Reinventing the Mutual Fund

An Essential Piece of Financial Engineering

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Q-Group Spring Seminar

April 3 – 6, 2005

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Fund Assets – Year End 2004

U.S. Mutual Funds	$8,000,000,000,000
U.S. ETFs	$ 226,000,000,000
Time required to get to $226 billion	
Mutual Funds	**More than 66 years**
ETFs	**Less than 12 years**

ETF Assets Reported by Funds Understate Investor Holdings at least 20%

Total Annual Shareholder Cost Comparison for Actively-Managed Funds

	Equity Mutual Fund	New Equity Fund
Basic Expense Ratio (ex 12b-1 or service fees)	1.0%	1.0%
Portfolio Composition Trading Cost Inside the Fund	1.5%	1.5%
Fund Share Trading Liquidity Costs	1.4%	
Leakage of Investment Info/ Index Publication	0.35%	
Fund Supermarket vs. Multi-Share Class ETF	0.35%	
Performance Penalty from Oversized Funds, Net of New Funds' Higher Performance-Based Fee	Up to 2.00%	
Total Annual Costs	Up to 6.60%	2.50%

Potential Shareholder Cost/Performance Difference: Up to 4.10% per year

Outline of the Discussion

- What will the new funds accomplish?
- Problems with mutual funds
  - Free liquidity for fund traders
  - Leakage of investment information
  - Failure of active fund management
- Improving the fund product – some simple examples

What Will the New Funds Accomplish?

- Offer investors increased and nearly automatic protection from most of the abuses uncovered in the recent mutual fund share trading scandals
- Reduce investor costs from fund share and portfolio turnover

What Will the New Funds Accomplish?

- Provide an appropriate allocation of transaction costs between entering and leaving fund shareholders on the one hand and ongoing shareholders on the other hand
- Allocate marketing, management and service costs appropriately and transparently among various classes of fund shareholders
- Protect the confidentiality of an investment manager’s trading plans.
- Increase the productivity of the investment management process

Free Liquidity for Fund Traders

- "ETFs don't work for small or periodic investments" – No free liquidity in ETFs
- Free liquidity is a performance killer
  - How does it work?
  - Why is it costly?
  - How costly is it?
    - Edelen's study
    - Market timing costs

Fund Share Flow and Portfolio Turnover

(Shares in Thousands, All Percentages Annualized)

Fund (year ending)	Shares Outstanding	Shares Issued [3]	Shares Redeemed	Fund Share Flow [4]	Portfolio Turnover
Vanguard 500 (12/31/03)[1]	733,805	146,182	115,745	37%	2%
Vanguard Total Market (12/31/03)[1]	925,632	324,147	120,340	54%	2%
Fidelity Mid-Cap Stock (4/30/04)	389,735	122,333	61,953	51%	137%
Fidelity Technology (2/29/04)	41,960	14,603	11,248	64%	127%
PBHG Growth Fund (3/31/02)[2]	101,665	760,668	791,641	1325%	171%
PBHG Growth Fund (3/31/03)[2]	80,513	10,894	32,046	47%	168%
PBHG Growth Fund (3/31/04)[2]	53,810	8,149	37,279	68%	164%
Invesco Technology 2003 (3/31/03)[1]	63,039	224,764	235,590	673%	107%
Invesco Technology 2004 (3/31/04)[1]	55,023	38,943	46,959	146%	141%

[1] Investor Class Shares Only

[2] PBHG Class Shares Only

[3] Excludes shares issued in dividend reinvestment when that number is available

[4] (Shares Issued + Shares Redeemed)/(Average Shares Outstanding during the Year)

Source: Fund reports and SEC filings

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- SEC proposals are inadequate

Leaks in the Investment Process

- Multiple Investment Products = One Process
  - Trading rotations
  - Average price executions
- How does information get out?
  - Separate accounts
  - Large institutional accounts
  - Outside trading desks
- Funds can have the fewest leaks

Failure of Active Management

- Berk and Green (2002, 2004) finds
  - that there are superior managers;
  - that rational investors try to find those managers and give them money;
  - that the superior managers often deliver superior performance;
  - but only for a limited time.
- Asset overload
- Conflict between incentives for manager and investor
- Stein (2004) – Most funds are open-ended
- Chen, Hong, Huang and Kubik (2004) – Fund size affects performance at least for small cap

Early Cut-off Time for Orders to Purchase or Redeem Shares

- Example for domestic equities
- Entry and exit through an ETF share class
  - Clear audit trail is possible
  - Involvement of separate organizations in creation and redemption facilitates rotations of personnel to prevent fraud

Conversion of ETF Share Class into Specialized Share Classes

- Brings all similar accounts into one pool
- Disclosure is fund disclosure – quarterly with 60-day lag
- Pay fees tax efficiently
- Politically necessary to have effective fee disclosure for mutual funds first

Is There a Trade-Off Between Portfolio Secrecy and Fund Share Trading Efficiency?

- Less frequent intra-day dissemination of precise values
  - No fill in
  - Random process fill in
  - Amex model fill in
- In-kind creation and redemption are important
- Risk factor model application

How the Manager Controls Disclosure

- Frequency of publication of precise values
- Parameters of random process for interim value publication
- Composition of creation and redemption baskets
- How factor model output is handled
- Plug leaks by dropping non-fund products

Can a Better Fund Structure Make Active Management Effective?

- Capping funds – specialty and small cap
- Raising fees on institutional share classes
- Raising fee on ETF share class
- Make board responsible for any cloning policy – or simply prohibit it
- How does this change manager incentives
  - The individual
  - The organization

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* Costs to enter and leave the ETF Share Class are paid by the trading shareholder only when entering or leaving.

** Preliminary estimate based on an estimate of half the typical annual publication effect of S&P 500 composition changes. The value of stopping leakage of trading plans for active portfolios may be greater.

*** Costs in affected share classes equal to minimum annual supermarket preference fee charged by major brokers. Some supermarket fees are higher. There would be no ongoing annual sales or marketing fee in the new structure without specific agreement by the investor to pay it.

**** A rough average derived from conversations with active fund managers and trading cost analysts. The estimate allows for some of the performance penalty reduction being absorbed by a higher management fee as compensation for that performance.