

**BWC Board of Directors  
Investment Committee**

Thurs., April 24, 2008, 4:00 PM  
William Green Building  
Neil Schultz Conference Center  
30 W. Spring St., 2<sup>ND</sup> Floor (Mezzanine)  
Columbus, OH 43215

Members Present: Robert Smith, Chair  
Alison Falls, Vice Chair  
David Caldwell  
James Harris  
Larry Price  
William Lhota, ex officio member

Members Absent: none

Other Directors Present:  
James Hummel  
James Matesich  
Philip Fulton  
Charles Bryan  
Kenneth Haffey

**Call to order**

Mr. Smith called the meeting to order at 4:00 pm and the roll call was taken. All members were present.

**Minutes of Feb. 28, 2008**

Motion was made by Mr. Price, and seconded by Ms. Falls to approve the March 27, 2008 minutes. The motion passed unanimously.

**New business/Action items**

**Request for Quotation for Commingled Passive Index Intermediate Duration Fixed Income Investment Manager**

Bruce Dunn, Chief Investment Officer, discussed the request for quotation (RFQ), approved for issuance in November 2007 and issued in March 2008. Mr. Dunn's presentation included a handout summarizing the RFQ process regarding the search for a commingled passive index intermediate duration fixed income investment manager for the Public Work-Relief Employees' Fund and Marine Industry Fund, incorporated into the minutes by reference. Two RFQ responses were considered, one from Barclays Global Investors and one from State Street Global Advisors. The respondents' RFQ submissions were scored, the scores were discussed by the RFQ evaluation committee, and Barclays was selected as the finalist candidate to be recommended for approval to the BWC Investment Committee and BWC Board of Directors. In particular, Mr. Dunn noted Barclays historical performance of its passively managed funds directed to this mandate

demonstrates impressive low tracking error to the benchmark index. Barclays is the largest passive index manager in the world, their trading execution costs are very low, and their management fee is competitive. Guy Cooper, of Mercer Consulting, noted that the RFQ selection process was one of great rigor, diligence, and thoroughness. Mr. Cooper was quite impressed with the Bureau's process and selection.

Presentations were made by two representatives of Barclays - Matt Tucker, head of fixed income investment solutions, and Timothy Parillo, global head of securities lending strategy and business development. A handout was included in the Barclays presentation, and is incorporated by reference. Barclays currently manages over two trillion dollars worldwide. The Bureau's two trust fund portfolios for this mandate would be managed in San Francisco, California. Barclays manages six hundred fifty billion dollars of fixed income assets, of which almost six hundred billion dollars currently are passively managed. The goal of Barclays' passive index management is to consistently provide performance closely matching respective benchmark index returns. The securities lending has been ongoing with Barclays since 1981. Barclays is currently the third largest securities lender by lending activity in the world, making six thousand to eight thousand loans per day. Barclays engages in research and innovation, optimization of revenue, and utilizes five risk mitigation practices. Ms. Falls raised an issue concerning managing counterparty risk. Mr. Parillo indicated that Barclays has a rigorous process for evaluating counterparty risk and is very selective in choosing acceptable counterparties. The Barclays securities lending group analyzes the financial statements and financial condition of both existing and prospective counterparties continuously and has strict exposure limits for each approved counterparty.

Motion was made by Ms. Falls, seconded by Mr. Price, as follows: that the Investment Committee of the Workers' Compensation Board of Directors recommend to the Board that it approve the selection of Barclays Global Investors (BGI) to serve as an intermediate duration U.S. Fixed Income Commingled Passive Index manager for the Bureau of Workers' Compensation, upon such terms as are outlined in BGI's response to the Request for Quote issued March 11, 2008 and such other terms as are favorable to the Bureau. Roll call was taken and the motion passed unanimously. Ms. Falls asked Mr. Dunn about the timing of implementation of this approved mandate. Mr. Dunn indicated that once Barclays has been approved, background checks will commence on the Barclays individuals identified as the investment management team assigned for the Bureau. This process is expected to take four to six weeks once completed fingerprint cards are received back from Barclays. Outside counsel to complete all related legal documentation will likely be hired as well. James Barnes, Chief Legal Officer, has been discussing the hiring of such outside counsel with the Office of the Attorney General. Ms. Falls inquired as to whether Barclays was authorized to engage in securities lending. Mr. Dunn answered yes. Securities lending activity is integrated with and included in the commingled pooled funds index management process employed by Barclays for the two Bureau trust funds pertinent to this recommendation.

## **Discussion items**

### **Monthly and Fiscal Year to Date Portfolio Value Comparisons**

Mr. Dunn provided market value comparisons of the investment portfolio of the Bureau. A handout is incorporated by reference into the minutes. Discussion was made of bonds, equity, and net cash investments. Mr. Dunn indicated the Bureau has experienced an estimated overall positive rate of return of 5.80% on its investment portfolio for the first nine months ending March 31, 2008. Mr. Dunn indicated there was a net cash balance decline in the month of March 2008 as a result of

investment activity with respect to bonds and equities. Balances in the report represent market values as of March 31, 2008, February 29, 2008, and June 30, 2007.

### **CIO Report – April 2008**

A written report, dated April 14, 2008, was included in Mr. Dunn's presentation and is incorporated into the minutes. An assistant investment manager has been hired and started at the end of March 2008. A second administrative assistant begins employment in April 2008. Sixty-five private equity partnerships have been sold through March 31, 2008, with three remaining to be sold.

### **Mercer Proposed Five Step Decision-Making Framework**

A presentation was made by Guy Cooper and Kristin Finney-Cooke, of Mercer Consulting, with regard to decision-making. A new handout was distributed prior to the presentation, replacing materials already prepared for the meeting. The new handout is incorporated into the minutes. The five step decision making framework includes the enterprise wide objective, five percent discount rate, investment objectives, asset allocation, and risk tolerances. The first two steps have been completed, and the Bureau needs to begin the third step. The third step needs to be consistent with steps one and two. Ms. Falls discussed the interplay between steps one and three, and the creation of and maintenance of a reasonable surplus.

The five step process must be sequential and linear. Assistance from Deloitte will be needed to define and calculate surplus, and to determine how much surplus is needed. There shall be future educational pieces presented by Mercer Consulting. Mr. Bryan suggested that education over the next three years be limited to asset classes in which the Bureau will actually invest. Mr. Smith, Mr. Fulton, and Mr. Matesich supported a broader scope for educational topics. Ms. Falls believes the opportunity cost of education needs to be considered, as well as the importance of diversification. Mr. Harris noted the Bureau's past negative history with hedge funds, and stated concern about this type of investment. Mr. Matesich left the meeting at 5:40 pm.

### **Calendar**

The calendar is tentatively set for the next twelve months. Mr. Dunn indicated that a vote may be necessary in May of 2008 with regard to the funding of the mine safety program. Mr. Dunn stated that portfolio rebalancing language in the investment policy was too vague, and will be addressed with proposed new language in either May 2008 or June 2008. There shall be a Mercer quarterly performance report to be provided and discussed in the May 2008 meeting. For the July 2008 meeting, there is targeted for submission a report summarizing completion of the private equity sale. Investment income projections and divisional goals are expected to be presented in the June 2008 meeting. Mr. Harris raised issues concerning the mine safety program and whether interest income earned from the Pneumoconiosis Fund would be utilized to fund the mine safety program. Ms. Ryan answered yes, it is her understanding the program would operate in that manner.

### **Adjournment**

Upon motion by Mr. Caldwell, seconded by Ms. Falls, the meeting was adjourned at 5:45 pm.

Prepared by Tom Woodruff, BWC Staff Counsel

## Draft language for creation of subcommittees

To be inserted as a bullet point under the Duties and Responsibilities section of all charters:

The Committee by majority vote may create a subcommittee consisting of one or more Directors on the Committee. In consultation with the chair, other board members may be appointed to the subcommittee as appropriate. The subcommittee shall have a specific purpose. Each subcommittee shall keep minutes of its meetings. The subcommittee shall report to the Board of Directors through the Committee. The Committee by majority vote may dissolve the subcommittee at any time.

**BWC Board of Directors**  
**Investment Committee**

**Revised Recommendation**  
**Request For Proposals Issuance**  
**Commingled Passive Index Managers**  
**State Insurance Fund/Disabled Workers Fund/Coal Workers Fund**

Bruce Dunn, CFA, Chief Investment Officer  
May 16, 2008

## **Background**

The BWC Investment Committee and Board of Directors approved at their respective December 2007 meetings the issuance of a Request for Proposals (RFP) for Commingled Passive Indexed Investment Management Services for each of the three current separately managed asset mandates of the three largest BWC trust funds. These three current asset mandates and their respective target asset allocations for each of the three largest trust funds (State Insurance Fund, Disabled Workers Fund and Coal Workers Fund) are 59% Long Duration Fixed Income (LDFI), 20% U.S. Treasury Inflation Protected Securities (TIPS) and 20% Large Cap U.S. Equity.

Since approval of the issuance of this referenced Commingled Index Manager RFP, Investment Division focus has included (i) the RFP evaluation and selection process for the BWC investment consultant, (ii) continued selling of remaining private equity partnerships, (iii) implementation and understanding of a new investment performance and compliance system, (iv) RFQ issuance, evaluation and selection process of a commingled intermediate fixed income investment manager for two ancillary funds, (v) selection, hiring and training of staff members along with the continuing selection process for a key senior investment manager vacancy, and (vi) developing targeted operational internal controls and processes.

## **Review**

At the scheduled monthly post-Investment Committee meeting conference call of late April 2008 that included the Chair and Vice Chair of the Investment Committee as well as representatives of the BWC Investment Division and the Mercer consulting team, discussion occurred around the possibility of adding an intermediate duration fixed income investment manager mandate to the commingled manager RFP targeted to be issued in June 2008. The rationale for including such mandate to the RFP is in anticipation that such a mandate may likely be necessary as an appropriate investment strategy to support certain identified liability obligations of these trust funds, as conclusions from the Deloitte actuarial study evolve later this year. By completing the 3-4 month RFP process for the selection of one or more commingled intermediate duration fixed income managers somewhat in advance of potential investment policy changes, the Bureau would be in position to act much sooner in executing such anticipated investment policy change if and when approved by the Board of Directors.

## Proposed RFP Strategy

After careful study and research as well as consultation with the Mercer investment consulting team regarding the potential inclusion of an intermediate fixed income mandate to the commingled manager RFP approved, the BWC Chief Investment Officer believes it is appropriate to proceed with the following proposed two-stage RFP strategy for selection of commingled passive indexed investment managers for each of the three identified trust funds:

- (1) issue an RFP in June 2008 for U.S. TIPS and Large Cap U.S. Equity (S&P 500 index) commingled mandates only – excluding the LDFI mandate from this RFP;
- (2) issue a separate commingled passive indexed manager RFP targeted for a September, 2008 issuance that would comprise both the LDFI mandate and a to- be-determined intermediate duration fixed income (IDFI) mandate(s).

There are several advantages to this two-staged RFP issuance proposal. By dividing four mandates into two separate RFP's issued approximately three months apart, the BWC Investment Division and consultant Mercer can conduct a focused and measured evaluation process for each of four (or possibly more) separate mandates over the remainder of 2008. The TIPS (\$3.6 billion MV on 4/30/08) and Large Cap Equity (\$3.4 billion MV on 4/30/08) mandates are currently well defined as to objectives and manager expectations. Both mandate transitions (from a separate account to commingled account asset management structure) would be considered straightforward and easy to execute.

By delaying an RFP involving the LDFI mandate (\$10.4 billion MV on 4/30/08) for several months, the issuance of an RFP combining LDFI and IDFI can occur at a later time whereby the projected target date for selection of respective managers (late 2008 to early 2009) coincides with the expected completion of the Deloitte actuarial study and possible presentation of the Mercer investment strategy recommendations. This timing is very important for several reasons. If there is a likelihood of allocating a portion of current LDFI assets towards IDFI mandates, it could be a very costly and rather lengthy proposition to transition a portion of assets from commingled managed LDFI (with securities lending) to commingled managed IDFI. If commingled manager RFP selections and targeted asset value mandate amounts are coordinated effectively, such asset transfers can be executed much more efficiently and at considerably less cost if the transition to IDFI from LDFI is made from the current LDFI separate account mandate.

In addition, it is believed that more competitive and favorable bids will be received from RFP respondents if there is a more definitive time period represented in the RFP between winning manager selection and strategy implementation.

## Recommendation

It is recommended that the Request for Proposals for Commingled Passive Indexed Investment Management Services, previously approved in December 2007 by the BWC Investment Committee and Board of Directors, be amended to exclude the Long Duration Fixed Income asset class mandate at this time for the reasons described herein. The amended RFP will therefore include only the U.S. TIPS and Large Cap U.S. Equity asset class mandates for each of the three largest trust fund portfolios (State Insurance Fund; Disabled Workers Fund; Coal Workers Fund).

It is anticipated that such excluded Long Duration Fixed Income mandate will be included in a separate commingled passive indexed investment managers RFP targeted to be issued later in 2008 that will also include the search for commingled investment manager services for intermediate duration fixed income managers.

**Ohio Bureau of Workers' Compensation  
Invested Assets Market Value Comparison  
TOTAL FUNDS**

<u>Asset Sector</u>	<u>Market Value Apr 30, 2008</u>	<u>% Assets</u>	<u>Market Value March 31, 2008</u>	<u>% Assets</u>	<u>Increase(Decrease) Prior Month-End</u>	<u>% Change</u>	<u>Market Value June 30, 2007</u>	<u>% Assets</u>	<u>Increase (Decrease) Prior Fiscal Year-End</u>	<u>% Change</u>
Bonds	\$14,023,749,507	78.1%	\$14,105,632,647	78.7%	(81,883,140)	-0.6%	\$13,506,132,582	80.1%	\$517,616,925	3.8%
Equity	3,433,383,691	19.1%	3,268,555,808	18.2%	164,827,883	5.0%	3,094,056,499	18.3%	339,327,192	11.0%
Net Cash - OIM	18,802,676	0.1%	45,922,696	0.3%	(27,120,020)	-59.1%	16,853,230	0.1%	1,949,446	11.6%
Net Cash - Operating	384,700,805	2.1%	404,841,739	2.3%	(20,140,934)	-5.0%	200,337,474	1.2%	184,363,331	92.0%
Net Cash - MIF, PWRF, SIEGF	96,897,807	0.5%	96,302,828	0.5%	594,979	0.6%	47,788,060	0.3%	49,109,748	102.8%
<b>Total Net Cash</b>	<b>500,401,288</b>	<b>2.8%</b>	<b>547,067,263</b>	<b>3.1%</b>	<b>(46,665,975)</b>	<b>-8.5%</b>	<b>264,978,764</b>	<b>1.6%</b>	<b>235,422,525</b>	<b>88.8%</b>
<b>Total Invested Assets</b>	<b>\$17,957,534,486</b>	<b>100%</b>	<b>\$17,921,255,718</b>	<b>100%</b>	<b>\$36,278,768</b>	<b>0.2%</b>	<b>\$16,865,167,844</b>	<b>100%</b>	<b>\$1,092,366,642</b>	<b>6.5%</b>

**OIM:** Outside Investment Managers

**MIF:** Marine Industry Fund; **PWRF:** Public Work-Relief Employees' Fund; **SIEGF:** Self Insured Employers Guarantee

Market Value of Bonds and Stocks includes accrued investment income.

Net Cash includes the impact of net trade receivables/payables, accrued money market earnings, and accrued investment manager fees.

**April/March 2008 Comparisons**

- Net investment income in April 2008 was \$56 million representing a net portfolio return of +0.32% (unaudited).
- Bond market value decrease of \$81.9 mm comprised of \$66.7 mm in interest income, (\$168.9) mm in net realized/unrealized losses and \$20.3 mm in OIM net bond purchases (reducing net cash balances accordingly).
- Equity market value increase of \$164.8 mm comprised of \$3.7 mm of dividend income, \$154.4 mm in net realized/unrealized gains and \$6.7 mm in lower OIM net cash balances.
- Net cash balances declined \$46.7 mm in April 2008 largely due to reduced OIM cash balances (\$27.1mm) and reduced operating cash balances (\$20.1mm).  
JPMorgan US Govt. money market fund had 30-day average yield of 2.51% for April 2008 and 7-day average yield of 2.35% on 4/30/08.

**April 2008/June 2007 YTD Comparisons**

- Net investment income YTD of \$1,050 million comprised of \$694 mm of investment income and \$365 mm of net realized/unrealized gains, offset slightly by \$10 mm in fees.
- A total of \$588 mm YTD has been shifted from Bonds to Equities due to ancillary fund portfolio transitions (\$283 mm) and portfolio rebalancing actions (\$305 mm).  
An additional \$192 mm was shifted from Bonds to Cash to fund operating expenses (\$155 mm) and to execute two ancillary fund portfolio transitions (\$37 mm).
- Bond market value increase of \$518 mm comprised of \$621 mm in interest income and \$667 mm of net realized/unrealized gains, reduced by \$780 mm in redemptions (see preceding bullet) and \$10 mm in lower OIM cash balances.
- Equity market value increase of \$339 mm comprised largely of \$50 mm in dividend income and \$588 mm inflow from transitions/rebalancing, reduced by \$302 mm in realized/unrealized losses.

**INVESTMENT DIVISION**

TO: Marsha Ryan, Administrator  
BWC Investment Committee  
BWC Board of Directors

FROM: Bruce Dunn, CFA, Chief Investment Officer

DATE: May 27, 2008

SUBJECT: Revised CIO Report April, 2008

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The Investment Division in April, 2008 continued to work on important investment initiatives. This report summarizes some of these activities, issues and action plans relating to the Ohio Bureau of Workers' Compensation Investment Division.

**Fiscal Year 2008 Goals**

The Investment Division has six major goals for fiscal year 2008. These goals are the following:

1. Execute and complete transition of BWC portfolios per new BWC Investment Policy
2. Complete establishment of new BWC Investment Division
3. Assist in establishment of new investment accounting system
4. Sell all 68 private equity funds
5. Establish proper investment controls and compliance procedures
6. Provide enhancement of knowledge to new BWC Board of Directors and Investment Committee

## **Strategic Goal One – PORTFOLIO TRANSITION**

A pool of three Transition Managers (Barclays, Russell, State Street) were approved by the former Workers' Compensation Oversight Commission (WCOC) at its September 28, 2006 meeting. At the discretion of the BWC Investment Division, these transition managers are selected to oversee and effectively manage one or more of the many specific asset class exchanges in fulfillment of the goals of the new BWC Investment Policy. The new Investment Policy was approved at the July 20, 2006 WCOC meeting for State Insurance Fund assets and at the September 28, 2006 WCOC meeting for the assets of the BWC ancillary trust fund portfolios. At the time of this approval, most invested assets of the State Insurance Fund and all assets of four ancillary trust funds (except operating cash) were invested in bonds in a customized commingled fund passively indexed managed to the intermediate-duration Lehman Aggregate benchmark index.

The State Insurance Fund (SIF) had approximately \$14.8 billion of investment assets involved in transitions to achieve its portfolio asset allocation and portfolio duration targets as per the new BWC Investment Policy. The State Insurance Fund asset transitions occurred over two stages between January, 2007 and April, 2007. These SIF asset transitions involved invested assets being sold, reinvested and transferred to respective approved passive indexed managers under the oversight and management of the respective transition managers chosen. Each such transition was very closely monitored by the BWC investment staff.

The transition of approximately \$1.4 billion of assets involving four ancillary funds was completed in two distinct stages in July, 2007 and September, 2007. The first stage of the ancillary fund transitions involved invested assets totalling \$21.4 million for the Ohio Public Workers Relief Fund (PWRF) and \$15.2 million for the Ohio Marine Industry Fund (MIF). These assets were transitioned in July, 2007 to the JPMorgan U.S. Government Money Market Fund. This money market fund serves as the current interim investment strategy for these two smaller ancillary funds.

The second stage of the ancillary trust funds asset transition strategy involved the transitioning of invested assets of the two large ancillary trust funds, the Disabled Workers Relief Fund (DWRF) and the Coal Workers Pneumoconiosis Fund (CWPF). These two trust fund transitions totaled approximately \$1.38 billion in invested assets, comprising approximately \$1.14 billion for DWRF and \$240 million for CWPF. These respective trust funds were transitioned in September, 2007 to three respective asset class mandates per the Investment Policy targeted asset class allocation. Similar to the SIF portfolio, these assets were all targeted to approved passive indexed managers.

As the result of the approval provided by the Board of Directors on November 21, 2007, all assets of PWRF and MIF will be transitioned to a commingled pooled intermediate duration bond fund indexed to the new intermediate duration fixed income benchmark also approved by the Board of Directors at the November, 2007 meeting. At the April, 2008 meetings of the Investment Committee and Board of Directors, an investment manager (Barclays) was recommended and approved for these two ancillary funds upon the completion of the RFQ review and selection process. As a result, approximately \$38 million in combined assets from these two ancillary funds is expected to be transitioned to the pooled commingled fund manager in June, 2008.

## **Strategic Goal Two – BUILD INVESTMENT STAFF**

The Investment Division began fiscal year 2008 commencing July 1, 2007 with a staff of seven individuals consisting of the CIO, Director of Investments, two Senior Investment Managers, two assistant Investment Managers and an administrative assistant. Two new additions to staff occurred in late July, 2007 with the hiring of an Investment Administration Manager and an Assistant Investment Manager. Both of these more recent hires are making many contributions.

One of the two Senior Investment Managers who was on staff at the start of fiscal year 2008 is no longer a member of the Investment Division team, effective November 9, 2007. To fill this vacancy, one of the Assistant Investment Managers was offered and accepted the new position of Investment Manager. The positions for a new Senior Investment Manager and an Assistant Investment Manager were intended to be filled at the end of the first quarter of 2008. The leading identified candidate for the Assistant Investment Manager position accepted the Investment Division employment offer and commenced BWC employment as an investment staff member at the end of March, 2008. The clear leading candidate for the new Senior Investment Manager position initially accepted the Investment Division employment offer in late January, 2008 but retracted such acceptance in late February, 2008 to accept an alternative employment offer. The Investment Division has reposted this Senior Investment Manager position with the hope and goal that such position can be filled by another outstanding candidate sometime this summer. The first choice finalist candidate for the posted Administrative Assistant position accepted the Investment Division employment offer and commenced employment as an investment staff member at the end of April, 2008.

The necessary increase in positions of the BWC investment staff reflects the next stage of the building of a team of experienced investment professionals dedicated to serving the needs of the BWC and its customers with the highest of integrity and competence.

## **Strategic Goal Three – NEW INVESTMENT ACCOUNTING SYSTEM**

A RFP process that began in November, 2006 for a new investment accounting and reporting system resulted in the selection of an integrated outsourced vendor solution offered by BNY Mellon. BWC has now completed the accounting conversion process and is currently in the process of completing the full implementation process to this web-based system. The BWC Investment Division is focusing on the goal to have an improved accounting system available to the investment staff to accommodate the effective daily monitoring of both passive and active style asset managers in satisfaction of the current BWC Investment Policy. The investment staff is in the process of learning how to utilize many of the analytical, compliance and performance measurement tools and resources offered by this accounting system through both formal training sessions and self education. Certain individuals at Mercer Investment Consulting are now being utilized by the Investment Division to assist in the education and implementation of analytical and compliance tools available. The transition of all performance data from Wilshire Associates to Mercer is also occurring so that Mercer will have the capability of producing and presenting a first quarter 2008 performance report to the Investment Committee and other members of the Board of Directors at the May, 2008 Investment Committee meeting.

## **Strategic Goal Four – PRIVATE EQUITY SALE**

Progress continued in the month of April, 2008 towards the goal of selling all 68 private equity partnerships. There were no additional sales of private equity partnerships in April, 2008. At the end of April, a total of 65 private equity partnerships have been sold by BWC for total proceeds of \$393.9 million. All such proceeds received from private equity partnership sales are reinvested in the passive indexed Large Cap S&P 500 Equity portfolio managed by Northern Trust. Efforts continue towards the disposal of the BWC partnership interest in two of the three remaining private equity funds held. The book value of these two funds owned and targeted for sale is presently \$10.2 million.

The Bureau's ownership interest in Axxon Capital, a former BWC private equity partnership, was converted in April, 2008 to a limited liability corporation (LLC). Axxon Capital, now an LLC, is in the process of being liquidated with net cash proceeds of its remaining assets to be distributed to its original limited partner investors (including BWC). This former partnership was originally licensed and sponsored by the Small Business Administration (SBA) which was involved in its operations until early this month. The SBA forced this partnership into receivership in March, 2006 and at that time removed its two original managing general partners.

The Bureau was directed to sell all of its 68 private equity partnerships by the former Workers' Compensation Oversight Commission (WCOC) in March, 2006. An RFP was issued to select a firm experienced in the sale of private equity partnerships, resulting in UBS being selected and approved by the WCOC to serve as private equity sales agent of the Bureau. In April, 2007 at the completion of several stages of competitive auctions undertaken by UBS, all private equity funds were competitively bid to numerous buyers. The specific purchase and sale agreement applicable for the Axxon Capital purchase expired April 1, 2008, as a result of the SBA not yet providing required approval for the transfer of ownership from the Bureau to potential buyers. Effective May, 2008, Axxon Capital LLC was removed from SBA receivership status, with the result that the SBA no longer retains any interest. Axxon Capital LLC is now in an accelerated liquidation mode with no new investments to be made. A significant distribution of cash is expected to be received by each Axxon Capital LLC holder shortly. Axxon Capital, the original partnership now converted to LLC status, will be liquidated not by third party sale but by actual liquidation of remaining assets that existed within the original partnership.

#### **Strategic Goal Five – INTERNAL INVESTMENT PROCEDURES**

The Internal Audit Division is providing guidance and assistance in both the creation and further improvement of proper procedures and controls for the Investment Division. This is important as the Investment Division selects and very closely monitors existing and new investment managers who will manage specific mandates reflected from the new Investment Policy approved.

The Investment Division has focused on the management oversight of the passive style investment managers, performance reporting, and other investment activities to support the Investment Policy. Internal procedures for the monitoring of active style investment managers will be developed well in advance of the selection of such managers.

#### **Strategic Goal Six – BOARD OF DIRECTORS KNOWLEDGE ENHANCEMENT**

An added goal of the Investment Division is to provide investment-related fundamental training to the new BWC Board of Directors. Such training will assist the Board of Directors in carrying out its fiduciary responsibilities to the BWC trust funds. The Investment Division will provide educational presentations (written and oral) on relevant topics at scheduled public meetings. The Investment Division will also provide training through informal discussion, as appropriate under the Ohio Sunshine Laws. The CIO and Director of Investments encourage Board members to contact them with inquiries, comments or concerns.

At the September meetings, there were formal presentations made by the Investment Division on (i) the fundamentals of investments as relevant to the BWC portfolio of assets and current investment strategy, (ii) the BWC RFP process for securing external investment management services/products, and (iii) the advantages/disadvantages of the two types of alternative custodial structures for investment asset management. The BWC RFP process for securing a full service investment consulting firm and the roles of an evaluation committee in the RFP process was addressed in the October meetings. Discussion on the fundamentals of securities lending was started in the November meeting and was continued and concluded at the December meeting. As determined by the Investment Division and Mercer in collaboration with the Administrator, BWC Investment Committee and Board of Directors, as appropriate, additional investment topics for gaining additional knowledge will be addressed over the course of the current fiscal year.

### **Compliance**

The investment portfolios in the aggregate were in compliance with the BWC Investment Policy at the end of April, 2008.

# 12-month Investment Committee Calendar

Date	November	Notes
11/20/2008	<ol style="list-style-type: none"> <li>1. Investment Consultant Performance Report 3Q08</li> <li>2. Annual Custodial Review</li> </ol>	
	<b>December</b>	
12/18/2008	<ol style="list-style-type: none"> <li>1. Investment Consultant Asset/Liability Report and recommendation, possible vote</li> <li>2. Commingled Index Managers RFP Finalists recommendations, approval vote</li> </ol>	
	<b>January</b>	
	<ol style="list-style-type: none"> <li>1. Commingled Index Managers RFP Finalists recommendations, approval vote</li> </ol>	
	<b>February</b>	
	<ol style="list-style-type: none"> <li>1. Investment Consultant Performance Report 4Q08</li> </ol>	
	<b>March</b>	
	<b>April</b>	



May 28, 2008

## Investment Topics

### Ohio Bureau of Workers' Compensation (BWC)

Kristin Finney-Cooke  
Guy M. Cooper  
Kweku Obed

# Agenda

- 1. Fixed Income**
- 2. Asset and Liability Matching – Discussion of basic concepts**
- 3. U.S. Equity**
  - Active Management Styles
- 4.. Non U.S. Equity**
  - International and Emerging Markets
- 5. Active vs. Passive Management**
- 6. Diversification – Correlation**

# Fixed Income

## Important Characteristics of a Bond

- Bonds provide income while stocks provide capital gains.
- The income offered by bonds is the 'bird in the hand' while the capital gains offered by stocks is the 'two in the bush'.
- When you invest in bonds, you expect that most of what you will earn is the promised interest payment. Stocks do pay dividends but they are not 'guaranteed', and dividends are not generally an important part of what you earn when you invest in stocks.
- There are risks to the promised interest income payment of bonds. These include:
  - Credit risk – the risk that interest payments will not be made
  - Inflation risk – the risk that, although interest is paid, it is worth less because prices have gone up
  - Re-investment rate risk – the risk that when interest is received there are not good alternatives for re-investing the interest.
- Bond prices also fluctuate and this presents significant risks.

## Terminology

- A bond is a loan from a lender to a borrower.
  - The lender is usually called the investor.
  - The borrower may be called the **issuer**.
- As with any loan, the borrower and lender must agree on:
  - **Maturity**: the length of time of the loan before it must be repaid.
  - **Coupon**: the amount of interest the borrower will pay the lender. Originally bond holders physically presented coupons on the semi-annual payment date to receive the interest due to them.
  - **Interest period**: how often the borrower pays interest to the lender. By convention, this is every six months for the most common bonds.
- **Yield**: the yield of a bond is a calculation of the percentage rate of return of the bond. There are actually many ways to compute a bond's yield depending on one's purpose. Common terms are:
  - **Current yield, book yield, yield-to-maturity and yield-to-worst**

## Common Types of Bonds (as classified by type of borrower)

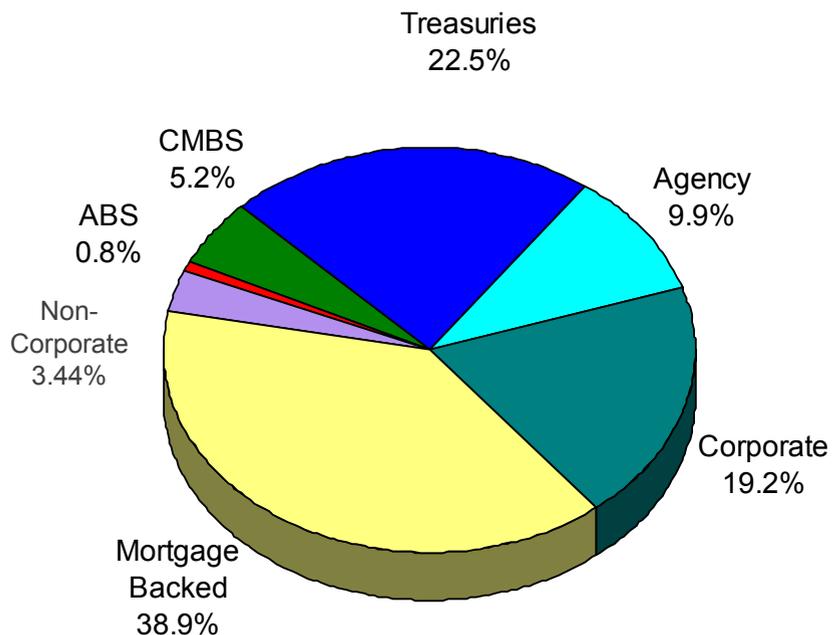
- U.S. Government Bonds
- Corporate Bonds
  - Investment Grade (Typical Credit Quality grades: AAA, AA, A, Baa)
  - Non-Investment Grade (High Yield, Junk, ratings below Baa)
- Mortgages and Mortgage-Backed Securities
- Other Collateralized Instruments
- TIPS
- Yankee Bonds
  - Foreign entities issue bonds payable in US dollars
- Non-Dollar Payees
  - Foreign Governments (Developed and Emerging Countries)
  - Foreign Corporations
- Synthetic Bonds (Futures and Swaps)

# Fixed Income

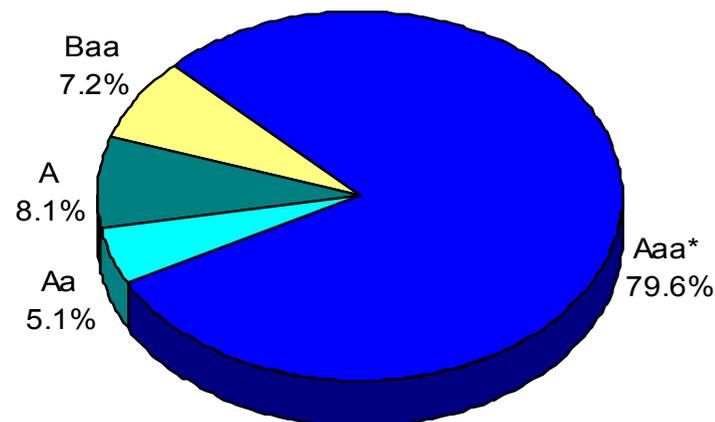
## US Investment Grade Fixed Income Market

### Lehman Brothers Aggregate Bond Index As of March 31, 2008

**Sector Breakdown  
% Market Value**



**Quality Breakdown  
% Market Value**



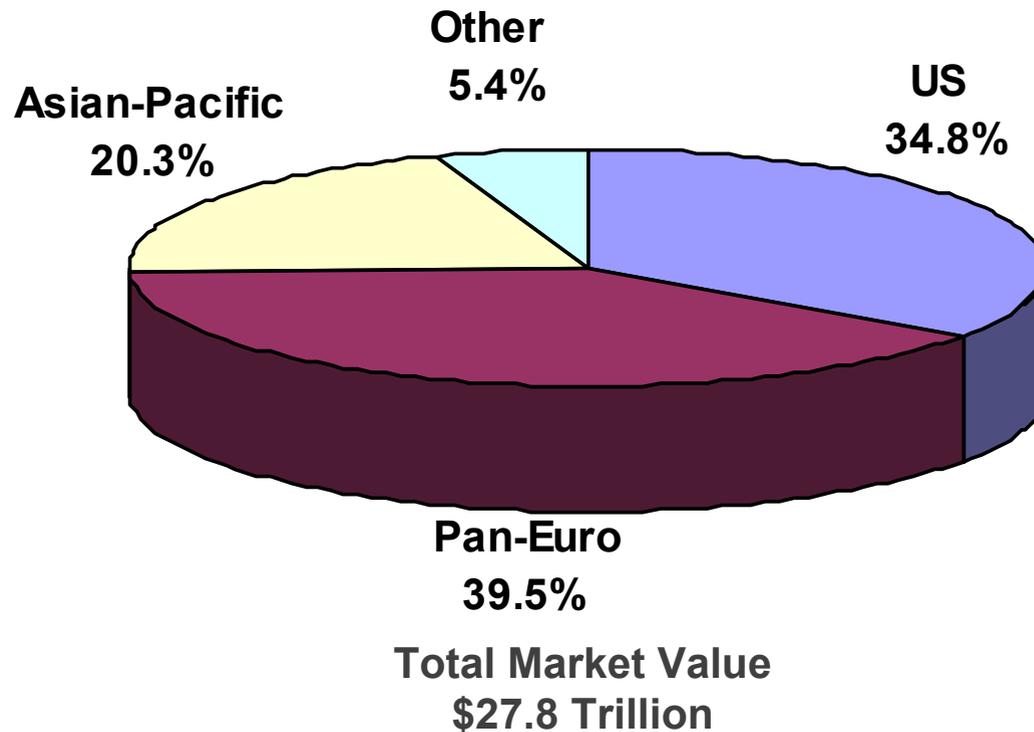
\* Aaa includes Treasuries (23.29%), Agency (52.64%) and Credit (3.54%).

Source: Lehman Brothers

## Fixed Income

### World Bond Market by Sector

As of March 31, 2008



\*Other includes Eurodollar and Euro-Yen corporate bonds, Canadian government, agency and corporate securities, and USD investment grade 144A securities.

Source: Lehman Brothers

## Common Types of Bonds (as classified by length of borrowing)

- Very short (maturity less than 90 days)
- Short (maturity between 90 days and 1 year)
- Intermediate (maturity between 1 and 10 years)
- Long (maturity between 10 and 30 years)

*Any length of bond may be associated with any borrower type.*

## The Value of a Bond – Example

- Suppose the following offer: The U.S. Government offers to pay you \$500 every year for 5 years and \$10,000 at the end of the 5 years.
- How much would you pay for this?
  - What if the offer was for \$500 every year for the next 15 years with \$10,000 at the end of the 15 years?
  - What if the offer was \$600 every year for 5 years?
  - What if the offer came from a person off the street that you didn't know?

## The Value of a Bond – Math

- The price of a bond is determined by a complex mathematical formula.
- Each type of bond may have a different formula, and usually Board members do not need to know the precise formula – computers and spreadsheets suffice for that.
- The formula for determining the price of a bond depends on five quantities:
  1. The coupon paid by the bond
  2. How often the coupon is paid (usually semi-annually)
  3. How long the coupon is going to be paid (i.e. the maturity)
  4. The yield-to-maturity of the bond
  5. Who the issuer is...
- Of these the most important is the yield-to-maturity. It is the only one of the quantities that changes from day to day and after you buy the bond.

## Fundamental Theorem of Bond Valuation – Example

- Suppose you buy a 5 year \$50,000 Certificate of Deposit from Bank ABC that is paying 5% interest.
- The next week you notice that Bank ABC is offering a 6% interest rate on 5 year Certificates of Deposit?
- If you had to or wanted to sell it, what is your 5% Certificate of Deposit worth?
- What would your 5% Certificate of Deposit be worth, do you think, if Bank ABC was offering only 4% on new Certificates of Deposit?

## Fundamental Theorem of Bond Valuation – Math

- The price of a bond moves in the opposite direction to the bond's yield-to-maturity.
- If the bond's yield-to-maturity goes up, the bond's price goes down.
- If the bond's yield-to-maturity goes down, the bond's price goes up.
- A bond's yield-to-maturity is just the interest rate prevailing in the market that investors are willing to accept for that particular type of bond. As these rates change, which they do every minute, the price of the bond changes.
- Thus the value of a portfolio of bonds fluctuates as interest rates fluctuate, rising when interest rates go down, and falling when interest rates go up.

## Duration – Common Sense Definitions

- Duration, like maturity, is a measure of the length of time of a bond. Duration is stated in years. It is almost always less than maturity.
- Duration measures the sensitivity of a bond to interest rate changes. Duration determines how much a bond will change in price when interest rates change.
- Facts about Duration:
  - The higher a bond's duration, the greater its sensitivity to a change in interest rates.
  - The higher a bond's duration, the more the bond will fall in price if interest rates go up.
  - The higher a bond's duration the more the price changes as interest rate changes – a form of risk.
  - The lower the duration, the less impact a change in interest rates will have on the value of your bonds.
  - Low (or short) duration can mean less than 3. High (or long) duration means 8-12.

## Duration – Math

- Duration provides a useful formula that relates what happens to the price of a bond when interest rates change:
  - Percentage change in bond price = Percentage Point change in Yield times the Duration of the bond.
- Example: A bond with a duration of 5 years will decrease in value by 5% if interest rates rise 1% and increase in value by 5% if interest rates fall 1%.
- Mathematically, duration is the weighted average maturity of a bond's cash flows. But it is more intuitive to think of duration as the link between changes in interest rates and changes in bond prices.
- Duration is stated in years. It is always less than maturity, except for zero coupon bonds, where maturity and duration are the same.

## Value of a \$100 Bond after Interest Rate Changes

### Interest Rates Decline by 1%:

Asset Duration	5 yrs	10 yrs
Assets	\$105	\$110

### Interest Rates Increase by 1%:

Asset Duration	5 yrs	10 yrs
Assets	\$95	\$90

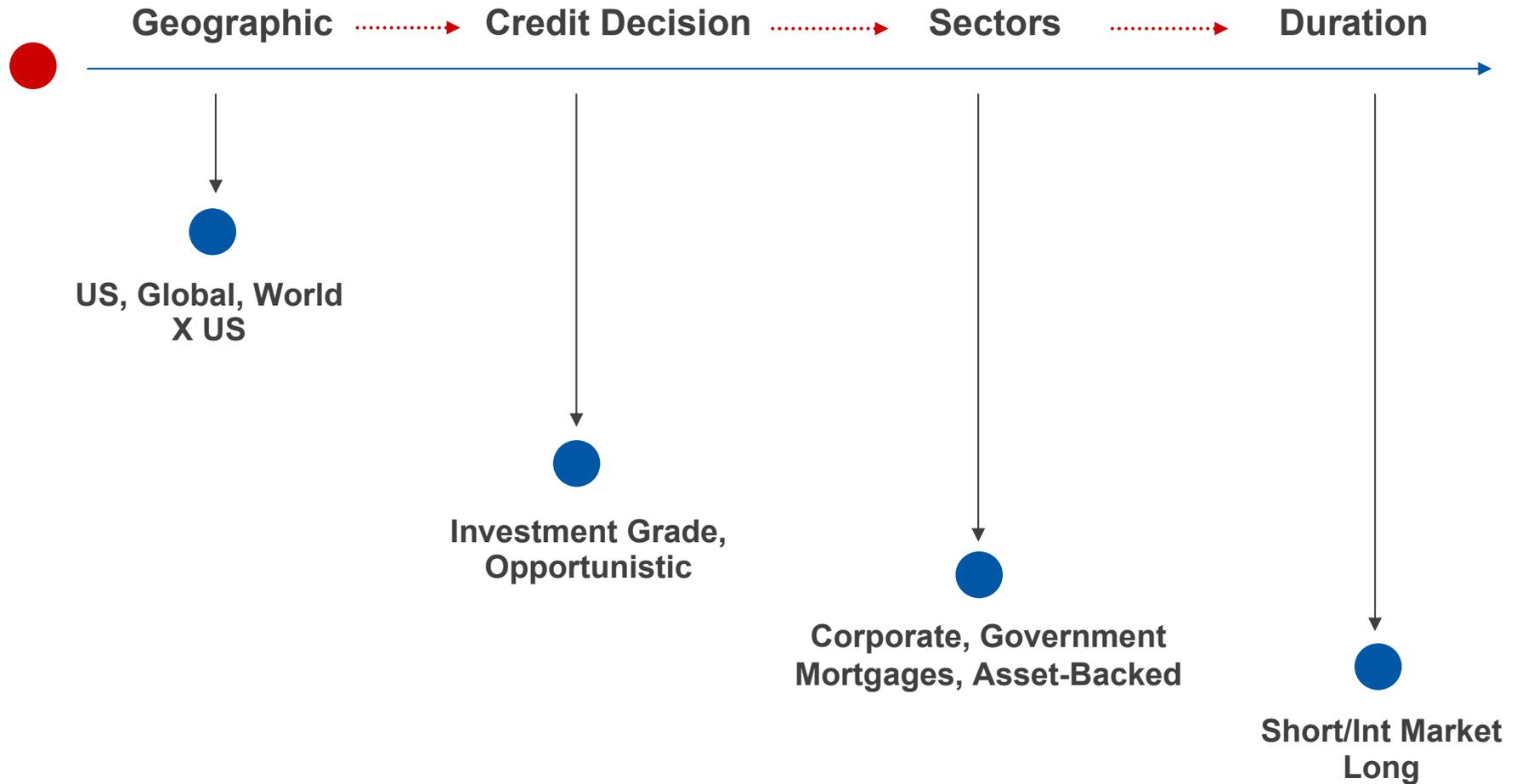
## Treasury Inflation Protected Securities (TIPS)

- TIPS can be viewed as a special type of Treasury note or bond that offers protection from inflation.
- Like other Treasuries, these inflation-indexed securities pay interest every six months and pay the principal when the security matures. *The difference is that the coupon payments and underlying principal are automatically increased to compensate for inflation as measured by the consumer price index (CPI).*
- TIPS maintain an investor's real rate of return by guaranteeing their purchasing power.
- TIPS are seen as 'double-safe' investments as they are guaranteed by the US Treasury *and* because they guarantee purchasing power;
- Due to their relative safety, TIPS offer a relatively lower return for investors (in normal market conditions).

## Convexity

- Convexity is a term that will be used frequently by investment managers and bond practitioners .
- Convexity refers to a mathematical property of the equation that relates a bond's price to changes interest rates.
- Gives a higher degree of accuracy in the pricing of bonds.
- In the normal course of your duties as a trustee, it is usually not necessary to know what the term convexity means.

# Bond Portfolio Management Choices



## The Important role of Credit Analysis

- Since a bond derives its value from the promise of the issuer to pay periodic interest, it is critical to determine whether the issuer is likely to actually make the promised interest and principal payments for the life of the bond.
- Only the United States Government is deemed default free and immune from ever failing to pay the interest and principal that is due to investors in its bonds.
- All other issuers are rated by independent rating agencies on various scales indicating their creditworthiness. A typical scale is AAA, AA, A, and BBB, with BB, B, C, and NR reserved for lower credit rated issuers.
- Investment management firms who invest in bonds also typically have significantly sized staffs devoted to analyzing the creditworthiness of the bond issuers they own or might own.
- Some bonds are backed by collateral – assets specifically pledged to provide security for the promised payments. All mortgages are bonds backed by the collateral of the property the mortgage covers.

## Common Portfolio Strategies

### Core and Core Plus Strategies

#### Core Strategy

- A Core Bond strategy will seek both current income and the growth of capital through exposure to US government and corporate investment-grade obligations.

#### Core Plus Strategy

- A Core Plus strategy permits managers to add instruments with greater risk and greater potential return (high-yield, global and emerging market debt, for example) to core portfolios of investment-grade bonds.

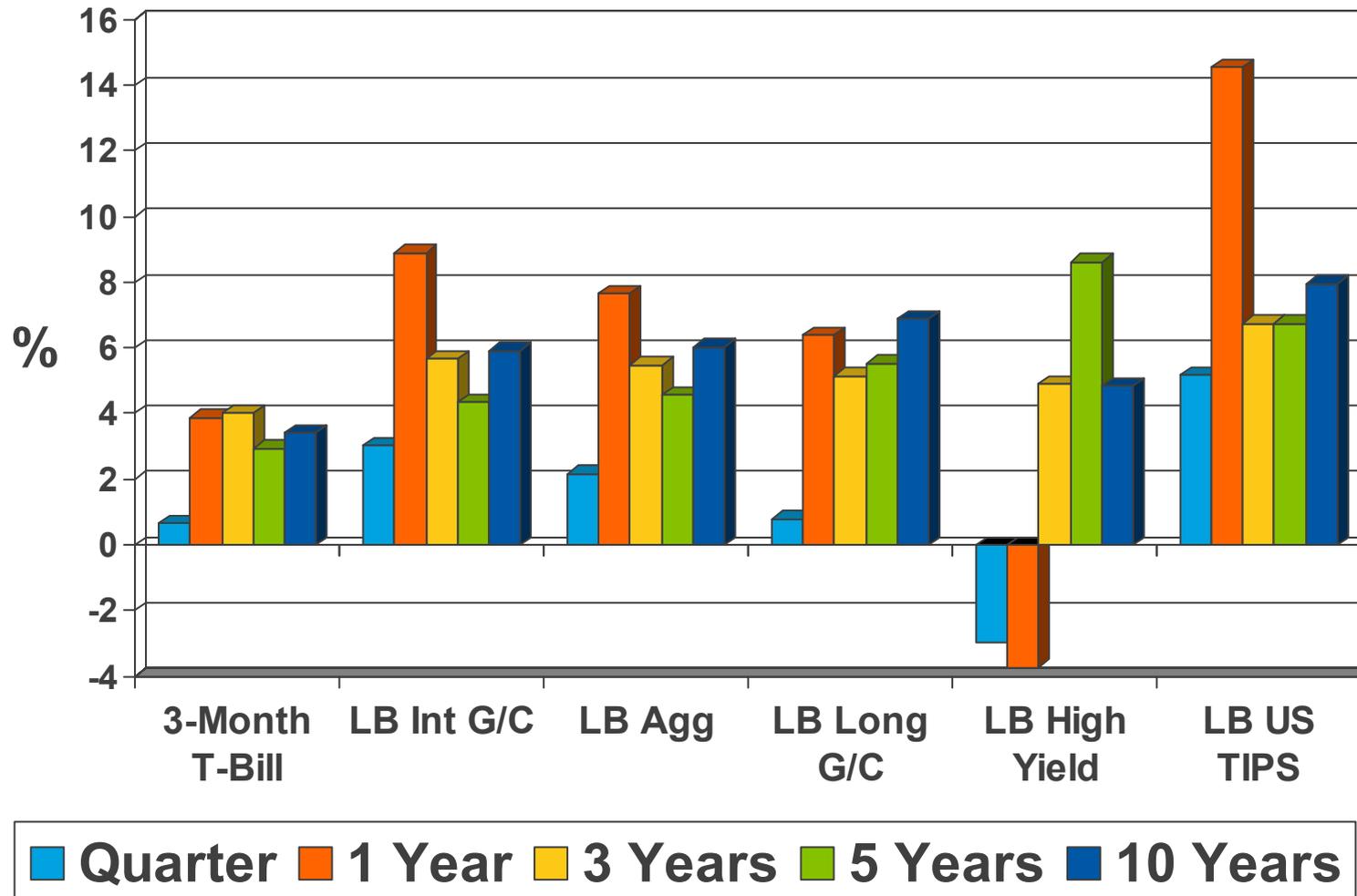
#### Passive Fixed Income Strategies

- A Passive Fixed Income strategy seeks to replicate the characteristics and performance of one or more generally accepted indices of the overall bond market.

## Fixed Income

### Annualized Returns by Maturity and Sector

As of March 31, 2008\*

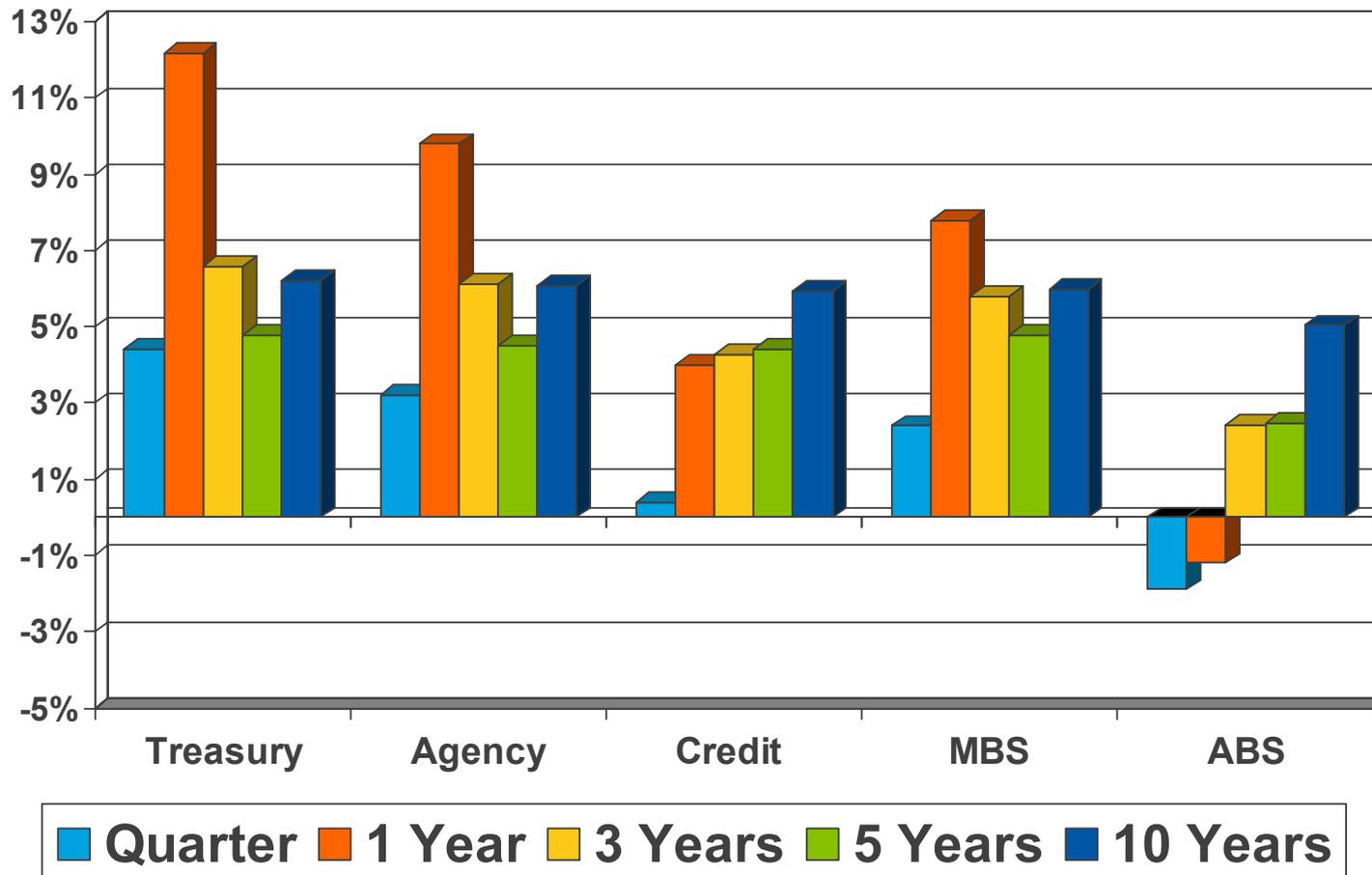


\* Performance for one year or longer has been annualized.

# Fixed Income

## Performance by Issuer

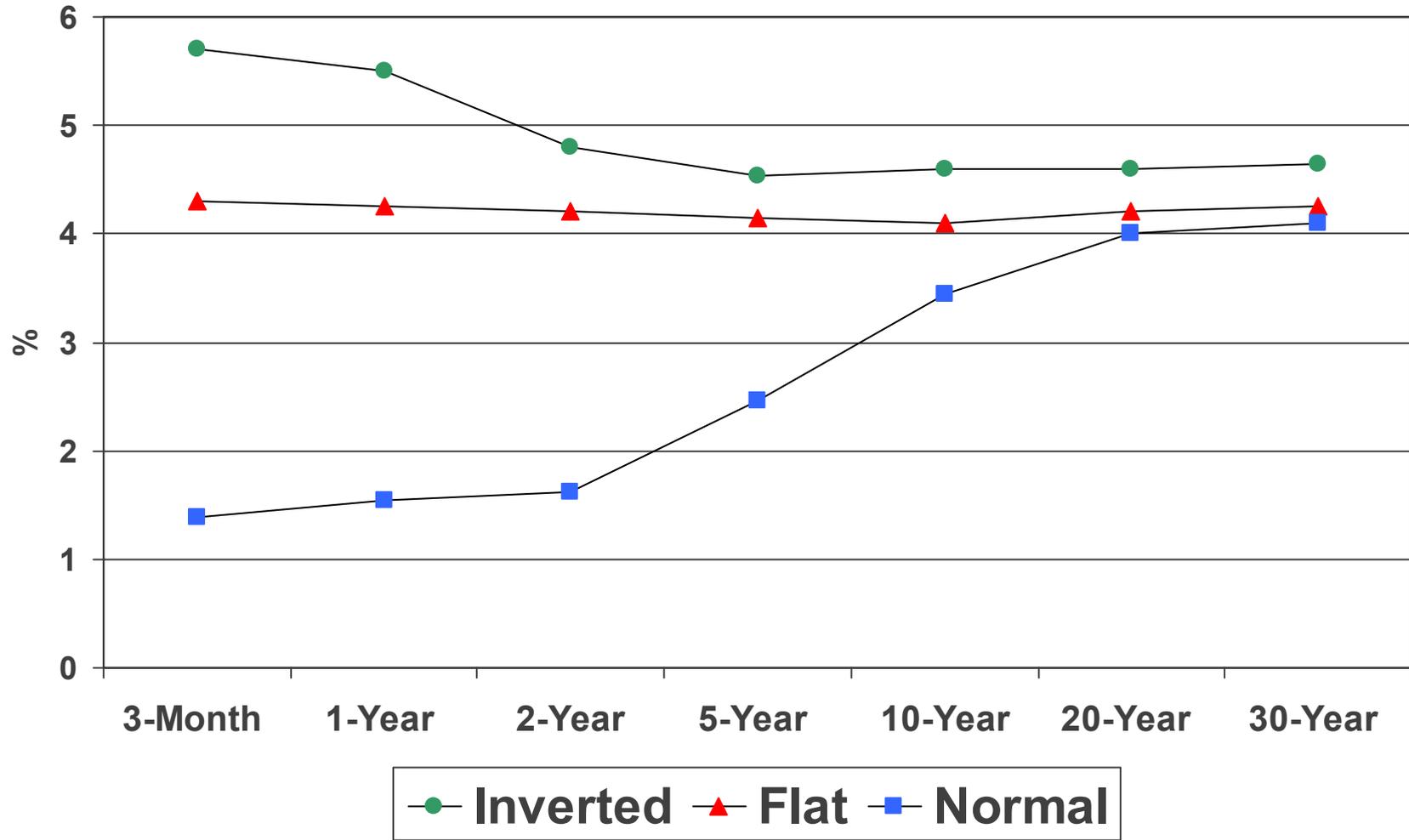
As of March 31, 2008\*



Source: Lehman Brothers

\* Performance for one year or longer has been annualized.

# Fixed Income Yield Curve



# Asset and Liability Matching

## ALM – Asset and Liability M...

- ALM can mean:
- Asset and Liability **Modeling** – a computer exercise of determining how assets and liabilities behave in the future in various scenarios.
  - Example: What is the likely return over the next 20 years of an investment strategy that is invested 20% in equities and 80% in bonds? What is likely to be the worst that can happen in any one year over the 20 years?
- Asset and Liability **Management** – the general practice of paying attention to how both assets and liabilities behave
- Asset and Liability **Matching** – one of several approaches to matching assets to liabilities in an attempt to manage surplus
- All three of these will be important exercises in steps 3 – 5 of our Five Step Decision Making Framework.
  - 3. Setting Investment Objectives
  - 4. Determining Asset Allocation
  - 5. Establishing acceptable Risk Tolerances

## ALM and Surplus Management

- Surplus equals Assets minus Liabilities
- If either Assets or Liabilities change, Surplus changes
- To manage Surplus, both Assets and Liabilities must be managed. It is not enough to just manage the assets.
- ALM in practice means designing an asset portfolio that behaves like the liabilities so that changes in assets are tracked by changes in liabilities.

## The Market Value of Liabilities

- If we have to make a payment of \$1,000,000 10 years from now, we would need \$613,913 today to be sure we could pay that payment, if interest rates were 5%.
- If, tomorrow, interest rates were to rise to 6%, we would need less money to meet that ten year obligation. We would only need \$558,395.
- If, tomorrow, interest rates were to fall to 4% we would need more money to meet that ten year obligation. We would need \$675,564.
- In each case, we call the amount of money needed to cover a future liability the market value of the liability. The market value of a liability changes as interest rates change reflecting the fact that the cost of meeting that liability changes.
- Note that the market value of a liability is just the discounted value of a future expected payment.

## The Market Value of Assets

- If interest rates were 5%, and we invested \$613,913 in a bond asset with a duration of 10 years, we would be assured of that asset being worth \$1,000,000 in ten years.
- If, tomorrow, interest rates were to rise to 6%, that asset would be worth only \$558,395. But we would still be assured of that asset being worth \$1,000,000 in ten years.
- If, tomorrow, interest rates were to fall to 4%, that asset would be worth only \$675,564. And we would still be assured of that asset being worth \$1,000,000 in ten years.

## Summary: Market Value of Asset = Market Value of Liability

- We began, with interest rates at 5%, with the market value of our asset equal to the market value of our liability (\$613,913).
- If interest rates rise to 6%, the market value of our asset still equals to the market value of our liability (\$558,395).
- If interest rates fall to 4%, the market value of our asset still equals to the market value of our liability (\$675,564).

## Summary: Market Value of Asset = Market Value of Liability

### Four things have happened:

1. Our surplus (assets minus liabilities) began at zero and remains unchanged at zero no matter what happens to interest rates.
2. We are assured of having a million dollars at the end of ten years to meet our liability
3. We are immune and indifferent to changes in the level of interest rates.
4. We are also immune and indifferent to changes in the stock market.

## The Fundamental Theorem of Asset and Liability Matching

**To achieve a perfect guarantee of meeting a future expected payment:**

1. Match the market value of your asset to the market value of your liability
2. Match the duration of your asset to the duration of your liability

## ALM in practice

- A number of real world complications arise in achieving the perfect asset and liability match.
- A future liability is not known with certainty. Estimates of what the liability may be might be wildly off, particularly if the future liability is subject to a high degree of uncertainty such as medical inflation.
- Typical coupon bonds do not have durations over 15. To match long liabilities we must use exotic instruments or U.S. Government zero-coupon bonds.
- ALM is expensive. This is because ALM relies on bonds which we expect to earn less than other asset classes, particularly stocks. In effect, ALM purchases safety and certainty at an expensive price.
- The theory of duration-matching makes several assumptions, which may not hold in practice: parallel shifts in yield curves, small changes in yields only, bonds cannot be called and do not contain other optionality.

## ALM for the BWC

- Surplus equals Assets minus Liabilities
- The BWC does not mark its liabilities to market as interest rates change (or they do so to a limited degree). This is a consequence of the discount rate that is fixed for a twelve month period and perhaps of the actuarial smoothing of liabilities.
- With liabilities largely fixed, managing surplus at the Bureau is equivalent to managing assets. There is arguably no need or role for an asset strategy that tries to mimic the volatility of the liabilities.
- We have asked Deloitte to consider these questions of surplus management and a final determination of what the role of ALM for the BWC should be awaits their views.

# U.S. Equity

## **U.S. Equity**

### Characteristics of Equity Market Investing

#### **Common Stock or Equity Securities**

- Represents ownership shares in a corporation. Each share of common stock typically entitles its owner to one vote.
- Residual claim and limited liability
- Generate returns from dividends and/or appreciation in the value of the stock price
- Returns are not guaranteed, as a stock investor can lose money if the stock price declines in value below the amount paid

## U.S. Equity

### Characteristics of Equity Market Investing

#### How your Portfolio Manager (PM) Invests in the Equity Market

- The portfolio manager invests in the stock market for clients by identifying a basket of securities to purchase.
- The basket of securities referred to as the portfolio will be identified through various types of analysis – in hopes that the portfolio will outperform a stated benchmark.
- The portfolio manager will stay within the guidelines set forth by the client as it relates to capitalization ranges (Large, Midcap or Small) and style (Growth, Value or Core).
- The portfolio will be measured against a stock market index (benchmark), which is defined as a method of measuring the stock market as a whole. The market can be Canadian stocks, American stocks, Bio-tech stocks, small-cap stocks, growth stocks, or any other market of interest.

## U.S. Equity

### Characteristics of Equity

#### Types of Stocks

##### Cyclical

- A cyclical stock is a stock that has a strong correlation with the movement of the general economy (business cycle) i.e. it will appreciate quickly when economic growth is strong and fall rapidly when growth is slowing.
- Automobile stocks are a good example of a cyclical stock; as economic growth slows, consumers have less disposable income to spend on new cars and vice versa.

# U.S. Equity

## Characteristics of Equity

### Types of Stocks

#### Non-cyclical

- Non-cyclical securities, also called defensive stocks, are anticipated to experience profit regardless of economic conditions as non-cyclical firms produce or distribute essential goods or services that we demand regardless of the business cycle.
- The classic example of a non-cyclical stock is a food or household products stock (P&G) as consumers and businesses need household supplies regardless of the direction of the economy.
- When the economy is growing, non-cyclical stocks tend to lag behind cyclical stocks as they have a low correlation with the business cycle.

# U.S. Equity

## Characteristics of Equity

### Types of Stocks

Standard & Poor's classifies stocks into 10 sectors:

- **Consumer Discretionary**
- **Consumer Staples**
- **Energy**
- **Financials**
- **Health Care**
- **Industrials**
- **Information Technology**
- **Materials**
- **Telecommunication Services**
- **Utilities**

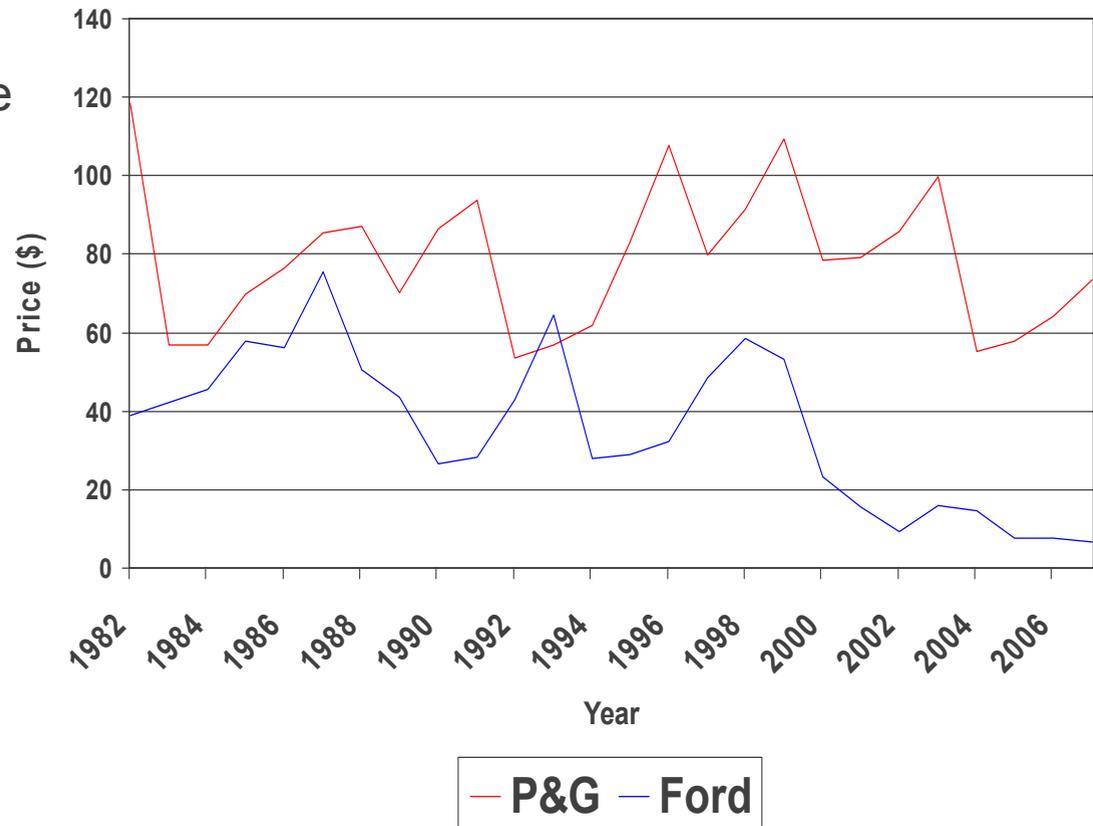
All of the sectors are cyclical with the exception of (3) Consumer Staples, Health Care and Utilities.

# U.S. Equity

## Characteristics of Equity

### Types of Stocks

- The chart shows the performance of a highly cyclical company, the Ford Motor Co. (blue line), and a non-cyclical company, Proctor & Gamble (P&G) (red line).
- This chart clearly demonstrates how each company's share price reacts to downturns in the economy.
- You will see that the downturn in the economy from 2000 to 2002 drastically reduced Ford's share price, whereas P&G share price remained within its normal price range during the slowdown.



## Domestic Equity

### Market Capitalizations

The total market value of a company's outstanding common stock is calculated by multiplying the market price per share by the number of shares outstanding.

**Market Capitalization = (# shares) x (price)**

Example: Marsh & McLennan -MMC

\$24.37 billion = 800 million shares x \$30.47

## U.S. Equity

### Market Capitalization

#### Broad Market Index (Example: Russell 3000)

- Represents largely entire market, which includes all capitalization ranges (large, mid and small companies)
- Range from \$468B – \$261M with the average market capitalization at \$82.8B
- An example of a broad index is the Russell 3000, which is often used as a proxy for the entire market

#### As of March 31, 2008

<u>% of Total</u>	<u>Russell 3000</u>
Large Cap	39.9%
Mid/Large Cap	26.8%
Mid Cap	17%
Small/Mid Cap	9.3%
Small Cap	7%

# U.S. Equity

## Market Capitalization Ranges

### Large Cap

- Largest stocks in the broad market
- Range from \$468B – \$2.5B with the average market capitalization at \$90.5B
- An example of a large cap index is the Russell 1000 Index, which is often used as the large cap benchmark that large cap portfolios are compared

### Mid Cap

- Stocks that fall in the middle of the capitalization range
- Range from \$18.3B – \$2.5B with the average market capitalization at \$9.1B
- An example of a mid cap index is the Russell Mid Cap Index

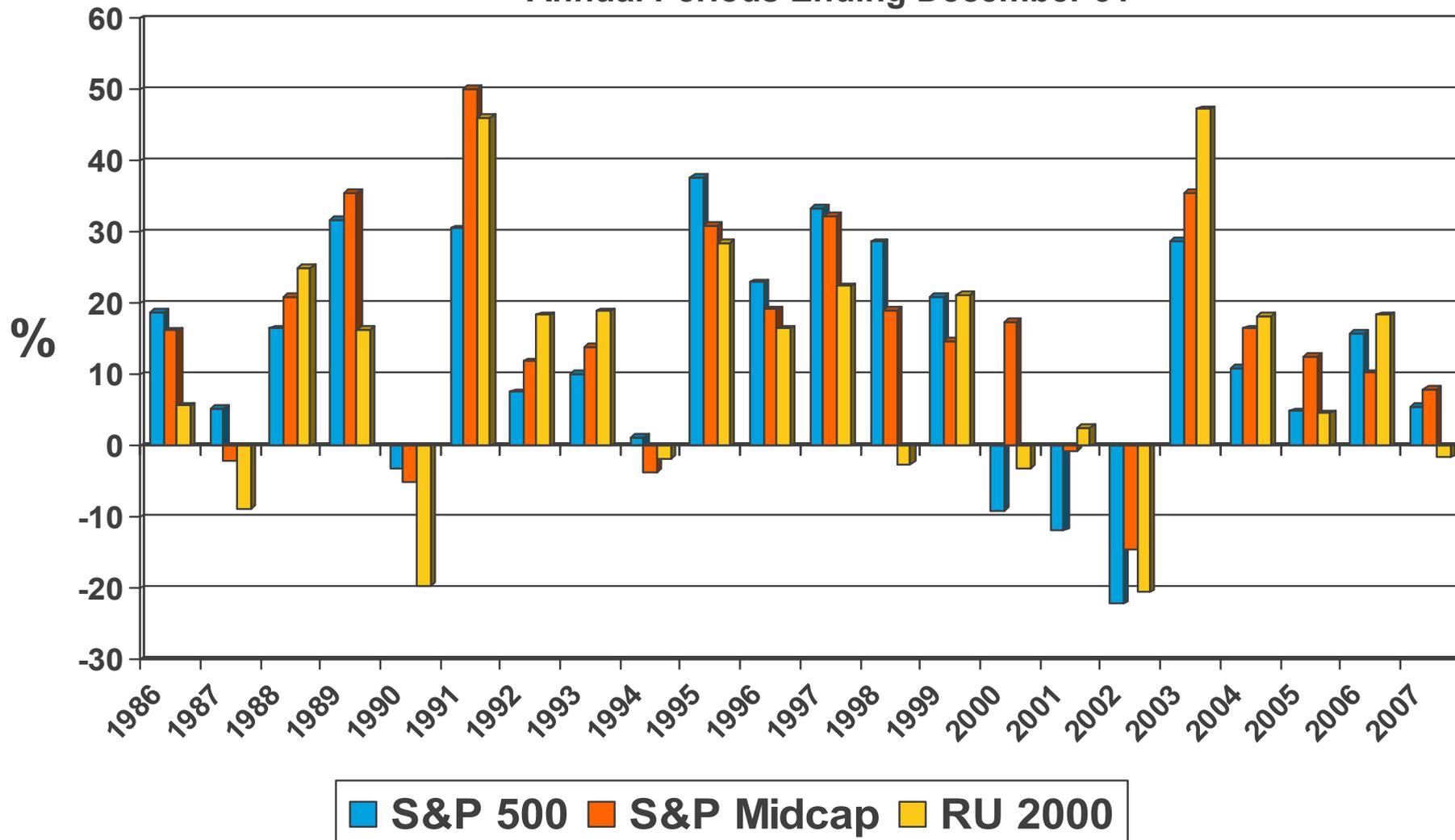
### Small Cap

- Smallest stocks in the broad market
- Range from \$2.5B – \$261M with the average market capitalization at \$1.3B
- An example of a small cap index is the Russell 2000 Index

# U.S. Equity

## Performance by Capitalization

Annual Periods Ending December 31



# U.S. Equity

## Methods of Investing

### Passively Managed Portfolio

- A strategy of holding a well – diversified portfolio of securities without attempting to outperform other investors (defined as the broad market index, hence the benchmark)
- The PM will create a portfolio of securities that holds close to the same weightings of sectors (financials, technology, healthcare, etc.) as their specific benchmark

### Active Managed Portfolio

- A strategy of creating a portfolio of securities selected by the “skill” of the portfolio manager with the goal of outperforming the broad market
- The term Alpha is typically used when discussing active management – Alpha is the excess returns generated by a portfolio due to the “skill” of the portfolio manager

## **U.S. Equity**

### Active Management Styles

#### **Top-Down Investing**

- A active management style that generally begins with an assessment of the economic environment. Typically, as a result of this macroeconomic analysis, specific industrial groups or geographical regions are identified for investment.

#### **Bottom-Up Investing**

- A active management style that focuses on the analysis of individual companies, utilizing fundamental, analytical techniques in an attempt to select superior performing issues.

## **U.S. Equity**

### Active Management Styles

#### **Quantitative Strategies**

- Most quantitative strategies rely heavily on computer simulations. A quantitative strategy must be based on a sound theory about why the strategy has worked in the past and why it should work in the future.

#### **Fundamental Strategies**

- Any investment strategy which is not based on quantitative techniques is based on fundamental techniques. A fundamental strategy is based on detailed industry and/or company research. It may be top-down or bottom-up in nature.

## Domestic Equity

### Active Management Styles

#### ***Value focused portfolios include:***

- Companies viewed as having market prices which are undervalued. That is, the market has not properly recognized future earnings streams.
- Earnings are generally distributed to equity holders.
- Price to earnings ratio is generally, but not always, lower.
- Examples: Limited Brands and Heinz

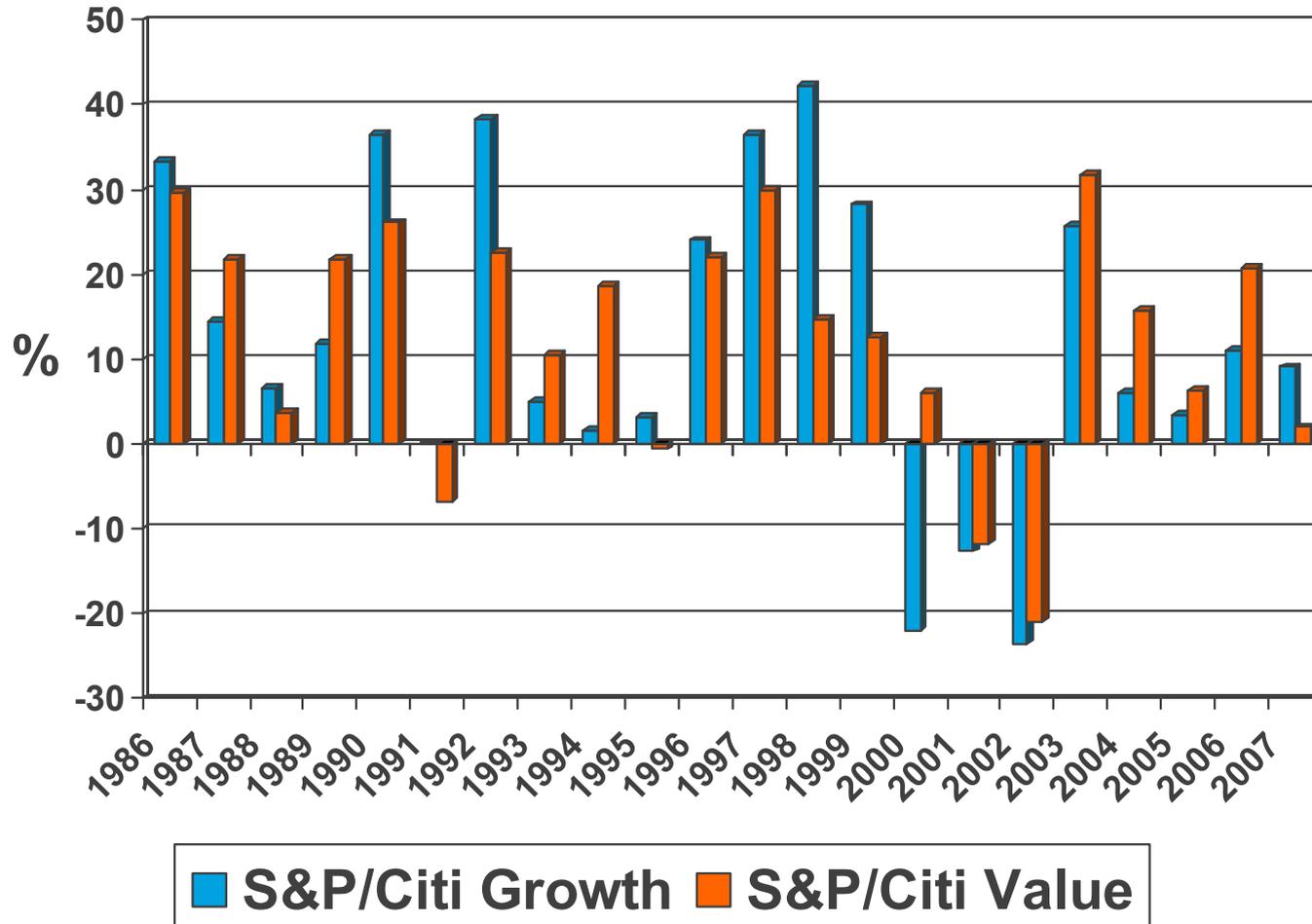
#### ***Growth focused portfolios include:***

- Companies whose sales and earnings are expanding faster than the general market and/or the industry average.
- Earnings are often plowed back into operations; therefore, dividend yield tends to be lower.
- Often the company maintains a solid position within an expanding part of the market.
- Generally characterized by price volatility as actual earnings are not always in line with expected earnings.
- Example: Google and Intel

# U.S. Equity

## S&P/ Citi Growth vs. S&P/ Citi Value

Annual Periods Ending December 31



# Non U.S. Equity

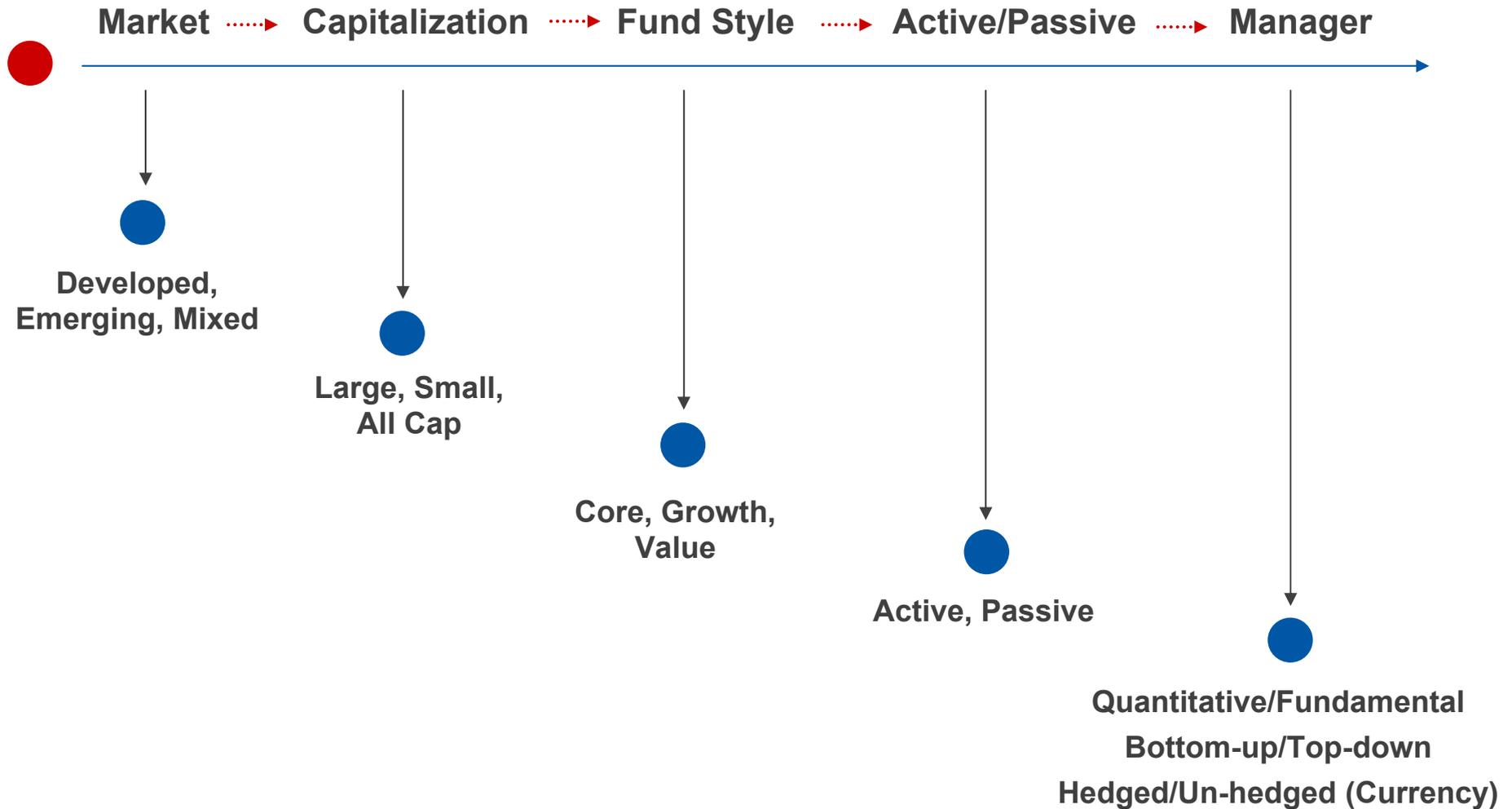
## Non U.S. Equity

### Economic Landscape

#### *The Global Environment Has Changed Over Time:*

- Historically the US dominated the world's economy
- Today more than 50% of the world's economy (stock investing opportunities) is outside of the US
- MSCI ACWI: Index of global stock opportunities, which includes 55 country indices (23 developed and 33 emerging market indices)
- Emerging market economies are playing an increasing role in the global economy

# Non U.S. Equity



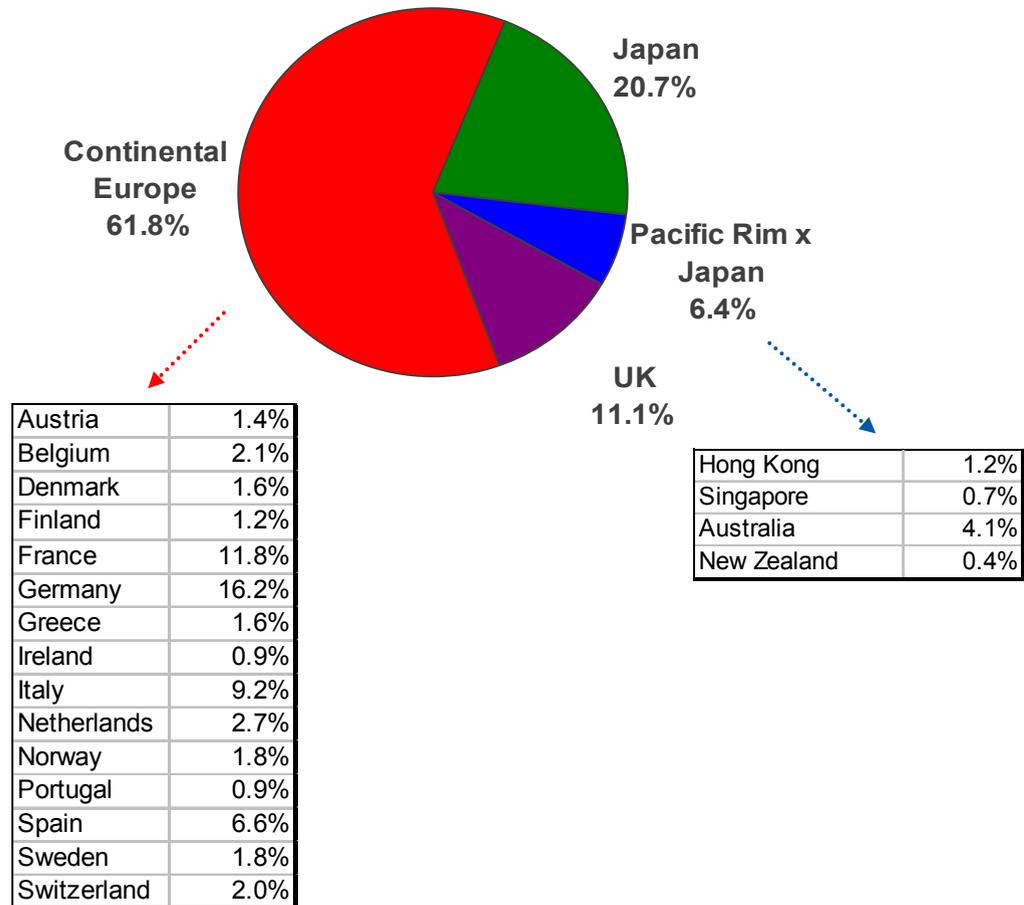
# Non U.S. Equity

## EAFE Country Allocation (Developed)

### Developed Markets

- Large, liquid capital markets.
- Generally politically stable.
- Stable economic growth.
- Governmental departments responsible for investor protection.

MSCI EAFE Index  
As of Mar 31, 2008



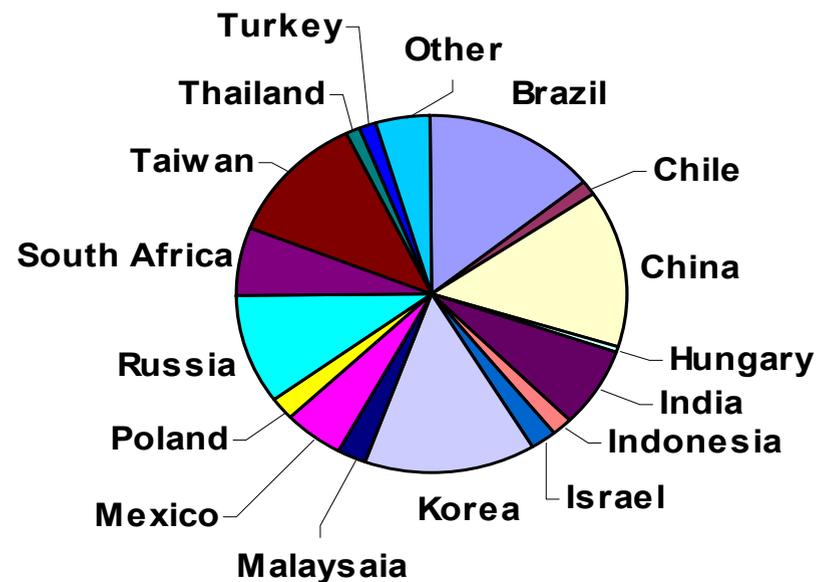
## Non U.S. Equity

### MSEMF Country Allocation (Emerging)

#### Emerging Markets

- Smaller, less liquid capital markets.
- Less politically stable and exhibit higher, more volatile economic growth.
- Less market regulation. Weak bankruptcy laws. Generally not as shareholder friendly due to capital controls.
- Higher expected returns over time, mediated by higher political and market risk.
- Not all are equal - some countries are more “developed” than others.

MS Emerging Market Free Index  
As of Mar 31, 2008

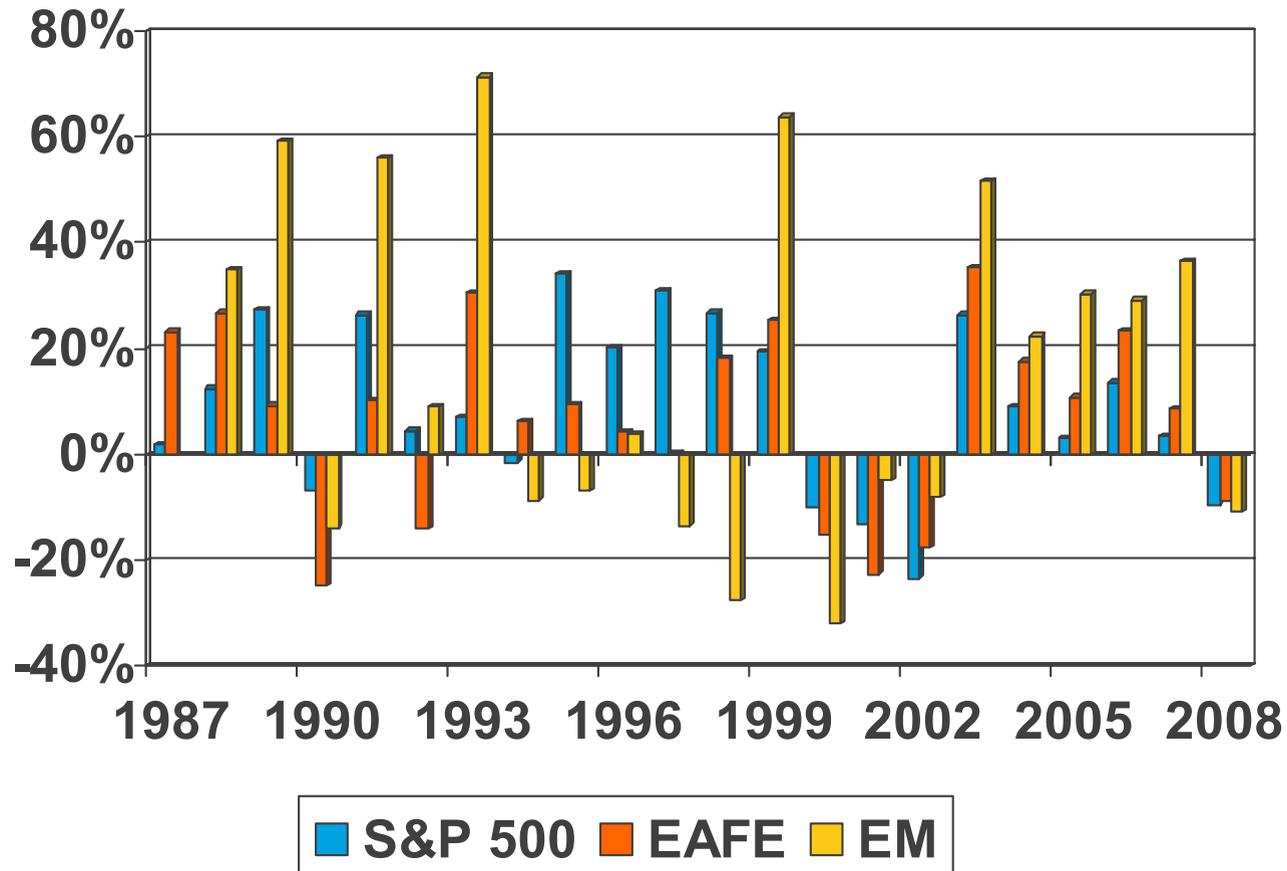


Source: MSCI

# Non U.S. Equity

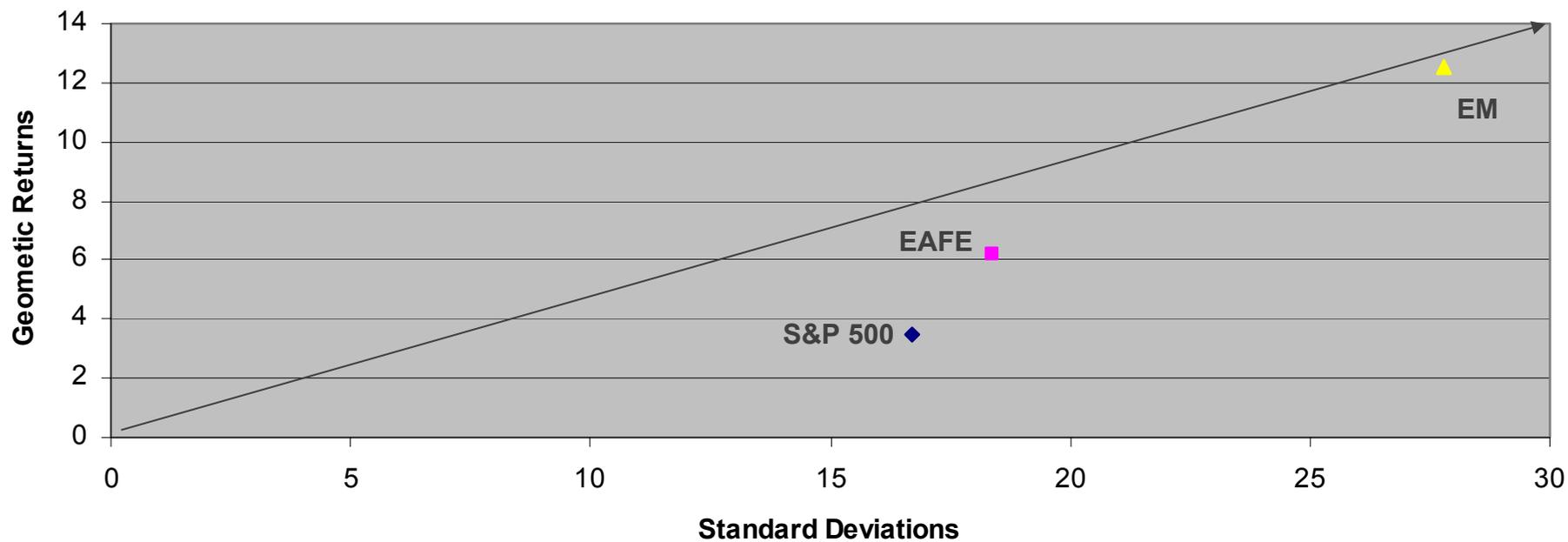
## Developed versus Emerging Market returns

Annual Periods Ending March 31, 2008



# Non U.S. Equity Risk and Return

Risk and Returns as of March 31, 2008



◆ S&P 500   ■ EAFE   ▲ EM

## Non U.S. Equity

### Key Drivers – Emerging Market Equity

***Performance of this sub-asset class can be attributed to the following factors, which give it potential to add value in an international portfolio:***

- Expectations for global growth
- Developing market consumption
- Movements in commodity cycle
- Global and regional interest rates
- Improvements in EM balance sheet
- Increasing liquidity

# Active vs. Passive Management

## Active vs. Passive Management

*Let us agree on what we are debating, discussing and disagreeing about: active vs. passive management:*

*Active management is the art of stock picking and market timing. Passive management refers to a buy-and-hold approach to money management. It can be applied to any asset class: big stocks, small stocks, value or growth, foreign or domestic can all be accessed by passive techniques.*

*Neither label, "active" or "passive," is perfect, and there will not always be a complete dichotomy between them. In any event, this is a debate about both market behavior and investor behavior.*

Rex A. Siquefield, October 1995

# Active vs. Passive Management

## Active Management

- A money management approach that aims to generate alpha i.e. outpace the 'market' as measured by a particular benchmark or index ( e.g. the S&P 500, the Russell 1000, the Lehman Aggregate or the Intermediate Lehman Brothers U.S. Government / Credit )
- Prevailing market trends, the economy, political and other current events, and company-specific factors (such as projected earnings growth or interest rates / duration) will influence an active manager's decisions
- Active management includes a wide variety of strategies for identifying portfolio securities that are believed to offer above-average prospects for outperforming:
  - *As an example, some equity managers look for Value, while others search for Growth. Some fixed income providers are Core managers while others are High Yield investors.*
  - *Some managers focus on current and projected Fundamentals while others adopt a model-centric / quantitative approach*
  - *Some managers are Top-Down investors while others view stocks or bond credits from the Bottom-Up*
- Regardless of their individual approach, all active managers share a common thread - they buy and sell securities selectively, based on a forecast of future conditions.

## Active vs. Passive Management

### Passive Management

- Passive management is more commonly called 'indexing'. Index managers generally believe that it is difficult to beat the market.
- Index managers essentially offer asset class performance that closely matches an index for investors who are unwilling to assume the risks of active management.
- This management style is considered passive because portfolio managers do not make decisions about which securities to buy and sell (they simply replicate or mirror the composition of the index by purchasing or sampling the same securities included in a particular stock or bond market index).

## Active vs. Passive Management

### Alpha and Tracking Error

- Active management is simply an attempt to “outperform” the market as measured by a particular benchmark or index (e.g. the S&P 500 or the Lehman Aggregate).
- Beating the market is analogous to ‘generating positive alpha’ (e.g. if an active manager generates a 7% return while their appropriate benchmark generates a return of 5%, the manager has an excess return or alpha of 2% or 200 basis points over the index).
- Tracking error (also called active risk) is a measure of how closely a portfolio follows the index to which it is benchmarked.
- An index fund should have a tracking error close to zero.
- All active managers must exhibit some level of tracking error against their target benchmark (if they do not, they would be managing an index fund, thus we would question whether paying active manager fees is appropriate).

## Active vs. Passive Management

### Beta

Active management exposes a portfolio to beta risk (or market risk) and to alpha risk (deviations from the market that the active manager takes).

By definition beta is a quantitative measure of the volatility of a given portfolio, relative to the overall market. The broad market beta is equal to 1. A beta above 1 is more volatile than the overall market, while a beta below 1 is less volatile so for example if the market returns +/- 5%:

- A portfolio with a beta of 1.5 will return +/- 7.5%
- A portfolio with a beta of 2 will return +/- 10%
- A portfolio with a beta of 0.5 will return +/- 2.5%

An index fund should have a beta of approximately 1 while an actively managed fund should have a beta that is greater or smaller than 1

## Active vs. Passive Management

### Standard Deviation

A manager's alpha risk or active risk is measured by standard deviation

The standard deviation is often used by investors to measure the risk of a stock. The basic idea is that the standard deviation is a measure of volatility i.e. the more a stock's returns vary from the stock's average return, the more volatile the stock. Consider the following two stock portfolios and their respective returns over the last six months:

Month	Stock A			Stock B		
	Value	Return	Final Value	Value	Return	Final Value
1	1000	0.75%	1008	1000	1.50%	1015
2	1008	1%	1018	1015	5%	1066
3	1018	3%	1048	1066	12%	1194
4	1048	-1.5%	1032	1194	-9%	1086
5	1032	0.50%	1038	1086	-4%	1043
6	1038	2%	1058	1043	1.5%	1058

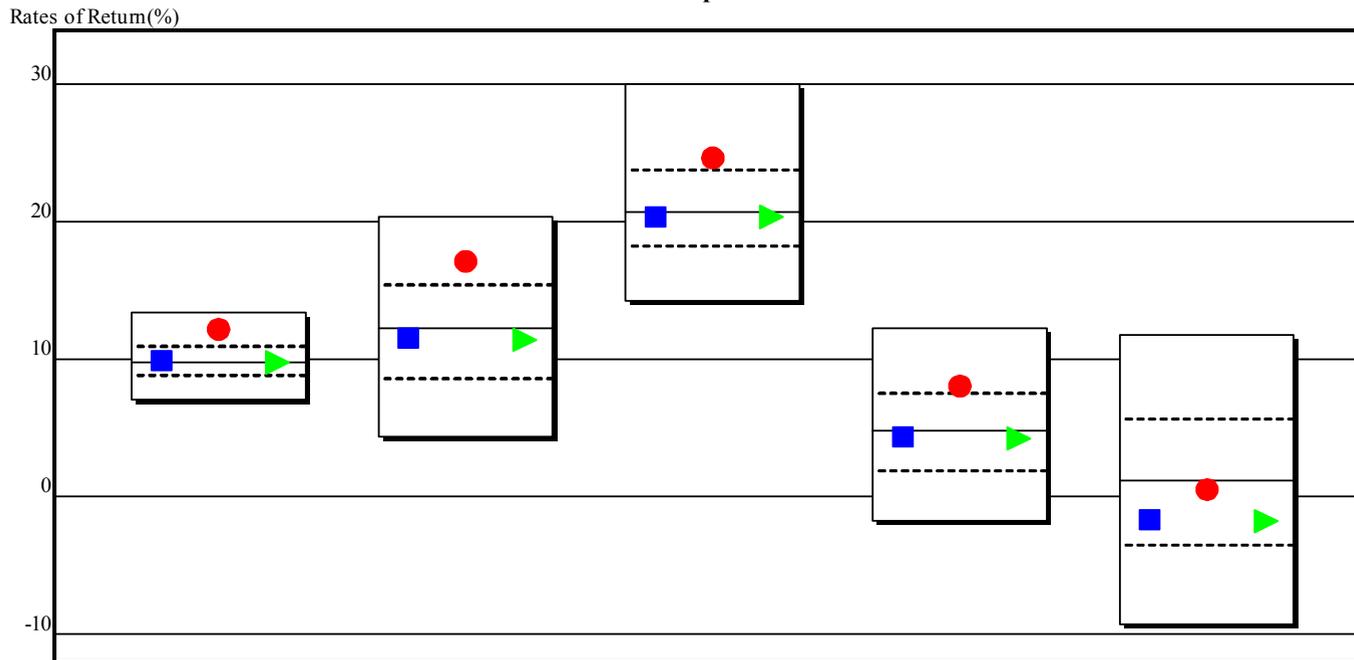
Both stocks end up increasing in value from \$1,000 to \$1,058. However, both stocks differ in volatility. Stock A's monthly returns range from -1.5% to 3% whereas Stock B's range from -9% to 12%.

The standard deviation of the returns is a better measure of volatility than the range of returns because it takes all the values into account. The standard deviation of the six returns for Stock A is 1.52; for Stock B it is 7.24

# Equity Active vs. Passive Management

Generally speaking, in strong markets, we would expect an active manager to outperform the benchmark (while the index manager will approximate the benchmark's returns)

## Equity Active vs. Passive Comparison with the Mercer US Equity Large Cap Equity Universe Performance before fees for periods ended December 2004

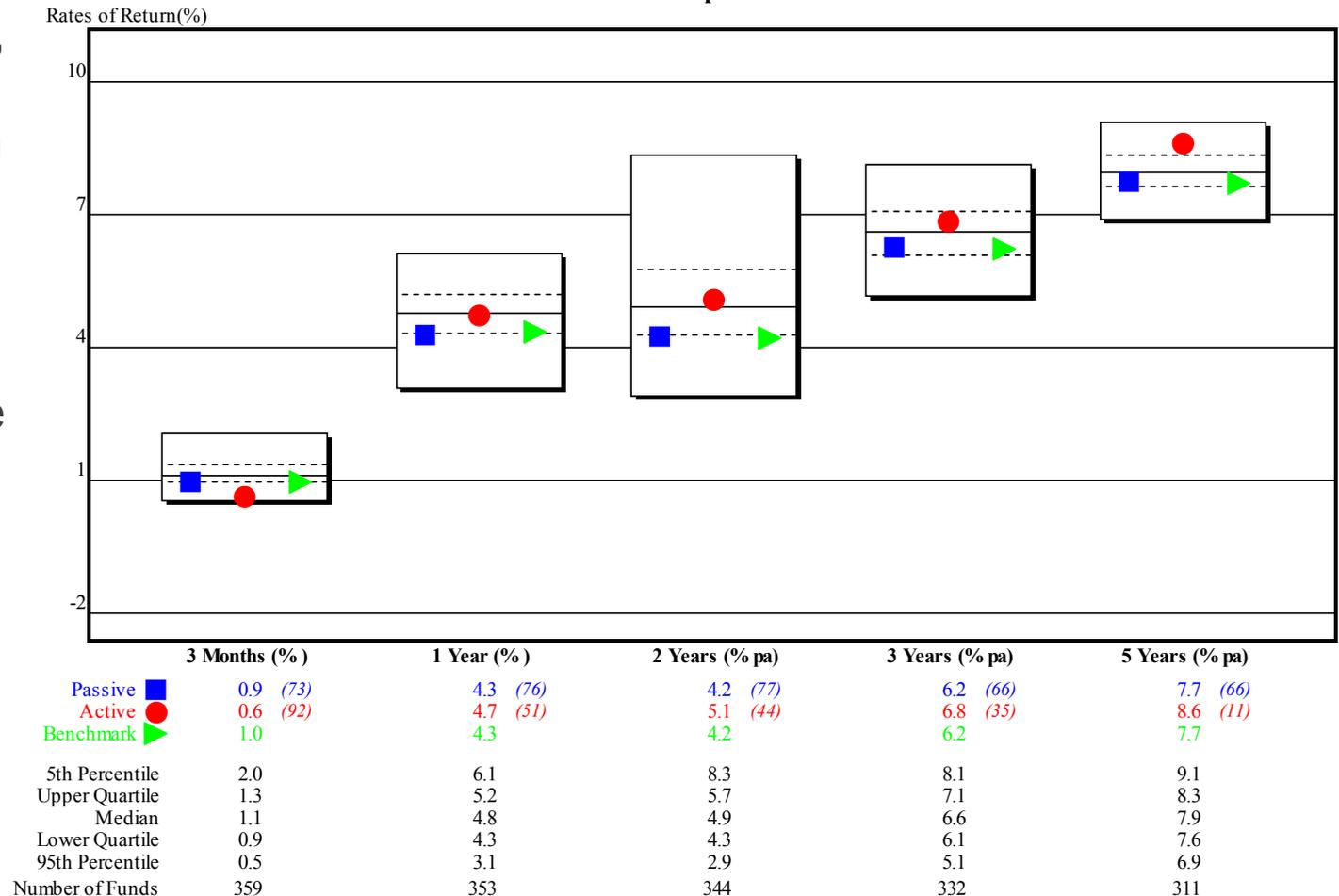


	3 Months (%)	1 Year (%)	2 Years (% pa)	3 Years (% pa)	5 Years (% pa)
Passive	9.8 (49)	11.5 (56)	20.4 (53)	4.4 (54)	-1.7 (66)
Active	12.1 (12)	17.2 (15)	24.6 (20)	8.1 (20)	0.5 (53)
Benchmark	9.8	11.4	20.3	4.3	-1.8
5th Percentile	13.3	20.2	29.9	12.1	11.7
Upper Quartile	10.9	15.4	23.7	7.5	5.6
Median	9.8	12.2	20.7	4.8	1.1
Lower Quartile	8.8	8.6	18.2	1.8	-3.6
95th Percentile	7.0	4.3	14.2	-1.9	-9.4
Number of Funds	1282	1231	1151	1081	903

# Fixed Income Active vs. Passive Management

Generally speaking, in strong markets, we would expect an active manager to outperform the benchmark (while the index manager will approximate the benchmark's returns)

## Fixed Income Active vs. Passive Comparison with the Mercer US Fixed Core Universe Performance before fees for periods ended December 2004

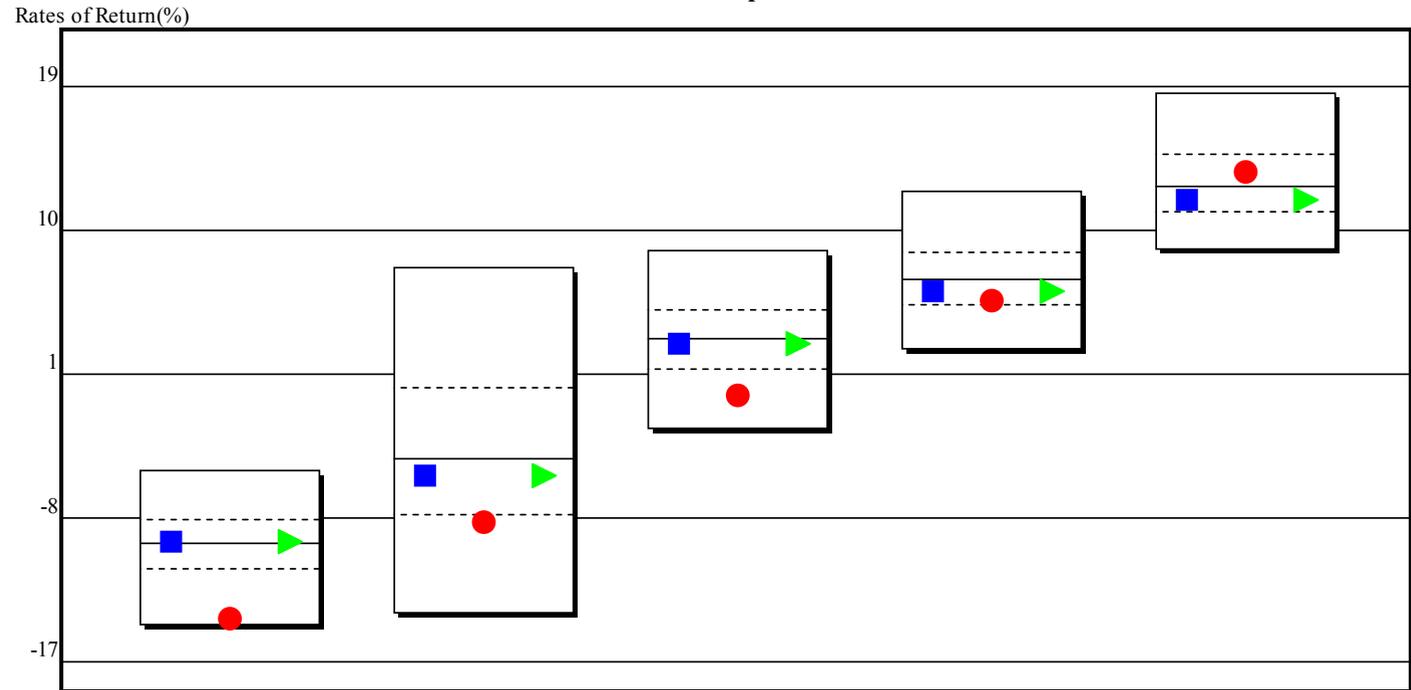


# Equity Active vs. Passive Management

## Equity Active vs. Passive

Comparison with the Mercer US Equity Large Cap Equity Universe  
Performance before fees for periods ended March 2008

In weaker markets, less skillful active managers may fail to outperform the benchmark (while the index manager will approximate the benchmark's returns)

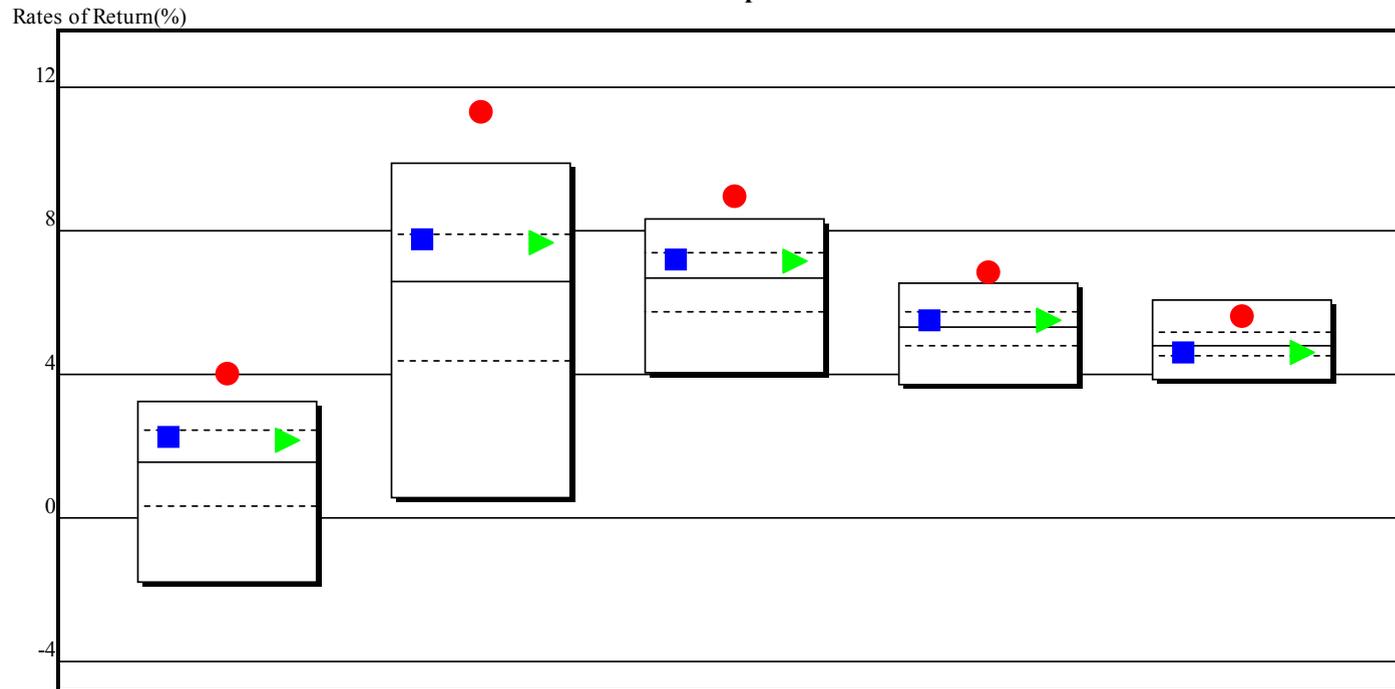


	3 Months (%)	1 Year (%)	2 Years (% pa)	3 Years (% pa)	5 Years (% pa)
Passive	-9.5 (47)	-5.4 (59)	2.9 (54)	6.2 (59)	11.9 (64)
Active	-14.3 (93)	-8.3 (77)	-0.3 (88)	5.7 (70)	13.7 (37)
Benchmark	-9.5	-5.4	2.9	6.2	11.9
5th Percentile	-5.1	7.6	8.7	12.4	18.5
Upper Quartile	-8.2	0.1	5.0	8.5	14.7
Median	-9.6	-4.4	3.2	6.8	12.7
Lower Quartile	-11.3	-7.8	1.3	5.3	11.2
95th Percentile	-14.8	-14.1	-2.5	2.5	8.8
Number of Funds	1136	1091	1021	956	862

# Fixed Income Active vs. Passive Management

## Fixed Income Active vs. Passive Comparison with the Mercer US Fixed Core Universe Performance before fees for periods ended March 2008

In weaker markets the index manager will approximate the benchmark's returns, while you may see an out-performance of active fixed income managers



	3 Months (%)	1 Year (%)	2 Years (% pa)	3 Years (% pa)	5 Years (% pa)
Passive	2.2 (30)	7.8 (28)	7.2 (32)	5.5 (40)	4.6 (68)
Active	4.0 (3)	11.3 (4)	8.9 (3)	6.9 (4)	5.6 (9)
Benchmark	2.2	7.7	7.1	5.5	4.6
5th Percentile	3.2	9.9	8.3	6.5	6.1
Upper Quartile	2.4	7.9	7.4	5.7	5.1
Median	1.5	6.6	6.7	5.3	4.8
Lower Quartile	0.3	4.3	5.7	4.8	4.5
95th Percentile	-1.8	0.5	4.0	3.7	3.8
Number of Funds	289	275	271	268	254

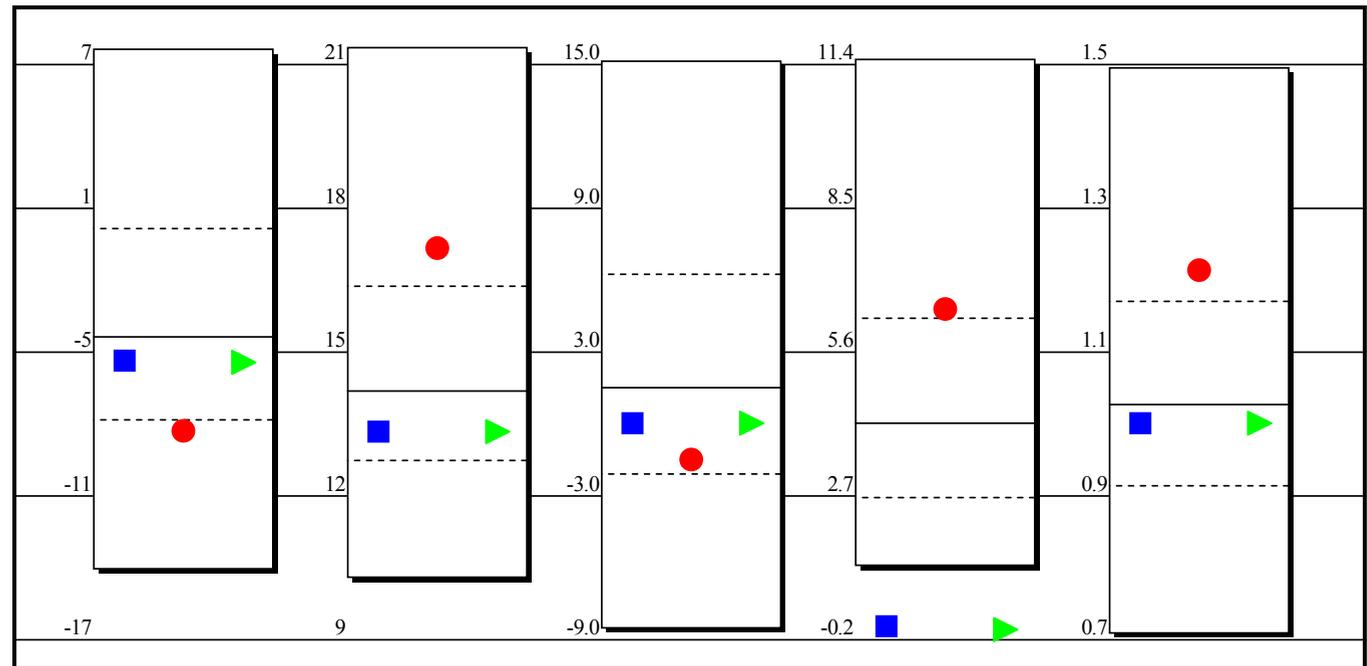
# Equity Active vs. Passive Management

## Equity Active vs. Passive

Comparison with the Mercer US Equity Large Cap Equity Universe

Risk and Return Characteristics (calculated quarterly) versus Benchmark for the period from Jun 2007 to Mar 2008

As expected the passive manager will have a similar risk and return profile as the benchmark while the active manager will have a more aggressive profile (due to a higher tracking error).



	Return (% pa)	Std Deviation (% pa)	Alpha (% pa)	Tracking Error (% pa)	Beta
Passive	-5.4 (59)	13.3 (64)	0.0 (61)	0.1 (100)	1.0 (57)
Active	-8.3 (77)	17.2 (19)	-1.5 (71)	6.5 (23)	1.2 (20)
Benchmark	-5.4 (59)	13.3 (65)	0.0 (61)	0.0 (100)	1.0 (58)
5th Percentile	7.6	21.3	15.1	11.5	1.5
Upper Quartile	0.1	16.4	6.2	6.3	1.2
Median	-4.4	14.2	1.5	4.1	1.0
Lower Quartile	-7.8	12.7	-2.1	2.6	0.9
95th Percentile	-14.1	10.3	-8.6	1.3	0.7
Number of Funds	1091	1091	1091	1091	1091

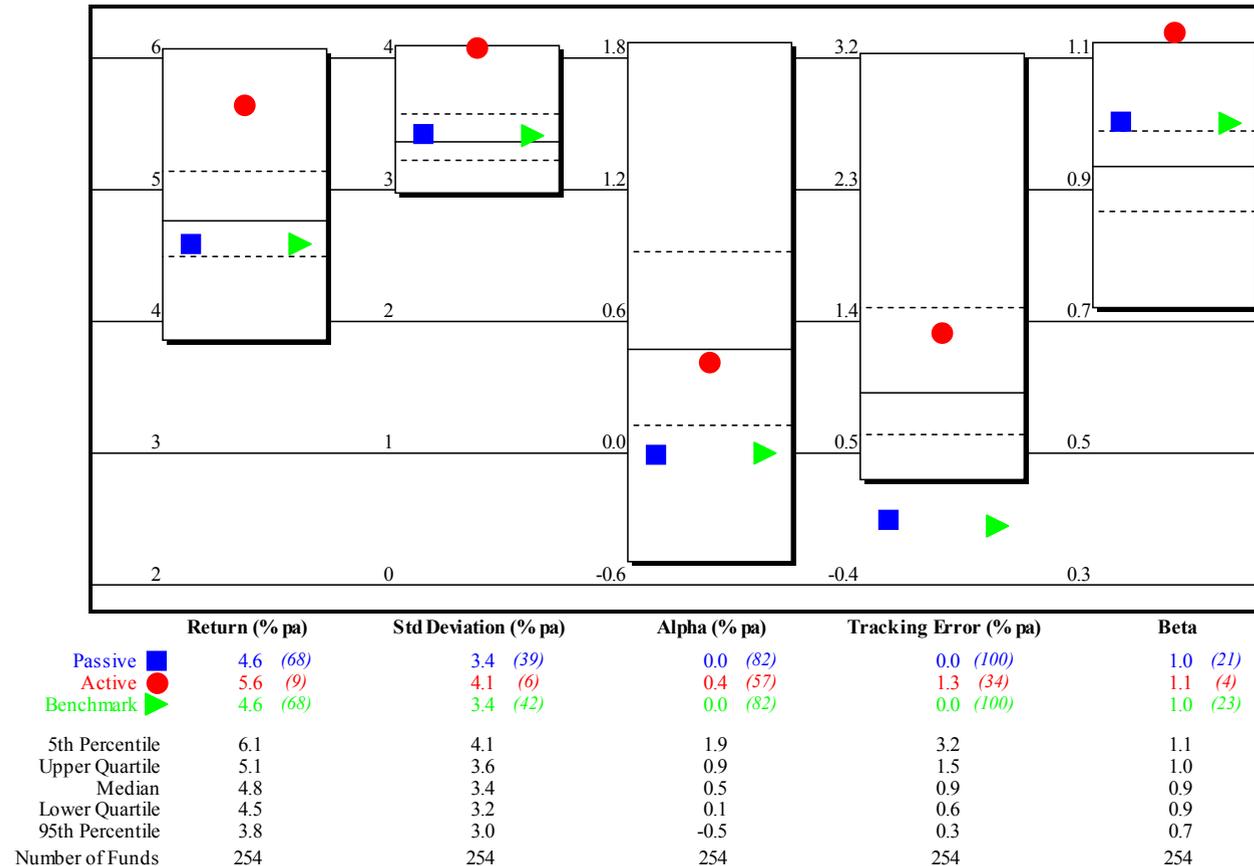
# Fixed Income Active vs. Passive Management

## Fixed Income Active vs. Passive

Comparison with the Mercer US Fixed Core Universe

Risk and Return Characteristics (calculated quarterly) versus Benchmark for the period from Jun 2003 to Mar 2008

As expected the passive manager will have a similar risk and return profile as the benchmark while the active manager will have a more aggressive profile (due to a higher tracking error).



# Active vs. Passive Management

## Active Management (Advantages & Disadvantages)

### Advantages

- **Expert analysis** - Seasoned managers make informed decisions based on experience, judgement, and prevailing market trends.
- **Possibility of higher-than-index returns.** Managers aim to beat the performance of the index, which means they strive for higher returns than the index delivers.
- **Defensive measures** - Managers can make changes if they believe the market may take a downturn. As an example, in the fixed income portfolio an active manager can easily adjust their duration whereas a passive manager must imitate the index.

### Disadvantages

- **Higher fees and operating expenses.**
- **Mistakes may happen.** There is always the risk that managers may make unwise choices on behalf of investors, which could reduce returns.
- **Style issues may interfere with performance.** At any given time, a manager's style may be in or out of favor with the market, which could reduce returns.

# Active vs. Passive Management

## Passive Management (Advantages & Disadvantages)

### Advantages

- **Low operating expenses.**
- **Market performance - Investors can be assured that index funds will perform on par with the indexes.**
- **There is no action required by the fund. There is no decision-making required by the manager or the investor as the portfolio closely replicates the characteristics of the index.**

### Disadvantages

- **Performance is dictated by the index. Investors must be satisfied with market returns because that is the best any index fund can and should produce.**
- **A lack of control - Managers cannot take action. Index fund managers are usually prohibited from using defensive measures, such as moving out of stocks, if the manager thinks stock prices are going to decline.**
- **Bonds purchased in an indexed portfolio are held through all yield curve changes. So, if the yield curve becomes inverted and 2-Year bonds offer a higher yield than 5-Year bonds, the indexed portfolio cannot take advantage of the more attractive risk/return relationship of the 2-Year bond without exceeding its stated target tracking error target versus the benchmark.**

## Active vs. Passive Management

### Conclusions

There are advantages and disadvantages to using both active and passive strategies. It is important that the debate of active vs. passive management should not be taken out of the context of an investors' goals and objectives. A risk budget analysis should be performed to determine the appropriate utilization of active and passive strategies within their portfolio.

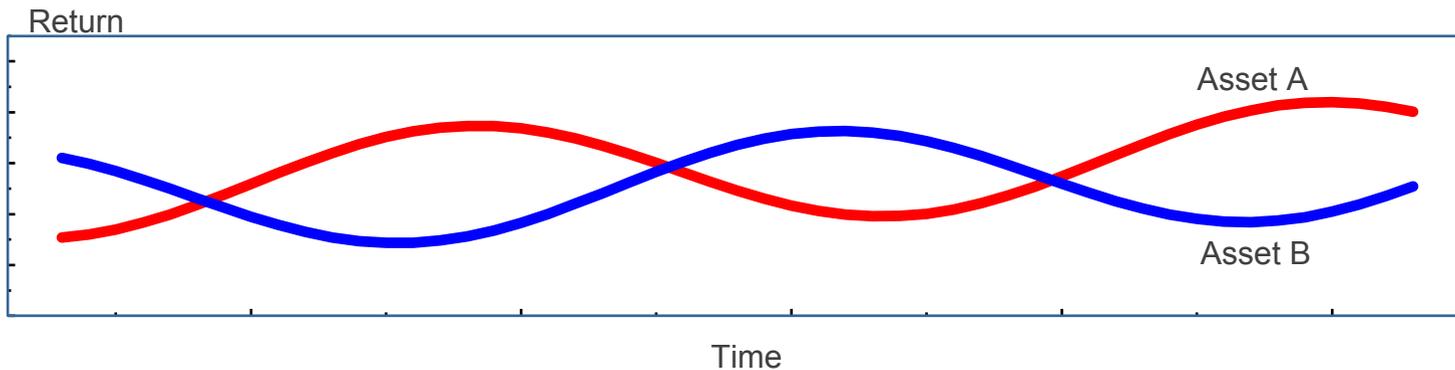
# Diversification

# General Investment Theory

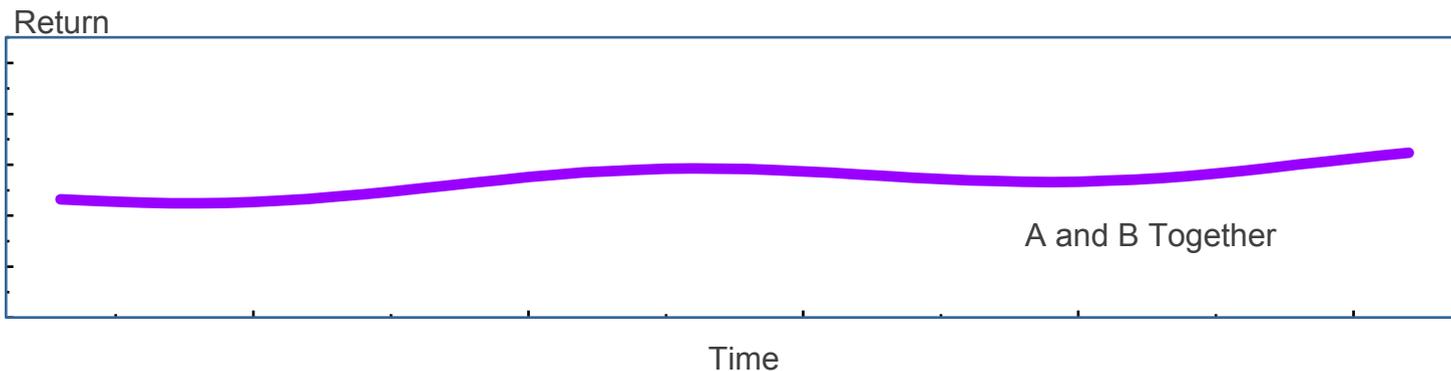
## What is Diversification?

**Diversification** is the practice of holding a large number of assets or asset classes in a portfolio so as to reduce the portfolio's sensitivity to the return of an individual asset (or class of assets). Diversification can produce a more optimal risk/return relationship.

**Assets A and B have low correlations**



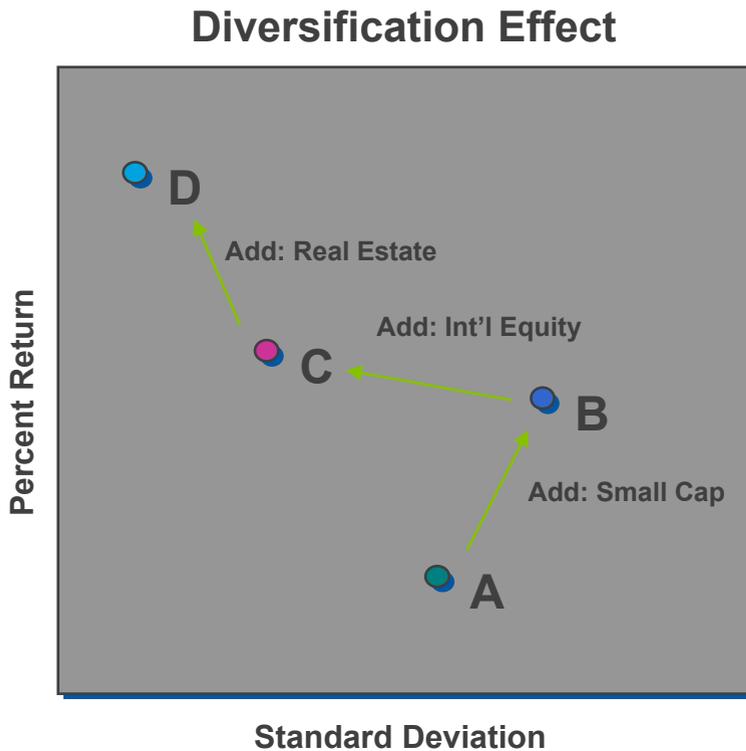
**... so investing in both of them together smoothes results**



# General Investment Theory

## Diversification and Risk

The following chart shows the diversification effect of different portfolio asset mixes. Although diversification is usually thought of in terms of risk reduction, it equivalently can be viewed in terms of return enhancement.

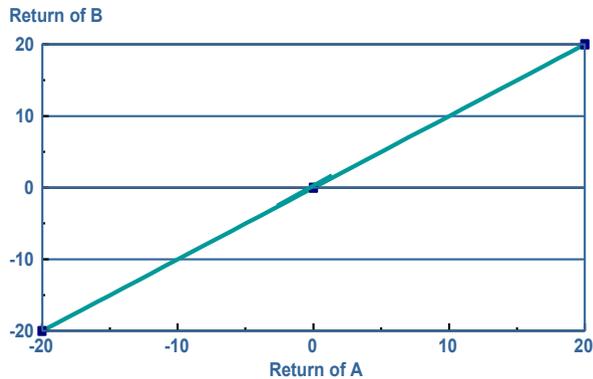


	Diversification			
	Least	→		Most
	A	B	C	D
Cash	10%	10%	10%	5%
Bonds	30%	30%	30%	25%
Large Cap Stock	60%	50%	40%	40%
Small Cap Stock		10%	10%	10%
International Stock			10%	10%
Real Estate				10%
	100%	100%	100%	100%

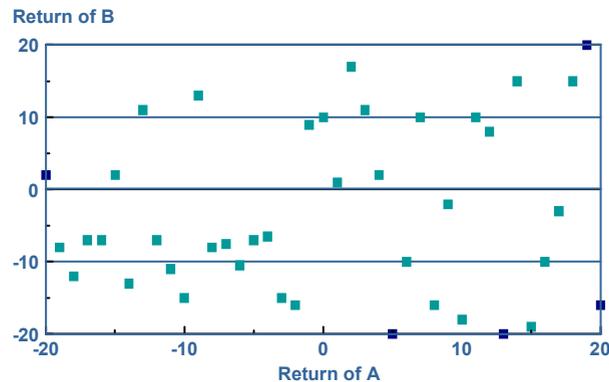
# General Investment Theory

## Asset Class Correlations

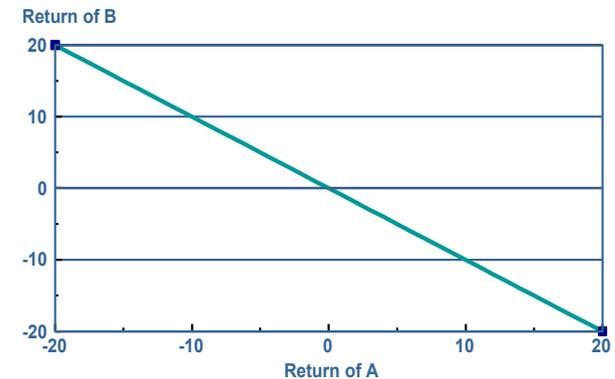
Perfect Correlation = +1.0



None or Random Correlation = 0.0



Perfectly Negative Correlation = -1.0



For statistics in between the extremes, the interpretation is one of degree. For example, a correlation of 0.90 would be strongly positive while a correlation of -0.10 would be closer to random.

**Correlation** - Statistical measure of the degree to which the movement of two asset classes are related. Correlations of 1 means that assets move together. A correlation of 0 suggests that there is no relationship between assets (Random relationship). And a less than 1.0 correlation indicates a less than perfectly positive relationship, hence the potential for diversification benefits.

# General Investment Theory

## Nominal Correlations with asset classes

		Domestic Equity-Large Cap	Domestic Equity-Small Cap	International Equity	International Eq-Emerging Mkts	Fixed Income-Aggregate	Fixed Income-Long G/C	Inflation-Indexed Bonds	Cash
		1	2	3	4	5	6	7	8
1	Domestic Equity-Large Cap	1.00							
2	Domestic Equity-Small Cap	0.85	1.00						
3	International Equity	0.75	0.60	1.00					
4	International Eq-Emerging Mkts	0.50	0.45	0.55	1.00				
5	Fixed Income-Aggregate	0.20	0.20	0.10	0.00	1.00			
6	Fixed Income-Long G/C	0.25	0.15	0.15	0.00	0.95	1.00		
7	Inflation-Indexed Bonds	0.15	0.15	0.10	0.10	0.60	0.60	1.00	
8	Cash	0.00	0.00	0.00	0.00	0.10	0.10	0.30	1.00

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