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# Introducing D-BEAM: Using Daily Corporate Bond Prices in High-Frequency Equity Momentum Strategies

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# Motivation

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## ■ Background:

- [Ben Dor and Xu \(2014\)](#) showed that corporate bond prices can be used to construct equity momentum portfolios with an improved risk-return profile
- This presentation expands the analysis by using **daily bond signals to form a high-frequency equity momentum strategy**

## ■ Research questions:

- Can daily bond signals be used to form a daily equity *momentum* strategy given that equity price behavior displays *short-term reversal*?
- What is the correlation between a daily equity momentum strategy based on bond signals and other systematic equity strategies?
- Is there a relationship between the efficacy of the bond signals and the liquidity of the underlying bonds?
- Can a daily strategy (D-BEAM) be used to improve the monthly BEAM strategy?

## Key Results

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- Bond information is useful for equity momentum strategies at a daily frequency
- **Unlike equities, there is no mean reversion in equity returns based on daily bond signals**
- The use of daily bond signals delivers:
  - + Annual avg. return of 18% and inf. ratio of 1.8 starting in 2001
  - + Positive returns in all years but one (2013) during the sample period
  - + Diversification to standard risk factors with highly significant alpha
  - + Possible enhancement to monthly BEAM when combined in a portfolio setting
- Consistent with prior results, ranking within industries leads to better performance compared to ranking across industries
- D-BEAM (L/S portfolio) vol. is half that of the *Long* or *Short* portfolios in isolation unlike when using equity signals to construct an equity momentum strategy
- Bond signal efficacy improves with bonds' liquidity

# Road Map

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Sample Construction and Methodology



Forming Bond-Based Daily Momentum Strategies



D-BEAM Diversification Benefits



D-BEAM Performance and Liquidity

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# Sample Construction and Methodology

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Mapping Firm-Level Equity and Bond Data Sample

# Construction of Debt-Equity Mapped Sample

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- Sample: All issuers in the Bloomberg Barclays US Corporate IG and HY Indices between January 2001 and December 2017, **with listed equity on a US exchange**
  - ADRs and OTC-traded stocks were excluded
  - Public firms turned Private were included as long as data are available
- Matching process:
  1. All bonds by same issuing entity were combined (by market value)
  2. All issuers associated with the same company were also aggregated by MV
  3. Company equity information from Compustat is matched with all the associated bonds using multiple identifiers
- Return data:
  1. Bonds - Excess returns (return over duration-matched Treasuries)
    - Controls for return differences due to duration
    - **Measures only the component of return due to changes in credit fundamentals→ “spread return”**
    - Is not affected by cyclical trends in yields, but does incorporate different spread regimes
  2. Equities - Total returns

# Sample Description

- Percentage of IG and HY indices mapped increased consistently over time
- In recent years, mapped sample included 83% of issuers (~94% in market cap), almost 100% for IG
- Final Sample represented 67% of issuers, 76% in terms of market cap (~80% for IG)

Matching of Corporate and High Yield Index Constituents to Compustat Data										
	Number of Issuers					Market Value (\$Bln)				
	2001	2005	2009	2013	2017	2001	2005	2009	2013	2017
Panel A: Corporate Index										
Index Population	1,173	863	902	1,089	1,088	1,586	1,609	2,488	3,718	5,174
Mapped	921	792	839	984	1,021	1,399	1,519	2,372	3,548	5,040
	79%	92%	93%	90%	94%	88%	94%	95%	95%	97%
Included in Sample	758	634	694	787	775	1,177	1,217	1,965	2,880	4,005
	65%	73%	77%	72%	71%	74%	76%	79%	77%	77%
Panel B: High-Yield Index										
Index Population	687	929	882	1,215	1,074	322	596	814	1,278	1,357
Mapped	400	550	547	662	770	244	462	565	819	1,109
	58%	59%	62%	54%	72%	76%	77%	69%	64%	82%
Included in Sample	335	463	486	576	677	221	382	524	703	952
	49%	50%	55%	47%	63%	69%	64%	64%	55%	70%
Panel C: Aggregate Universe (IG+HY)										
Index Population	1,860	1,792	1,784	2,304	2,162	1,908	2,205	3,302	4,996	6,531
Mapped	1,321	1,342	1,386	1,646	1,791	1,643	1,981	2,937	4,367	6,149
	71%	75%	78%	71%	83%	86%	90%	89%	87%	94%
Included in Sample	1,093	1,097	1,180	1,363	1,452	1,397	1,599	2,489	3,583	4,957
	59%	61%	66%	59%	67%	73%	73%	75%	72%	76%

Note: The data are as of end of December for each year. Source: Compustat , Barclays Research

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# Coverage of Key Indices

- Most constituents of the S&P500 and Russell1000 Indices were included in the sample
- Coverage reached 88% of the S&P 500 and 83% of Russell 1000 in terms of MV toward the end of the sample period

## Sample Coverage of Standard Equity Momentum Universe and Key Indices

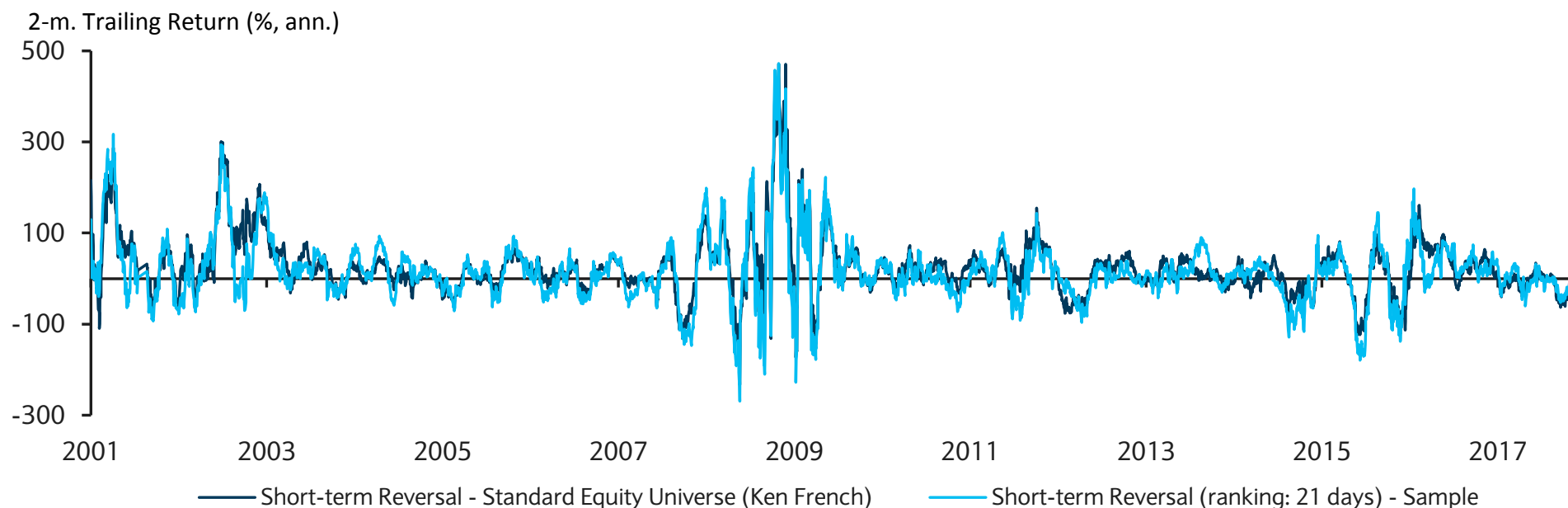
		2001	2005	2009	2013	2017
Panel A: BEAM Universe						
Sample	Number of Stocks	644	690	736	957	923
	Avg. Stock Size (\$bln)	12.8	14.2	12.9	17.7	24.8
Panel B: Coverage of Main Equity Indices						
S&P 500	Number of Stocks	62%	62%	69%	80%	79%
	Market Cap.	72%	75%	80%	86%	88%
Russell1000	Number of Stocks	43%	44%	50%	60%	60%
	Market Cap.	68%	68%	74%	80%	83%
Russell2000	Number of Stocks	8%	9%	9%	14%	12%
	Market Cap.	11%	12%	11%	20%	17%
Standard Equity Universe (Ken French)	Number of Stocks	12%	15%	19%	27%	27%
	Market Cap.	66%	67%	78%	84%	85%

Note: The data are as of end of December for 2001-17. Source: Compustat, Barclays Research



# Short-Term Rev. Dynamics in Sample Similar to Overall Equity Universe

## Equity Mom. Performance in Sample vs. Short-Term Reversal in Universe (VW)



Source: Compustat, Ken French data library, Barclays Research

- Value-Weighted Short-term Reversal for our sample and standard US equity universe moved largely together, with a daily return correlation of about 90%
- Investors employing a momentum strategy using our universe would not be required to give up performance as a result, although the sample has a bias to larger capitalization stocks

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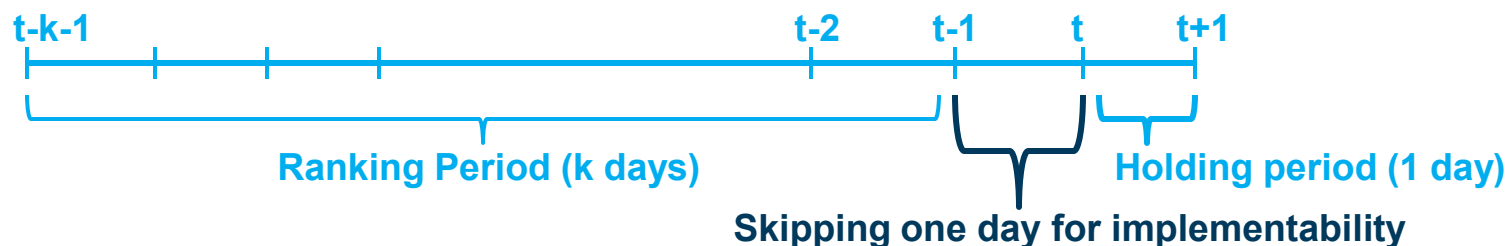
# Forming Bond-Based Daily Momentum Strategies

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## Overview and Performance

## Momentum: Portfolio Construction

- At the end of each day, we form 10 equity momentum portfolios on the basis of prior  $(t-k-1, t-1)$  bond excess returns:



- Over the one-day holding period, we will evaluate the return of the top and bottom ("winner" and "loser") deciles. We also consider the long-short portfolio that invests \$1 in the winner portfolio, and shorts \$1 of the loser portfolio
- Weighting scheme: Equal Weights (EW) or Value Weights w/ 2% cap (VW)

# Bond and Equity Momentum Performance by Ranking Period

- **Note:** Given the short-run mean reversion in equity markets, the comparable equity strategy is based on buying losers and selling winners (**Short-term Reversal**)
- All bond-based signals are superior (higher ret. and lower vol.), compared with the portfolios based on equity signals
- Improved performance from ranking within industries reflects lower vol. rather than higher return
- Unlike equity, bond-ranked signals do not display short-term reversal

## Bond- and Equity-Ranked Mom. Performance by Ranking Period (top-bottom or bottom-top deciles, Jan. 2001 – Dec. 2017)

		Bond-ranked Momentum Portfolio					Short-term Reversal				
		Buy Winners and Selling Losers: Top - Bottom					Buy Losers and Selling Winners: Bottom - Top				
Ranking Window (Past k days)		k=1	3	5	9	20	k=1	3	5	9	20
Panel A: Ranking Across Universe											
EW	Avg (%/Yr)	13.2	15.6	15.9	16.6	20.5	3.4	9.2	5.4	2.0	-1.0
	Vol. (%/Yr)	11.7	13.4	14.5	15.8	17.7	20.7	22.2	23.2	23.4	24.0
	Inf. Ratio (Ann.)	1.13	1.17	1.09	1.05	1.16	0.16	0.41	0.24	0.09	-0.04
VW	Avg (%/Yr)	8.8	8.0	7.6	8.5	11.5	9.1	16.6	15.0	7.8	4.5
	Vol. (%/Yr)	11.5	13.5	14.6	15.6	17.4	21.4	22.8	23.9	24.3	25.1
	Inf. Ratio (Ann.)	0.80	0.60	0.50	0.50	0.70	0.40	0.70	0.60	0.30	0.20
Panel B: Ranking Within Industries											
EW	Avg (%/Yr)	12.7	18.2	17.1	15.6	18.0	4.5	9.8	7.3	5.2	3.0
	Vol. (%/Yr)	9.1	9.9	10.4	10.9	11.9	14.4	15.8	16.8	16.7	17.7
	Inf. Ratio (Ann.)	1.39	1.83	1.65	1.43	1.52	0.31	0.62	0.44	0.31	0.17
VW	Avg (%/Yr)	8.90	10.5	9.8	8.0	9.6	7.9	13.5	12.7	8.5	6.5
	Vol. (%/Yr)	8.90	9.7	10.1	10.6	11.3	14.2	15.6	16.4	16.3	17.5
	Inf. Ratio (Ann.)	1.00	1.10	1.00	0.80	0.90	0.60	0.90	0.80	0.50	0.40

Source: Compustat, Barclays Research

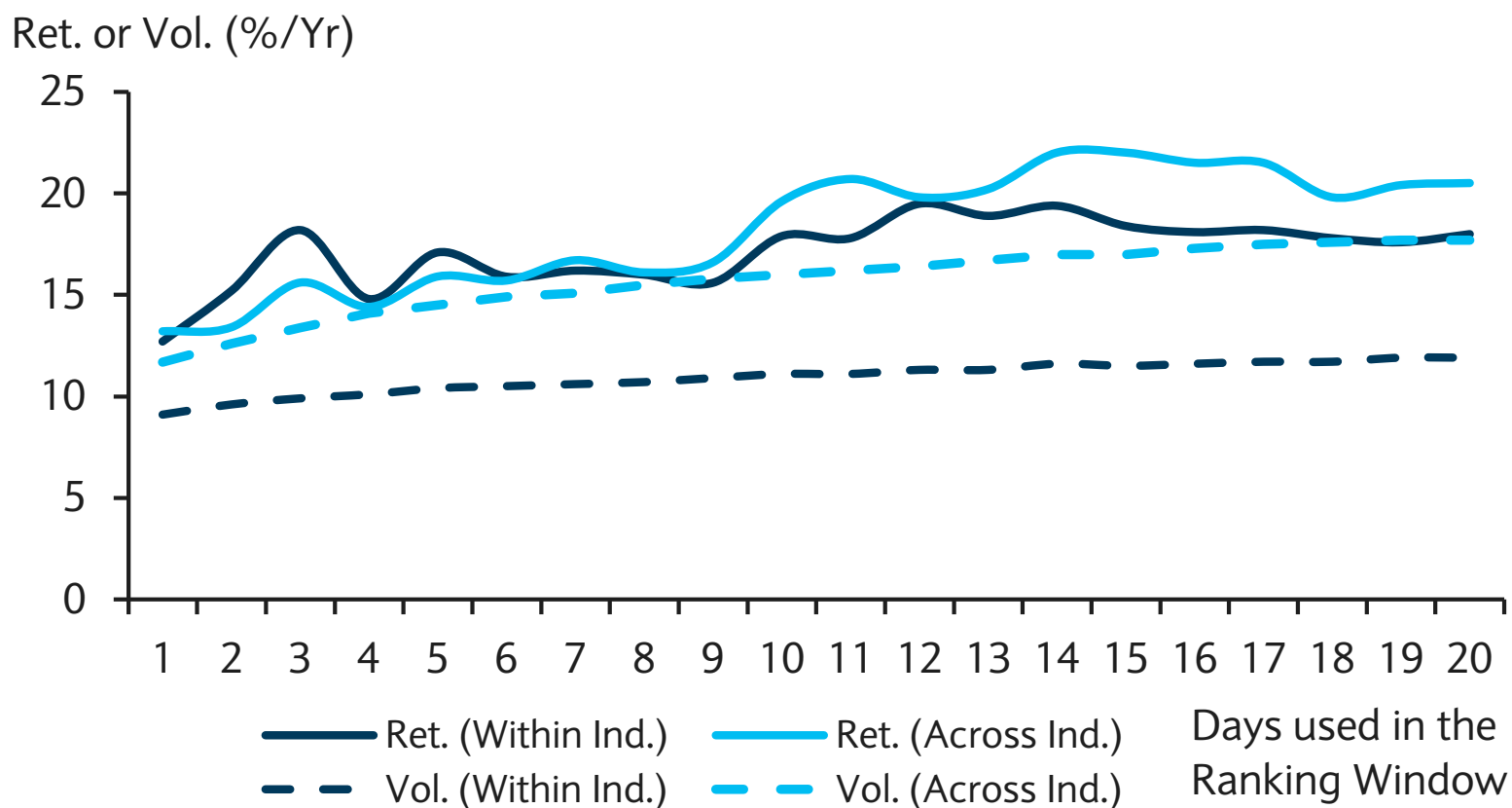
**Baseline  
D-BEAM**

**Short-term  
Reversal**

# Ranking Within Industries Leads to Better Performance

Ranking firms within industries results in similar average returns to ranking across industries but with lower vol.

## Returns and Vol. of Long-Short daily EW Bond-Ranked Mom. (Across and Within Industries, Jan. 2001 – Dec. 2017)

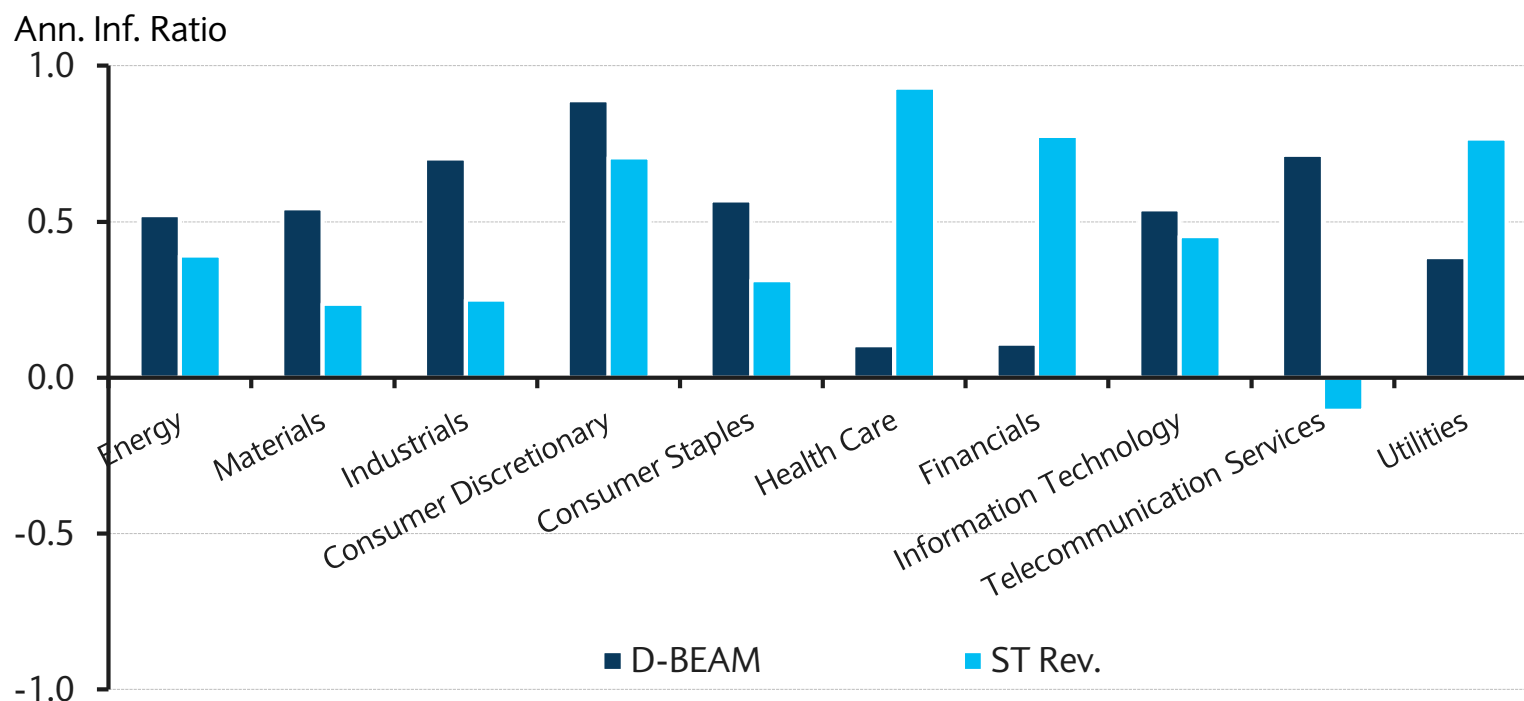


Source: Compustat, Barclays Research

## D-BEAM Generated Positive Inf. Ratio in All GICS Sectors

- Performance of D-BEAM Top half - Bottom half is strong: Positive information ratio in all GICS sectors
- ST Rev is also robust across industries

### D-BEAM and ST Rev Inf. Ratio by GICS Sector (EW, Top half - Bottom half, Jan. 2001 – Dec. 2017)

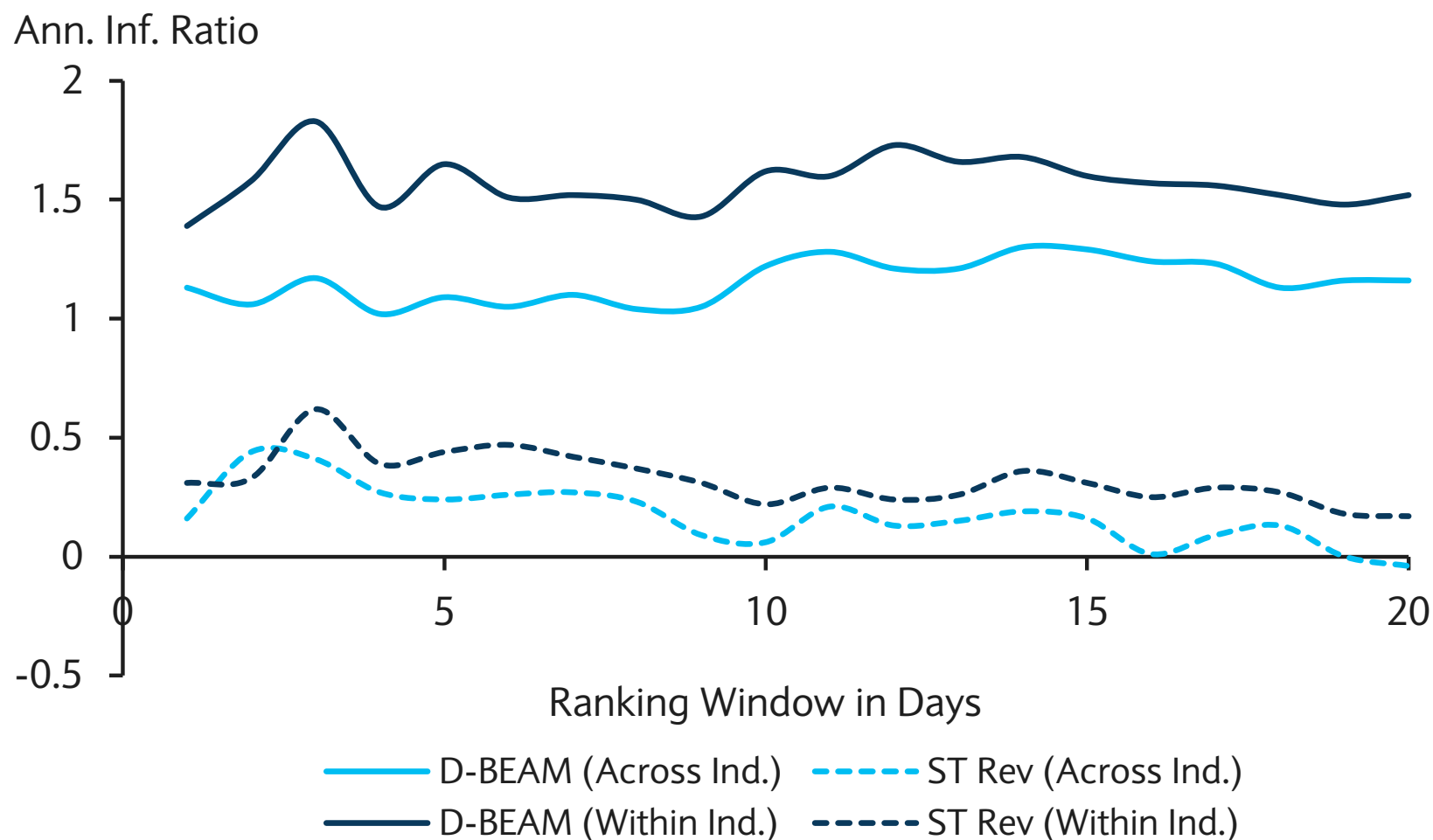


Source: Compustat, Barclays Research

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## *D-BEAM Performance is robust to different ranking windows*

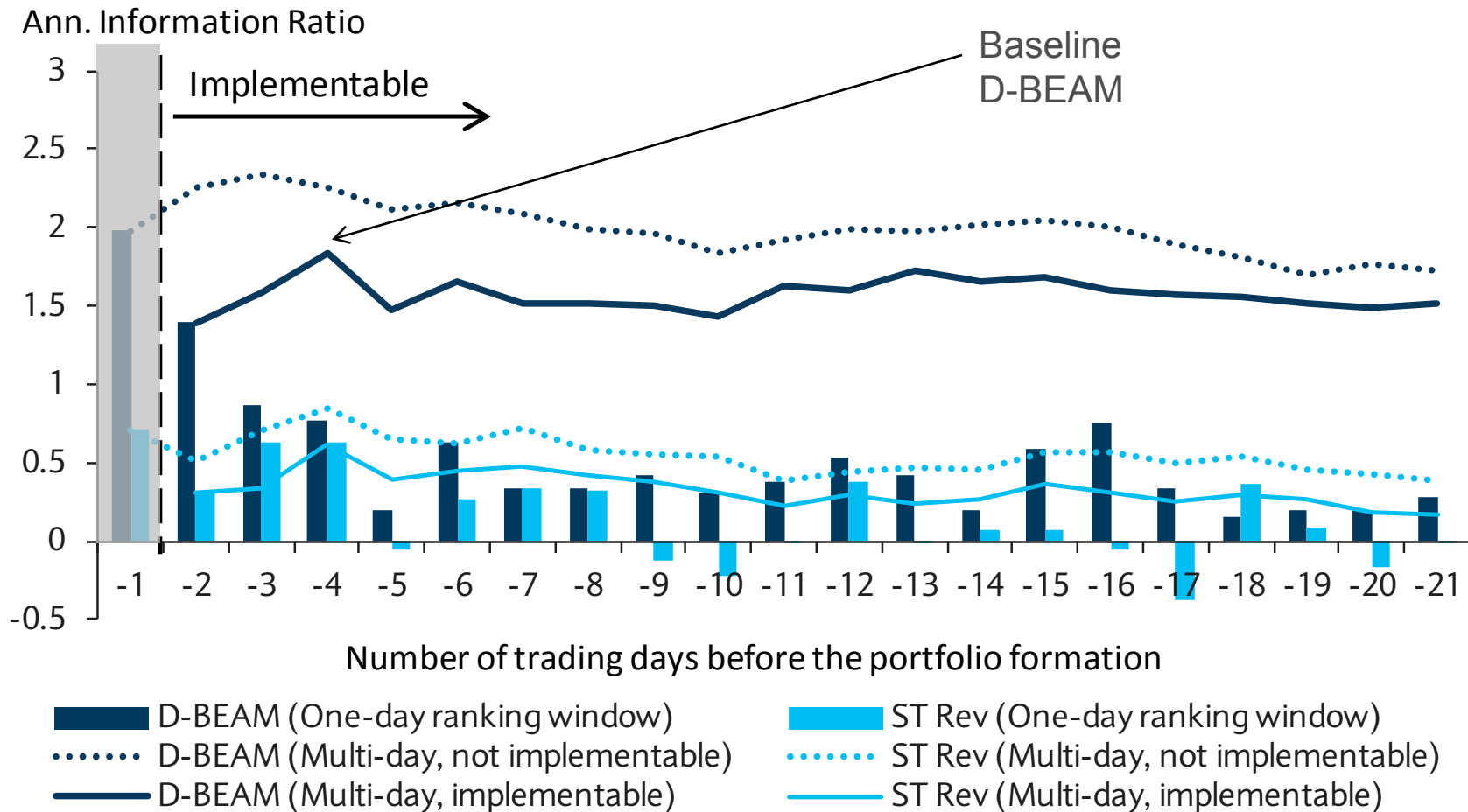
### D-BEAM and ST Rev Returns (EW, top-bottom deciles, Jan. 2001 – Dec. 2017)



Source: Compustat, Barclays Research

# The Informational Content of Bond and Equity Signals by Ranking Window

## Bond- and Equity-Ranked Mom. Returns (EW, Within Industries, top-bottom deciles, Jan. 2001 – Dec. 2017)



Source: Compustat, Barclays Research



## ***The Informational Content of Bond and Equity Signals by Ranking Window: Key Findings***

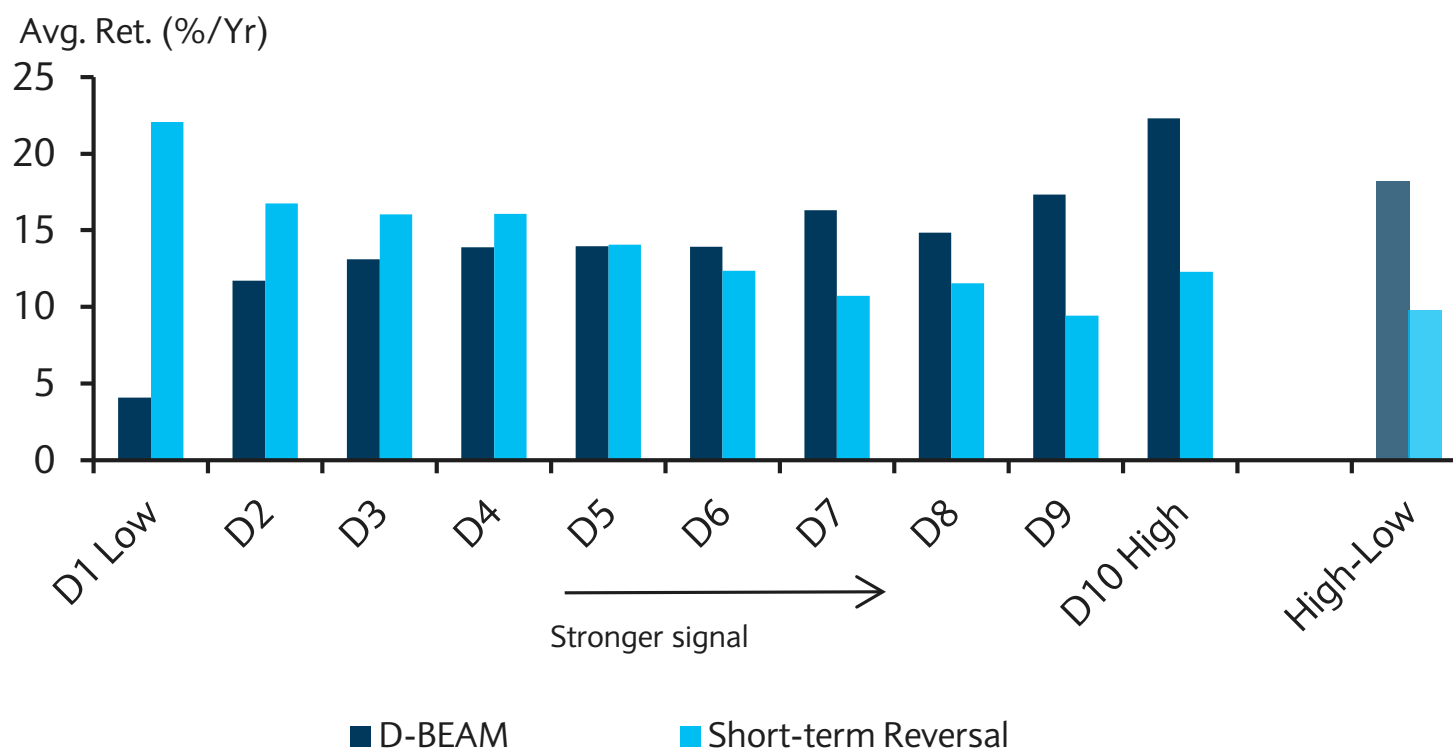
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- Like in the monthly BEAM, the most recent period (day) is the most important
- Even after removing the first day, the inf. ratio is about 1.8
- The most valuable information is contained in the days immediately before the portfolio formation date. D-BEAM is based on a three-day ranking window
- Ranking windows based on multiple days are always better than one-day ranking windows

# Performance Increases with the Strength of the BEAM Signal

- Deciles returns are monotonic in D-BEAM signal

## D-BEAM and ST Rev Ret by Portfolio Deciles (EW, Within Industries, Jan. 2001- Dec. 2017)



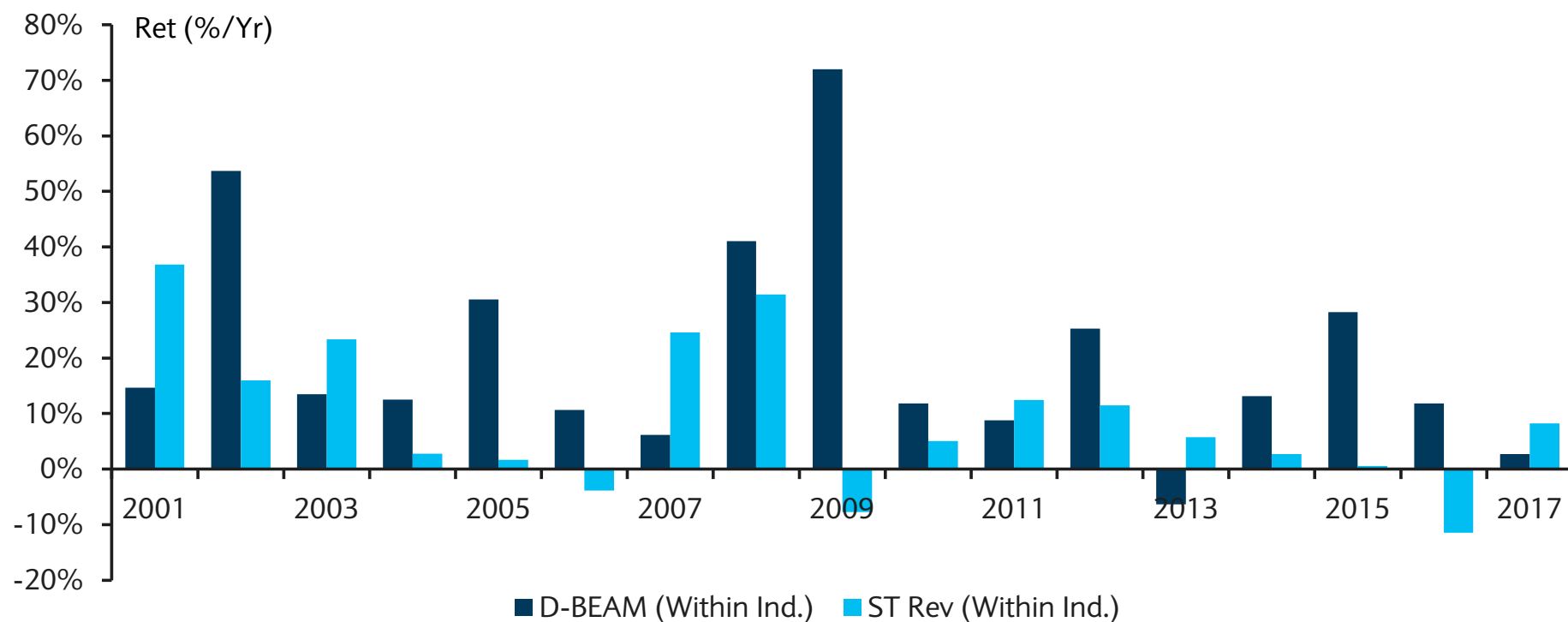
Note: D-BEAM is defined as D10-D1, whereas Short-term Reversal is defined as D1-D10.

Source: Compustat, Barclays Research

## D-BEAM Generated Positive Returns since 2001

- D-BEAM avg. ret. has been positive almost every year since 2001 (only exception in 2013)

### D-BEAM and ST Rev Ret. (EW, Within Industries, Jan. 2001 - Dec. 2017)

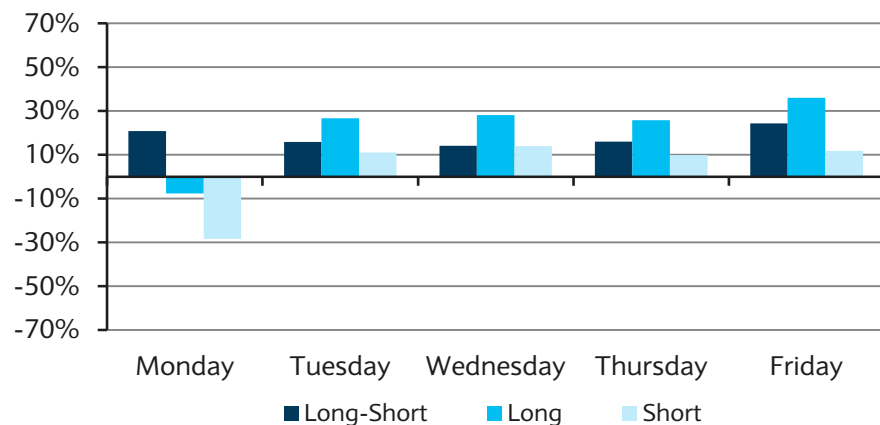


Source: Compustat, Barclays Research

# D-BEAM Returns Display Limited Calendar Effects

## D-BEAM Returns by Day-of-the-Week (EW, Within Industries, Jan. 2001 - Dec. 2017)

Avg Ret (%/Yr)



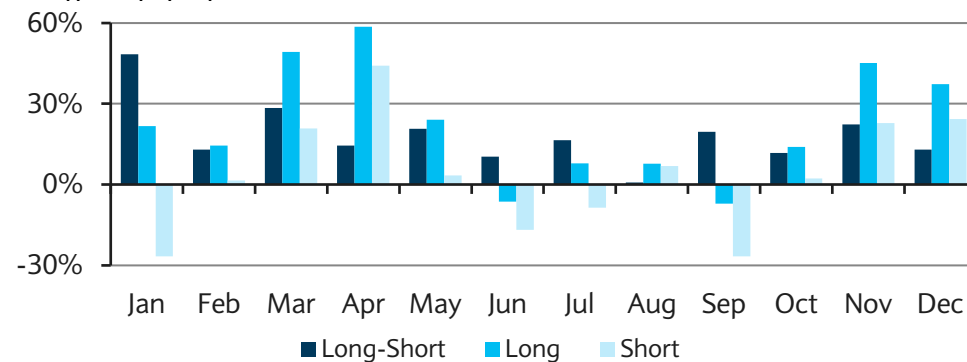
Source: Barclays Research, Compustat

- D-BEAM returns are positive every day of the week

- D-BEAM returns are positive every month

## D-BEAM Returns by Month (EW, Within Industries, Jan. 2001 - Dec. 2017)

Avg Ret (%/Yr)



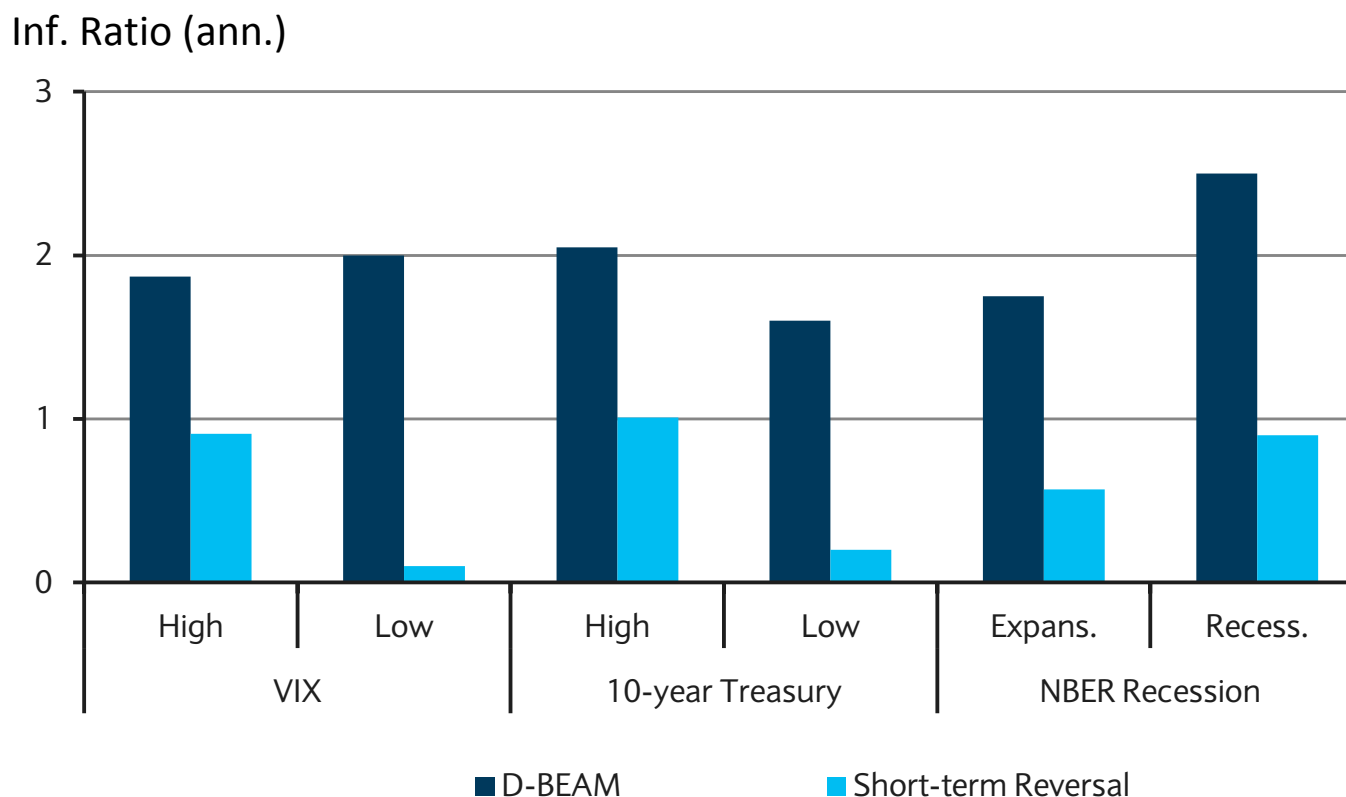
Source: Compustat, Barclays Research

- D-BEAM does not display pre- or post-holiday effects

## ***D-BEAM Inf. Ratio is higher than ST Rev Irrespective of Market State***

- BEAM Inf. Ratio is higher than ST Rev Inf. Ratio in all market conditions

### **D-BEAM and ST Rev Ret in Good and Bad States (EW, Within Industries, Jan. 2001 - Dec. 2017)**



Note: The High (Low) level of VIX is above (below) its median (17.2% in the sample 2001-17). The High (Low) level of the 10-year Treasury rate is above (below) its median (3.47% in 2001-17). The recession and expansion are classified by the NBER.

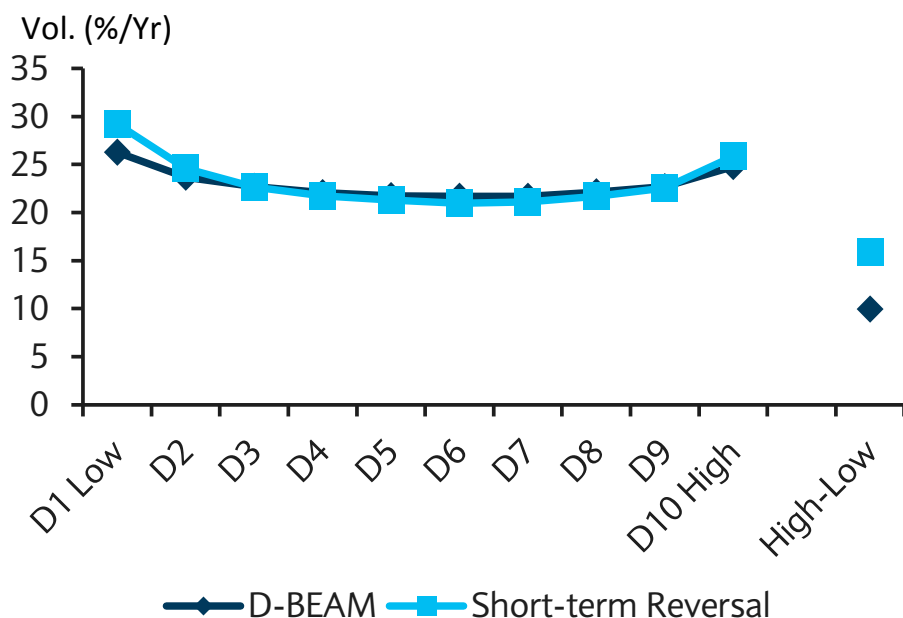
Source: Compustat, NBER, Barclays Research

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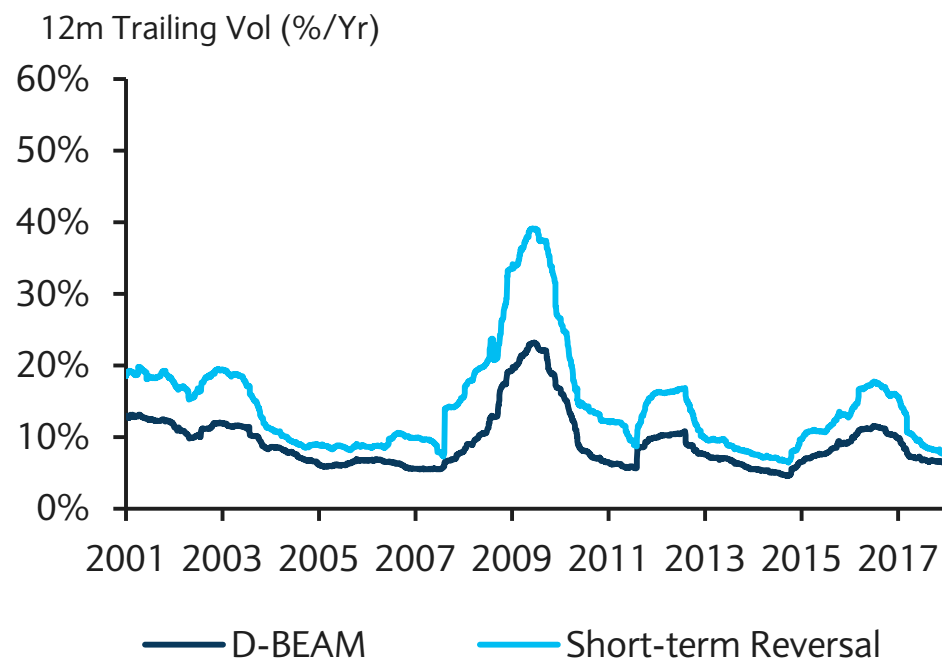
## ***D-BEAM Volatility is Consistently Lower than ST Rev. Vol.***

- The vol. of the decile portfolios is similar irrespective of the signal source
- However, D-BEAM vol. is about half that of the L/S ST REV port. not only on avg. but in each 36-month period
- D-BEAM consistent lower vol. reflects the tendency of the bond signal to generate Long and Short port. with similar factor exposures

**D-BEAM and Short-term Rev. Vol. by Decile  
(EW, Within Industries, Jan. 2001 – Dec. 2017)**



**D-BEAM and Short-term Rev. 12-m Vol. of daily returns  
(EW, Within Industries, Jan. 2001 – Dec. 2017)**

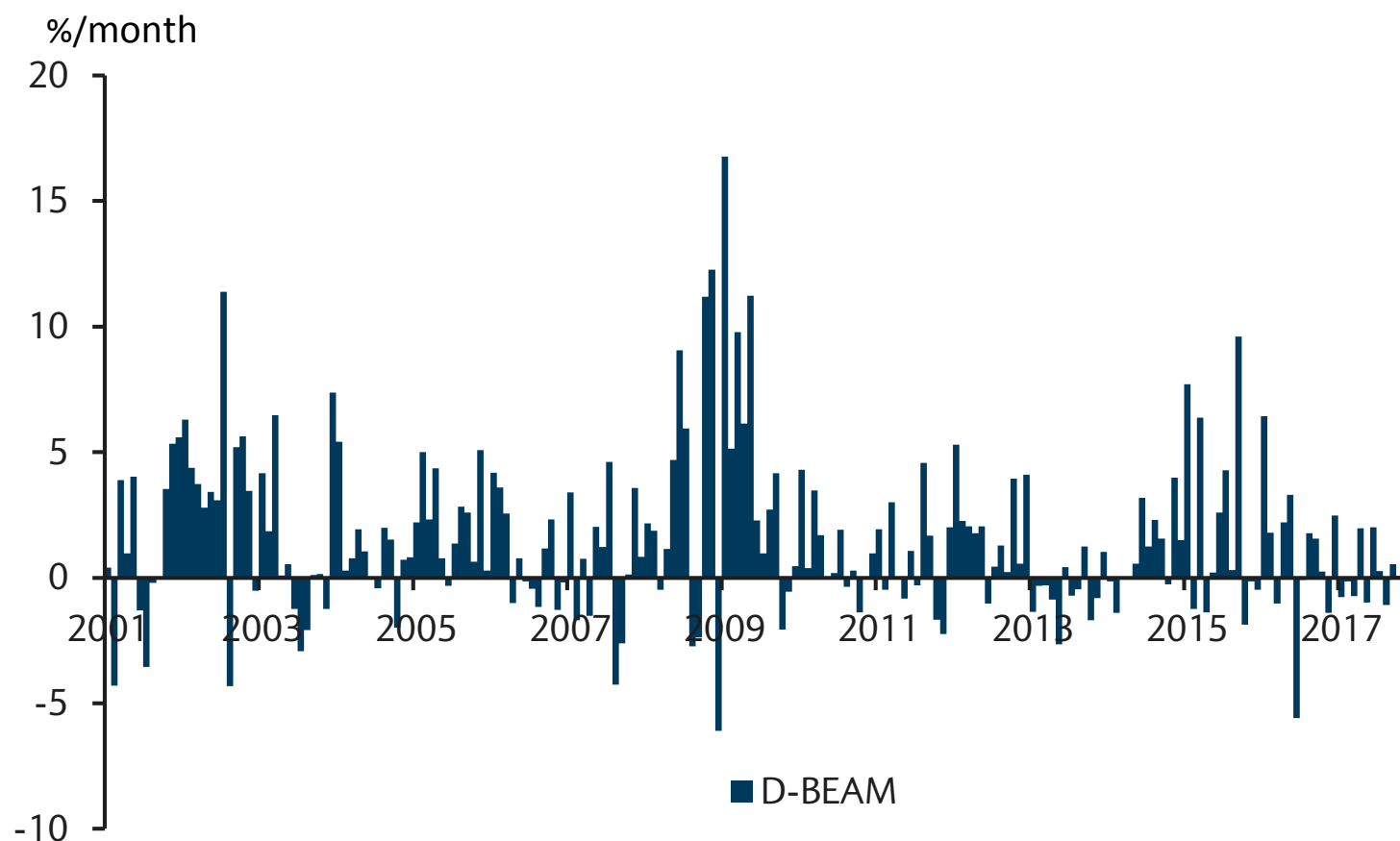


Note: D-BEAM is defined as D10-D1, whereas Short-term Reversal is defined as D1-D10. Source: Compustat, Barclays Research

## Monthly Portfolio Returns of Daily and Monthly BEAM Strategies

- Daily and Monthly BEAM returns are positive and large during the crisis

### Monthly Returns of Daily and Monthly BEAM Strategies (EW, Within industries, top-bottom deciles)



Source: Compustat, Barclays Research

## D-BEAM Improves Momentum but Not Vice Versa

- Stocks are assigned to three buckets based on Short-term Reversal signals, and then assigned to three D-BEAM buckets (left table) or vice versa (right table)
- Within each Momentum tercile sorting on D-BEAM improves returns, while the opposite displays short-term reversal
- Inf. ratio of D-BEAM H-L w/i each Momentum tercile is at least 0.93

Conditional Double Sort (EW, Within Industries, Jan. 2001 - Dec. 2017)										
		Bond Mom x Equity Mom				Equity Mom x Bond Mom				
Ranking window = 3 days		Conditional Sort on Equity Mom				Conditional Sort on Bond Mom				
	First Sorting Dimension	Low	Medium	High	Low-High ST Rev	First Sorting Dimension	Low	Medium	High	High-Low BEAM
Avg. Ret (%/Yr)	Low BEAM	13.2	10.2	7.2	6.0	Low Momentum	12.4	19.2	22.8	10.4
Vol. (%/Yr)		26.9	22.2	23.4	11.3		26.6	24.0	24.5	8.6
Sharpe (Inf.) Ratio (Ann.)		0.39	0.36	0.19	0.53		0.37	0.70	0.84	1.21
Avg. Ret (%/Yr)	Medium BEAM	19.3	13.5	10.2	9.1	Medium Momentum	10.7	12.9	16.5	5.8
Vol. (%/Yr)		23.6	20.5	21.8	9.3		21.6	20.6	21.4	5.9
Sharpe (Inf.) Ratio (Ann.)		0.72	0.56	0.36	0.98		0.39	0.52	0.67	0.98
Avg. Ret (%/Yr)	High BEAM	22.4	16.8	15.0	7.4	High Momentum	7.4	10.7	14.3	6.9
Vol. (%/Yr)		24.4	21.6	23.6	10.1		23.4	22.2	23.5	7.4
Sharpe (Inf.) Ratio (Ann.)		0.83	0.67	0.53	0.74		0.21	0.37	0.51	0.93

Source: Compustat, Barclays Research



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## D-BEAM Diversification Benefits

## D-BEAM Has Low Correlation with Daily Risk Factors

- D-BEAM factor has very low (level and rank) corr. with other existing factors, and moderately positive corr. with equity momentum and negative corr. w/ short-term reversal
- Equity momentum has negative corr. w/ short-term reversal factor

**Daily Return Correlations between pairs of factors  
(Jan. 2001 - Dec. 2017)**

	Mkt - Rf	SMB	HML	CMA	RMW	MOM	ST Rev	Daily ST Rev	D-BEAM
Mkt - Rf		0.16	0.19	-0.20	-0.43	-0.40	0.30	0.19	-0.14
SMB	0.27		0.12	0.09	-0.25	0.00	0.01	0.02	0.03
HML	0.05	0.06		0.35	-0.14	-0.29	0.03	0.03	-0.07
CMA (Investment)	-0.08	0.07	0.39		0.11	0.24	-0.23	-0.09	0.09
RMW (Profitability)	-0.39	-0.27	-0.10	-0.07		0.38	-0.18	-0.13	0.10
MOM (Monthly)	-0.17	0.06	-0.09	0.08	0.25		-0.22	-0.07	0.08
Short-term Reversal	0.14	0.01	-0.03	-0.08	-0.09	-0.14		0.44	-0.33
Daily ST Rev (EW, Within Ind.)	0.10	0.05	0.00	-0.02	-0.09	-0.04	0.28		-0.37
D-BEAM (EW, Within Ind.)	-0.03	0.05	0.00	0.05	0.00	0.05	-0.18	-0.25	

Note: The sample period is Jan. 2001 – Dec. 2017. The ranking window for D-BEAM and Daily ST Rev is 3 days. “Short-term Reversal” factor is based on 21-day ranking window. The level (Pearson) correlation is reported in the upper triangular matrix, the rank (Spearman) correlation is reported in the lower triangular matrix

Source: Compustat, Ken French data library, Barclays Research

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# D-BEAM Generates Significant Alpha Controlling for Other Risk Factors

- Alpha of EW D-BEAM is significant and economically meaningful (about 20% per year)
- Alpha of EW equity momentum is smaller and only marginally significant

Performance of D-BEAM and ST Rev Portfolios (EW, Across and Within Industries, top-bottom deciles)					
		Across industries		Within industries	
Alpha (%/Yr) based on		BEAM	ST Rev	BEAM	ST Rev
EW	Raw returns	15.6***	9.2*	18.2***	9.8**
	CAPM	16.4***	7.6	18.8***	8.5**
	FF3	16.1***	7.7	18.6***	8.6**
	FF3+Mom+ST_Rev	20.9***	-1.7	21.5***	2.1
	FF5	15.5***	9.4*	17.8***	9.8**
VW	Raw returns	8.0**	16.6***	10.5***	13.5***
	CAPM	8.8***	15.0***	11.1***	12.2***
	FF3	8.5***	15.0***	11.0***	12.2***
	FF3+Mom+ST_Rev	13.5***	5.0	14.0***	5.5
	FF5	7.9**	16.7***	10.1***	13.4***

Note: The sample period is Jan. 2001 – Dec. 2017. The ranking window is three days. The superscripts \*\*\*, \*\*, and \* indicate statistical significance at the 1%, 5% and 10% level. Source: Compustat, Ken French data library, Barclays Research

## D-BEAM Factor Loadings are Small

- D-BEAM does not exhibit significant loadings on the Fama-French risk factors
- Negative loading on Equity Short-Term Reversal factor

### Daily regression of D-BEAM on various risk factors (EW, Within Industries, top-bottom deciles, Jan. 2001 - Dec.2017)

Intercept	18.8***	18.6***	21.5***	17.8***
Mkt - Rf	-0.07***	-0.07***	-0.03	-0.05**
SMB		0.07*	0.06*	0.07**
HML		-0.05	-0.06*	-0.08
Mom			-0.02	
Short-Term Rev.			-0.12***	
CMA				0.15**
RMW				0.08*
Adj. R <sup>2</sup>	1.9%	2.4%	11.3%	3.3%

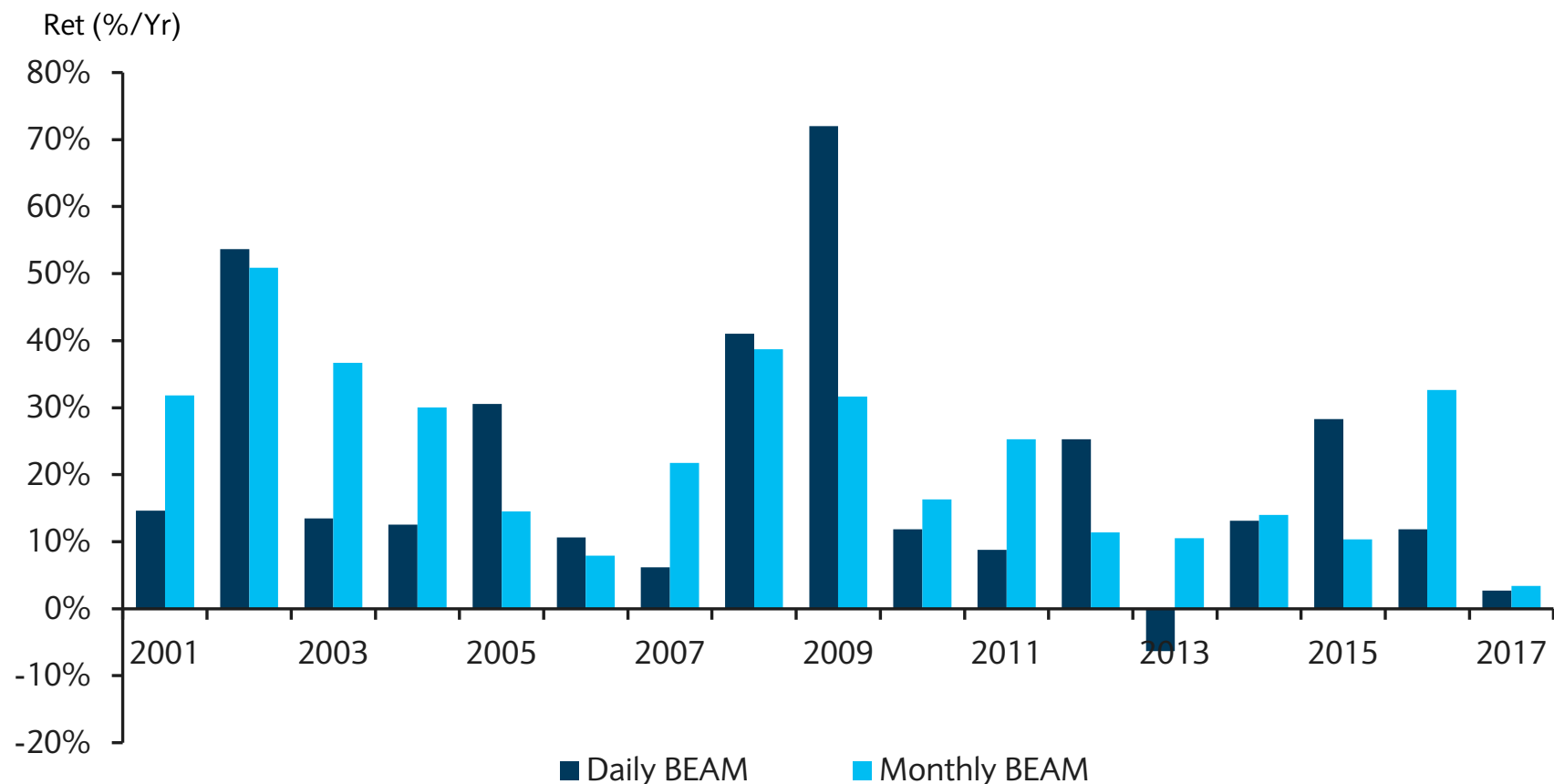
Note: The sample is Jan. 2001 - Dec. 2017. The ranking window is three days. The superscripts \*\*\*, \*\*, and \* indicate statistical significance at the 1%, 5% and 10% level.

Source: Compustat, Ken French data library, Barclays Research

## *D-BEAM Returns are High When Monthly BEAM Returns are Low*

- Daily and monthly BEAM signals complement each other

**Daily and Monthly BEAM Ret.**  
(EW, Within Industries, top-bottom deciles, Jan. 2001 – Dec. 2017)

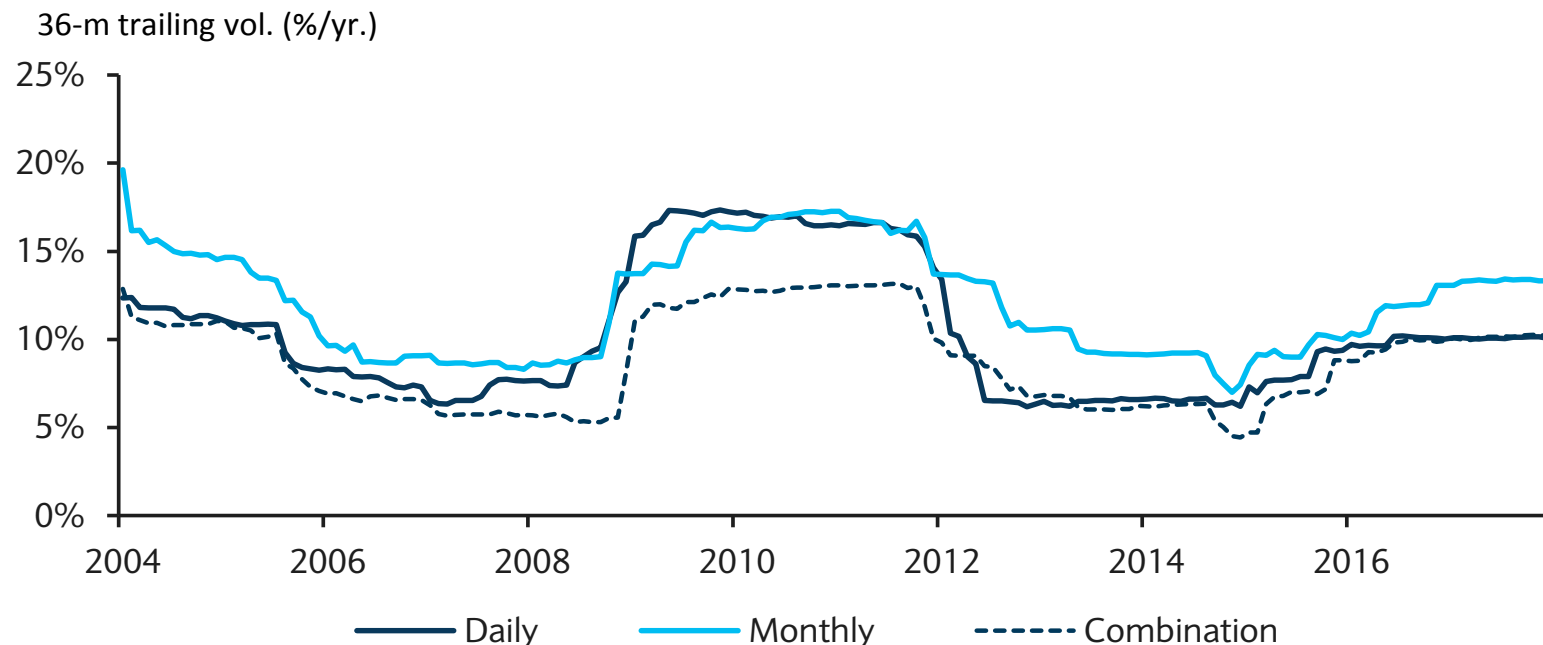


Source: Compustat, Barclays Research

## Combining Daily and Monthly BEAM reduces 36m trailing vol.

- 36-month trailing vol. of the combined factor (half daily + half monthly) is usually lower than daily or monthly BEAM trailing vol.
- The correlation between daily (aggregated at monthly) and monthly BEAM is low (12% for across universe and 22% within industries)

### 36-month Trailing vol. of Daily and Monthly BEAM returns (EW, Within industries, top-bottom deciles)



Source: Compustat, Barclays Research

## ***D-BEAM and Liquidity in Corporate Bonds***

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Corporate bonds are relatively illiquid compared to the equity market

**Is the efficacy of the D-BEAM signal affected by the liquidity of the underlying bond?**

Using two measures of corporate bonds' liquidity to answer the question:

1. Liquidity Cost Scores (LCS)
2. Trade Efficiency Scores (TES)

Based on bond-level information, and published by Barclays QPS Research (see [Konstantinovsky, Ng, and Phelps, 2015](#); [Konstantinovsky, 2017](#); for more details)

# Quantifying Bonds' Liquidity: Liquidity Cost Scores (LCS)

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## Liquidity as Cost of Trading:

- Liquidity Cost Score (LCS) measures the cost of an *immediate, institutional-size, round-trip* transaction, expressed as a percent of the bond's price:
  - $\text{OASD} \times (\text{Bid spread} - \text{Ask spread})$  *if quoted on spread*
  - $(\text{Ask price} - \text{Bid price}) / \text{Bid price}$  *if quoted on price*
- Launched in October 2009 for USD IG and HY corporate bonds, with history available from January 2007. Currently, LCS is computed for ~20,000 bonds



## Liquidity is Multi-Dimensional: Trade Efficiency Scores (TES)

LCS is an *absolute* measure of liquidity:

- Difficult to compare bonds' liquidity across diverse market environments
- Liquidity is multi-dimensional: Cost of trading and trading flows (volumes)

### ⇒ Trade Efficiency Scores (TES)

Trade Efficiency Score (TES) is a bond-level liquidity ranking, combining transaction costs and volumes. Each month, bonds are sorted into LCS quintiles (adjusted by OASD, 1 lowest – 5 highest) and volume deciles (1 highest – 10 lowest); and mapped onto one TES score ranging from 1 (best) to 10 (worst)

LCS Quint. + Volume Dec.	2 and 3	4 and 5	6	7	8	9	10	11	12	13-15
Trade Efficiency Score	1	2	3	4	5	6	7	8	9	10

We construct 3 TES categories:

1. “Low TES” (consisting of the most liquid segment of IG and HY bonds)
2. “Medium TES”
3. “High TES” (consisting of the least liquid bonds)

# The Efficacy of the Bond Signal is Affected by Liquidity

- BEAM performance increases with the liquidity of the bond, with an ann. return of 9.5%, and an ann. inf. ratio close to 1 for the most liquid bonds
- Including other bonds in the universe still improved BEAM performance

Conditional Double Sort (EW, within industries, Feb. 2007 - Dec. 2017)					
TES x BEAM					
Ranking window = 3 days		Conditional Sort on BEAM			
	First Sorting Dimension	Low	Medium	High	H-L
Avg. Ret (%/Yr)	Low TES (liquid)	6.2	10.5	15.7	9.5
Vol. (%/Yr)		27.8	24.6	25.9	10.1
Sharpe (Inf.) Ratio (Ann.)		0.12	0.33	0.49	0.94
Avg. Ret (%/Yr)	Medium TES	11.4	10.9	16.0	4.6
Vol. (%/Yr)		26.1	23.9	25.4	7.5
Sharpe (Inf.) Ratio (Ann.)		0.33	0.37	0.54	0.62
Avg. Ret (%/Yr)	High TES (illiquid)	13.2	17.2	17.2	4.0
Vol. (%/Yr)		26.3	25.0	25.7	6.9
Sharpe (Inf.) Ratio (Ann.)		0.42	0.59	0.58	0.58

BEAM Performance (EW, Within industry, Top - Bottom Decile, Feb. 2007 -Dec. 2017)	
Avg. Ret (%/Yr)	17.1
Vol. (%/Yr)	10.5
Inf. Ratio (Ann.)	1.62

Source: Compustat, Barclays Research

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## Concluding Remarks

## ***Key Takeaways***

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- Bond information can be used to form a daily equity momentum strategy with strong performance
- The bond-based L-S portfolios retained a significant and positive alpha after controlling for standard risk factors
- Bond-based L-S portfolios perform better for liquid bonds

**Ongoing research to identify additional applications of credit information in equity markets...**

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