



# Financial market institutions

## 10. Exchange-Traded Funds



*Lecturer: Sayyora Abdirahimova*



# Overview

- What are ETF's?
- Benefits and Applications
- Practical Portfolio Strategies
- Questions and Answers



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# What are ETF's?

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# What are ETF's?: The Basics

- Exchange Traded Funds (ETFs) are open ended mutual funds.\*
- ETFs represent a fractional ownership in the underlying securities in a particular index.
- ETFs can be traded like stock on the major stock exchanges.
- Unlike closed-end funds, the number of ETF shares can change daily.
- Intraday portfolio values are calculated every fifteen seconds.
- ETFs range in style, sector, country ranging from value, growth, international equity, commodity, and domestic to equity and fixed income.
- More and more specialty index funds created annually.

❖ *Other structures include exchange traded unit investment trusts and exchange traded grantor trusts.*

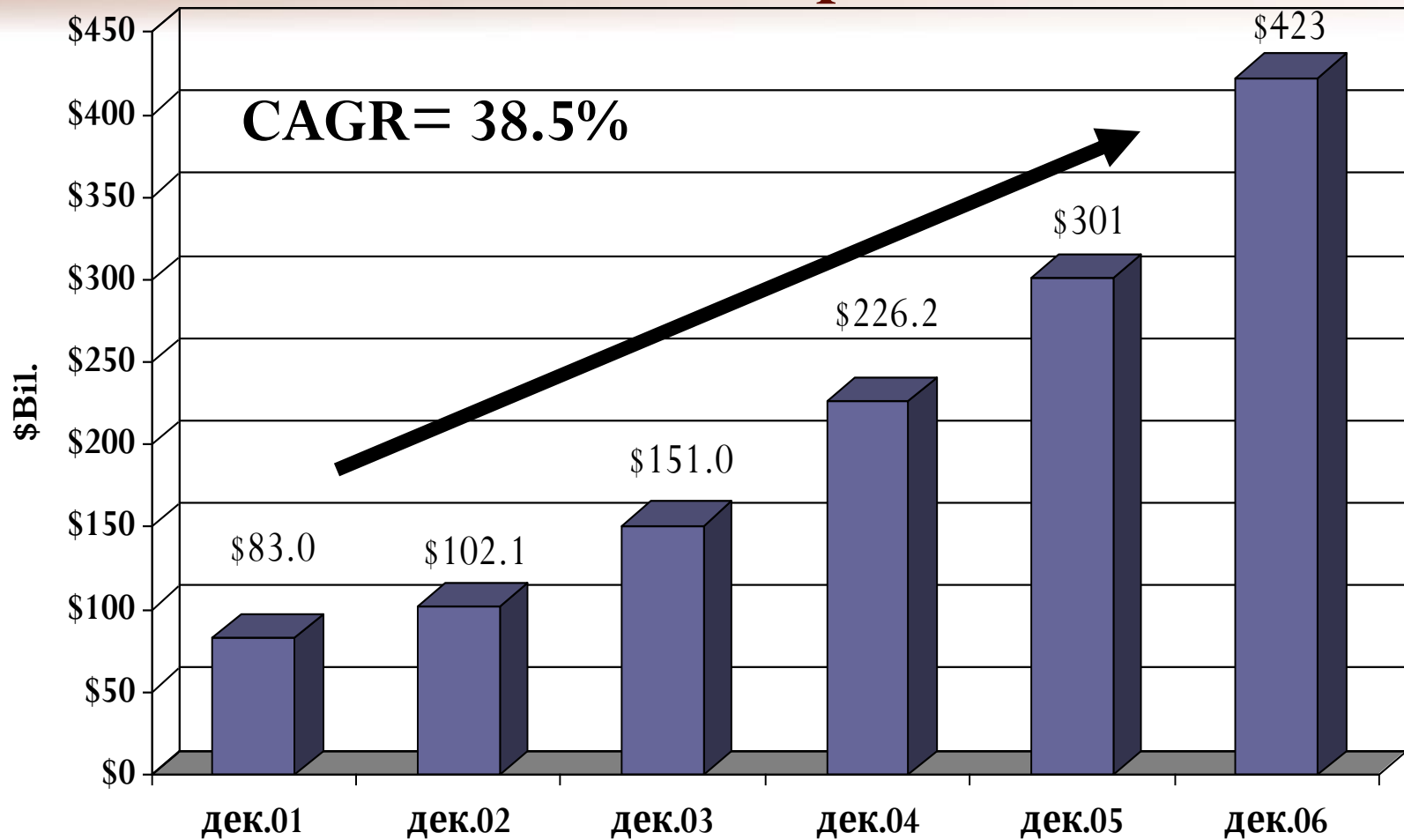


## What are ETFs?: The Primary Providers

Provider	Name	Assets Managed
Barclays	iShares	\$248.5 billion
State Street	StreetTracks	\$100.3 billion
Bank of NY	BNY	\$26.8 billion
Vanguard	VIPER's	\$24.2 billion
PowerShares	PowerShares	\$9.3 billion
Rydex	Rydex	\$3.8 billion

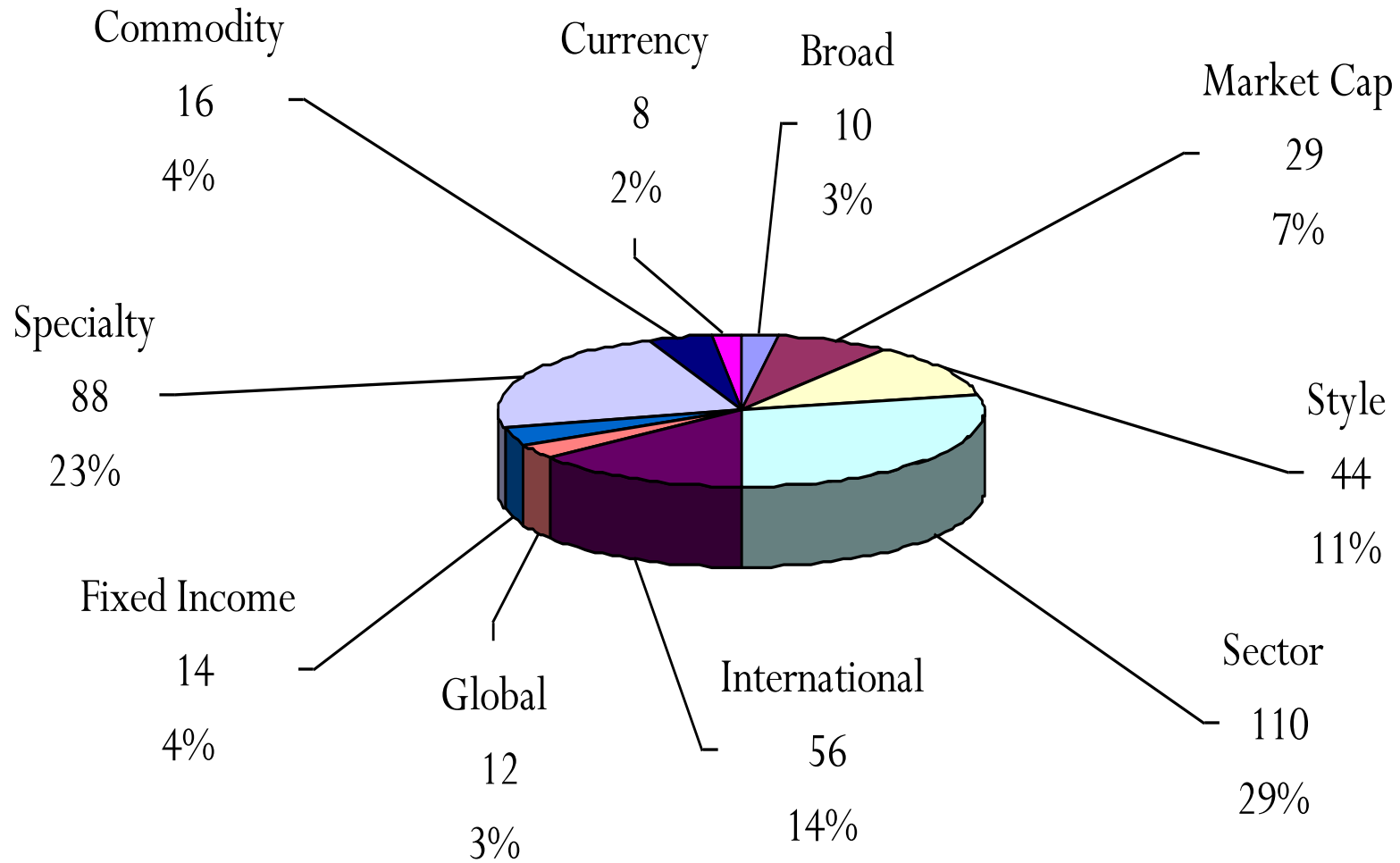


# What are ETFs?: Explosive AUM Growth





# What Are ETF's: ETF Options



Data as of Jan 2007

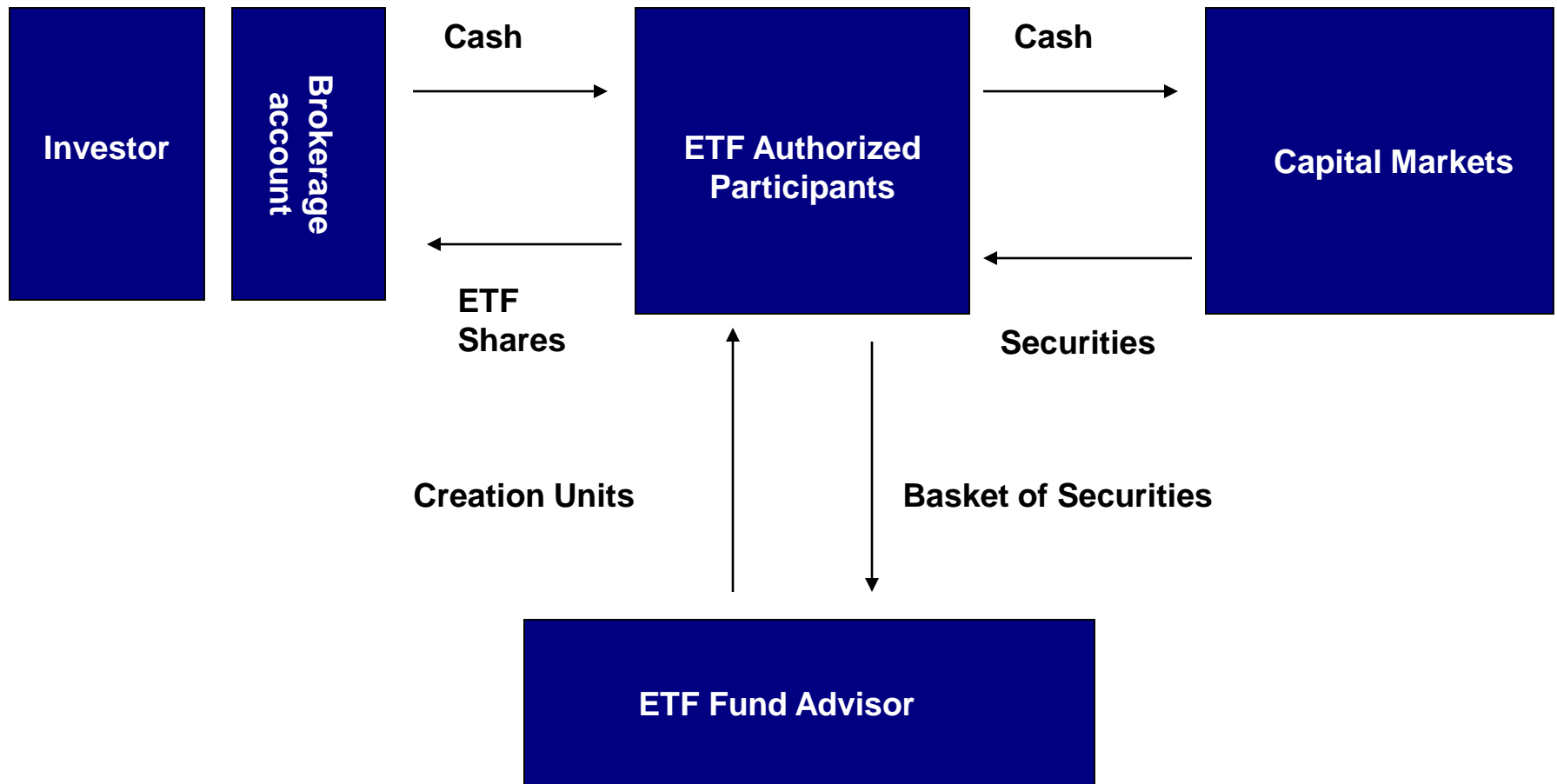


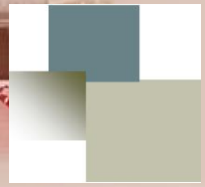
# What Are ETFs?: **Creation/Redemption Process**

- Index provider (S&P, Dow Jones, etc.) announces changes in index.
- Fund manager (Barclays, State Street, etc.) announces the contents – holdings and wtds - of the new creation units.
- A Market Maker (authorized participant (AP)) buys basket of securities in market then delivers the basket to the fund (trustee), which creates and delivers to AP the appropriate ETF units.
- The AP receives newly created fund shares and makes available to investors.
- The ETF will be custodied wherever investor clears trade.



# What Are ETFs?: Creation Process





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# Benefits and Applications

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# Benefits: **The Good**

- Transparency
- Full market participation
- Style Consistency
- Trading flexibility
- Low costs



## Benefits?: The Bad and Ugly

- Dollar cost averaging hurdle
- Float adjustment
- Tax consequences
- Dividend “Drag”
- Market Volatility
- Interest Rate and Credit Risks



# Applications: **Diversification**

- Investment minimums
- Correlation and factors analyses
- Cost effective dynamic diversification
- Minimize concentrated portfolios
- Exploit global growth and currency opportunities



# Applications: Risk Management

- Real time risk management
- Dynamic beta adjustments
- Active indexing or “tilting”
- Duration management
- “Equitize” cash
- Limit and stop orders
- Hedging options



# Applications: Tax Management

- Low turnover through relatively passive management
- The creation/redemption process involves in-kind transfers, a non-taxable event
- Tax loss harvesting
- After tax alpha through cross sectional rotations



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# Portfolio Strategies

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# Portfolio Strategies: Strategic & Dynamic Strategies

- Strategic long term diversified portfolios – including **strategic MVO** with simple re-balancing
- **Enhanced indexed** portfolios
- Easily achieve broadly diversified portfolio from **concentrated portfolio**
- Combine ETFs with active managers – including **Core Satellite**
- Develop **Risk budgeting** techniques



# Portfolio Strategies: Implementation

**Science**

(Modern Portfolio Theory)

+

**Art**

(The Mix Between Index and Active)

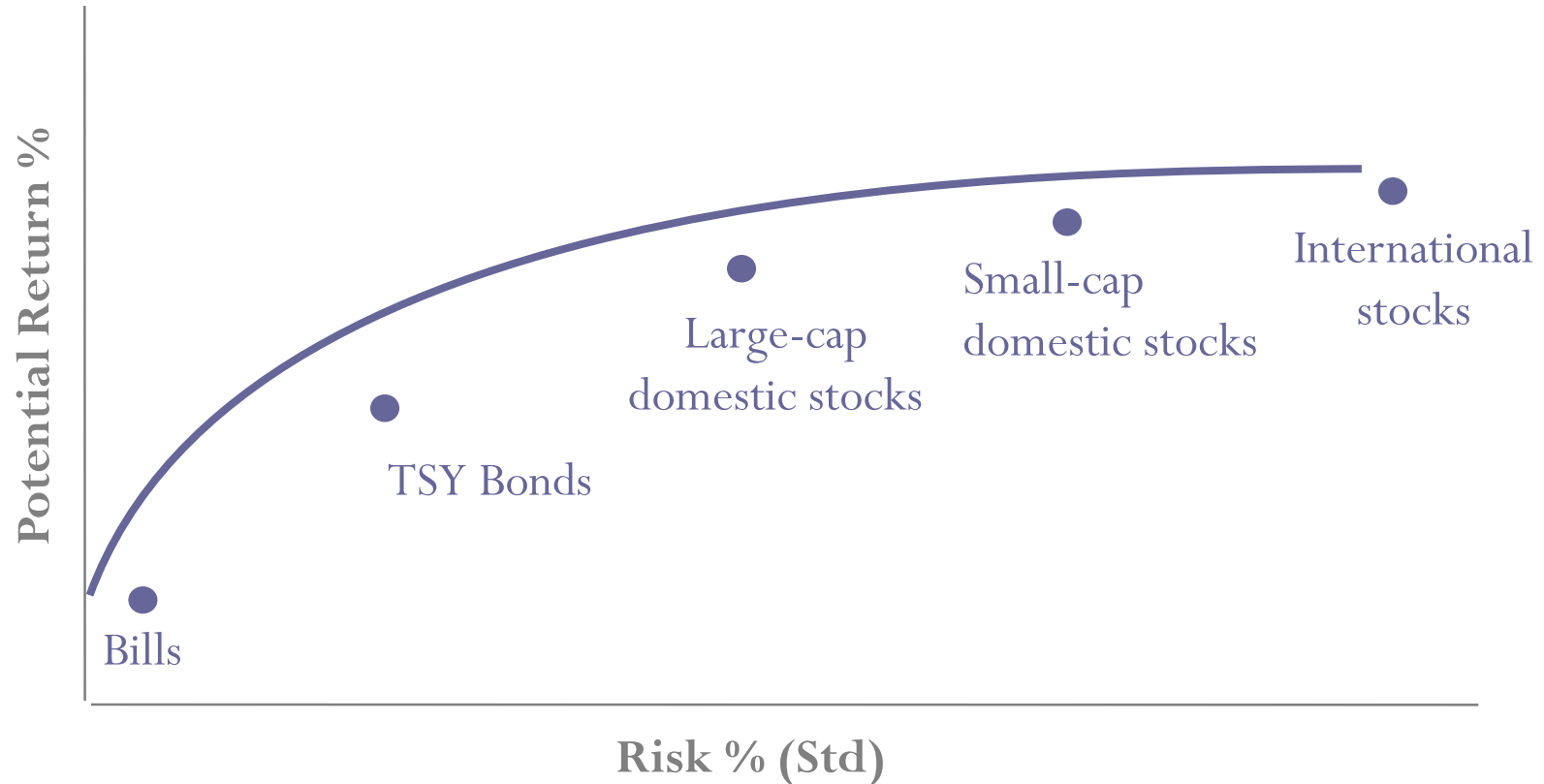
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**Client Expectations**

(Understanding Tolerance to Risk)



# Portfolio Strategies: Traditional MVO

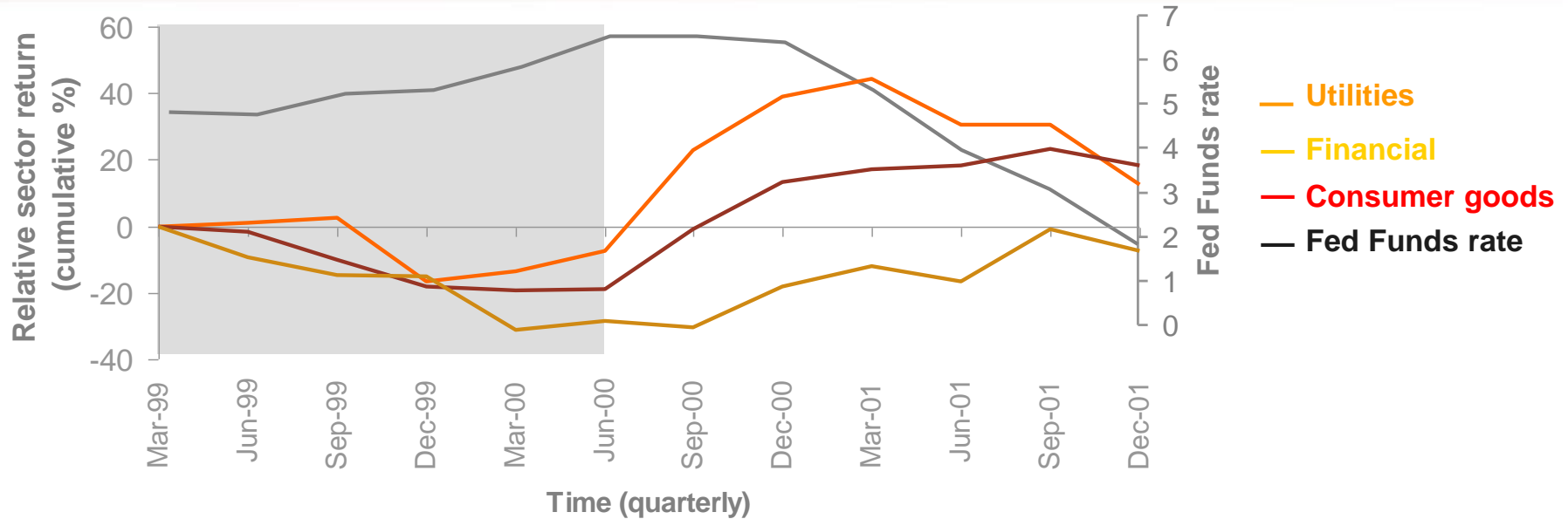




# Portfolio Strategies: **Dynamic & Tactical Opportunities**

- Sector, style, **country allocations**
  - Express business cycle views
  - Greater international diversification **beyond EAFE**
  - Wider re-allocation bands allow for consistent alpha
  - Yield curve and credit quality management possible at all portfolio account sizes

# Portfolio Strategies: Dynamic Top Down Management



Time		Relative sector returns (cumulative %)		
		Utilities	Financial	Consumer goods
Total period	2Q99 - 4Q01	12.63	18.29	-7.39
During tightening	2Q99 - 2Q00	-7.43	-18.95	-28.54
After tightening and during easing	2Q00 - 4Q01	21.67	45.93	29.59

Source: BGI, Dow Jones, Bloomberg

# Portfolio Strategies: Enhanced MVO Portfolios

## Traditional MVO Portfolios

Portfolio/Asset Class	Low Risk	Conservative	Moderate	Growth	Enhanced Growth
Large Value	7.50%	9.00%	11.50%	13.00%	14.00%
Large Growth	7.50%	10.00%	10.50%	14.00%	15.00%
Mid Growth	0.00%	0.00%	0.00%	0.00%	0.00%
Mid Value	5.00%	7.00%	8.00%	9.00%	10.00%
Small Growth	0.00%	0.00%	0.00%	0.00%	0.00%
Small Value	0.00%	4.00%	5.00%	8.00%	10.00%
International Devel	7.00%	13.00%	15.00%	22.00%	25.00%
Equity Neutral	0.00%	4.00%	6.00%	9.00%	10.00%
Real Estate	3.00%	3.00%	4.00%	5.00%	6.00%
Govt bond	53.00%	33.00%	24.00%	8.00%	0.00%
Corp Bond	15.00%	15.00%	14.00%	10.00%	8.00%
Cash	2.00%	2.00%	2.00%	2.00%	2.00%
<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>
<b>Equity</b>	<b>30.00%</b>	<b>50.00%</b>	<b>60.00%</b>	<b>80.00%</b>	<b>90.00%</b>
<b>Fixed Income</b>	<b>70.00%</b>	<b>50.00%</b>	<b>40.00%</b>	<b>20.00%</b>	<b>10.00%</b>

## Tactical Sector / Country Allocations

Portfolio/Asset Class	Low Risk	Conservative	Moderate	Growth	Enhanced Growth
International Real Estate	3.00%	3.00%	3.00%	5.00%	6.00%
Dividend	5.00%	5.00%	0.00%	0.00%	0.00%
Global Healthcare	0.00%	0.00%	0.00%	0.00%	5.00%
Global Telecommunications	0.00%	4.00%	4.00%	5.00%	5.00%
Biotechnology	0.00%	0.00%	0.00%	6.00%	7.00%
Utilities	0.00%	4.00%	4.00%	5.00%	5.00%
Pacific ex-Japan	0.00%	0.00%	5.00%	5.00%	5.00%
EMU	0.00%	4.00%	7.00%	3.00%	3.00%
Germany	0.00%	0.00%	0.00%	5.00%	5.00%
Emerging Markets	0.00%	0.00%	3.00%	4.00%	6.00%
Cash	1.00%	1.00%	1.00%	1.00%	1.00%

# Portfolio Strategies: Broad Diversification

	Legacy portfolio	Broad-cap	International	Balanced
Annualized return*	2.83%	4.21%	5.45%	3.86%
Standard deviation*	14.81%	14.48%	14.58%	9.25%
<b>Portfolio allocations</b>				
US Large-cap equity	100%	85%	80%	70%
US Mid-cap equity	-	10%	-	-
US Small-cap equity	-	5%	-	-
International equity	-	-	15%	-
Emerging markets equit	-	-	5%	-
US Fixed income	-	-	-	30%

# Portfolio Strategies: These Strategies Work!

	Inception Date	Dec	YTD	1 Yr	3 Yr	5 Yr	Since Incep.	Q4 2006	Q3 2006	Q2 2006	Q1 2006	2006	2005	2004
<b>Exchange-Traded Fund Model Portfolios</b>														
Strategic ETF Low Risk	May-05	0.02%	9.94%	9.94%	N/A	N/A	8.09%	3.35%	3.92%	0.07%	2.29%	9.94%	-	-
Tactical ETF Low Risk	May-05	0.37%	10.17%	10.17%	N/A	N/A	8.98%	3.98%	3.22%	-0.24%	2.68%	10.17%	-	-
20%S&P/15% EAFE/65%LB Agg		0.37%	9.73%	9.73%	N/A	N/A	6.97%	3.66%	4.20%	-0.21%	1.80%	9.73%	-	-
Strategic ETF Conservative	May-05	0.23%	11.14%	11.14%	N/A	N/A	10.78%	4.32%	3.85%	-0.49%	3.10%	11.14%	-	-
Tactical ETF Conservative	May-05	0.79%	12.62%	12.62%	N/A	N/A	11.24%	5.16%	3.46%	-0.39%	3.38%	12.62%	-	-
40%S&P/10% EAFE/50%LB Agg		0.58%	10.96%	10.96%	N/A	N/A	6.74%	4.30%	4.57%	-0.53%	2.27%	10.96%	-	-
Strategic ETF Moderate	May-05	0.92%	15.53%	15.53%	N/A	N/A	14.89%	6.23%	4.13%	-0.63%	5.10%	15.53%	-	-
Tactical ETF Moderate	May-05	1.55%	16.37%	16.37%	N/A	N/A	15.53%	7.17%	3.61%	-0.33%	4.92%	16.37%	-	-
50%S&P/20% EAFE/30%LB Agg		1.15%	14.30%	14.30%	N/A	N/A	7.80%	5.76%	4.77%	-0.58%	3.76%	14.30%	-	-
Strategic ETF Growth	May-05	1.19%	18.43%	18.43%	N/A	N/A	17.61%	7.66%	4.49%	-0.79%	6.12%	18.43%	-	-
Tactical ETF Growth	May-05	1.80%	18.57%	18.57%	N/A	N/A	18.49%	8.16%	3.96%	-1.40%	6.70%	18.57%	-	-
55%S&P/25% EAFE/20%LB Agg		1.44%	16.00%	16.00%	N/A	N/A	8.30%	6.49%	4.87%	-0.61%	4.51%	16.00%	-	-
Strategic ETF Enhanced Growth	May-05	1.42%	19.82%	19.82%	N/A	N/A	19.24%	8.37%	4.59%	-0.79%	6.55%	19.82%	-	-
Tactical ETF Enhanced Growth	May-05	2.06%	20.01%	20.01%	N/A	N/A	19.98%	8.94%	4.12%	-1.48%	7.26%	20.01%	-	-
60%S&P/30% EAFE/10%LB Agg		1.72%	17.72%	17.72%	N/A	N/A	8.79%	7.23%	4.97%	-0.64%	5.26%	17.72%	-	-
<b>Exchange-Traded Fund Model Portfolios - Global</b>														
EM Core	Apr-03	6.86%	31.98%	31.98%	29.94%	N/A	36.16%	19.14%	3.59%	-1.68%	10.20%	31.98%	31.24%	26.65%
Intl Diversified	Apr-03	5.28%	31.42%	31.42%	25.75%	N/A	32.98%	16.99%	2.33%	-1.39%	9.79%	31.42%	19.39%	26.73%
MSCI World ex US		2.87%	25.81%	25.81%	20.43%	N/A	26.95%	10.12%	3.72%	0.77%	9.31%	25.81%	15.33%	20.39%

As of 12/31/06

# Portfolio Strategies: Because of Low Fees

Lowest fees in each strategy

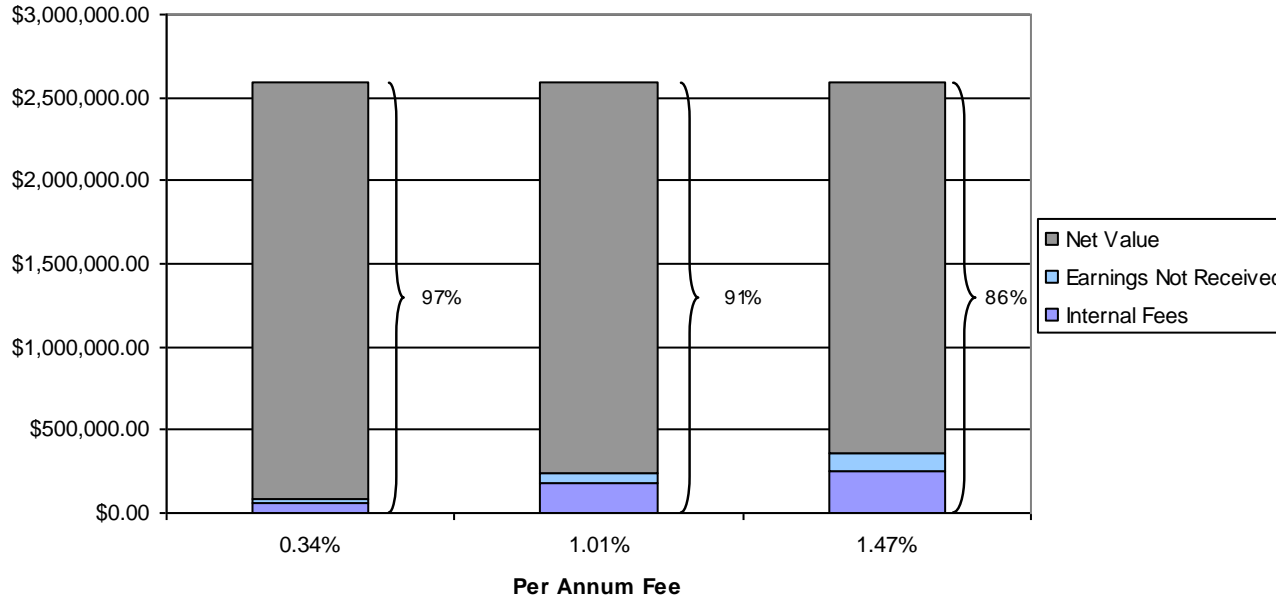
Strategy / Fees (in bps)	CCR Strategic MF	Industry Average	CCR Strategic ETF	CCR Tactical ETF	CCR International Satellite	CCR Emerging Satellite
Low Risk	67	117	20	22		
Conservative	82	130	25	26	N/A	N/A
Moderate	89	136	27	29	N/A	N/A
Growth	101	147	31	34	N/A	N/A
Growth Plus	110	152	33	37	59	59

\* Morningstar and Champion 2\_07



# Portfolio Strategies: Fees Matter

**Impact of Internal Expenses**  
**\$1,000,000 Invested for 10 Years**



Growth Model Fees	34 bps	101 bps	147 bps
Gross Value	\$2,593,742.46	\$2,593,742.46	\$2,593,742.46
Fees	\$59,605.97	\$177,064.79	\$257,708.16
Earnings Not Received	\$23,077.71	\$62,939.74	\$98,605.40
Net Value	\$2,511,058.78	\$2,353,737.93	\$2,237,428.90



# Portfolio Strategies: Core / Satellite

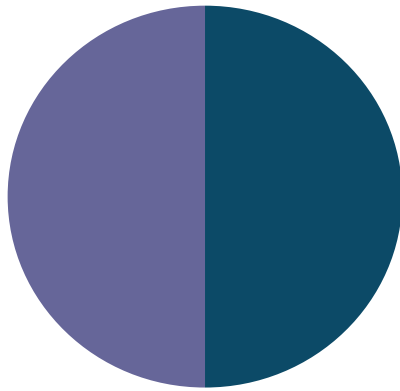
- Traditional indexed “core” and satellite managers
- New “satellite” structures
- Plug ETFs with existing managers
- Manage market risk ( $\beta$ ), tracking error ( $\sigma$ ) and active risk ( $\alpha$ )
- $\alpha$  strategies can be governed by unique guidelines
- Rebalancing efficiencies



# Portfolio Strategies: Rebalance Opportunities

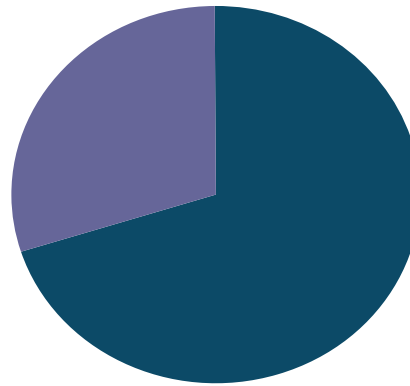
**50% Growth**

**50% Value**



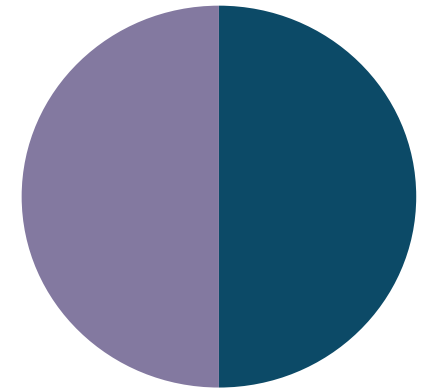
**30% Growth**

**70% Value**



**50% Growth**

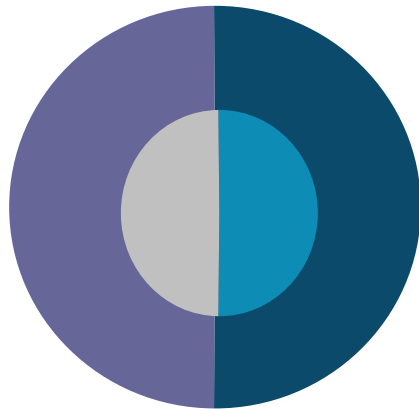
**50% Value**



In order to reset portfolio to original strategic weights, sell 20% value manager/fund and buy 20% growth manager/fund.



# Portfolio Strategies: Rebalance Opportunities

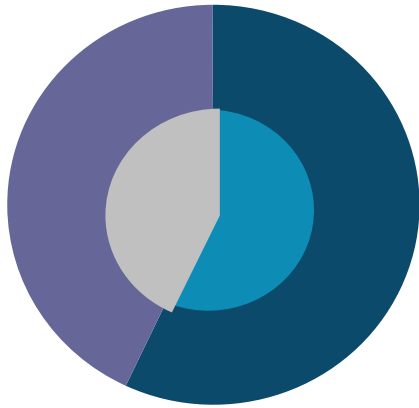


1. \$200,000 taxable portfolio
2. Strategic asset allocation –  
50% value / 50% growth
3. Active/index blend –  
50% active / 50% index

Style	%	\$
<b>Growth</b>	<b>50</b>	<b>100,000</b>
Active	50	50,000
Index	50	50,000
<b>Value</b>	<b>50</b>	<b>100,000</b>
Active	50	50,000
Index	50	50,000

Source: BGI analysis.

# Portfolio Strategies: Rebalance Opportunities

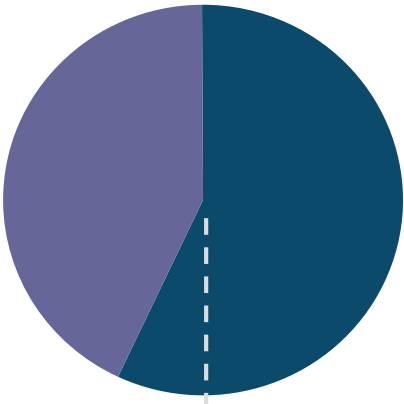


1. Portfolio grew to \$210,000
2. Value outperformed growth
3. Index growth outperformed manager growth manager

Style	%	\$
<b>Growth</b>	<b>43</b>	<b>90,000</b>
Active	44	40,000
Index	56	50,000
<b>Value</b>	<b>57</b>	<b>120,000</b>
Active	50	60,000
Index	50	60,000

Source: BGI analysis.

# Portfolio Strategies: Rebalance Opportunities



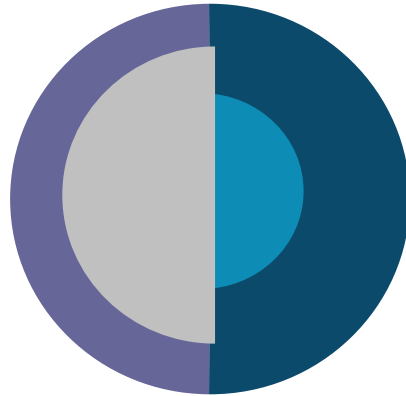
1. New portfolio = 210,000
2. Strategic weights = 50/50.
3. Allocate 105,000 to each asset class.
4. Sell 15,000V; Buy 15,000G
5. Decision is to sell/buy active/index.

Style	%	\$
<b>Growth</b>	<b>43</b>	<b>90,000</b>
Active	44	40,000
Index	56	50,000
<b>Value</b>	<b>57</b>	<b>120,000</b>
Active	50	60,000
Index	50	60,000

Source: BGI analysis.



# Portfolio Strategies: Rebalance Opportunities



Style	%	\$
<b>Growth</b>	<b>50</b>	<b>105,000</b>
Active	29	30,000
Index	71	75,000
<b>Value</b>	<b>50</b>	<b>105,000</b>
Active	57	60,000
Index	43	45,000

Source: BGI analysis.

# Portfolio Strategies: International Satellites

Asset Allocation	Region	Investment Allocation	ETF	Qtr.	YTD	Trailing 1 Yr.	3 Yr.	5 Yr.	Incept.	Inc. Date	Fund Expense
<b>International Diversified</b>											
50%	Developed	8.0%	Asian	3.92	0.85	1.57	14.40	14.97	0.21	Mar-96	0.54
	Developed	7.0%	Asian	7.59	0.17	22.96	26.26	24.51	11.72	Mar-96	0.54
	Developed	12.0%	European	8.40	0.63	27.66	20.92	16.24	5.33	Jul-00	0.54
	Developed	5.0%	European	11.72	0.22	22.55	37.42	39.46	13.47	Mar-96	0.54
	Developed	8.0%	European	8.03	0.51	28.31	26.50	23.19	11.12	Mar-96	0.54
	Developed	10.0%	Diversified Foreign	6.45	0.74	15.62			23.01	Aug-05	0.40
40%	Emerging	10.0%	Emerging Markets	11.88	-0.62	15.05	28.43		38.87	Apr-03	0.75
	Emerging	10.0%	Emerging Markets	17.37	0.15				30.65	Sep-06	0.75
	Emerging	5.0%	Asian	18.04	3.83	43.66	26.84	18.76	1.84	Mar-96	0.54
	Emerging	5.0%	Asian	23.57	-6.51	50.44			34.88	Oct-04	0.74
	Emerging	5.0%	Africa	15.66	0.23	3.33	30.06		34.04	Feb-03	0.70
	Emerging	5.0%	Latin American	15.49	2.35	23.09	45.52	31.11	33.46	Oct-01	0.50
10%	Global Sector	10.0%	International REIT		1.38				5.98	Dec-06	0.60
Portfolio		100.0%		11.49%	0.37%	22.51%	24.42%	N/A	32.26%	Apr-03	0.59
Benchmark				6.58%	0.61%	19.06%	20.12%	N/A	26.47%		

## Model Portfolios Performance Update

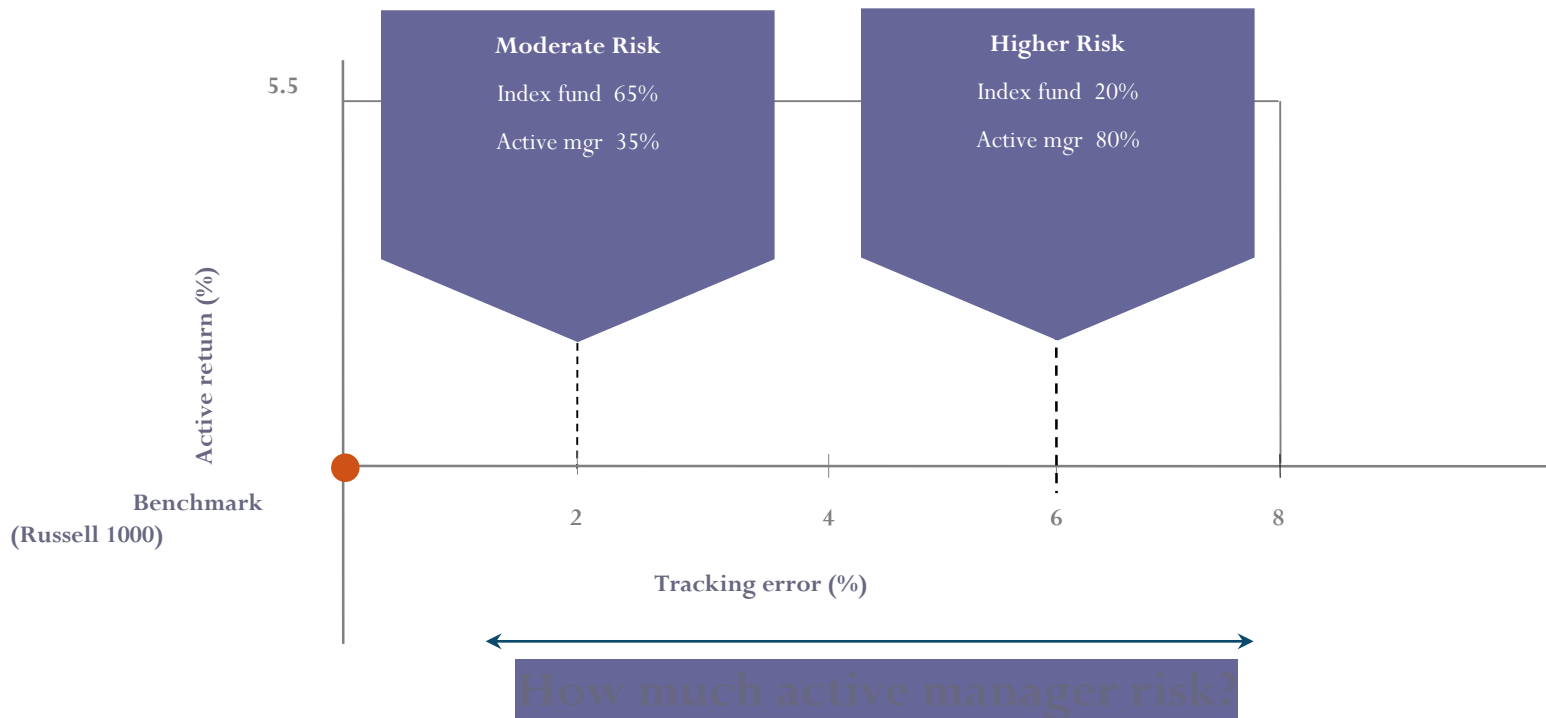
January 31, 2007

	Return							Standard Deviation				Sharpe Ratio			
	Mo.	3 Mo.	YTD	1 Yr.	3 Yr.	5 Yr.	Incept.	1 Yr.	3 Yr.	5 Yr.	Incept.	1 Yr.	3 Yr.	5 Yr.	Incept.
<b>EM Focus</b>															
Portfolio	-0.43%	9.85%	-0.43%	19.59%	26.54%	N/A	33.47%	17.96%	17.11%	N/A	17.10%	1.29	1.47	N/A	1.87
MSCI World ex US	0.61%	6.58%	0.61%	19.06%	20.12%	N/A	26.47%	11.50%	11.38%	N/A	12.22%	1.74	1.56	N/A	2.00
<b>Intl Diversified</b>															
Portfolio	0.37%	11.49%	0.37%	22.51%	24.42%	N/A	32.26%	15.80%	15.81%	N/A	16.19%	1.53	1.47	N/A	1.89
MSCI World ex US	0.61%	6.58%	0.61%	19.06%	20.12%	N/A	26.47%	11.50%	11.38%	N/A	12.22%	1.74	1.56	N/A	2.00
<b>EM Core</b>															
Portfolio	-0.12%	12.77%	-0.12%	19.74%	27.57%	N/A	35.17%	19.96%	18.33%	N/A	18.27%	1.24	1.49	N/A	1.85
MSCI World ex US	0.61%	6.58%	0.61%	19.06%	20.12%	N/A	26.47%	11.50%	11.38%	N/A	12.22%	1.74	1.56	N/A	2.00



# Portfolio Strategies: Budget Risk

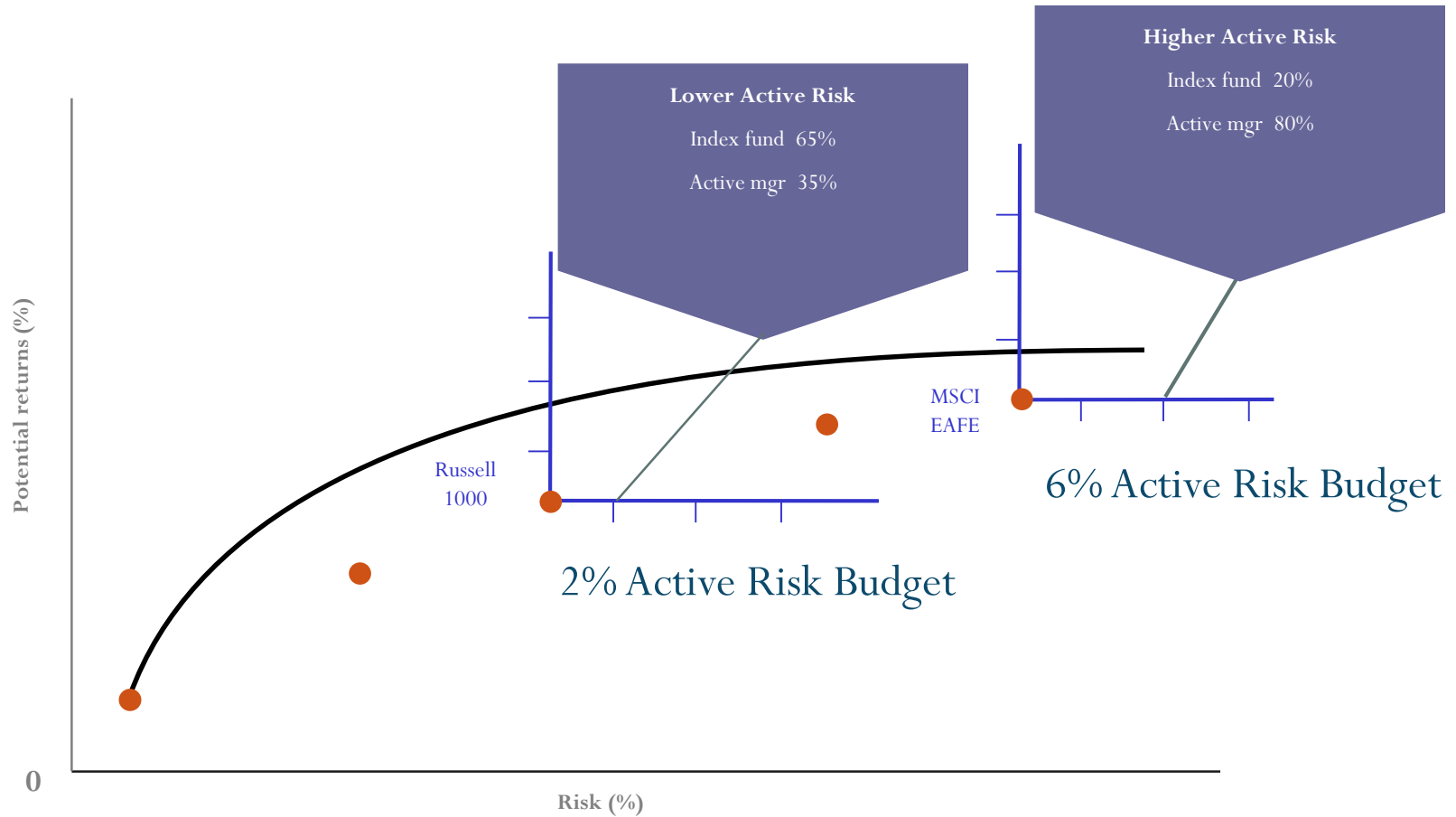
Like traditional risk / return analysis, identify clients risk tolerance. In Core Satellite construction, identify client's propensity to endure both active and passive volatility.



Source: BGI analysis.



# Portfolio Strategies: Refining within classes



Source: BGI analysis.



# Summary

- What are ETF's?
  - Construction Methodology, Growth, Providers
  - [www.ActiveIndexing.com](http://www.ActiveIndexing.com), [www.IndexUniverse.com](http://www.IndexUniverse.com)
- Benefits and Applications
  - Costs, Liquidity, Diversification, Risk management, Tax management, Concentration, Rebalancing
- Practical Portfolio Strategies
  - Traditional MVO, Enhanced Indexing, Core Satellite, Risk Budgeting



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# Discussion

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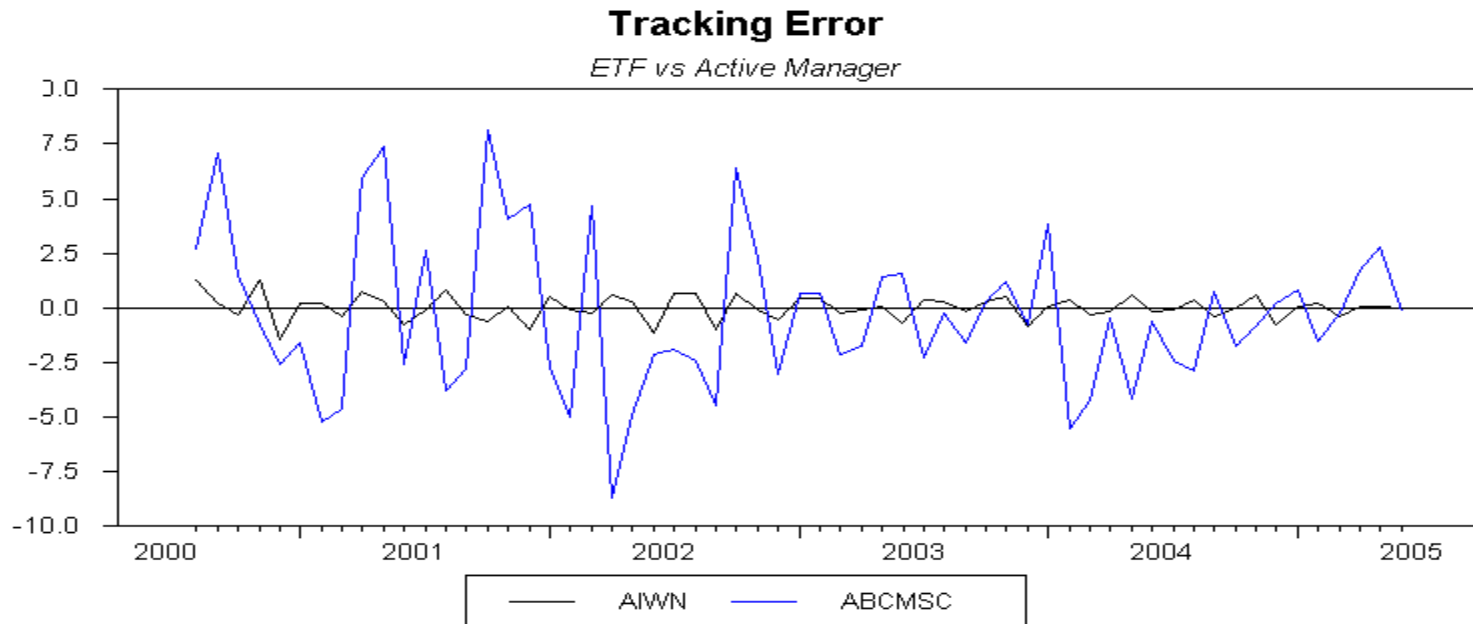
*713.435.4374*

*December 2005*

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# Portfolio Strategies: Tracking error

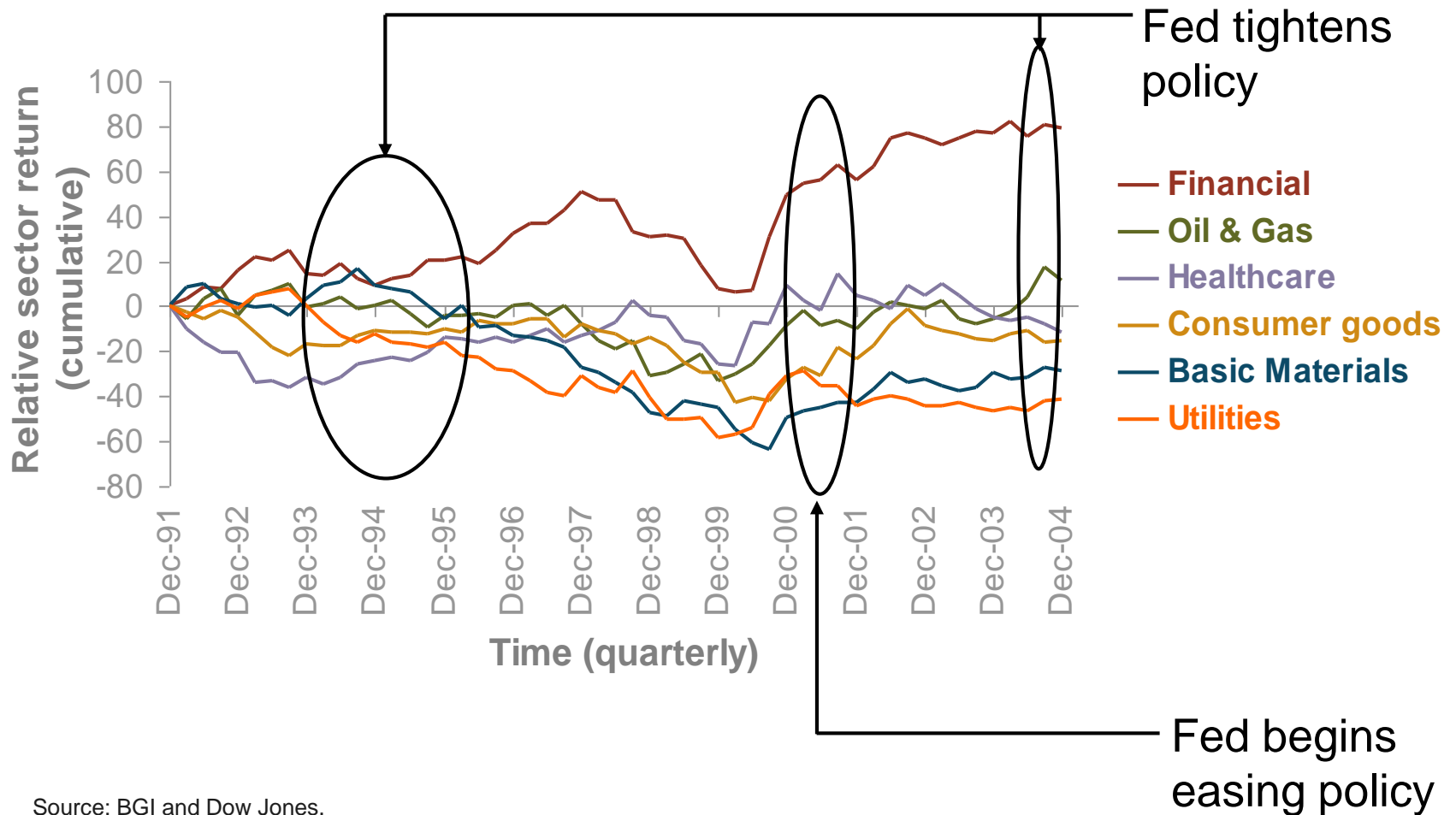


## SUMMARY STATISTICS

2000:8 - 2005:6	Small Cap Index	iShares	Manager
Monthly Observations	59	59	59
Sample Mean	1.16	1.18	0.41
Variance	24.19	24.23	62.22



# Portfolio Strategies: Top Down Management



Source: BGI and Dow Jones.



# Portfolio Strategies: Managing $\alpha$ and $\sigma_\alpha$

- Active manager return
  - The over- or under-return earned by an active manager relative to a benchmark
- Active manager risk
  - The annualized standard deviation of a manager's active return (usually calculated as tracking error)



# REFERENCE AND SOURCE

1. Financial Markets and Institutions by Anthony Saunders and Marcia Cornett | Feb 7, 2018
2. Financial Institutions, Markets, and Money, Twelfth Edition by David S. Kidwell, David W. Blackwell, et al. | Nov 7, 2016
3. Foundations of Global Financial Markets and Institutions, fifth edition (The MIT Press) by Frank J. Fabozzi, Frank J. Jones, et al. | Apr 30, 2019
4. Corporate and Investment Banking: Preparing for a Career in Sales, Trading, and Research in Global Markets by Fidelio Tata | Jul 20, 2020
5. Money, Banking, Financial Markets & Institutions (MindTap Course List) by Michael Brandl | Jan 1, 2020
6. Financial Institutions, Markets, and Money by David S. Kidwell, David W. Blackwell, et al. | Nov 1, 2011