A WEBINAR SERIES

ETF UNIVERSITY

ETFs 101:

How ETFs Work – Risks and Opportunities

Presenters:

MATT HOUGAN
Chief Executive Officer
ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Why Are We All Here Today?

Lower Costs

Tax Efficiency

Intraday Trading

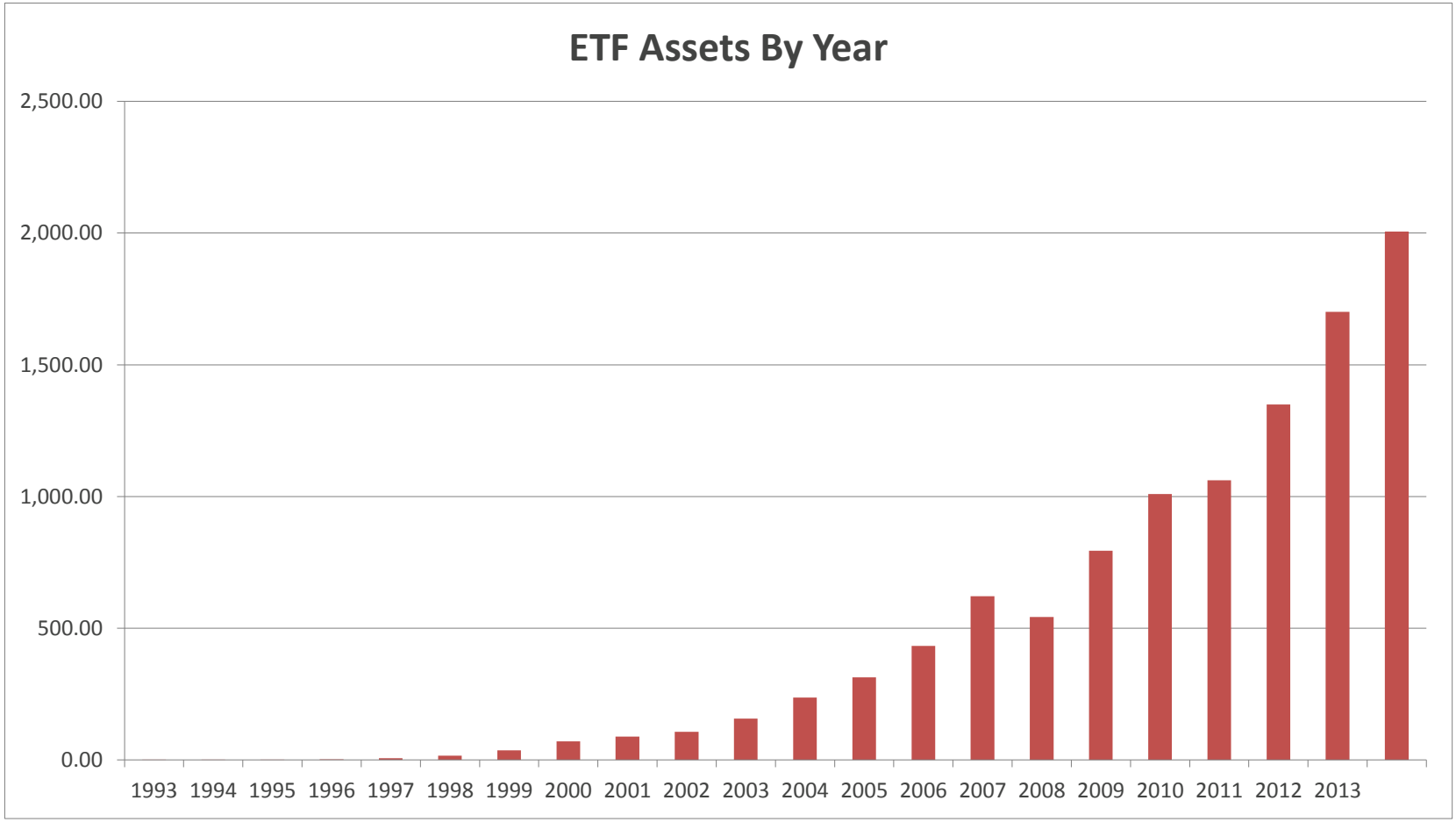
Transparency

Access To Anything

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

ETF Assets Are Soaring



Source: ETF.com as of 12/31/2014

ETF.com ProShares Vanguard VIDENT FINANCIAL

Funds	ETFs
($953)	$104,067

2009 Flows

Millions

Source: Morningstar, ETF.com

ETF.com ProShares Vanguard VIDENT FINANCIAL

Funds	ETFs
($237,161)	$122,452

2010 Flows

Millions

Source: Morningstar, ETF.com

ETF.com ProShares Vanguard VIDENT FINANCIAL

Funds	ETFs
($33,251)	$119,052

2011 Flows

Millions

Source: Morningstar, ETF.com

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Funds	ETFs
$196,459	$188,363

2012 Flows

Millions

Source: Morningstar, ETF.com

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Funds	ETFs
$155,459	$188,357

2013 Flows

Millions

Source: Morningstar, ETF.com

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Funds	ETFs
$105,359	$243,970

2014 Flows

Millions

Source: Morningstar, ETF.com

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Funds	ETFs
$185,912	$967,261

Six Years Since Financial Crisis

Millions

Source: Morningstar, ETF.com

ETF.com ProShares Vanguard VIDENT FINANCIAL

How Much Are ETF Investors Saving?

	AUM ($, mm)	Average ETF ER	Average Mutual Fund ER
U.S. Equity	1,168,621	0.52%	1.43%
International Equity	424,615	0.56%	1.57%
U.S. Fixed Income	283,689	0.30%	1.06%

Annual Fees As ETFs: $9.3 billion

Annual Fees As Funds: $26.4 billion

ETF.com ProShares Vanguard VIDENT FINANCIAL

Who's Got The Yachts Now?

$17,079,099,000

Per Year

(That's $46.9 million per day)

($542 per second)

ETF.com ProShares Vanguard VIDENT FINANCIAL

And Low Costs Aren't The Only Benefit

Lower Costs

Tax Efficiency

Intraday Trading

Transparency

Access To Anything

ETF.com
ProShares
Vanguard
VIDENT FINANCIAL

How A Mutual Fund Works

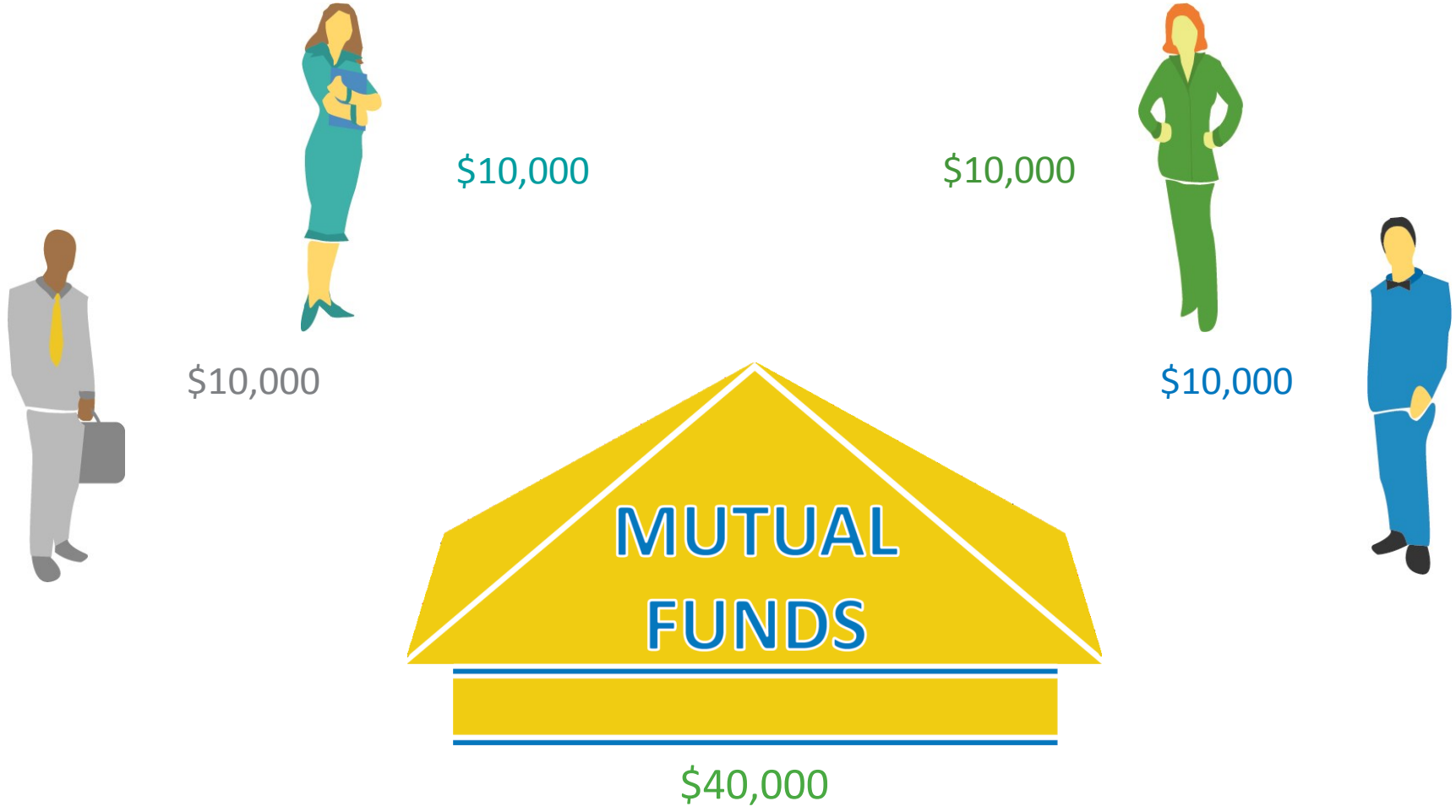
$10,000

$10,000

$10,000

$10,000

How A Mutual Fund Works



How A Mutual Fund Works

100 @ $100

100 @ $100

100 @ $100

100 @ $100

$40,000

How A Mutual Fund Works

100 @ $200

100 @ $200

100 @ $200

100 @ $200

$80,000

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

How A Mutual Fund Works

100 @ $200

100 @ $200

$20,000

100 @ $200

$80,000

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

How A Mutual Fund Works

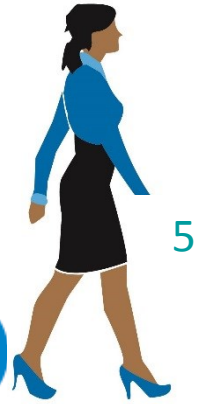
100 @ $200

100 @ $200

$20,000

100 @ $200

MUTUAL FUNDS



50 @ $200

$70,000

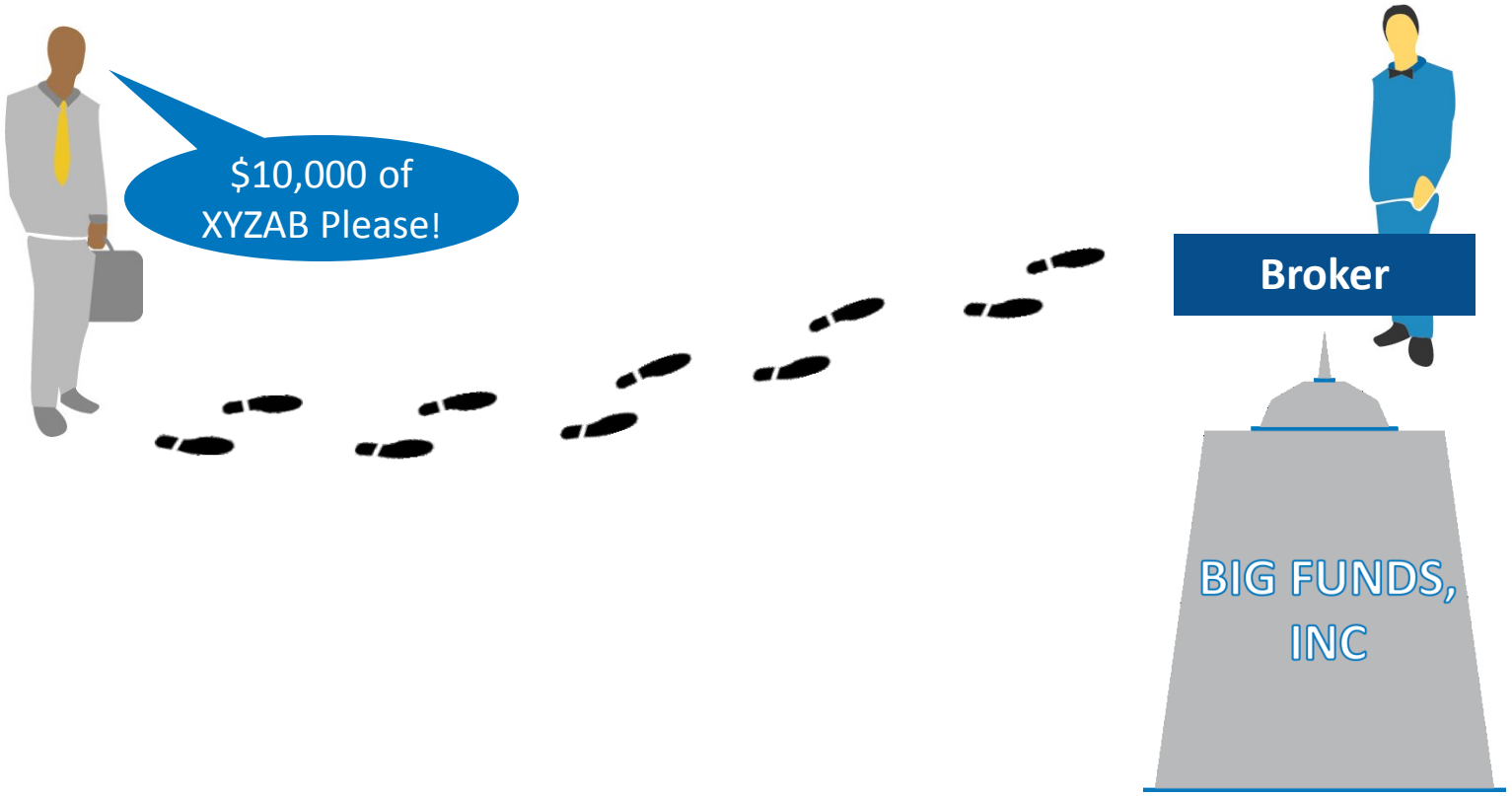
ETF.com

ProShares

Vanguard

VIDENT FINANCIAL

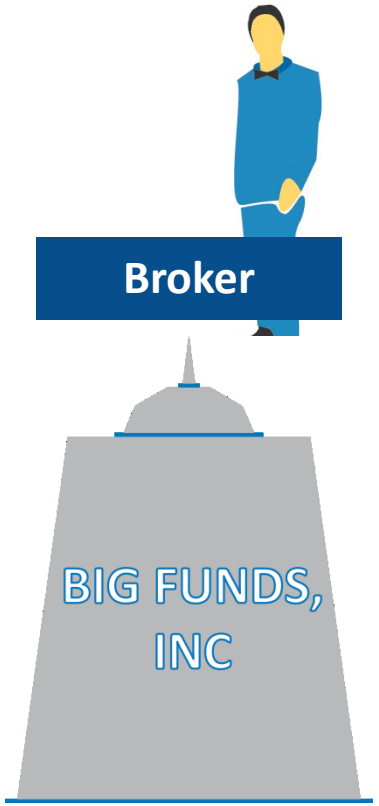
How It *Really* Works

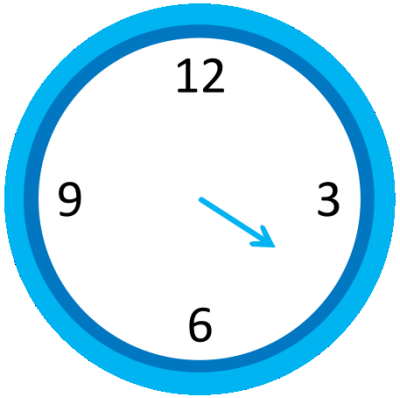


ETF.com
ProShares
Vanguard
VIDENT FINANCIAL

How It *Really* Works

702.74 Shares





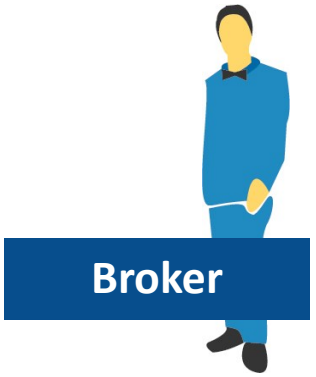
Assets:	$120,358,025.58
Shares:	8,458,025.58
Net Asset Value:	$14.23

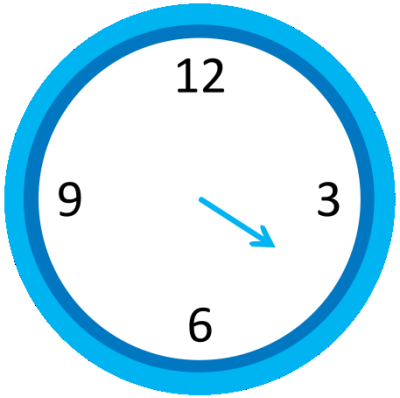
ETF.com

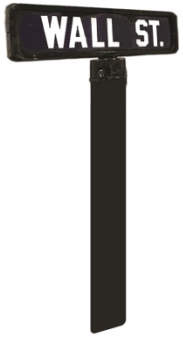
ProShares | Vanguard | VIDENT FINANCIAL

How An ETF Works

$9,723







ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

How An ETF Works

ETF.com
ProShares
Vanguard
VIDENT FINANCIAL

ETF Anatomy: Creation/Redemption

Authorized Participant

$2.5 million

ETFs, Inc.

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

ETF Anatomy: Creation/Redemption

Authorized Participant

100K @ $25

ETFs, Inc.

- IBM
- MSFT
- AAPL
- CAT
- CSCO

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

ETF Anatomy: Creation/Redemption

Authorized Participant

50K @ $25

ETFs, Inc.

ETF.com

ProShares

Why Be An AP?

Authorized Participant

$25.00

ETF Shares

Fair Value
$25.00

$25.00

SECURITIES

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Why Be An AP?

Authorized Participant

$25.10

Fair Value
$25.00

ETF.com | ProShares | Vanguard | VIDENT FINANCIAL

Why Be An AP?

Sell!
100K @ $25.10

Authorized Participant

$25.10

Fair Value
$25.00

ETF.com
ProShares
Vanguard
VIDENT FINANCIAL

Why Be An AP?

IBM
MSFT
AAPL
CAT
CSCO

Buy Holdings!

Authorized Participant

$25.10

ETF Shares

Fair Value
$25.00

$25.00

SECURITIES

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Why Be An AP?

Authorized Participant

Selling Pressure

$25.01

ETF Shares

Fair Value
$25.01

$25.01

SECURITIES

Buying Pressure

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Why Be An AP?

Bought: $25.00
Sold: $25.10
Margin: $.10

Authorized Participant

Selling Pressure

$25.01

ETF Shares

Fair Value
$25.01

$25.01

SECURITIES

Buying Pressure

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Why Be An AP?

Buy!
100K @ $24.90

Authorized Participant

Fair Value
$25.00

$24.90

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Why Be An AP?

IBM
MSFT
AAPL
CAT
CSCO

Sell Holdings!

Authorized Participant

Fair Value
$25.00

$24.90

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Why Be An AP?

Bought:	$24.90
Sold:	$25.00
Margin:	$.10

Authorized Participant

Buying Pressure

Selling Pressure

ETF Shares

$24.99

Fair Value
$24.99

$24.99
SECURITIES

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

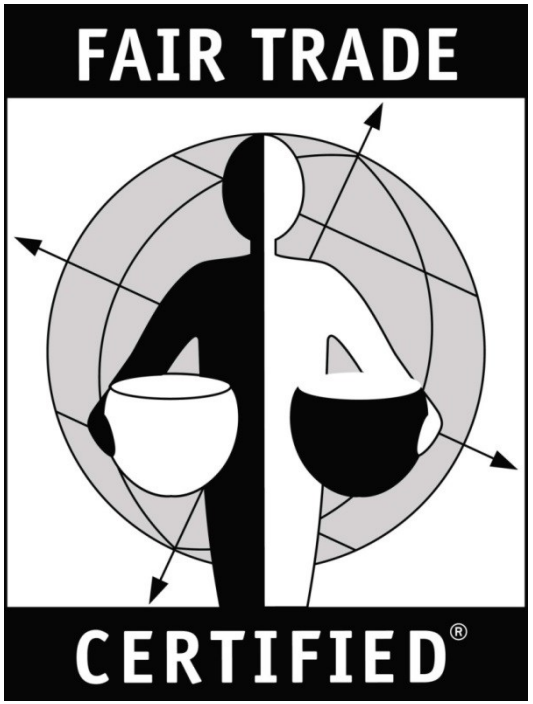
The Benefits and Risks of ETFs Are Not Accidental

Benefit 1: Intraday Trading

Trade anytime the market's open

Benefit 1: Intraday Trading

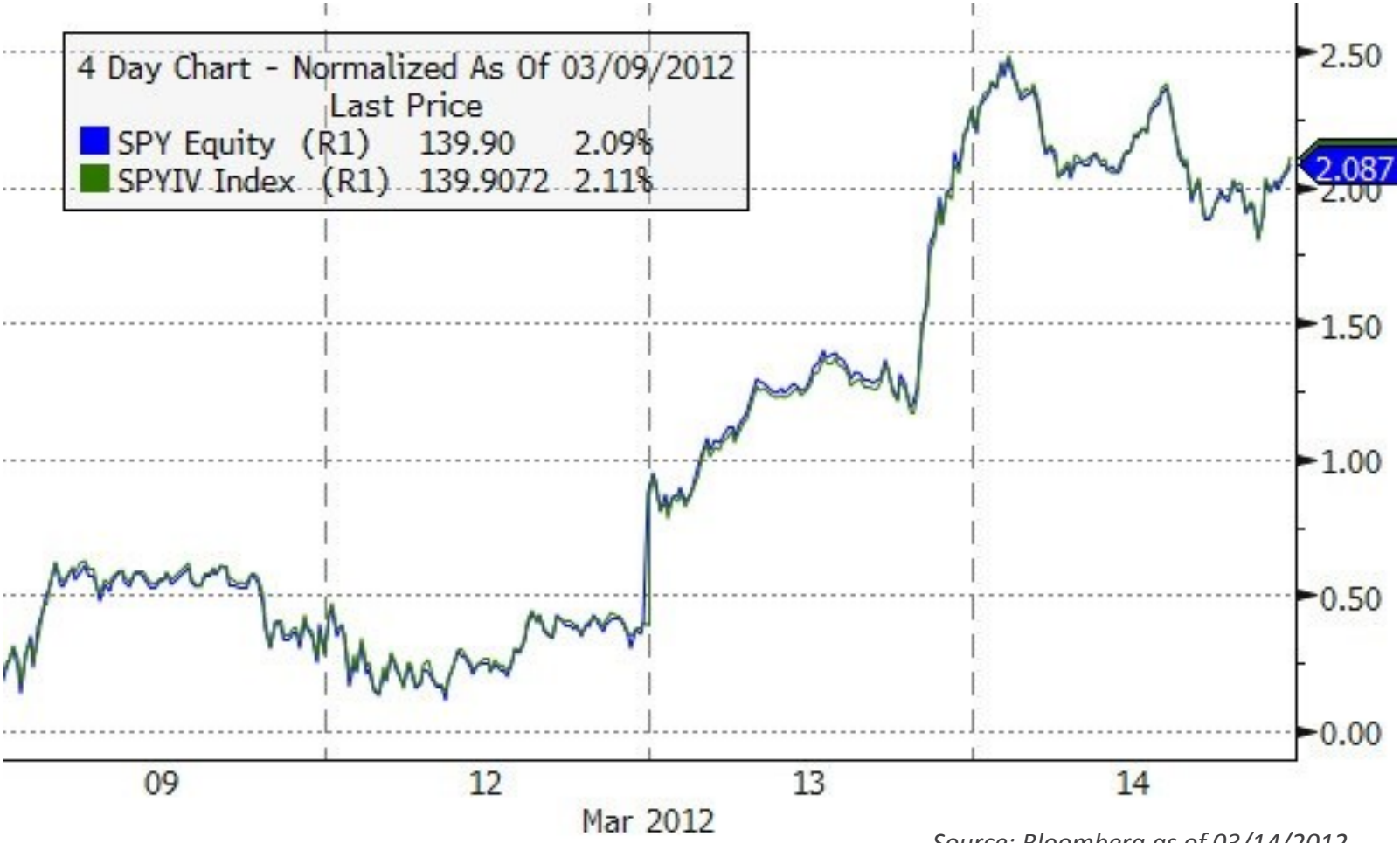
Why Do ETFs Represent 25% Of All Trading Volume, When CEFs Represent Less Than 1%?



Creation/Redemption Keeps ETF Prices "Fair"

ETF.com
ProShares
Vanguard
VIDENT FINANCIAL

The Beauty of iNAV



Source: Bloomberg as of 03/14/2012

Benefit 2: Lower Costs

ETFs cost fund companies less.
So ETFs cost investors less.

Large Cap Equity
ETFs: 0.44% Average

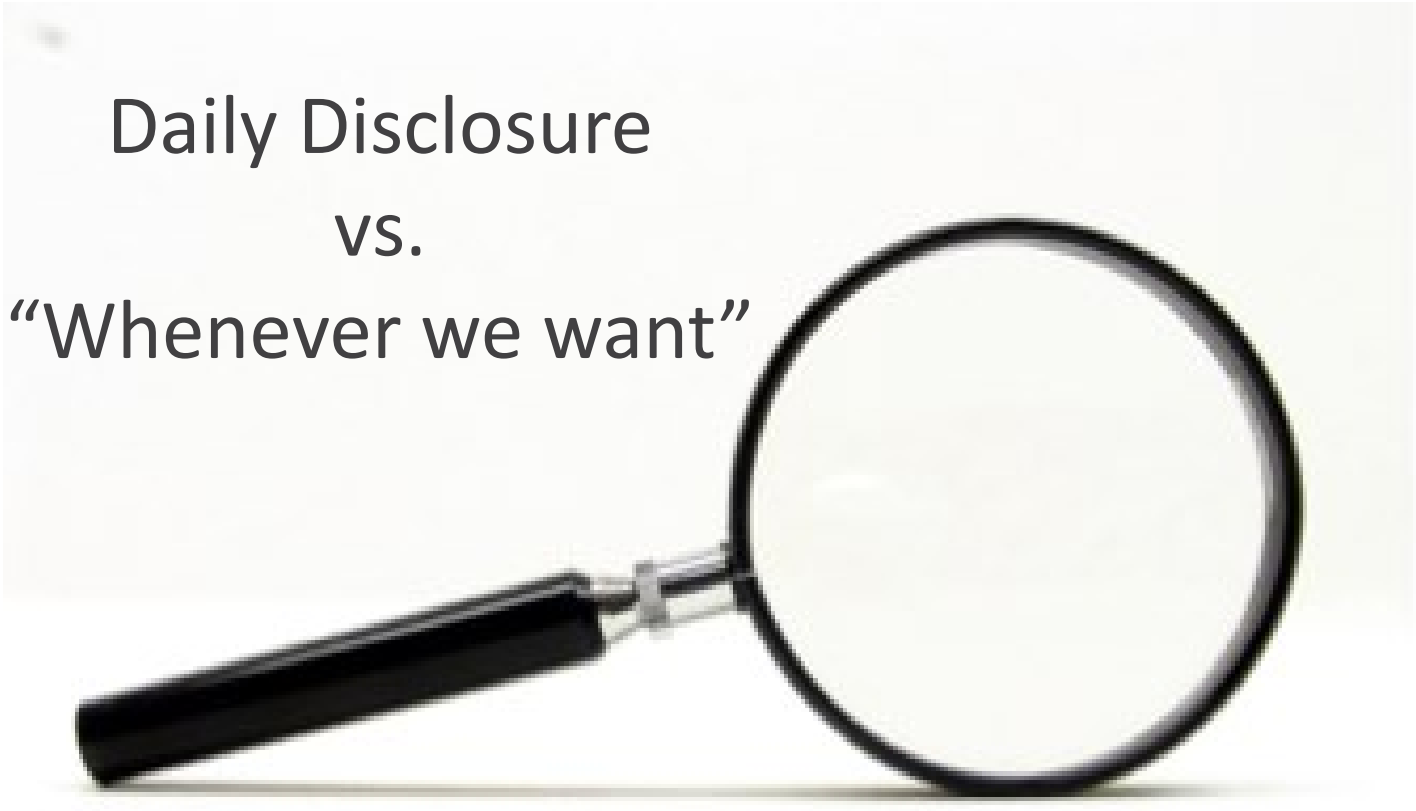
Large Cap Equity Mutual
Funds: 1.37% Average

Benefit 3: Tax Efficiency

	Active MF	Passive MF	ETF
Large Cap Blend	1.92%	0.16%	0.00%
Large Cap Value	2.01%	0.08%	0.00%
Large Cap Growth	1.65%	0.04%	0.00%
Mid Cap Blend	4.26%	1.25%	0.00%
Small Cap Blend	3.54%	1.31%	0.00%
Foreign Large Blend	2.50%	0.32%	0.00%
Emerging Market	6.46%	0.02%	0.01%

Source: Morningstar

Benefit 4: Transparency



ETF.com
ProShares
Vanguard
VIDENT FINANCIAL

Benefit 5: Access

1,717 ETFs

100+ new in 2015

900+ in Registration

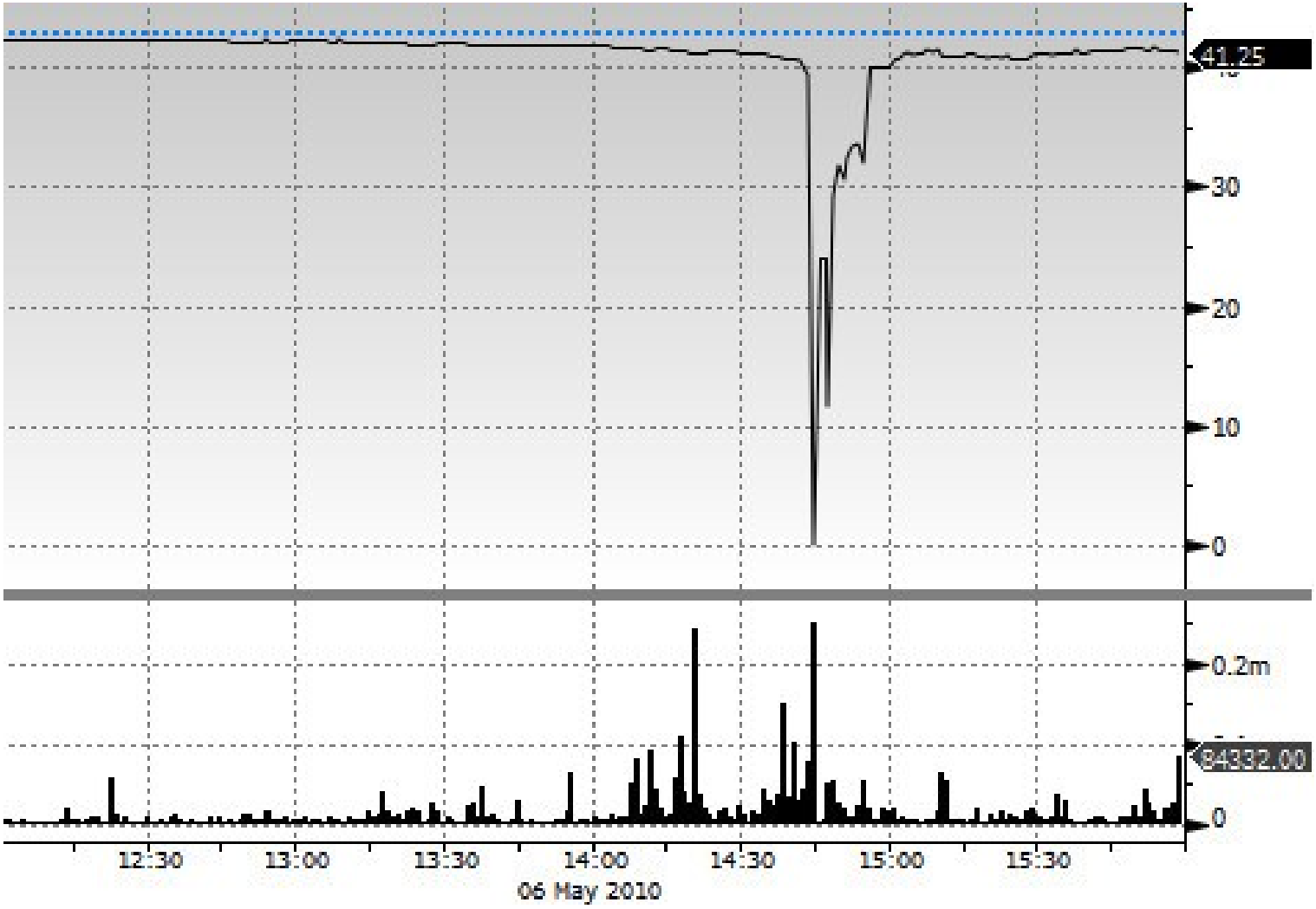
Source: ETF.com as of 6/1/2015

Issues With ETFs

ETF.com
ProShares
Vanguard
VIDENT FINANCIAL

Issue: Flash Crash

Rydex S&P 500 Equal-Weight ETF (NYSEArca: RSP)

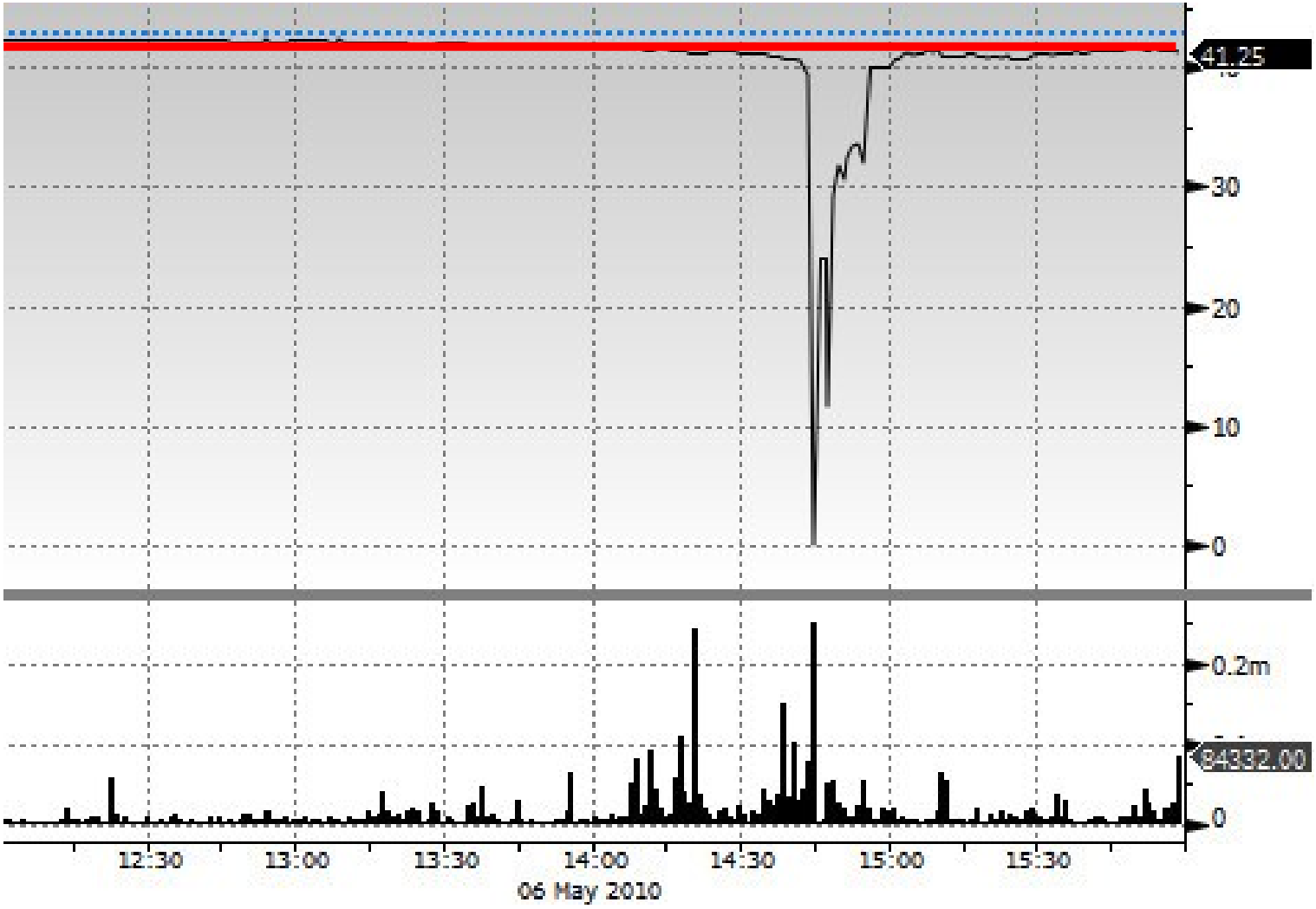


ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Issue: Flash Crash

Rydex S&P 500 Equal-Weight ETF (NYSEArca: RSP)



ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

ETF Issue: Continued Flash Crashes

Log In

MarketWatch

LATEST NEWS

7:59 P.M. ET Alcoa shares fall farther as profit slips
7:57 P.M. ET Starbucks to roll out Apple Pay this year
7:43 P.M. ET Location Scouts debut on MarketWatch

NEWS VIEWER | MARKETS | INVESTING | TRADING DECK | PERSONAL FINANCE | RETIREMENT | ECONOMY | REAL ESTATE

Portfolio | Watchlist | Alerts | Games

ETF INVESTING GET EMAIL ALERTS

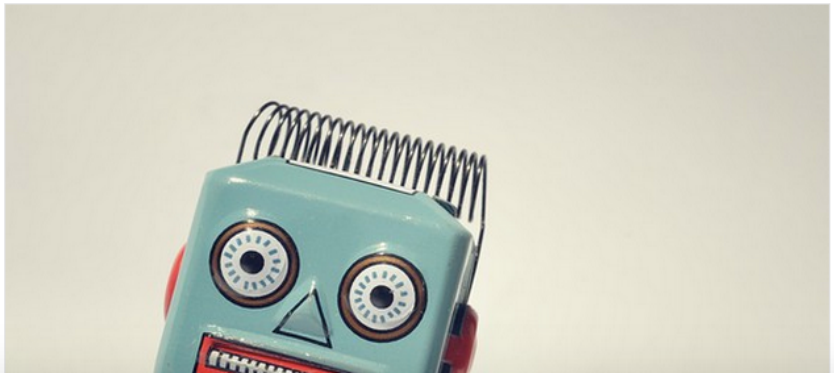
Here's what may have caused the 'flash crash' in some big ETFs

Published: Aug 25, 2015 2:07 p.m. ET

f 24 49 18

Aa

By VICTOR REKLAITIS
MARKETS WRITER



MFS Investment Management

THE ACTIVE ADVANTAGE

Michael Roberge
Co-CEO, President & Chief Investment Officer

Joseph Flaherty
Chief Investment Risk Officer

ACTIVE MANAGEMENT HAS ACTIVE SUPPORT

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Issue: Commissions

Every transaction has a cost, no matter how low*

*Note new zero-cost commission ETF programs

Issue: Spreads

Liquid Funds = Penny Spreads

Illiquid Funds = > 4% Spreads

Issue: Fair Value

Most ETFs trade close to NAV

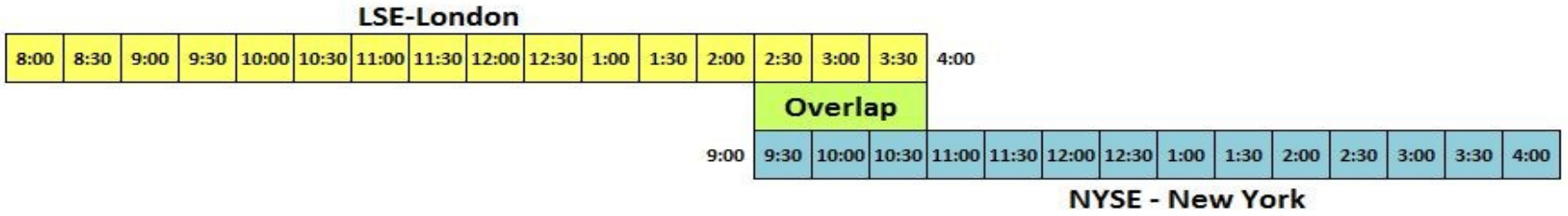
But all funds can get out of balance

ETF.com
ProShares
Vanguard
VIDENT FINANCIAL

The Crushing Horribleness of iNAV

- iNAV's flaws in:
  - International Funds
  - Bond Funds
  - Commodity Funds
  - and any other asynchronous things

Sometimes international markets overlap:



ETF.com
ProShares
Vanguard
VIDENT FINANCIAL

Issue: Fair Value?

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

Issue: Tax Treatment

Product Category	Long-Term Max Rate
Equities	20%
Bonds	20%
Commodity ETFs (Futures)	28%*
Commodity ETNs	20%
Commodity ETFs (Bullion-based)	28%
Currency ETFs	38.6%
Currency ETNs	38.6%
Certain WisdomTree Currency ETFs	20%

Issue: ETF Choice - China

- 4 Broad-based China ETFs, over 1 year.
- 57% difference in return.

Issue: ETF Choice - BRICS

Top Countries in MSCI BRIC Investable Markets (ETF.com Benchmark)

	China	*India*	*Hong Kong*	*Brazil*	*Russian Federation*
Benchmark	37.98%	18.92%	17.91%	16.94%	8.20%
BKF	38.98%	17.76%	16.44%	17.84%	8.98%
BIK	54.08%	9.42%	13.97%	12.59%	9.94%
EEB	29.34%	15.08%	13.53%	22.76%	17.38%

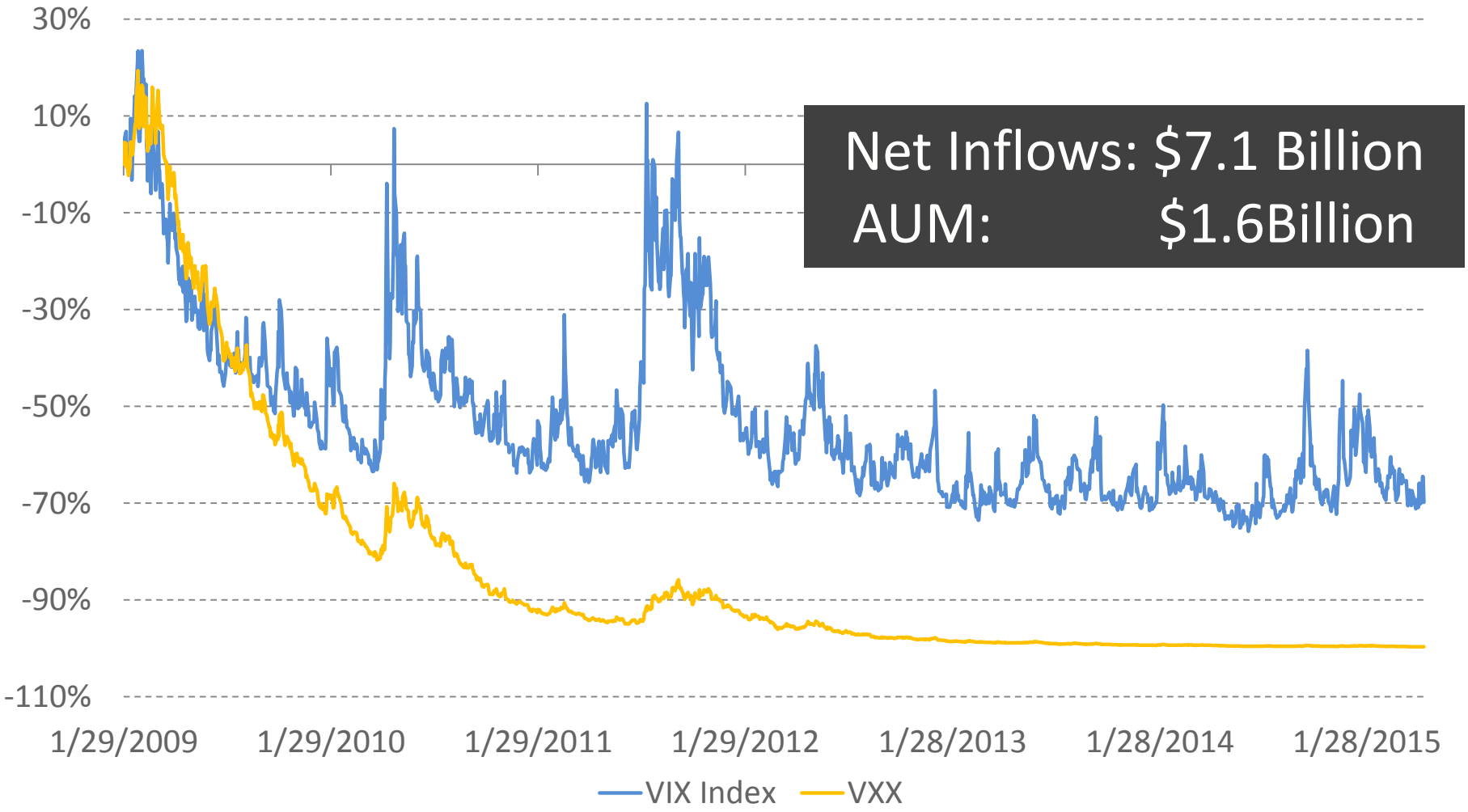
ETF.com ProShares Vanguard VIDENT FINANCIAL

ETF Issue: Complex ETFs

ETF.com

ProShares | Vanguard | VIDENT FINANCIAL

ETF Issue: Toxic ETFs



Source: Bloomberg, FactSet, AS OF 5/8/2015

The 8 BPS ETF Portfolio

Asset Class	Weight	Fund	Ticker	ER
U.S. Equity	40%	Schwab U.S. Broad Equity	SCHB	0.04%
Developed Equity	30%	Schwab International Equity	SCHF	0.08%
Emerging Markets Equity	5%	Schwab Emerging Markets Equity	SCHE	0.14%
Fixed Income	15%	Schwab U.S. Aggregate Bond	SCHZ	0.06%
REITs	5%	Schwab U.S. REIT	SCHH	0.07%
Commodities	5%	UBS E-TRACS DJ-UBS Commodity ETN	DJCI	0.50%
All-In Costs				0.08%

ETF.com
ProShares
Vanguard
VIDENT FINANCIAL

Evaluation:
E-T-F

There is No Easy Button

Efficiency

(Can I trust it?)

Tradability

(Can I trade it?)

Fit

(Can I do better?)

Overview | Efficiency 94 | Tradability 89 | Fit 99

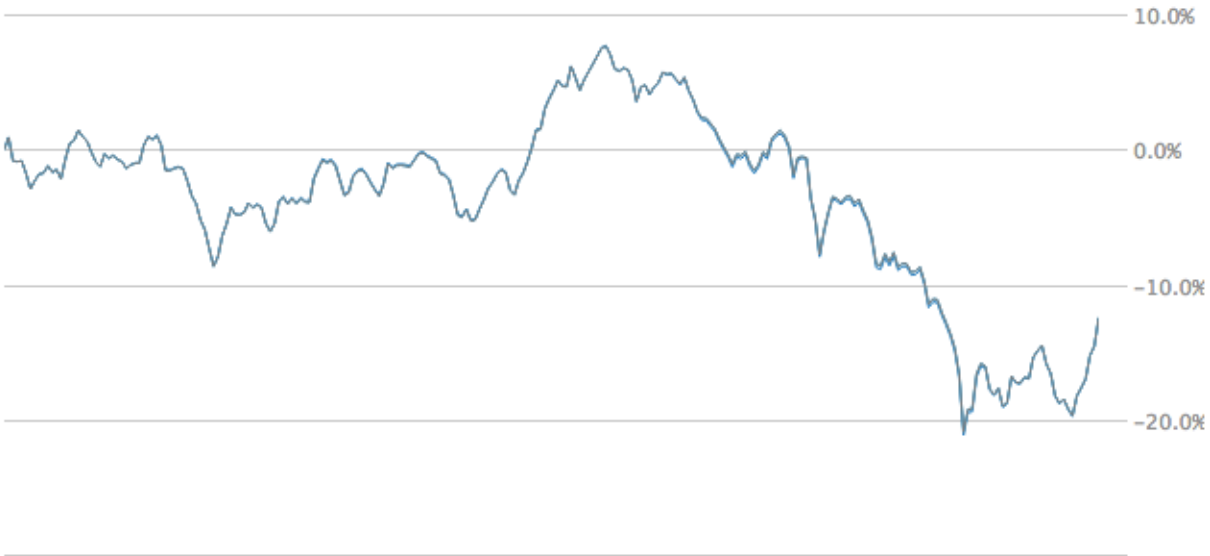
Definitions: On

IEMG ETF.com Efficiency Insight

IEMG has attracted massive assets since its launch in 2012. Fund closure risk is practically nil. IEMG's very low expense ratio puts it on sound footing in Efficiency. Better still, the fund tracks its index well so investors realize the benefits of the low fee. *(Insight updated 09/02/2015)*

Total Return - *10/06/2015*

1 Month | 3 Months | YTD | 1 Year | 3 Years | 5 Years | Max



Performance [as of 10/06/15]	*1 Month*	*3 Month*	*YTD*	*1 Year*	*3 Years*	*5 Years*	*10 Years*
IEMG	**7.81%**	**-10.77%**	**-10.24%**	**-15.09%**	--	--	--

IEMG Portfolio Management

Expense Ratio	**0.18%**
Median Tracking Difference (12 Mo)	**-0.13%**
Max. Upside Deviation (12 Mo)	**0.06%**
Max. Downside Deviation (12 Mo)	**-0.34%**

IEMG Tax Exposures

Max LT/ST Capital Gains Rate	**20.00% / 39.60%**
Capital Gains Distributions (3 Year)	**0.00%**
Tax on Distributions	**Qualified dividends**
Distributes K1	**No**

IEMG Fund Structure

Legal Structure	**Open-Ended Fund**
OTC Derivative Use	**No**
Securities Lending Active	**Yes**

Expense Ratios Aren't Everything

Ticker	ER	Median Tracking Diff.	Max Upside	Max Downside
IEMG	0.18%	-0.07%	+0.06%	-0.29%
VWO	0.15%	-0.14%	+0.10%	-0.48%
GMM	0.59%	-0.67%	+1.83%	-0.50%
EWEM	0.70%	-0.76%	+0.46%	-2.19%

Source: FactSet, as of 5/8/2015

ETF.com

Tradability

Liquidity

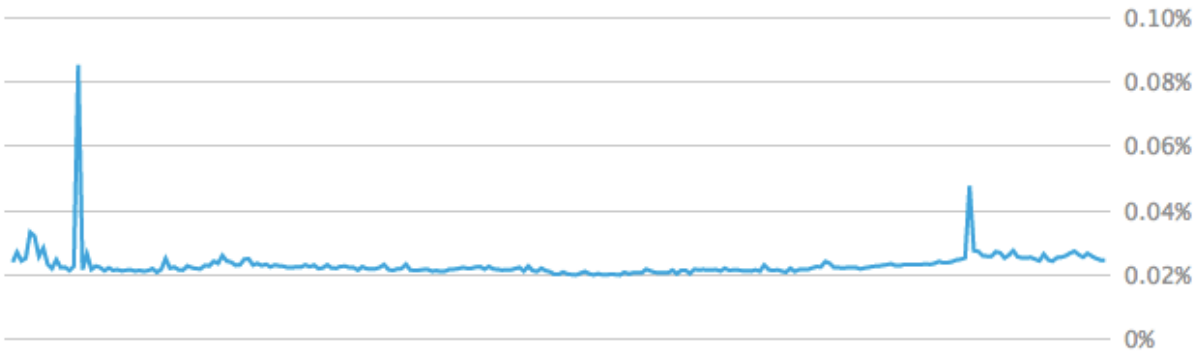
Source: FactSet, as of 11/7/2014

Commission Free Trading

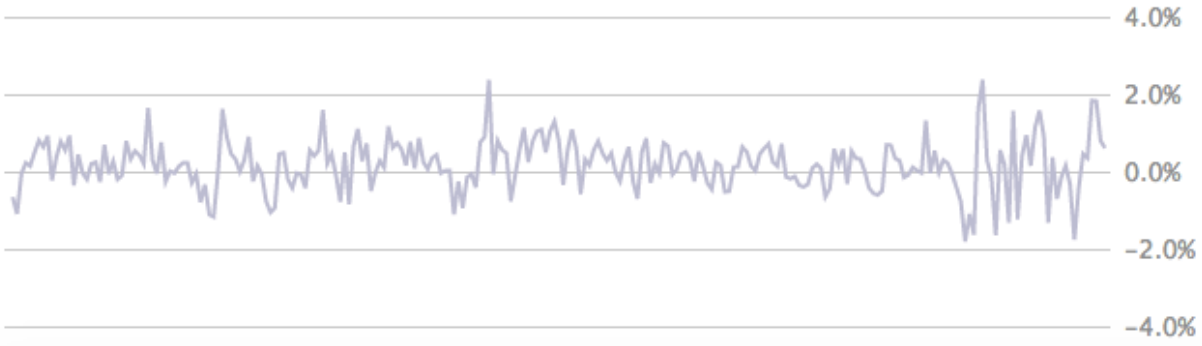
IEMG ETF.com Tradability Insight

IEMG can be traded cheaply. It may not get the volume of EEM or VWO, but it provides plenty of liquidity for retail investors. It can be traded cheaply in size as well. *(Insight updated 09/02/2015)*

Average Spread



Premium/Discount



IEMG ETF.com/ Block Liquidity

5
4
3
2
1

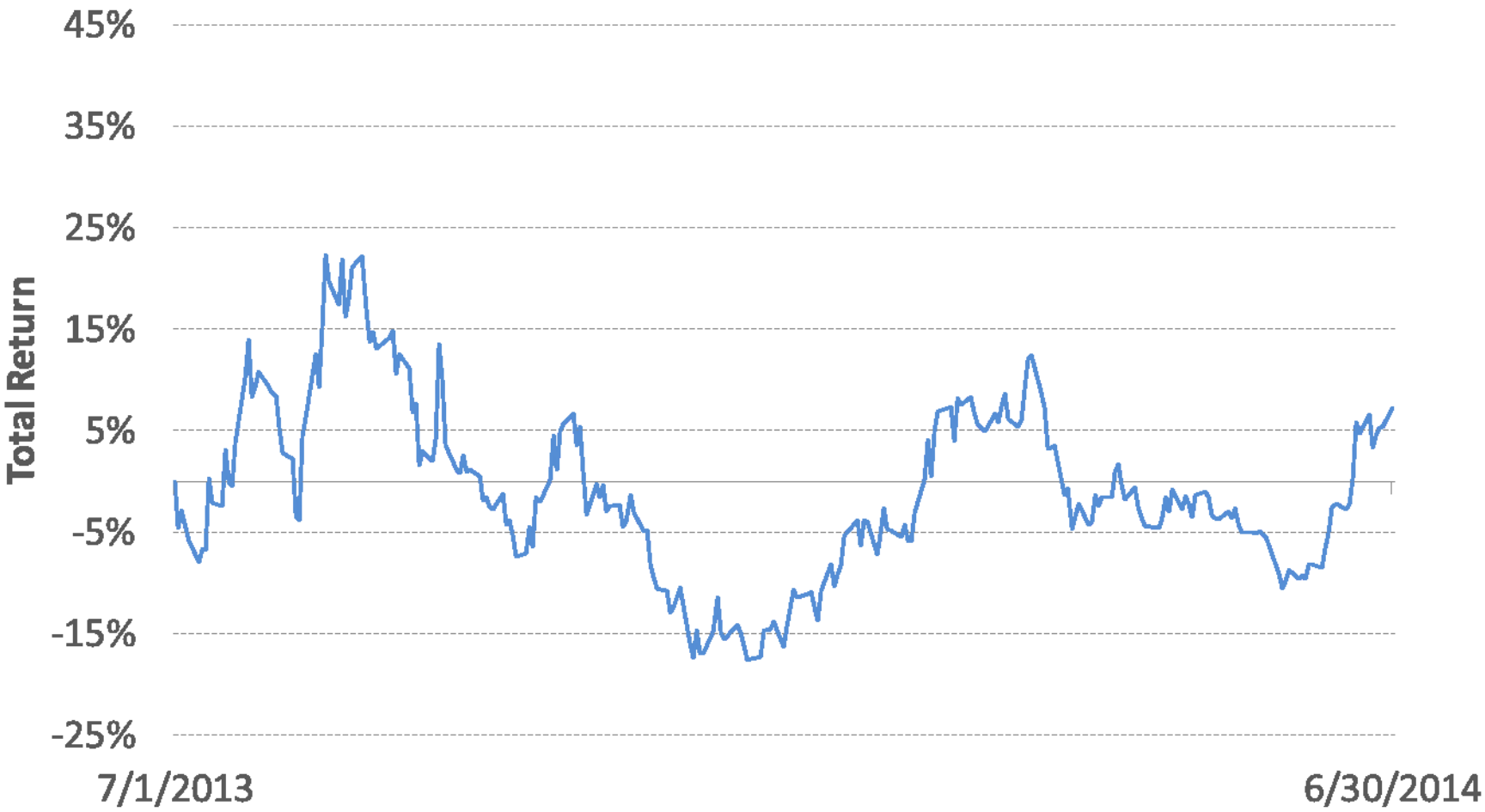
This measurement shows how easy it is to trade 25,000 shares of IEMG. IEMG is rated a 5 out of 5.

IEMG Tradability

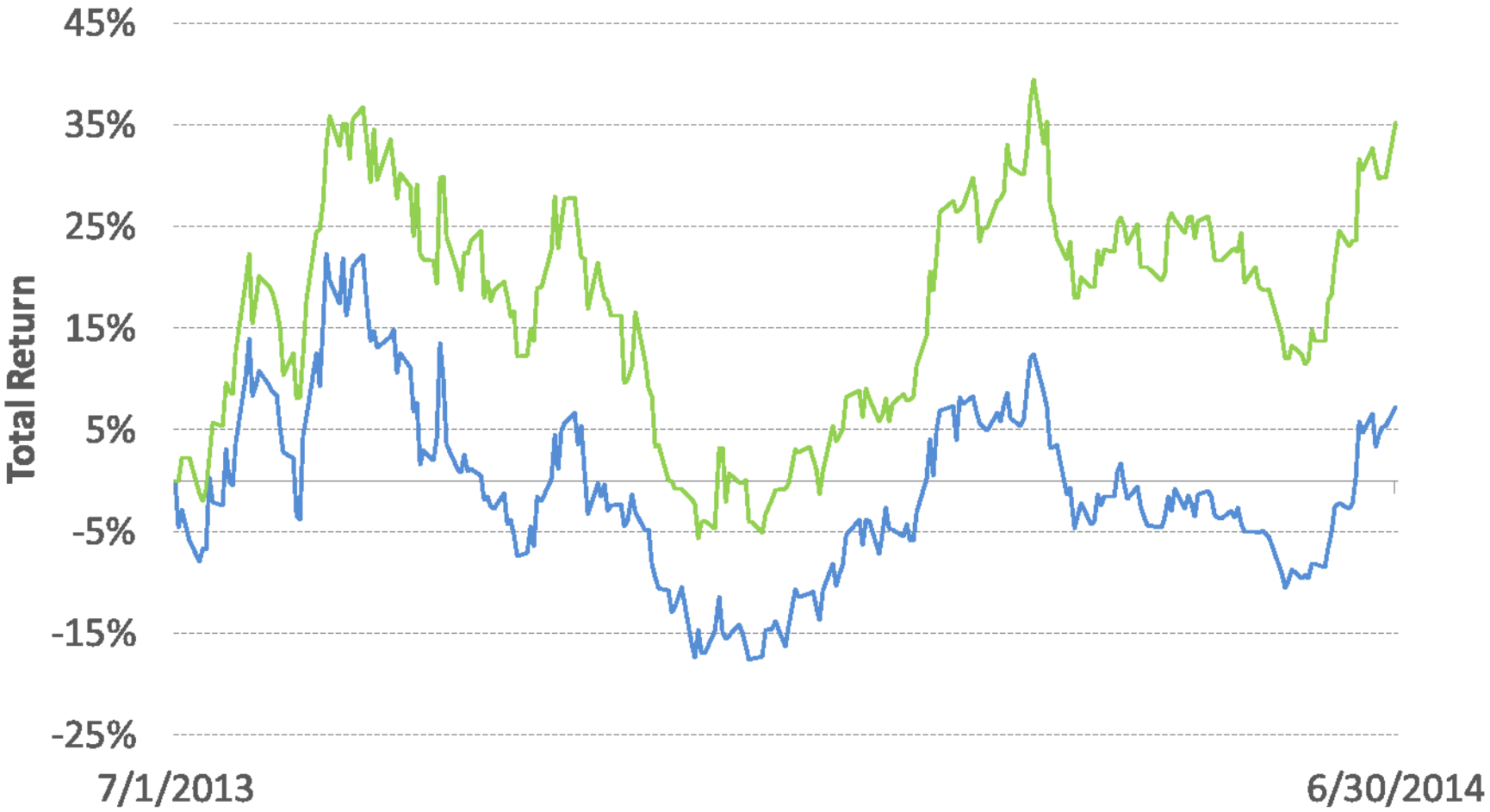
Avg. Daily Share Volume	**5,211,452**
Average Daily $ Volume	**$211.32 M**
Median Daily Share Volume	**4,233,196**
Median Daily Volume ($)	**$174.83 M**
Average Spread (%)	**0.03%**
Average Spread ($)	**$0.01**
Median Premium / Discount (12 Mo)	**0.20%**
Max. Premium / Discount (12 Mo)	**2.38% / -1.81%**
Impediment to Creations	**None**
Market Hours Overlap	**5.00%**

Fit

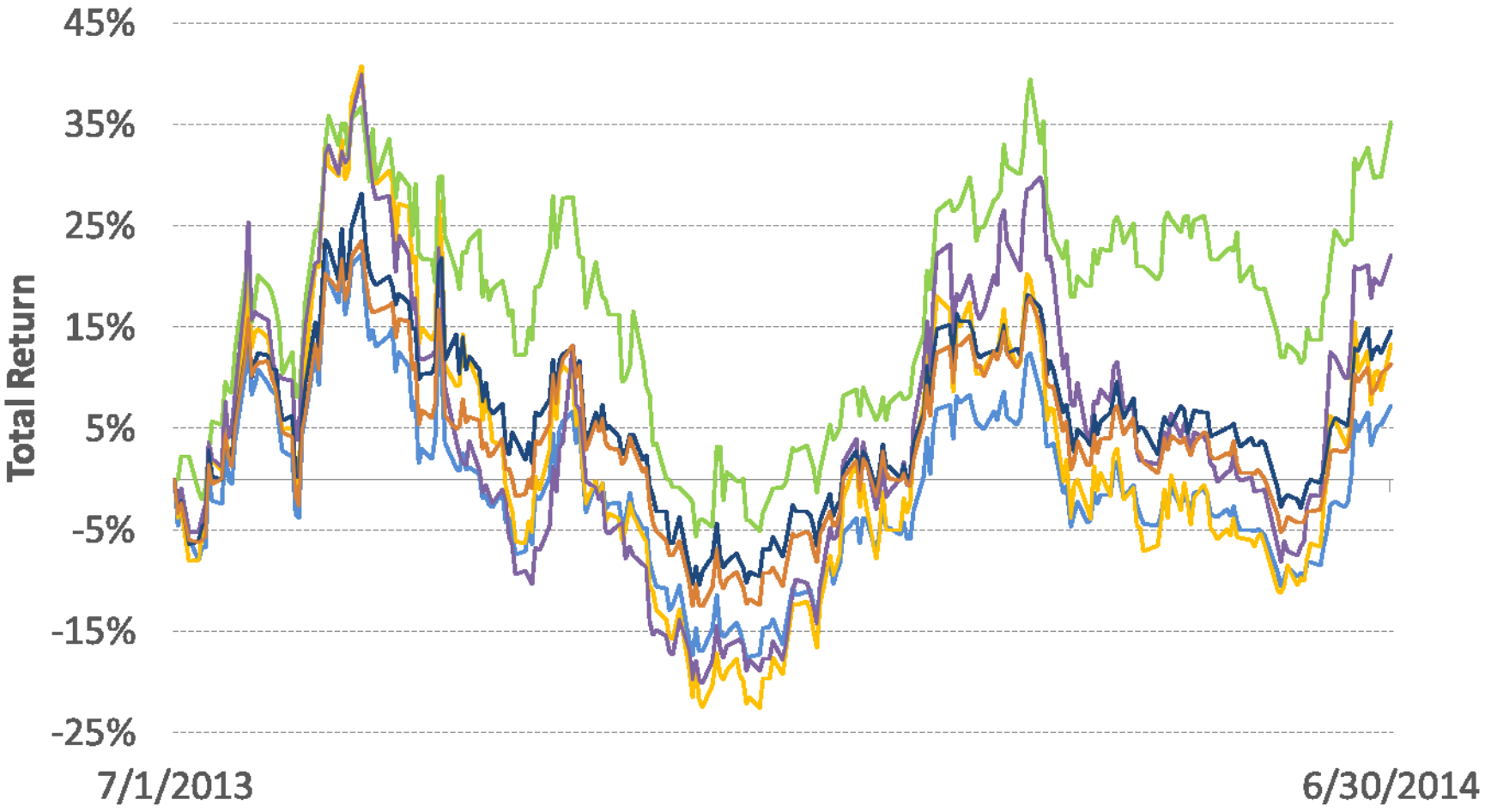
The Worst Gold Miner ETF



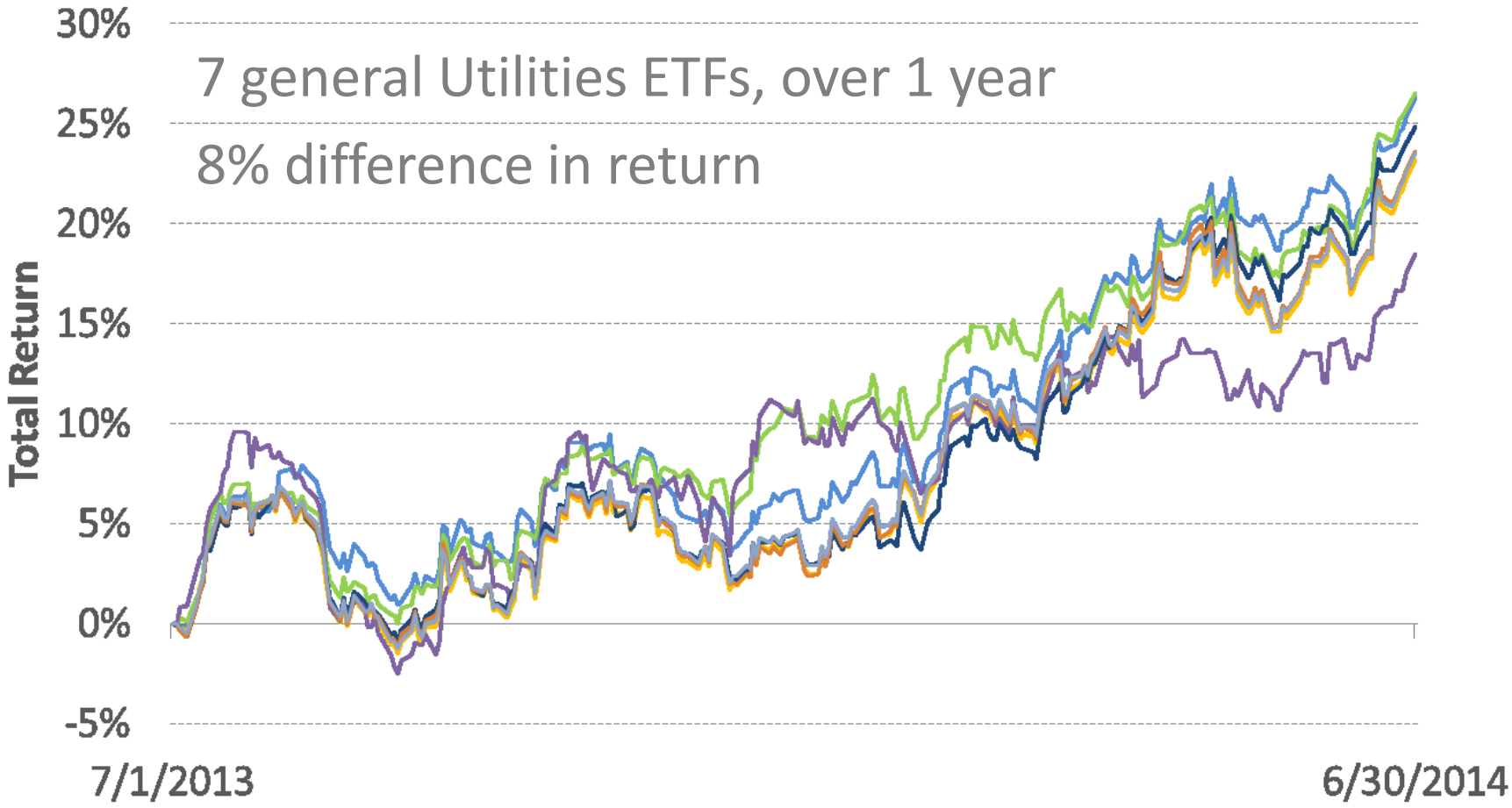
The Best Gold Miner ETF



All Gold Miner ETFs



Not All ETFs Are Created Equal



IEMG ETF.com Fit Insight

IEMG delivers outstanding emerging markets coverage. It tracks the same index as our segment benchmark, so it registers a very high score here. The fund aligns extremely well with our benchmark by sector and by country. IEMG, unlike some competitors, includes South Korea. As such it aligns with sister fund EEM but not with its archrival VWO, which no longer holds South Korea. *(Insight updated 09/02/2015)*

IEMG Sector/Industry Breakdown View All

Sector	IEMG	Segment Benchmark
Financials	27.18%	26.52%
Technology	18.10%	18.44%
Consumer Cyclicals	9.85%	10.09%
Consumer Non-Cyclicals	8.86%	8.99%
Basic Materials	7.84%	8.00%
Industrials	7.51%	7.20%
Energy	7.32%	7.24%
Telecommunications Services	6.50%	6.58%
Healthcare	3.45%	3.52%
Utilities	3.38%	3.41%

IEMG Top 10 Holdings View All

Samsung Electronics Co., Ltd.	3.03%
Taiwan Semiconductor Manufacturing Co., Ltd.	2.44%
Tencent Holdings Ltd.	2.20%
China Mobile Limited	1.90%
China Construction Bank Corporation Class H	1.50%
Naspers Limited Class N	1.26%
Industrial and Commercial Bank of China Limited Class H	1.11%
Hon Hai Precision Industry Co., Ltd.	0.95%
Bank of China Limited Class H	0.91%

IEMG Performance Statistics

Goodness of Fit (R^2)	1.00
Beta	1.00
Up Beta	1.01
Down Beta	1.01
Downside Standard Deviation	0.02%
Segment Benchmark	MSCI Emerging Markets Investable Market Index

IEMG Benchmark Comparison

IEMG	Segment Benchmark
1760 Holdings	2639 Constituents
Shared Holdings	
1689 (Count)	93.30% (Weight)

	IEMG	Segment Benchmark
Weighted Average Market Cap	$36.93 B	$37.53 B
Size Split		
Large (>12.9B)	46%	47%
Mid (>2.7B)		

IEMG

iShares Core MSCI Emerging Markets

ETF.com segment: Equity: Emerging Markets - Total Market

Related ETF Lists: Emerging Markets ETFs

Find more ETFs with our ETF Screener and Database

Overall Rating

A
99

as of 10/07/2015

Rating Details

IEMG Fund Report

Equity: Emerging Markets - Total Market Segment Report

Price	Today's Change	Today's Volume
$43.27	+0.47 (1.10%)	3.3 M
4:00pm (ET) 10/8/2015		

Overview | Efficiency 94 | Tradability 89 | Fit 99

Definitions: On

Special Topics

Currency Hedging

What Does This Headline Mean To You?

FINANCIAL TIMES

Sign in Site tour Register Subscribe

ft.com > markets > equities >

Search articles, quotes and multimedia

Search

Advanced search

UK Equities

Home World Companies Markets Global Economy Lex Comment Management Life & Arts

NEW fastFT Alphaville FTfm ▾ Markets Data ▾ Trading Room ▾ Equities ▾ Currencies Capital Mkts Commodities Emerging Mkts Tools ▾

Welcome to FT.com, the global source of business news and analysis. Register now to receive 8 free articles per month.

Last updated: December 31, 2010 1:13 pm

Share Clip Reprints Print Email

Miners help FTSE 100 post a 9% gain in 2010

By Neil Dennis

London and European equity markets fell in Friday's shortened session as investors shied away from taking fresh positions ahead of the New Year break, electing instead to take profits following the strong rally earlier in the month....

VIDEOS

"Miners help FTSE 100 post a 9% gain in 2010"

If you're a U.S. Investor, your returns are:

A) Up 9%

B) Up More Than 9%

C) Up Less than 9%

D) There's No Way To Know

"Miners help FTSE 100 post a 9% gain in 2010"

If the pound is up 5% that year against the dollar, your returns are:

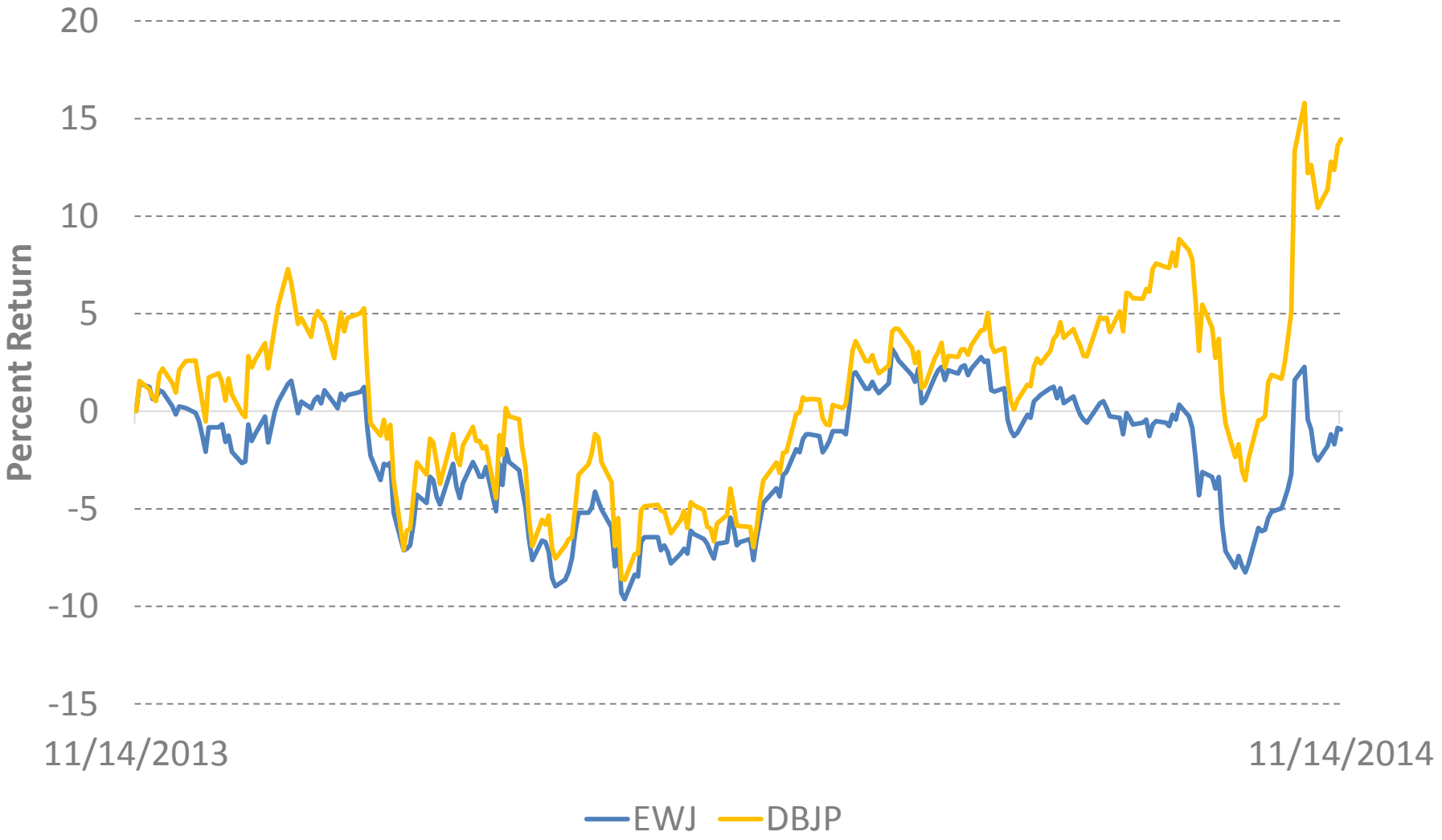
A) Up 9%

B) Up 14%

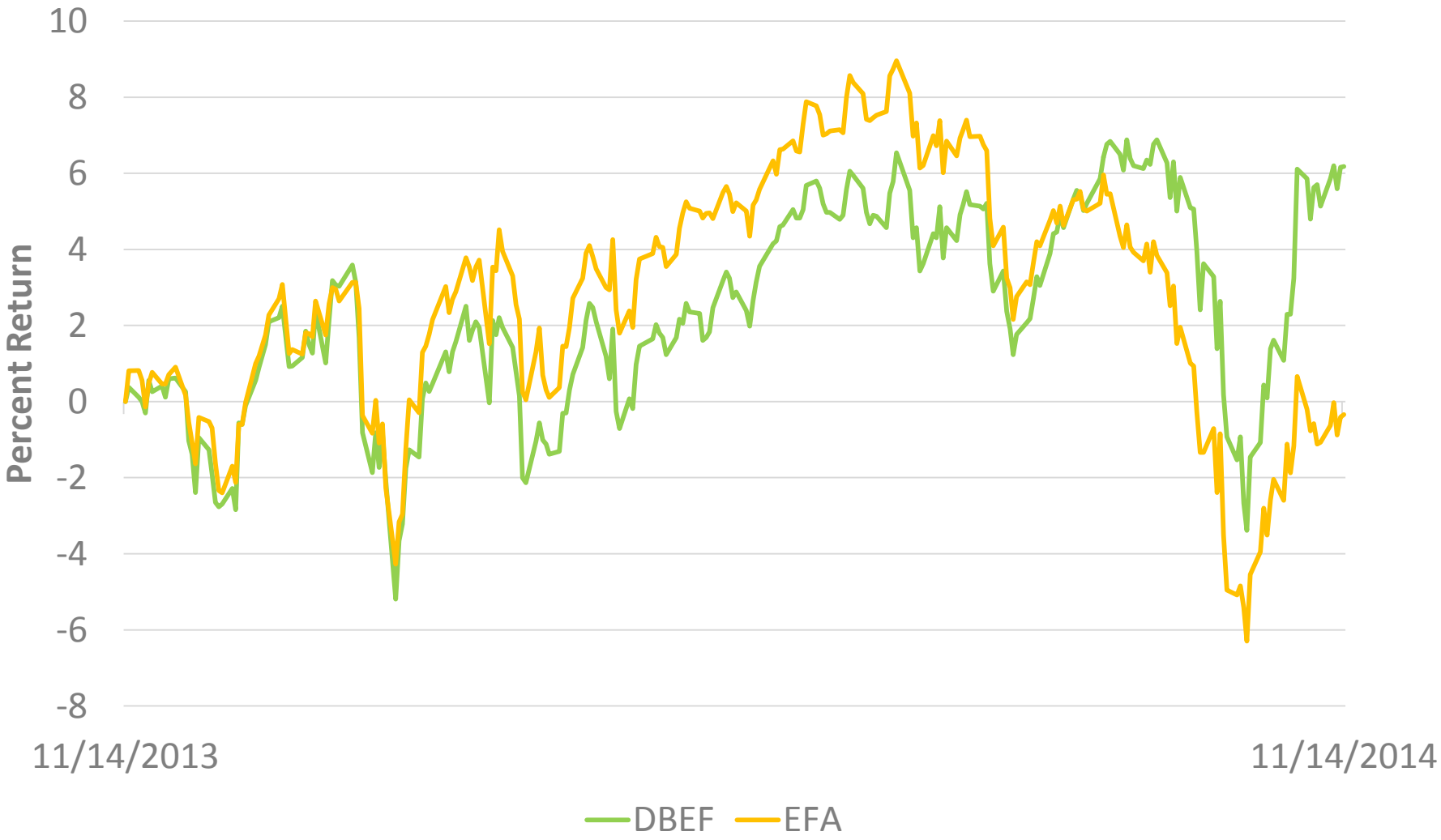
C) Up 4%

D) There's No Way To Know

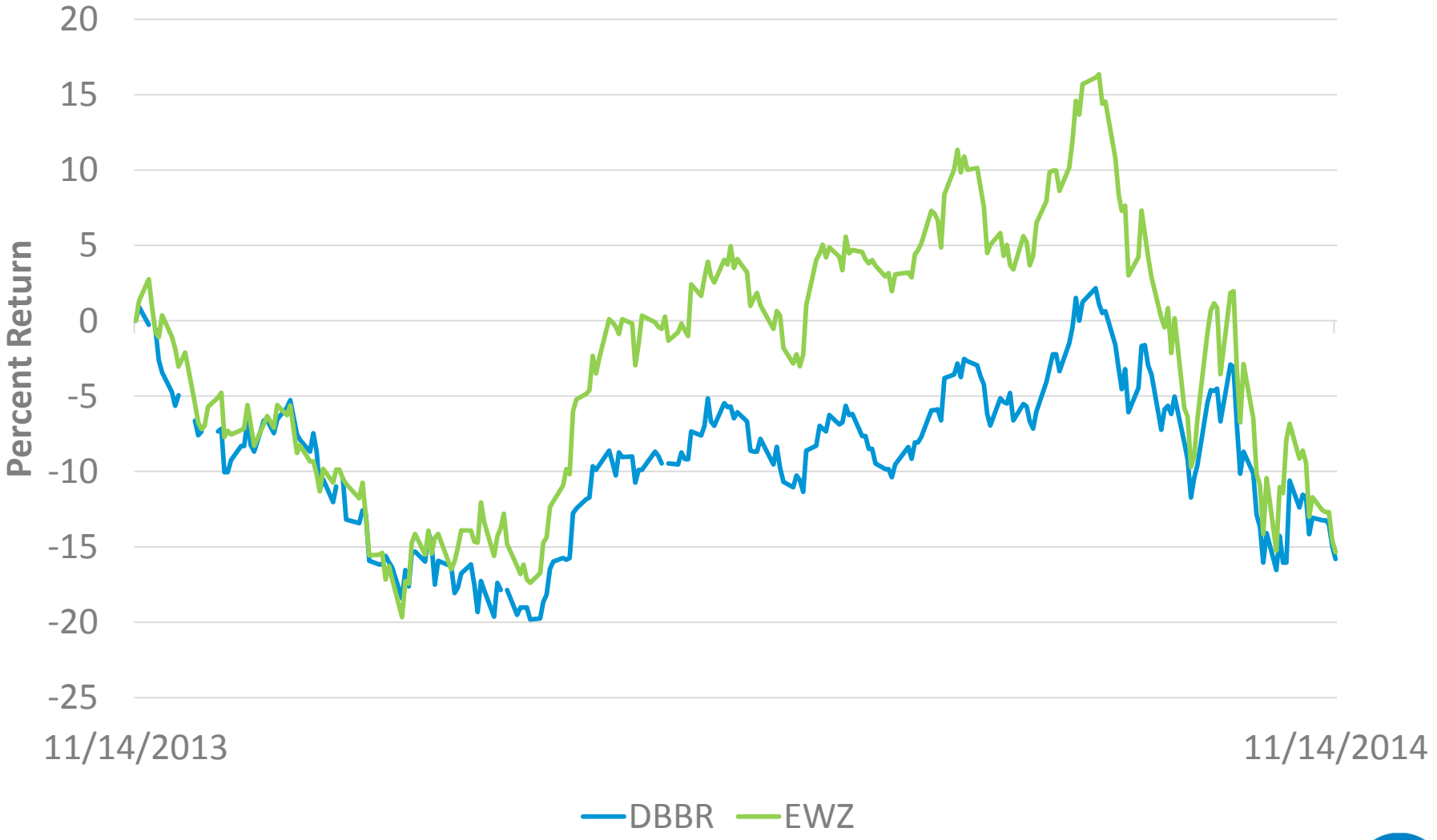
Japan Hedged



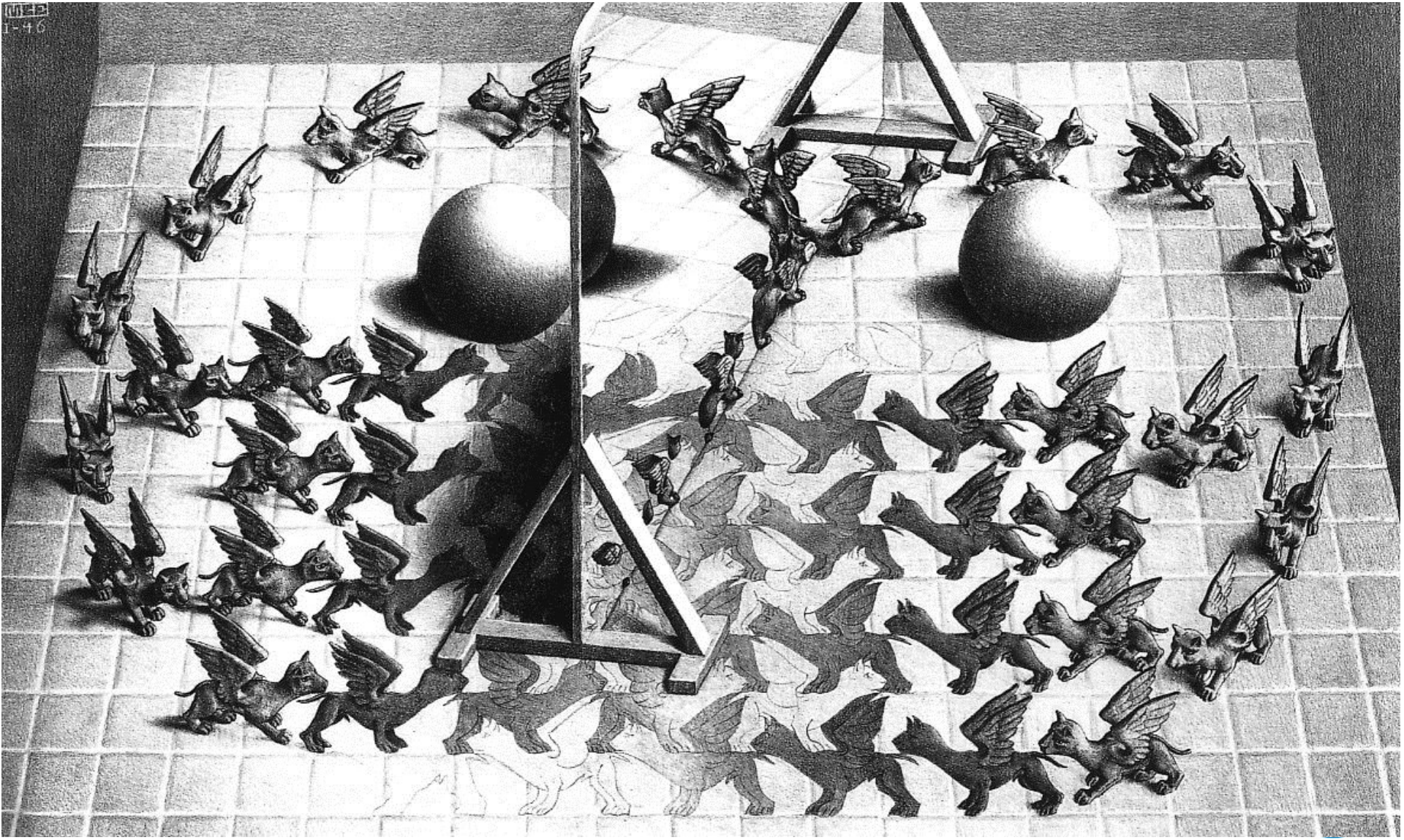
EAFE Hedged



Brazil Hedged



Smart Beta?



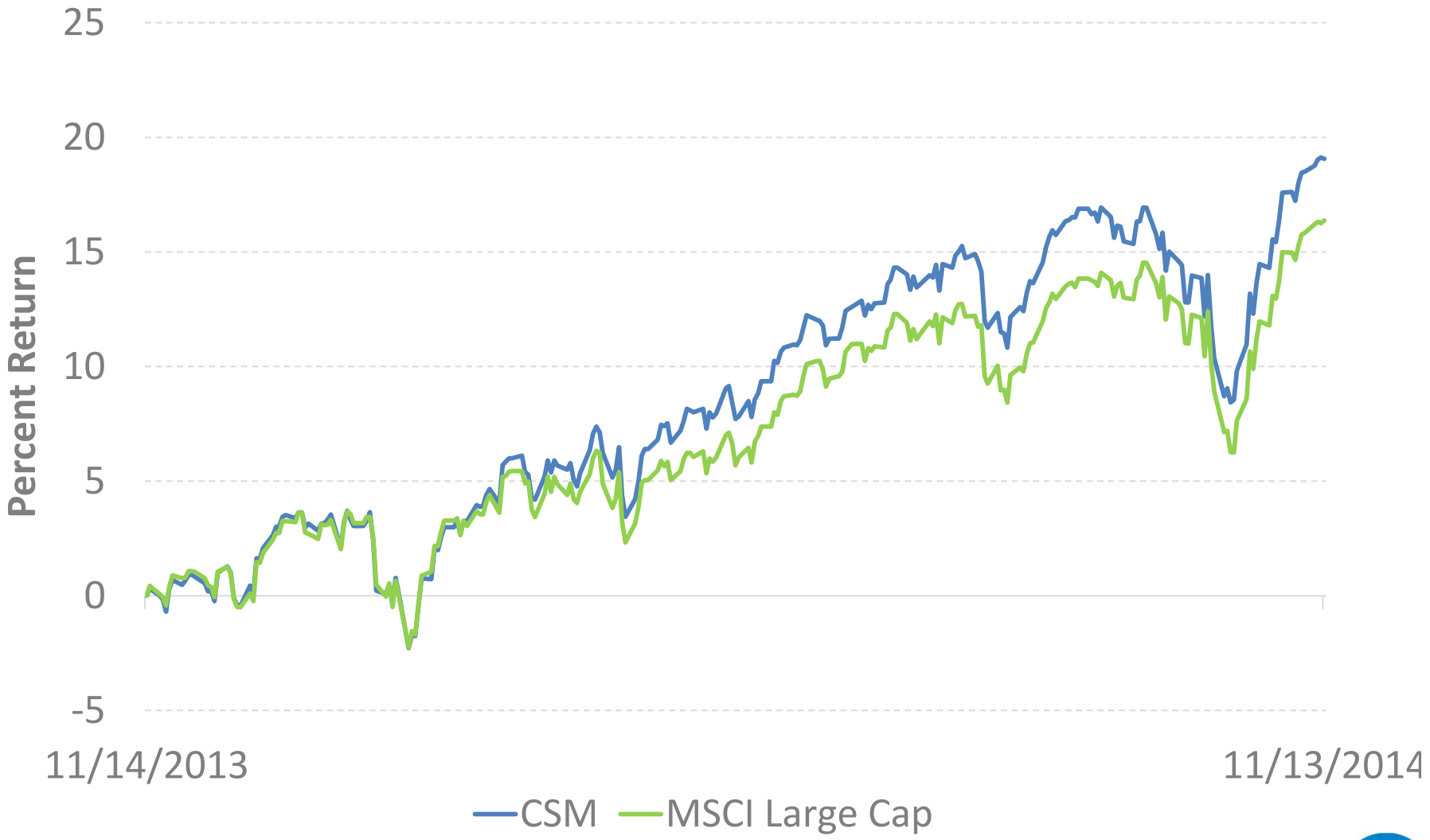
A Proliferation of Smart Beta Indexes

But Just Two Major Themes

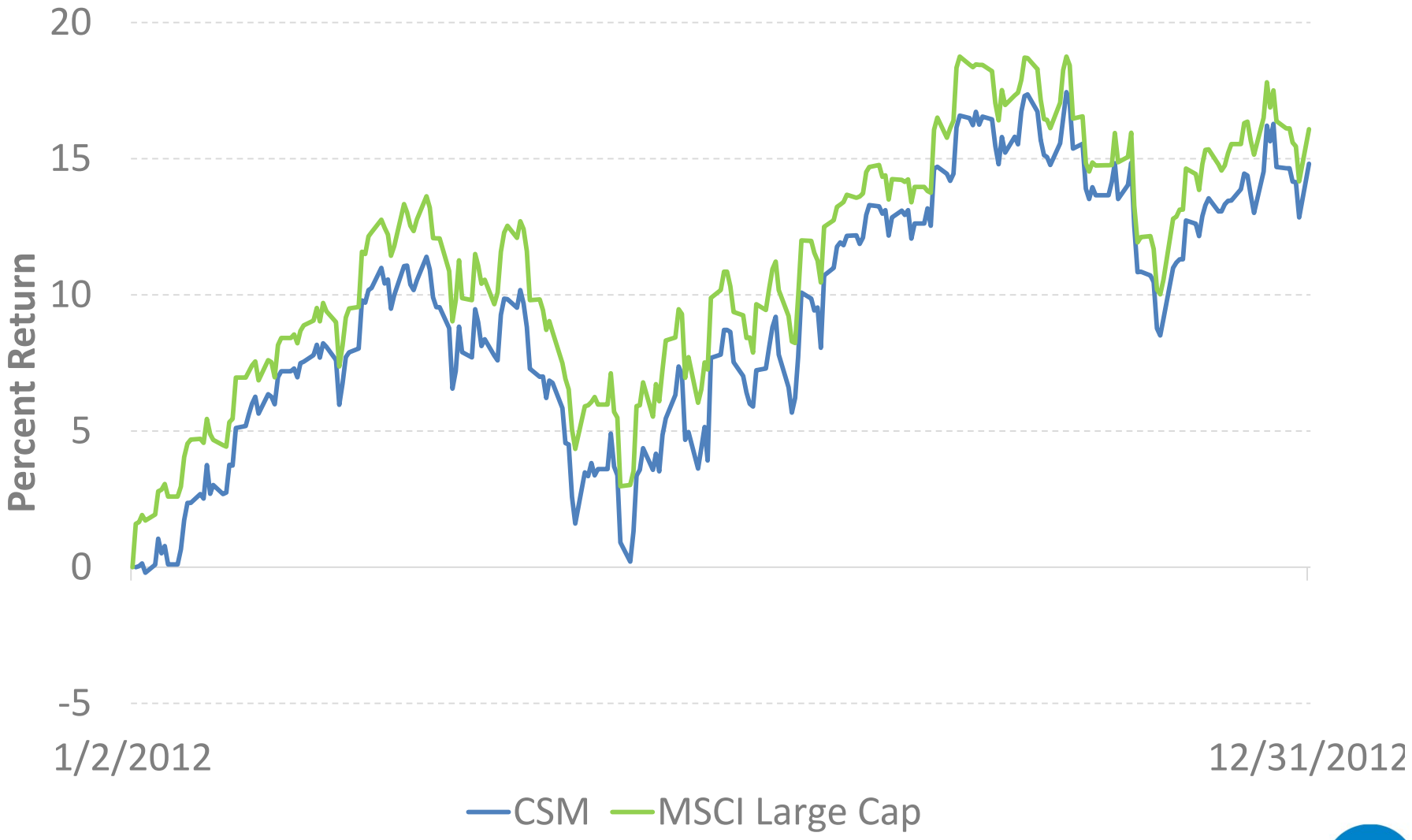
- **Factor Indexes**
  - Low Volatility stands out as one of the first to generate interest and still one of the strongest
  - High Dividend Yield also one of the first and still strong interest
  - Also: Momentum, Quality, Value, Low Beta
- **Indexes with weights that break the link with market price**
  - Equal-weighted indexes
  - Fundamentally-weighted indexes

ETF.com

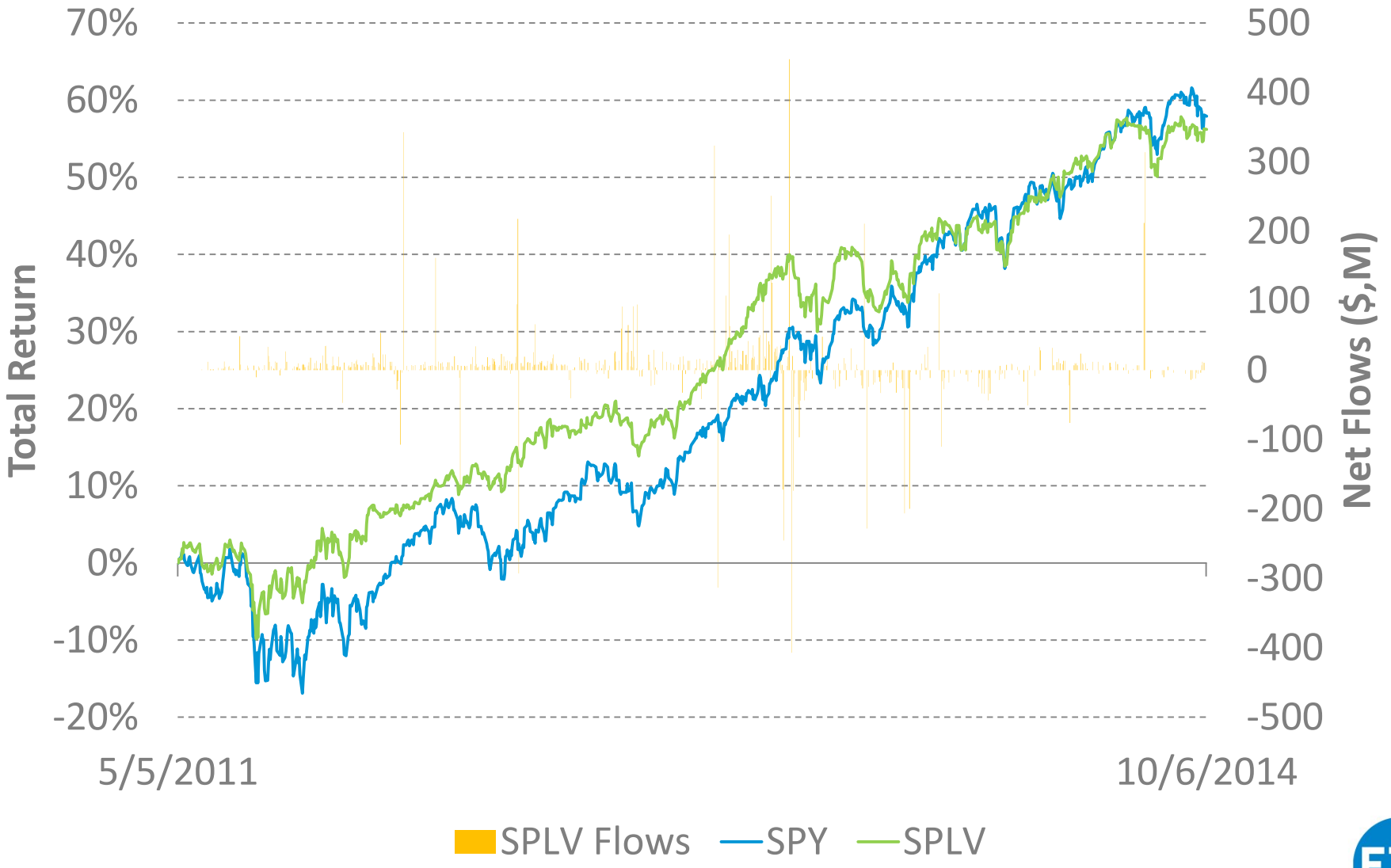
Occasional Strong Performance



Occasional Strong Performance



The Bigger Problem



Source: FactSet

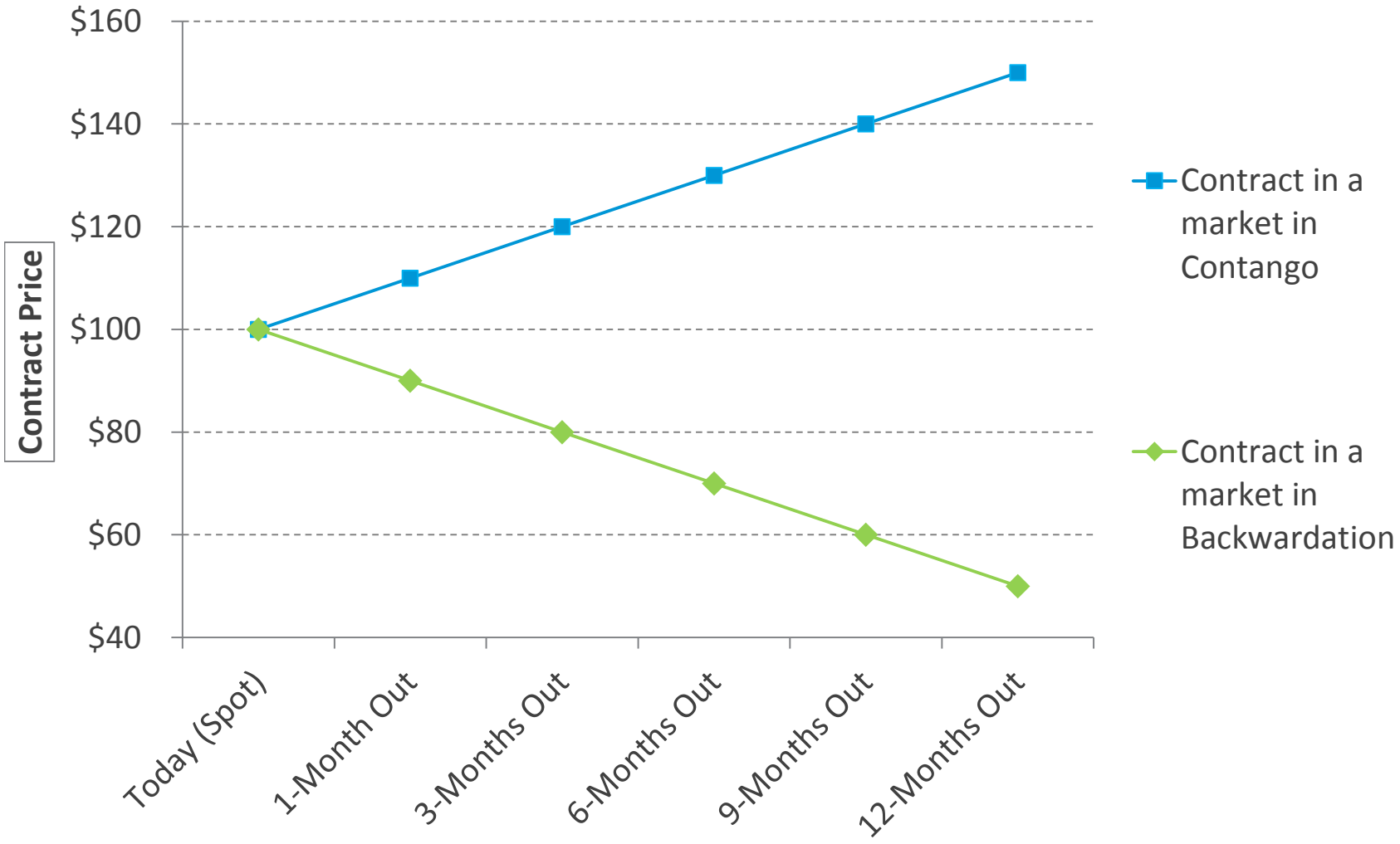
Smart Summary

- Factor access: Yes. Panacea? Nope.
- Watch your holding periods
- Be enormously skeptical

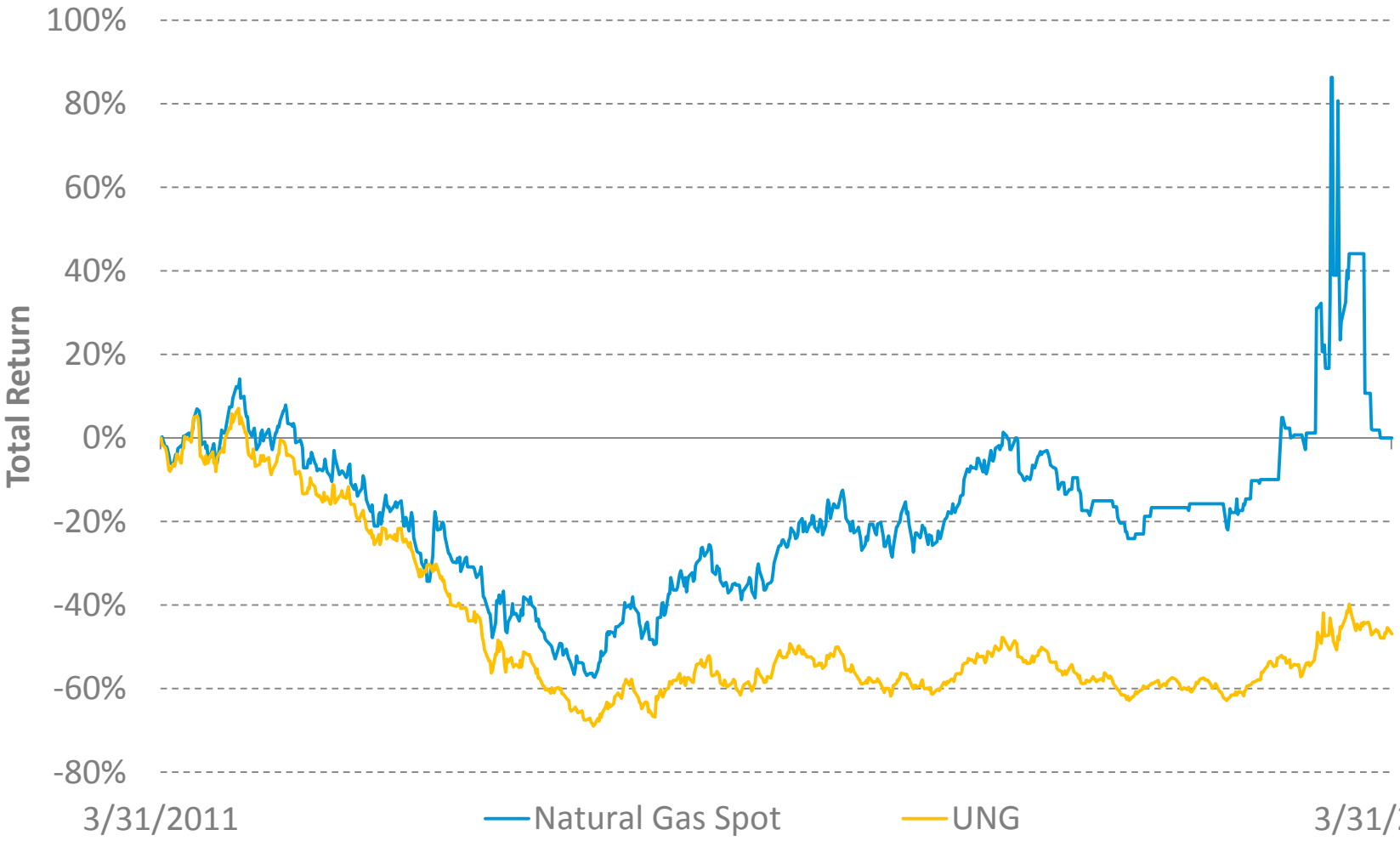
FACTSET

Commodities

Basics of Contango



Here's The Problem With Futures



Source: Bloomberg

The 8 BPS ETF Portfolio

Asset Class	Weight	Fund	Ticker	ER
U.S. Equity	40%	Schwab U.S. Broad Equity	SCHB	0.04%
Developed Equity	30%	Schwab International Equity	SCHF	0.08%
Emerging Markets Equity	5%	Schwab Emerging Markets Equity	SCHE	0.14%
Fixed Income	15%	Schwab U.S. Aggregate Bond	SCHZ	0.06%
REITs	5%	Schwab U.S. REIT	SCHH	0.07%
Commodities	5%	UBS E-TRACS DJ-UBS Commodity ETN	DJCI	0.50%
All-In Costs				0.08%

ETF.com

ETFs 101:

How ETFs Work – Risks and Opportunities

Presenters:

MATT HOUGAN
Chief Executive Officer
ETF.com