



CANTOR FITZGERALD

ETF Solutions

## STRUCTURAL BASICS OF THE ETF

- Commingled fund listed on a National Stock Exchange
  - Structured as open-end Registered Investment Company or Unit Investment Trust under the Investment Company Act of 1940 or as a Grantor Trust or Limited Partnership under the Securities Act of 1933
  - ETNs are an altogether different animal
- Fungible derivative
  - Underlying securities can be exchanged for shares of the Fund and vice versa through a creation/redemption process
  - Creations/redemptions can only be performed by Authorized Participants
- Share price of ETF in secondary market remains closely aligned with NAV of Fund
  - Fungibility of instrument provides a natural arbitrage mechanism
  - Highly competitive environment among ETF market makers
- Low cost of usage with opportunity for additional offset through lending
  - TERs very low and continuing to decline
  - Spreads very tight, can be tighter than the underlying

### ETF

#### Positive Attributes

- Diversified beta exposure can be acquired in one trade/custody line
- Economies of scale contribute to liquidity (i.e., turnover of ETF shares in secondary market is additive to underlying basket liquidity)
- Highly regulated product
- Can be borrowed, lent, sold short
- Options available

#### Potential Drawbacks

- Difficult to customize exposure (e.g., ex-specific names/industries)
- In less actively traded ETFs, poorly executed trading strategies can be detrimental to performance outcomes

### SMA

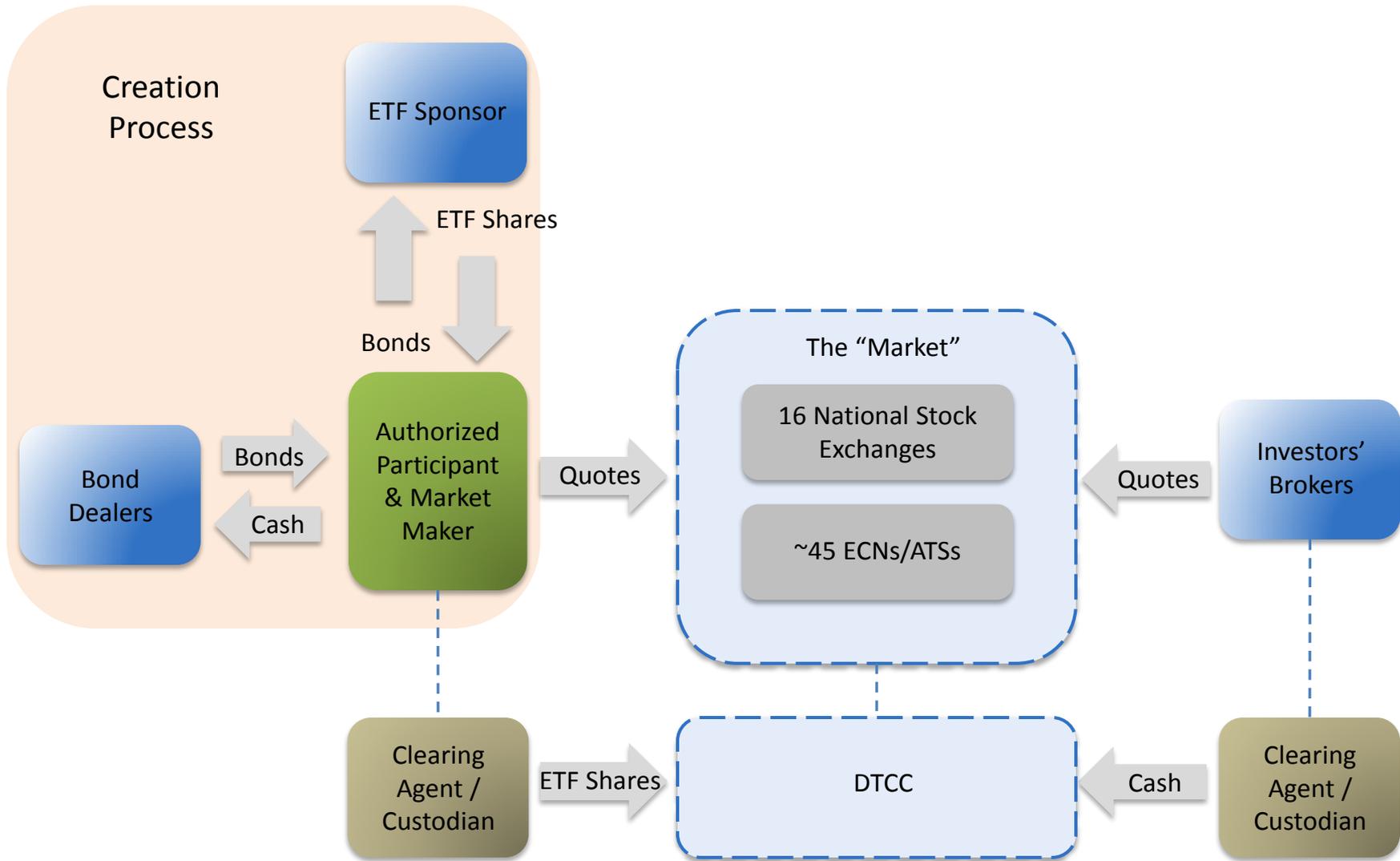
#### Positive Attributes

- Direct ownership of shares/issues allows for direct influence from corporate governance perspective (i.e., voting)
- Customizable exposure

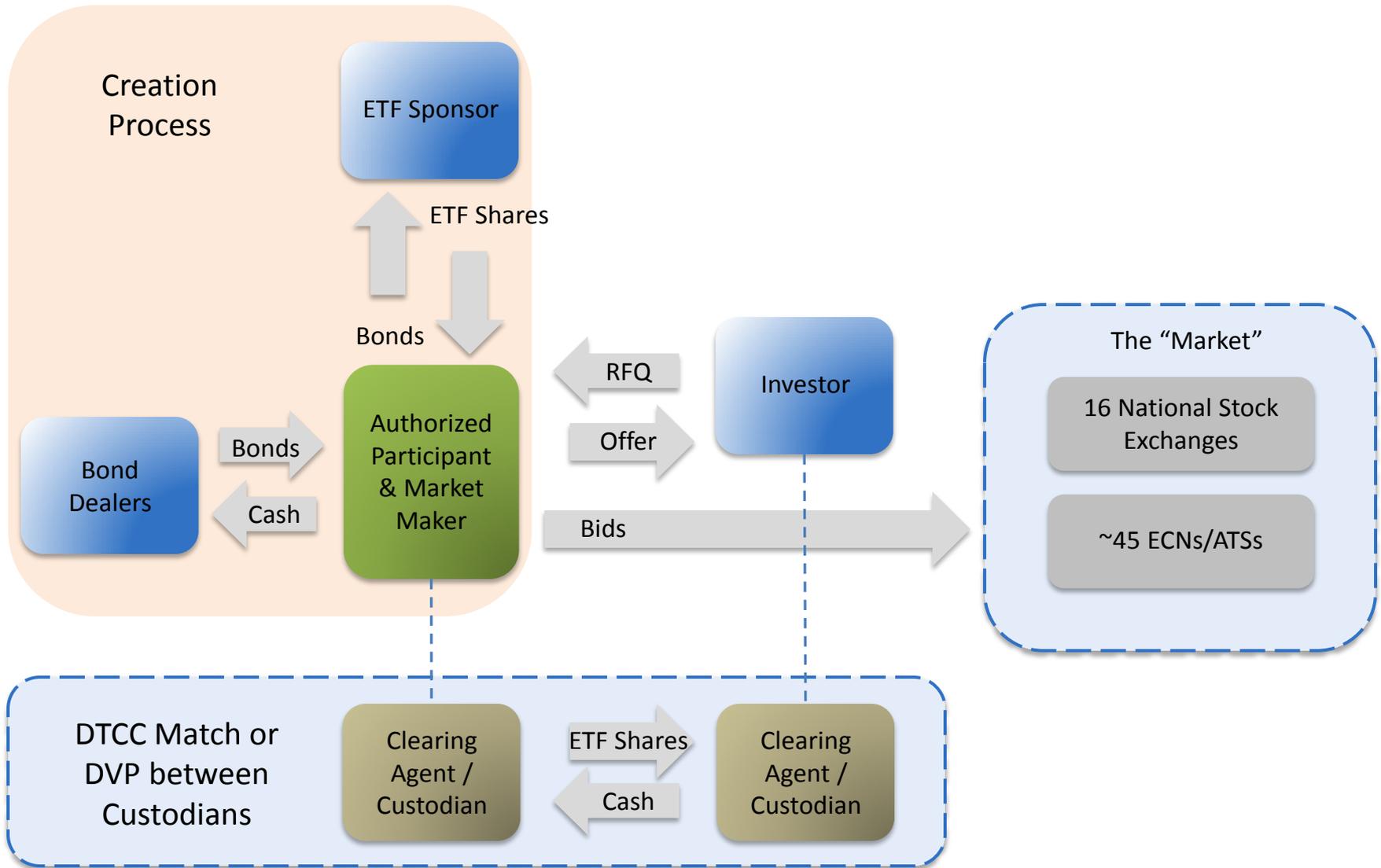
#### Potential Drawbacks

- Acquisition of diversified beta exposure requires tens/hundreds of trades / custody lines
- Manager risk; regulatory oversight is not at the product level

# BASIC LAYOUT OF ETF TRANSACTION – SECONDARY MARKET BUY



# BASIC LAYOUT OF ETF TRANSACTION – OTC BUY



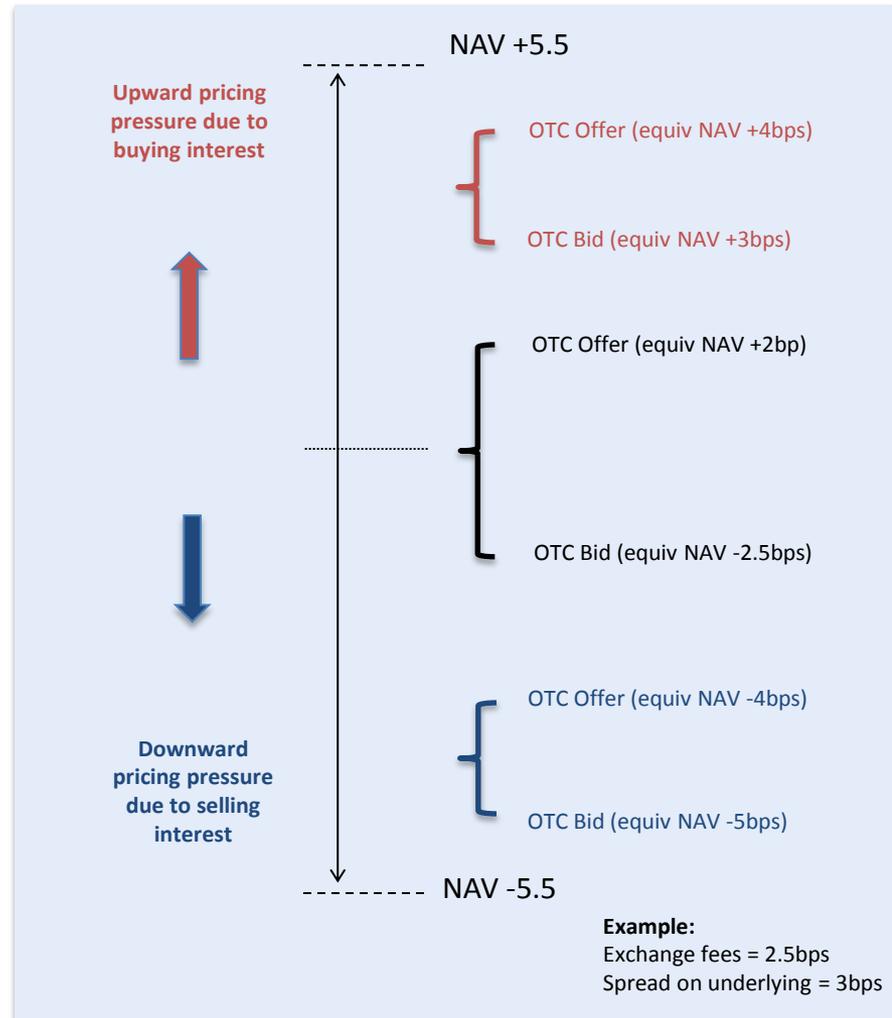
## HOW AN ETF TRADES RELATIVE TO NAV

ETFs tend not to trade at NAV but rather within or around a “Fair Value Band”

The “Fair Value Band” sits around the intraday NAV of a fund and is affected by the following factors:

- Spread of underlying assets
- Commission charges on underlying assets
- Taxation of the underlying
  - Effects of tax on shares
  - Effects of tax on currency
- Creation / Redemption charges
- Size of Creation / Redemption unit
- Variability of hedging results in process

Propensity for trades to occur inside the fair value band dependent on many factors; ETF share turnover and competitive market making forces are most significant factors.



1. Objective for the trade
2. Timing relative to trading hours for the ETF and its basket constituents
3. Size of trade relative to ETF's volume traded (historical and current)
  - Informs path of execution and cost/impact expectations
4. Current size and depth of national limit order book
5. Potential impact of your trade on ETF's basket constituents (most relevant for large trades)
  - Market impact and other costs of trading the basket

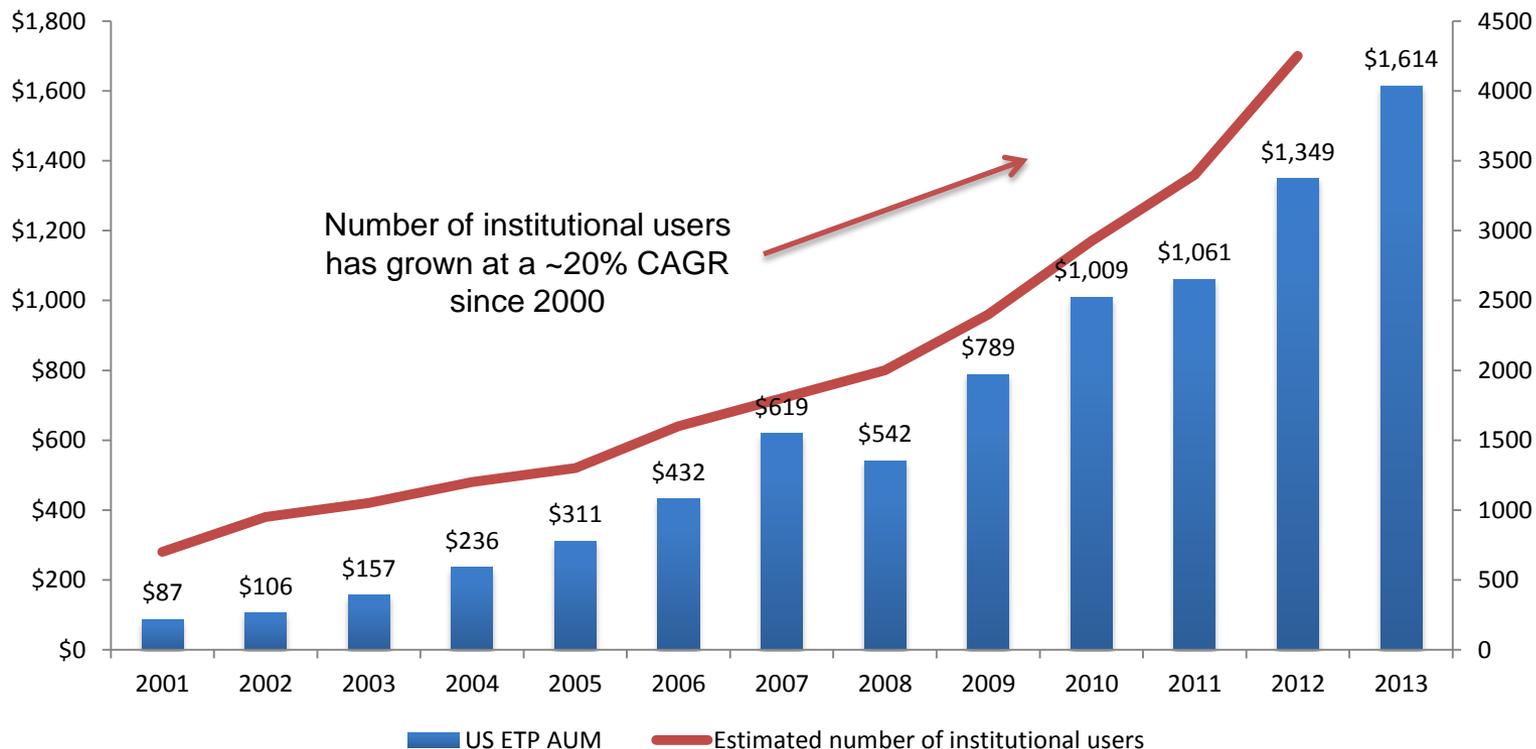
## WHY YOU SHOULD CARE

# INCREASING ADOPTION OF ETFs BY INSTITUTIONAL INVESTORS

U.S.-listed ETPs represented 27% of notional average daily equity turnover in 2013.

Net cash flow into U.S.-listed ETPs in 2013 was \$190.5 billion; globally ETPs collected \$235.5 billion.

## Growth of ETPs in the United States



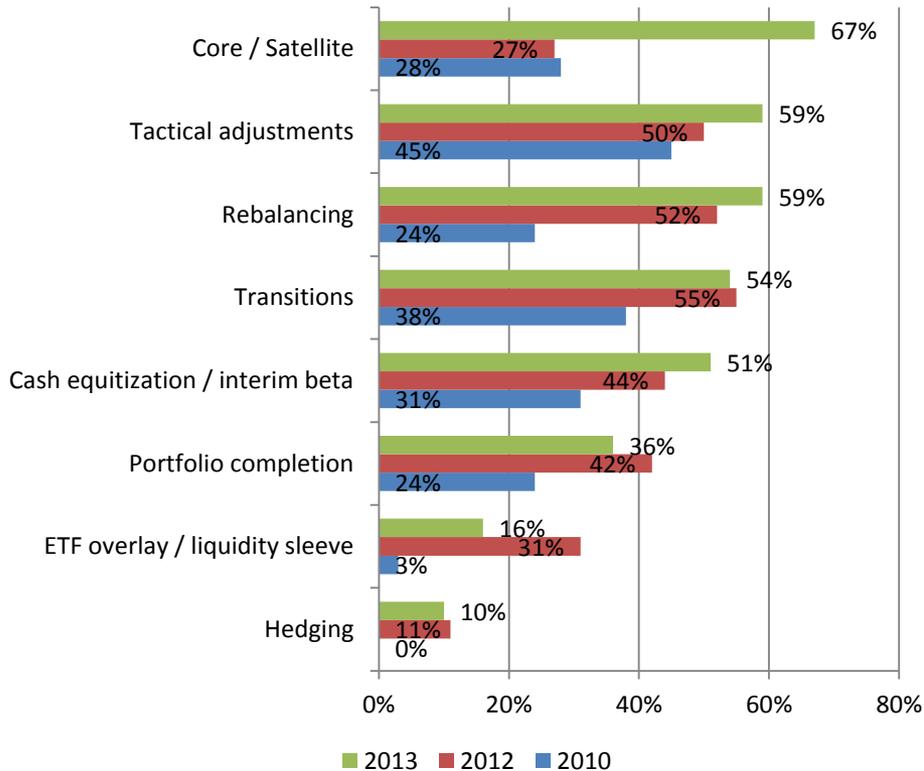
Source: BlackRock, Bloomberg, ICI, NYSE Euronext

"Institutional Users" inclusive of corporate and public pensions, asset managers, investment consultants, insurance companies, and RIAs

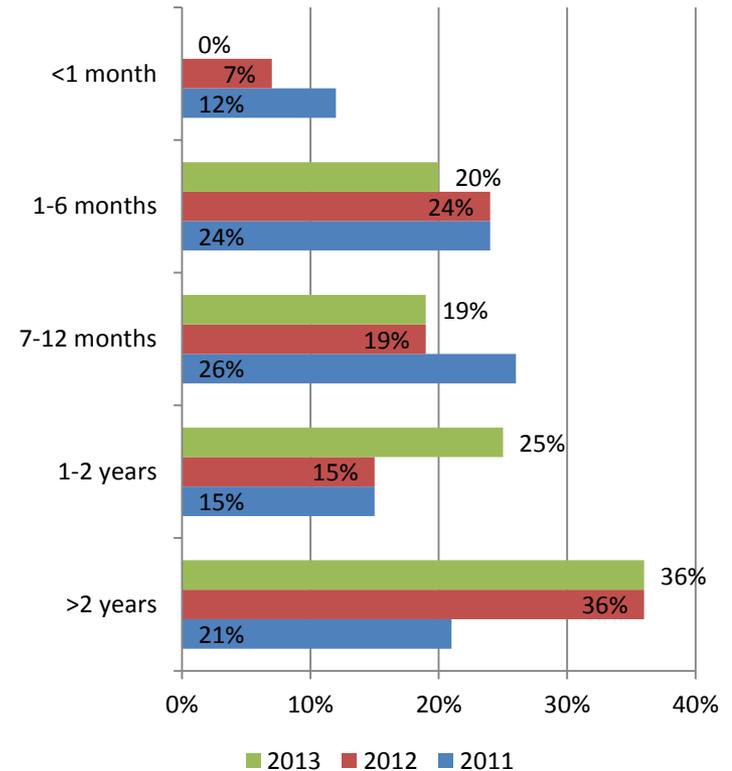
# BROAD SET OF APPLICATIONS FOR INSTITUTIONAL PORTFOLIOS

Public and corporate pensions, which were once using ETFs solely for transitions or rebalancing, are now using them for increasingly strategic purposes with longer holding periods.

## How institutional funds are using ETFs



## Typical ETF holding period

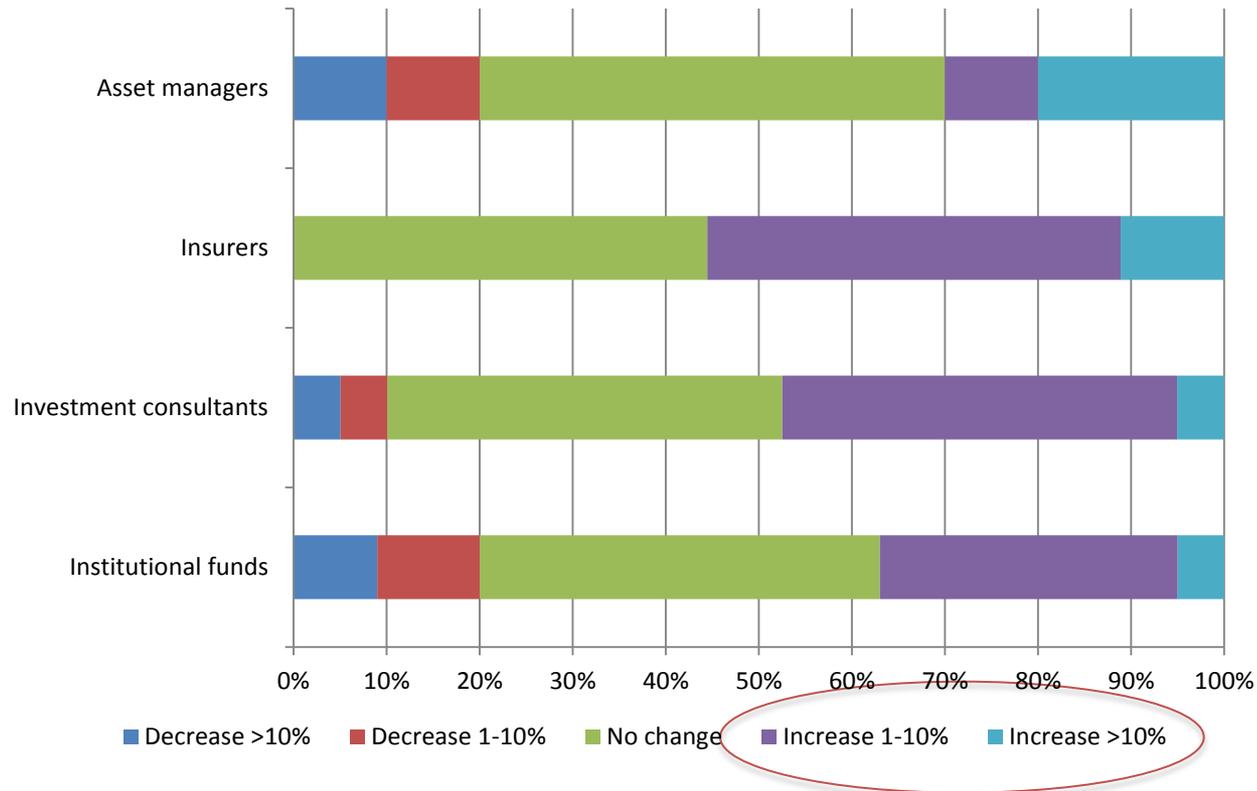


Source: Greenwich Associates, BlackRock  
 "Institutional Funds" include corporate and public pensions

## ALLOCATIONS TO ETFs LIKELY TO RISE AMONG INSTITUTIONS

Between 30% and 55% of institutional investors expect to increase allocations to ETF by the end of 2013.

### Expected change in allocations to ETFs by year end



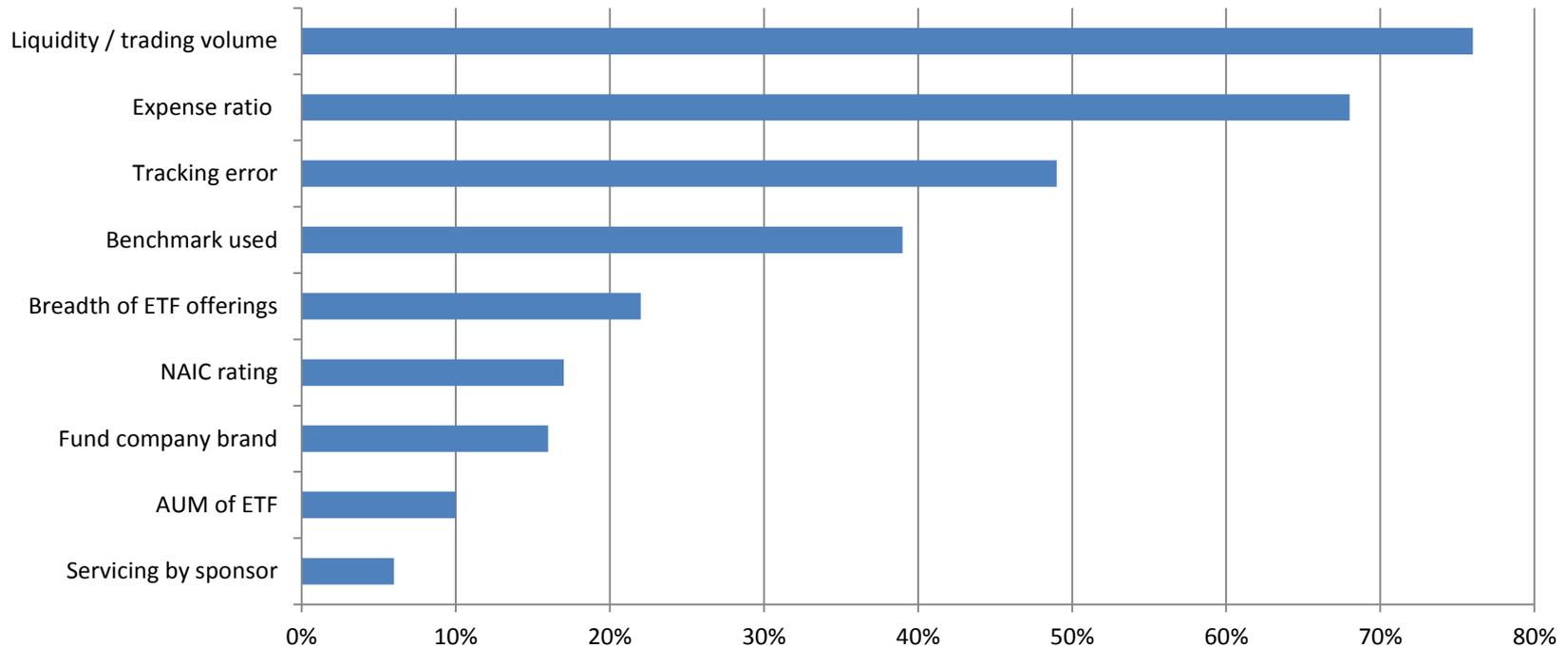
Source: Greenwich Associates

## ETF SELECTION CRITERIA – EDUCATION MAY STILL BE NEEDED

Persistence of misperceptions about ETF liquidity still prominent.

This list should reflect prioritization of the same characteristics an institution would have for an indexed SMA or institutional fund.

### Most important factors for institutions when selecting an ETF

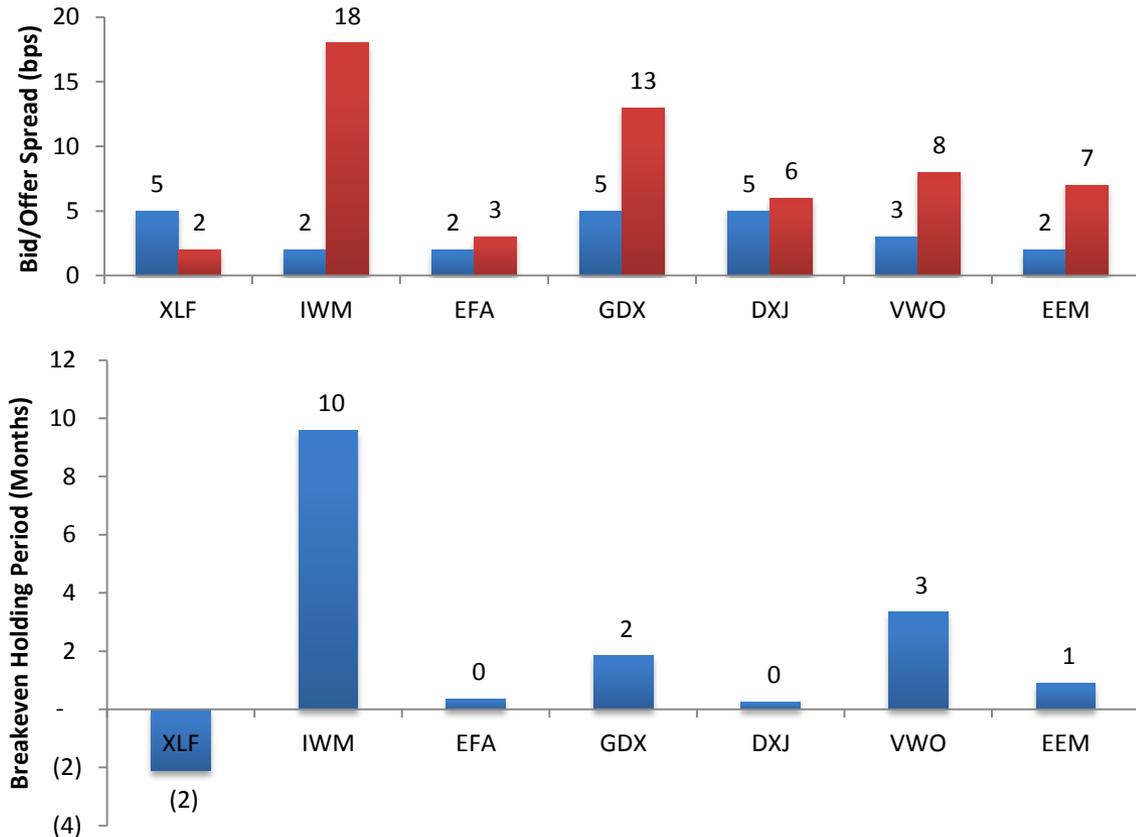


Source: Greenwich Associates  
NAIC rating only relevant to insurance companies

# TRANSACTION COST SAVINGS OF ETFs VERSUS EQUITY BASKETS

## Estimated Bid/Offer Spreads & Breakeven Holding Periods

■ ETF Bid/Offer ■ Basket Bid/Offer



Source: Cantor, Bloomberg as of 12/13/2013  
Approximate spreads based on \$25m notional trade size

Trading ETFs on-exchange can be cheaper than trading the underlying equities.

Bid/ask spreads on International ETFs include a risk premium to account for constituent price uncertainties.

An investor can hold IWM for almost a year before the management fee outweighs the transaction cost savings. Securities lending opportunities in the ETF can greatly extend this breakeven period.

## COST COMPARISON: U.S. SMALL-CAP CTF VERSUS ETF

Investment size of \$100 million		CTF		ETF	
		Russell 2000 Index Fund		iShares Russell 2000 (IWM)	
Investment Phase	Cost/Revenue Item	\$K	bps	\$K	bps
Initiation	Commission	\$(25.0)	(2.5)	\$(8.0)	(0.8)
	Impact/Spread	\$(149.0)	(14.9)	\$(54.6)	(5.5)
	Phase Total	\$(174.0)	(17.4)	\$(62.6)	(6.3)
Holding Period	Management Fee / TER	\$(90.0)	(9.0)	\$(240.0)	(24.0)
	Underlying Lending Revenue	\$138.0	13.8	\$134.0	13.4
	ETF Lending Revenue	N/A	N/A	\$466.1	46.6
	Phase Total	\$48.0	4.8	\$360.1	36.0
Exit	Commission	\$(25.0)	(2.5)	\$(8.0)	(0.8)
	Impact/Spread	\$(151.0)	(15.1)	\$(54.6)	(5.5)
	Phase Total	\$(176.0)	(17.6)	\$(62.6)	(6.3)
<b>Total Costs</b>		<b>\$(302.0)</b>	<b>(30.2)</b>	<b>\$234.9</b>	<b>23.4</b>
Time to Fully Invest		1 Day		1 Day	
Available Liquidity		Daily with 1-Day Notification		Intraday	

Source: Cantor Fitzgerald, BlackRock, BECS, Citigroup, BarCapLive, Bloomberg

## INSTITUTIONS SEEKING TO ADD CREDIT BUT I.G. MARKET LESS EFFICIENT/LIQUID

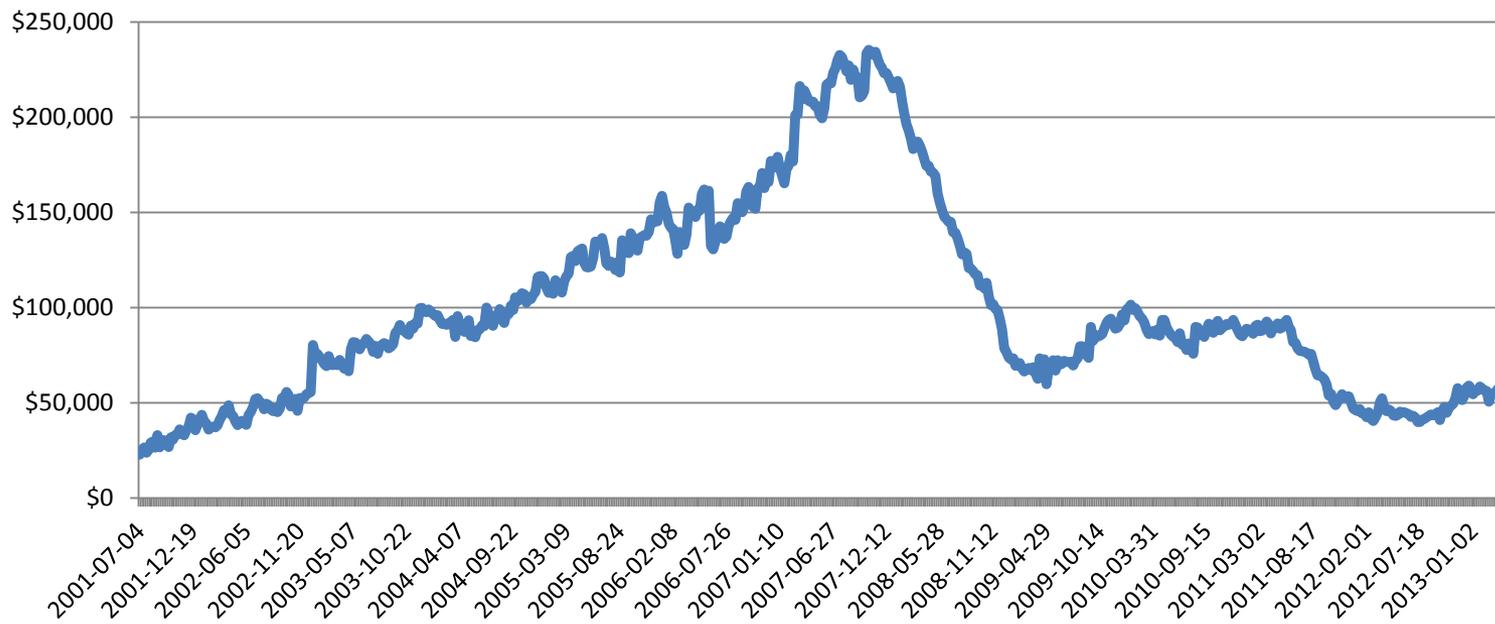
Primary dealers face several trends that are impacting their ability to provide liquidity

- Basel III requiring higher capital levels at banks
- Dodd-Frank (Volcker Rule) has reduced banks' ability to hold inventory

Liquidity has been reduced and spreads have widened

- Risk warehousing has been significantly reduced – down ~80% since peak
- Bid/ask spreads have widened; IG spreads as much as 40% wider since 2007
- Liquidity is fragmented; average trade size about half the level in mid-2000s

### Primary Dealer Corporate Positions (>1 year maturity)



Source: Federal Reserve Bank of New York, Barclays, BlackRock

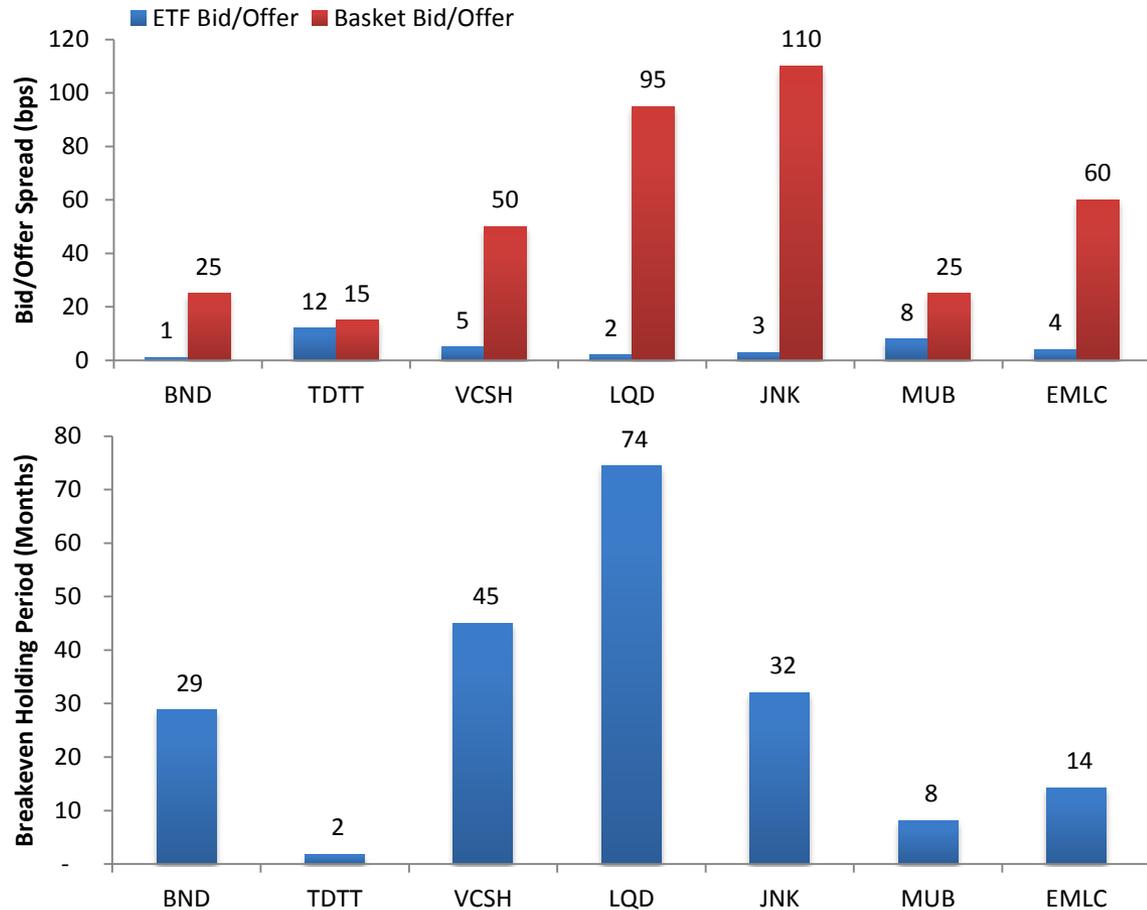
# TRANSACTION COST SAVINGS OF ETFs VERSUS CASH BONDS

Trading ETFs on-exchange can be cheaper than trading the underlying bonds.

The bid/ask spread on JNK is more than 1% tighter than the underlying basket.

An investor can hold JNK for almost 3 years before the management fee outweighs the transaction cost savings.

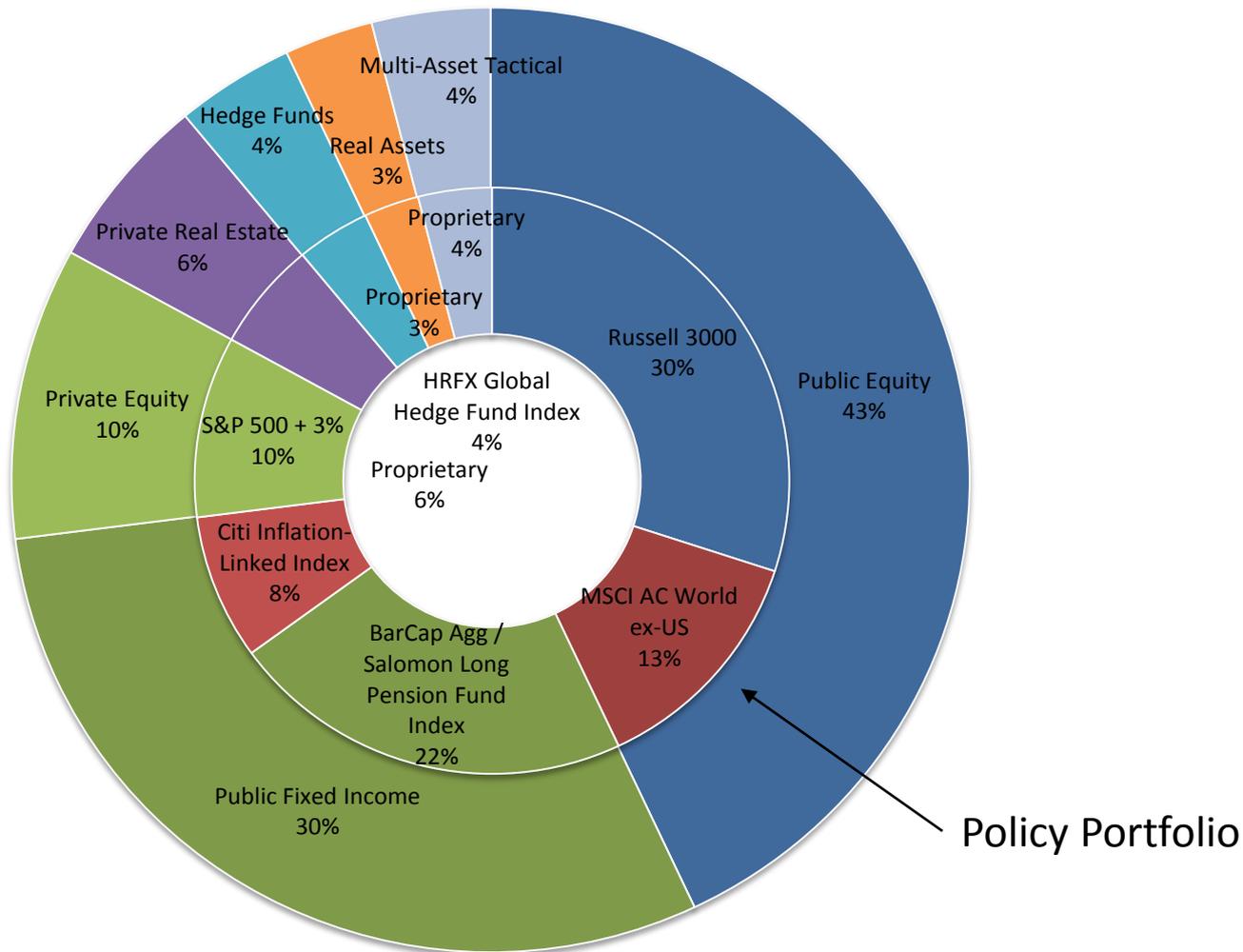
### Estimated Bid/Offer Spreads & Breakeven Holding Periods



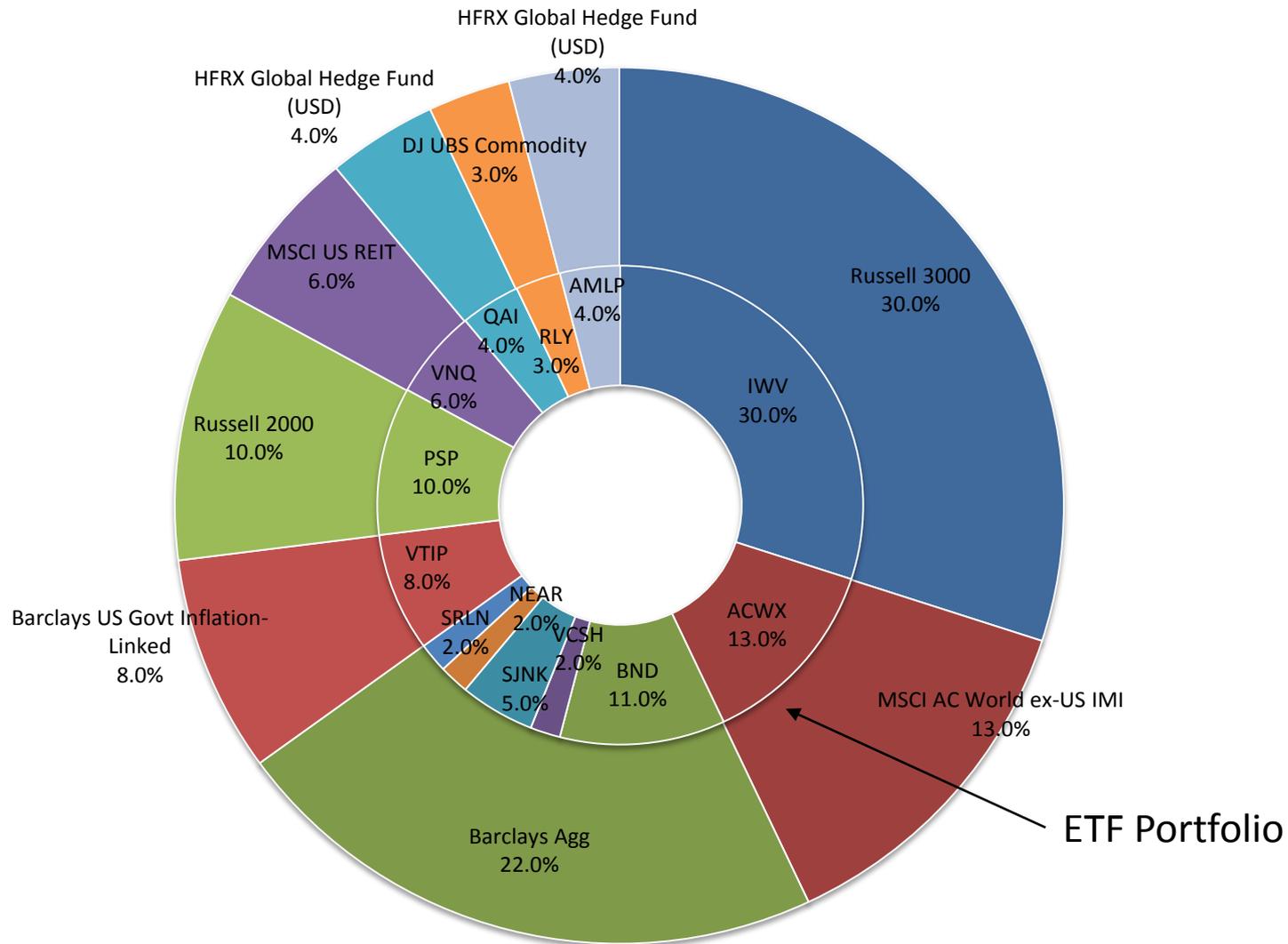
Source: Cantor, Bloomberg as of 7/10/2013

# INNOVATIVE USES: LIQUIDITY SLEEVE – REPLICATING THE POLICY BENCHMARK

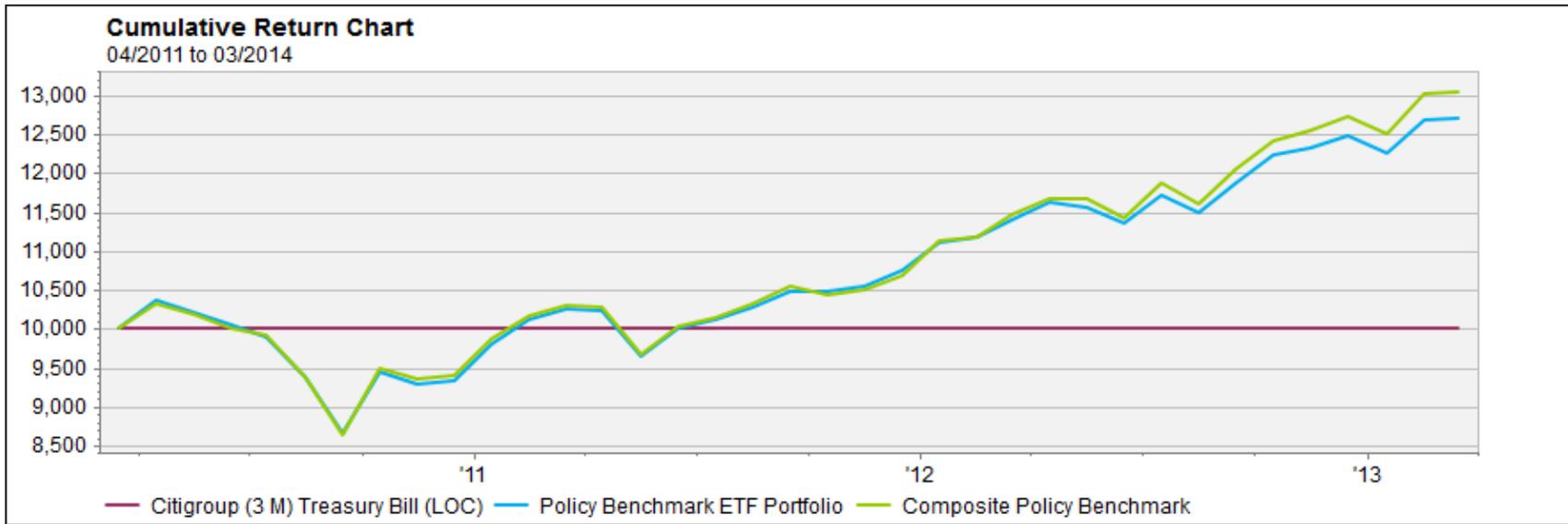
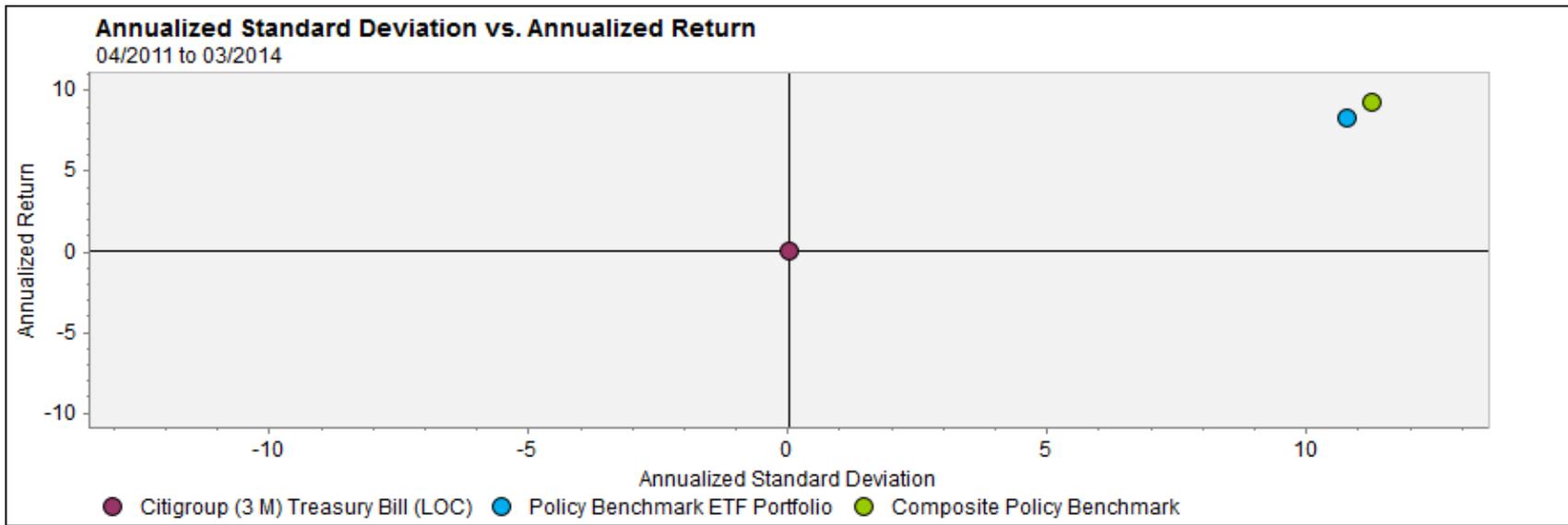
Large public pension funds are beginning to implement beta replication portfolios using ETFs as either a distinct liquidity sleeve or to equitize existing cash management accounts.



# INNOVATIVE USES: LIQUIDITY SLEEVE – MAPPING THE POLICY TO AN ALL-ETF PORTFOLIO

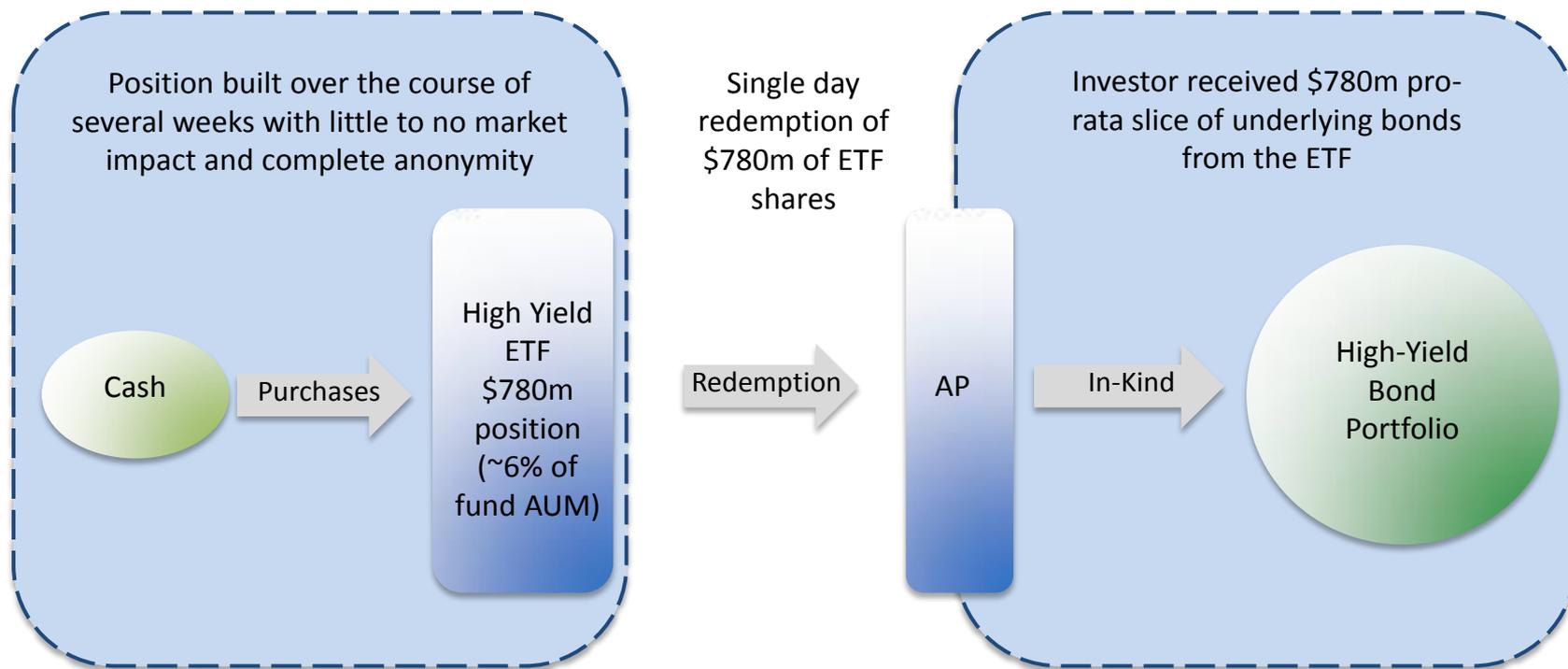


# INNOVATIVE USES: LIQUIDITY SLEEVE –ALL-ETF PORTFOLIO OUTCOME



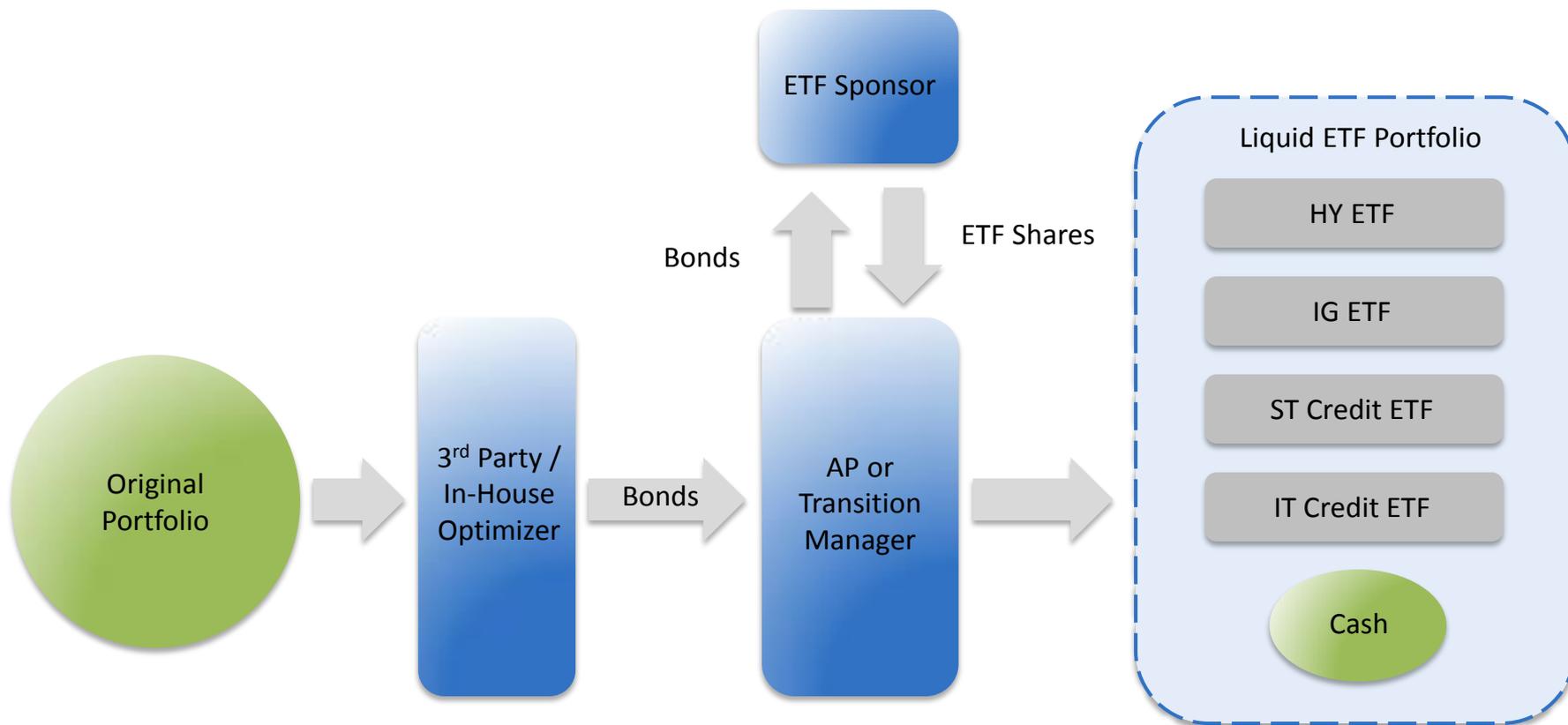
# INNOVATIVE USES: IN-KIND REDEMPTION TO BUILD TARGET PORTFOLIO

A large insurance firm seeking a significant position in U.S. high-yield bonds achieved the desired exposure by taking advantage of the creation/redemption function inherent in ETFs. The large position was obtained over a shorter period than would have been possible directly and at substantially lower cost.



# INNOVATIVE USES: TRANSITION TO A LIQUID, SIMPLIFIED PORTFOLIO

A public pension transitioned a broad, indexed fixed income mandate from an external manager to a simplified in-house solution. The resulting portfolio: four ETFs plus a small cash position.



We leverage our expertise and relationships to help clients better manage portfolio risks and improve their investment performance.

- World's largest, most specialized and experienced ETF team with access to significant capital
  - 28 members located in NYC and London; subgroups focused on specific underlying asset classes
  - Majority of team involved in trading/manufacture of ETFs for over a decade; senior leadership since mid-1990s
  - Balance sheet allows for facilitation of complex client trades and tighter spreads
- Broad set of relationships with entire spectrum of managers—emerging to minority to brand name
  - Long track record of partnering to help these firms bring new product to market, improve existing product, reach new buyers

## MAJOR ETF TRENDS FOR 2014

- **“Smart” Beta and the Battle of the Indexes**

- Successful en masse transition of Vanguard ETFs to new benchmarks undermined index provider value and increased competition.
- SEC simplification of self-indexing (July 2013) further complicates index landscape.
- Continued adoption of fundamental and alternate weight indexes (e.g., DFA, Research Affiliates) – how will institutional buyers fit them into investment policies that have historically been constructed on market cap-weighted benchmarks?
- Further collaboration between institutional investors and ETF issuers will lead to development of additional tailored products (e.g., State of Arizona’s involvement in launch of iShares factor-based ETFs in 2013).

- **Further Granularity in Fixed Income**

- First wave of broad market bond ETFs is concluding; all of the other potential building blocks will now be launched. This granularity will allow institutional investors the flexibility they need to effectively and efficiently manage portfolios using an increasing number of ETFs.
- Rising interest rates will encourage development of ETFs that can immunize rate risk (e.g., target maturity, pure credit ex-interest rate).
- NAIC ratings will be commonplace across all fixed income ETFs. Getting the rating will be incorporated into the standard launch process.

- **Non-Transparent, Actively Managed ETFs**

- Spotty adoption of transparent active ETFs (outside of BOND) improves, but mass adoption of transparent active not likely.
- Accelerating smart beta ETF adoption, blurring the active/passive distinction.
- NON-transparent, truly active ETFs will get developed and launched in 2014 – cost, trading, operational complexity will all limit 2014 adoption. 2015 will be the year that active mutual fund flows transition to ETFs.

- **Maturing of ETF Strategist Asset Manager Space**

- ETF strategist portfolios move from “hot dot” category to a mature, stable place on the retail product shelf and begin to see institutional buyer interest as a cheaper, liquid alternative.
- Development/maturing of frameworks for manager research, analysis, and guidance for advisor/client usage. New style-boxes emerge and managed ETF strategies become mainstream investment options – but will the rolling off of 2008 outperformance by GTAA managers impact growth as investors forget down-side risk protection can still be important?
- Increased content and thought leadership from Morningstar, Cerulli, and Index Universe.

- **Deeper Institutional Investor Adoption**

- Institutions increasingly allowing ETFs in their investment policies (2012 on) and “dabbling”. Broader adoption and niche solution/portfolio penetration will accelerate in 2014.

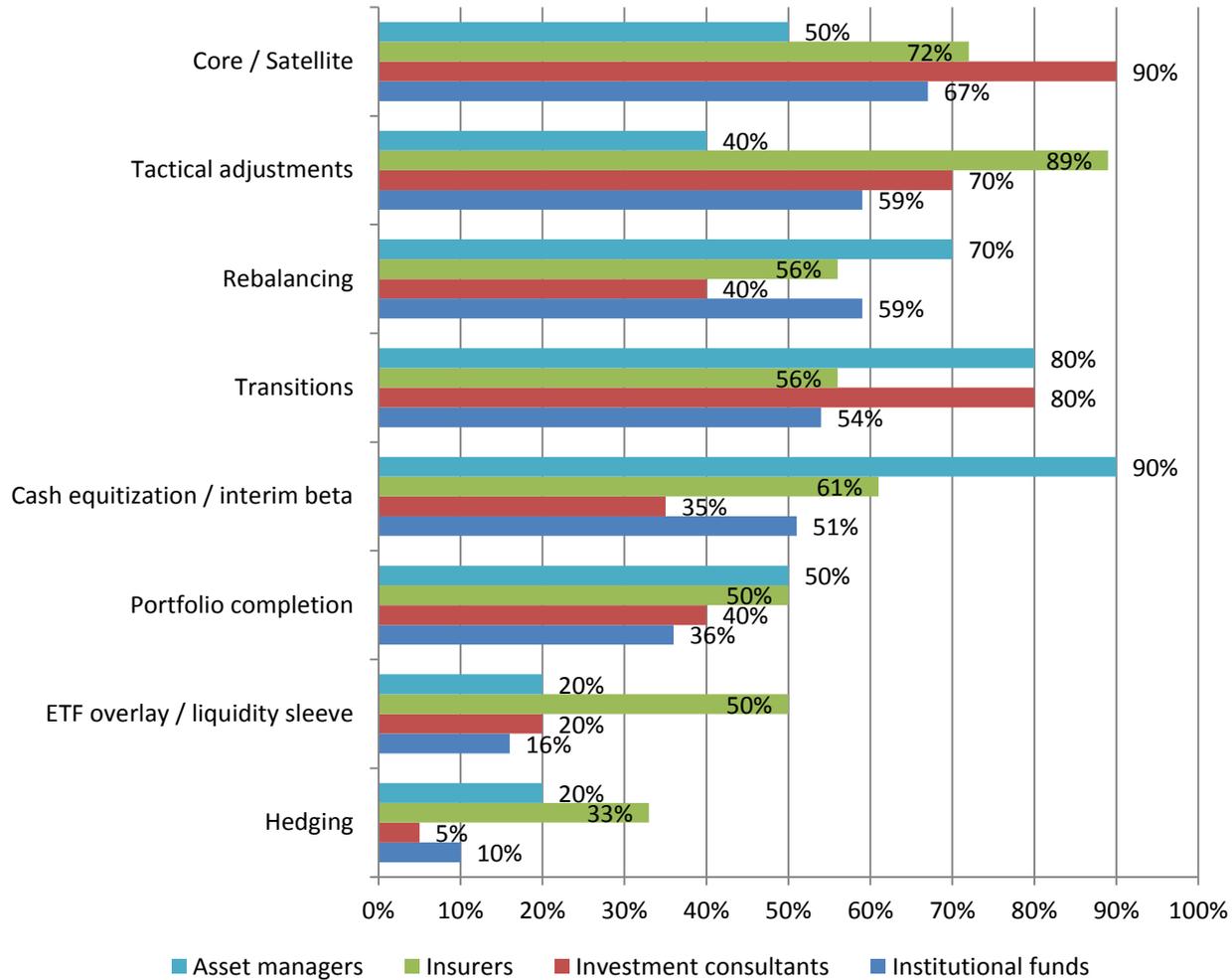
- **ETFs in Small- to Mid-Market 401(k)s go Mainstream**

- Schwab’s ETF 401(k) offering – announced and delayed throughout 2013 – will force broader industry adoption.
- New emerging competitors (e.g., InvestNRetire) poised to bring ETF solutions to the mass market – will a deal be done with a major insurance company or third-party recordkeeper that will challenge the dominant 401(k) providers?

# APPENDIX

## ADDITIONAL GREENWICH STUDY RESULTS

### ETF usage by type of institution in 2013

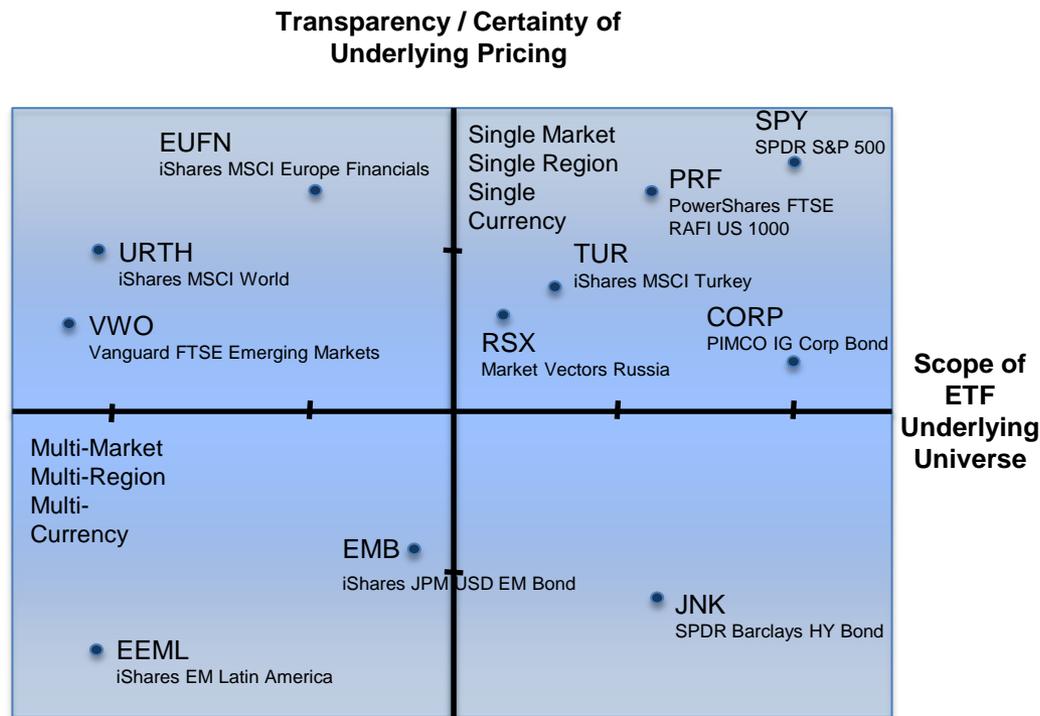


Source: Greenwich Associates

# IS INAV A TRUE INDICATION OF FAIR VALUE?

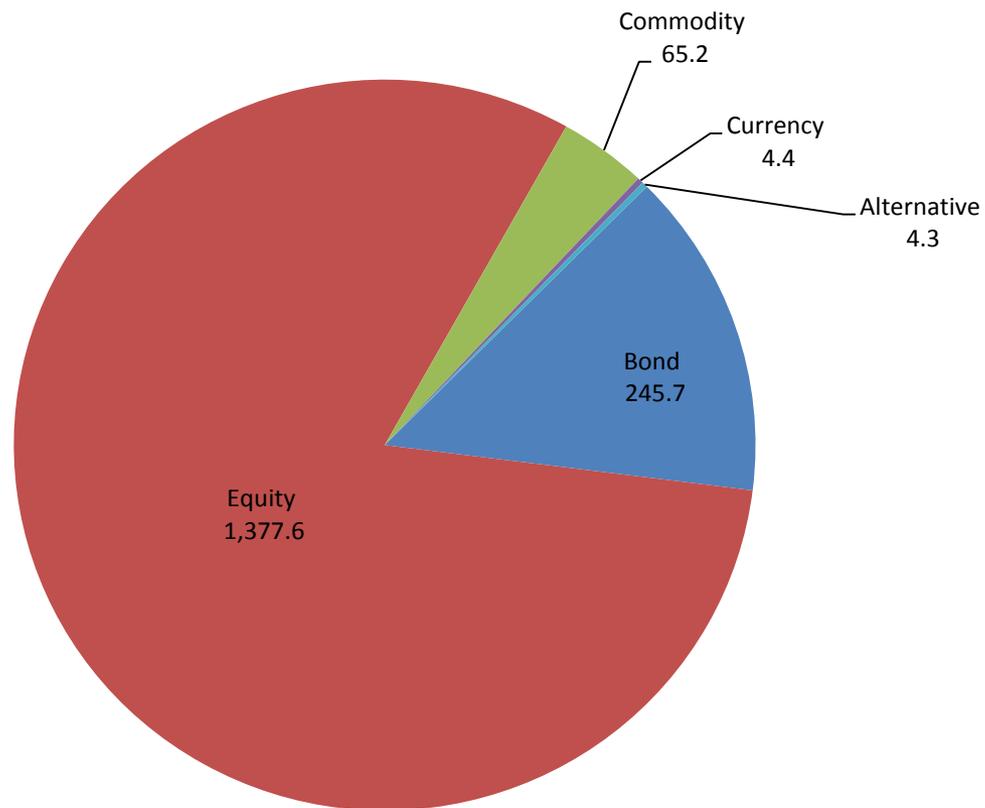
Key questions with respect to INAV calculations:

- Do the underlying assets price transparently?
  - Equities have transparency while markets are open
  - Bonds have very little public transparency
- Are the assets part of a single market, a single currency?
  - Single currency and single market has less room for error
  - Multiple currencies, regions and markets are prone to error and timing complexity
- Is the INAV independently calculated by an exchange or an index provider?
- Does the calculation involve proxy settings for markets that are not open?



URTH: BlackRock, BECS, Citigroup, BarCapLive, Bloomberg

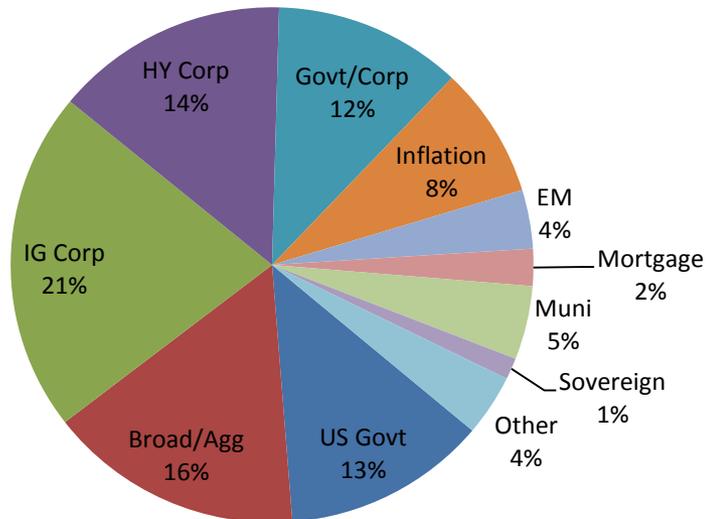
### ETP AUM by Asset Class



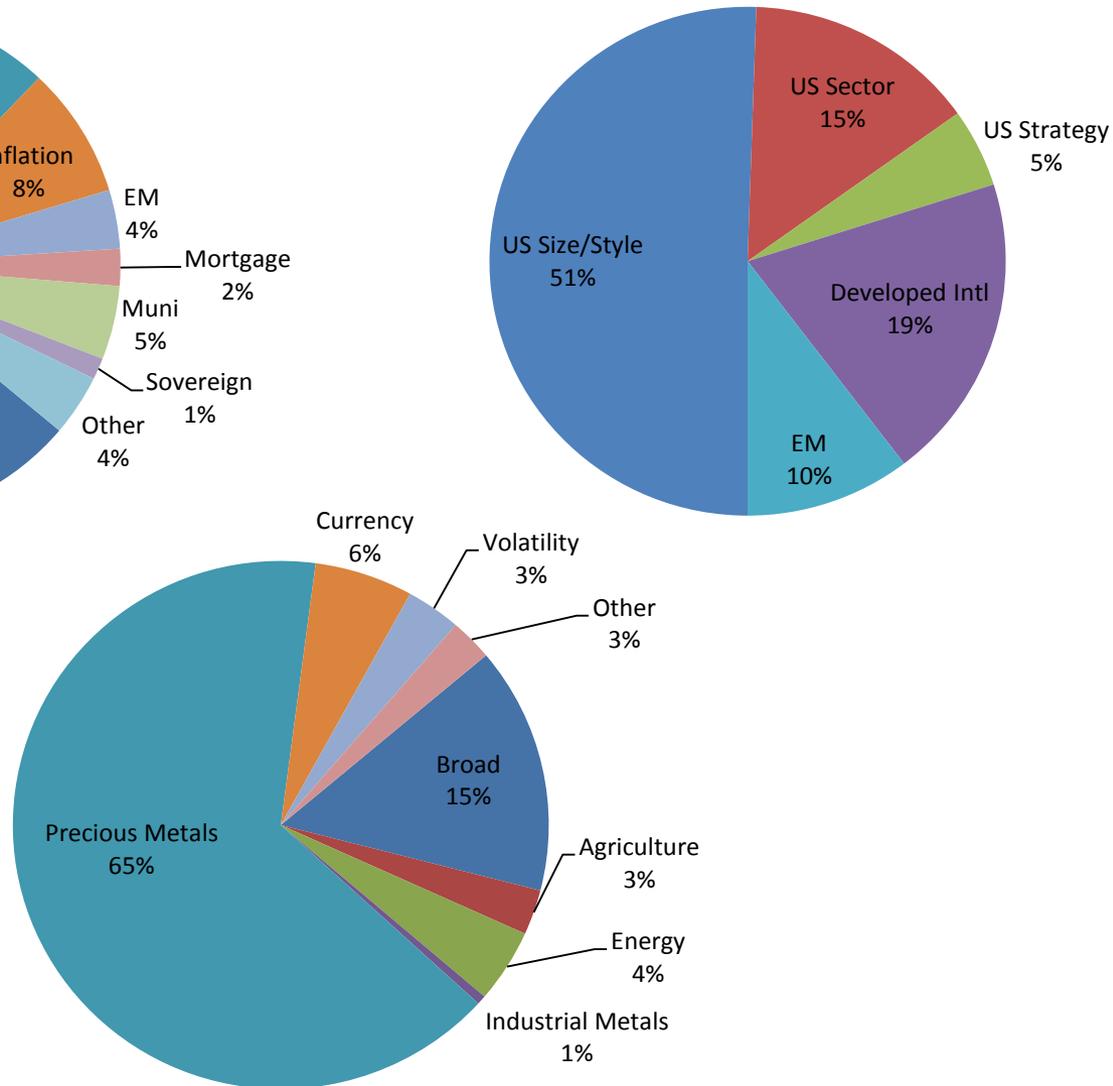
Source: BlackRock

# US-LISTED ETP ASSETS AS OF DECEMBER 2013

## Bond ETP Assets



## Equity ETP Assets



Source: BlackRock

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