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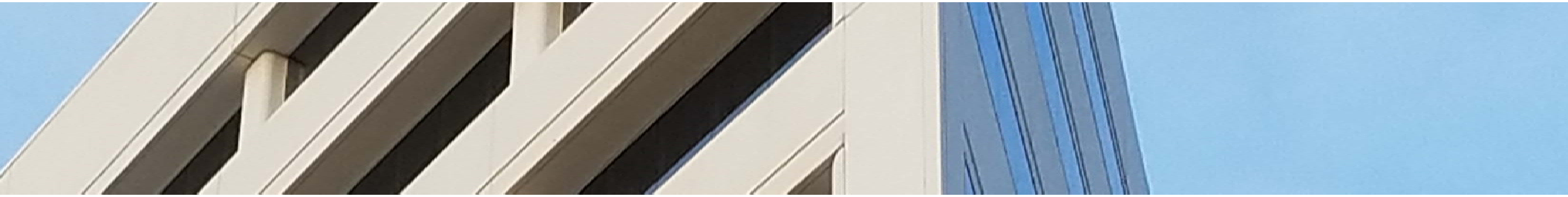

Numbers in Context

Second Quarter 2018

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ASSET CLASS PERFORMANCE

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Annual Asset Class Returns - Best to Worst										Annualized 5-Year
2009	2010	2011	2012	2013	2014	2015	2016	2017	2018 YTD	as of June 17'
Emrg Mrkts 79.0%	MLPs 35.9%	MLPs 13.9%	Emrg Mrkts 18.6	U.S. Equity 33.1%	REITs 31.8%	REITs 4.2%	MLPs 18.3%	Emrg Mrkts 37.7%	U.S. Equity 3.0%	U.S. Equity 13.4%
MLPs 76.4%	REITs 28.6%	U.S. TIPS 13.6%	Developed 17.9%	MLPs 27.6%	U.S. Equity 12.7%	U.S. Equity 0.7%	High Yield 17.1%	Developed 25.6%	REITs 1.5%	REITs 8.4%
High Yield 58.2%	Emrg Mrkts 19.2%	REITs 9.2%	REITs 17.6%	Developed 23.3%	Core Bond 6.0%	Core Bond 0.6%	U.S. Equity 13.4%	U.S. Equity 21.0%	T-Bills 0.8%	Developed 6.9%
Developed 32.5%	U.S. Equity 17.2%	Core Bond 7.8%	U.S. Equity 16.1%	High Yield 7.4%	MLPs 4.8%	T-Bills 0.1%	Commodities 11.8%	High Yield 7.5%	High Yield 0.2%	High Yield 5.5%
REITs 28.6%	Commodities 16.8%	High Yield 5.0%	High Yield 15.8%	REITs 1.9%	U.S. TIPS 3.6%	Developed -0.4%	Emrg Mrkts 11.6%	REITs 4.2%	Commodities 0.0%	Emrg Mrkts 5.4%
U.S. Equity 28.3%	High Yield 15.1%	U.S. Equity 1.0%	U.S. TIPS 7.0%	T-Bills 0.1%	High Yield 2.5%	U.S. TIPS -1.4%	REITs 7.2%	Core Bond 3.6%	U.S. TIPS 0.0%	Core Bond 2.3%
Commodities 18.9%	Developed 8.2%	T-Bills 0.1%	MLPs 4.8%	Core Bond -2.0%	T-Bills 0.0%	High Yield -4.5%	U.S. TIPS 4.7%	U.S. TIPS 3.0%	MLPs -0.6%	U.S. TIPS 1.7%
U.S. TIPS 11.4%	Core Bond 6.5%	Developed -11.7%	Core Bond 4.2%	Emrg Mrkts -2.3%	Emrg Mrkts -1.8%	Emrg Mrkts -14.6%	Core Bond 2.6%	Commodities 1.7%	Core Bond -1.6%	T-Bills 0.4%
Core Bond 5.9%	U.S. TIPS 6.3%	Commodities -13.3%	T-Bills 0.1%	U.S. TIPS -8.6%	Developed -4.5%	Commodities -24.7%	Developed 1.5%	T-Bills 0.8%	Developed -2.4%	MLPs -4.1%
T-Bills 0.2%	T-Bills 0.1%	Emrg Mrkts -18.2%	Commodities -1.0%	Commodities -9.5%	Commodities -17.0%	MLPs -32.6%	T-Bills 0.3%	MLPs --6.5%	Emrg Mrkts -6.5%	Commodities -6.4%

Data sources: Wilshire Compass

Note: Developed asset class is developed equity markets ex-U.S., ex-Canada

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MARKET COMMENTARY

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U.S. Equity

The U.S. stock market was up 3.8% for the second quarter. Volatility has returned this year but is approximately in line with long-term historical figures. Although there have been more up days than down during 2018, the daily losses have been more substantial. Trade and tariffs continued to help drive markets this spring as did increased anti-euro sentiment in Italy.

A common measurement of the slope of the yield curve, the 10-year minus 2-year Treasuries spread, has been on the decline since late 2013 and is currently below the long-term average at 0.38%. It should be noted that the last three times that the spread went negative (1989, 2000 and 2007) the U.S. economy entered a recession not long afterwards. Continued economic growth without upward movement in long rates could be an indication that market participants are expecting a slowdown on the horizon.

Non-U.S. Equity

Equity markets outside of the U.S. produced mixed results while currency had a major effect on U.S.-based investors. As global growth slowed and the Federal Reserve adopted a more aggressive stance on interest rates, the U.S. dollar was up approximately 5% versus a basket of currencies. The European Union faces a fresh challenge with political developments in Italy, already being rattled by the Greek financial crisis and Brexit in past years.

Fixed Income

The U.S. Treasury yield curve rose but continued to flatten during the quarter. The Federal Open Market Committee decided to increase its overnight rate by 25 basis points in June to a range of 1.75% to 2.00%. Credit spreads widened during the quarter within investment grade credit but were little changed for the high yield market.

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JUNE 2018 ASSET CLASS ASSUMPTIONS

	EQUITY						FIXED INCOME						REAL ASSETS					
													REAL ESTATE					
	US STOCK	DEV EX-US STOCK	EMG MRKT STOCK	GLOBAL EX-US STOCK	GLOBAL STOCK	PRIVATE EQUITY	CASH	CORE BOND	LT CORE BOND	US TIPS	HIGH YIELD	NON-US BOND (HDG)	US RES	GLOBAL RES	PRIVATE RE	CMDTY	REAL ASSETS	US CPI
EXPECTED COMPOUND RETURN (%)	6.50	6.50	6.50	6.75	6.75	9.15	2.35	3.90	4.15	3.15	5.15	1.25	5.55	5.75	6.90	4.45	6.75	2.10
EXPECTED ARITHMETIC RETURN (%)	7.80	7.95	9.45	8.35	8.10	12.50	2.35	4.05	4.60	3.30	5.60	1.30	6.90	6.90	7.80	5.50	7.10	2.10
EXPECTED RISK (%)	17.00	18.00	26.00	18.75	17.15	28.00	1.25	5.15	9.85	6.00	10.00	3.50	17.00	15.80	14.00	15.00	8.50	1.75
CASH YIELD (%)	2.00	3.00	2.75	2.95	2.45	0.00	2.35	3.80	4.90	3.30	8.45	1.55	3.95	3.95	2.60	2.35	3.00	0.00
CORRELATIONS																		
US STOCK	1.00																	
DEV EX-US STOCK (USD)	0.81	1.00																
EMERGING MARKET STOCK	0.74	0.74	1.00															
GLOBAL EX-US STOCK	0.83	0.96	0.86	1.00														
GLOBAL STOCK	0.94	0.92	0.82	0.94	1.00													
PRIVATE EQUITY	0.74	0.64	0.62	0.67	0.74	1.00												
CASH EQUIVALENTS	-0.05	-0.09	-0.05	-0.08	-0.07	0.00	1.00											
CORE BOND	0.28	0.13	0.00	0.09	0.20	0.31	0.19	1.00										
LT CORE BOND	0.31	0.16	0.01	0.12	0.23	0.32	0.11	0.93	1.00									
US TIPS	-0.05	0.00	0.15	0.05	0.00	-0.03	0.20	0.60	0.47	1.00								
HIGH YIELD BOND	0.54	0.39	0.49	0.45	0.51	0.34	-0.10	0.25	0.32	0.05	1.00							
NON-US BOND (HDG)	0.16	0.25	-0.01	0.18	0.18	0.26	0.10	0.67	0.64	0.39	0.26	1.00						
US RE SECURITIES	0.59	0.47	0.44	0.49	0.56	0.50	-0.05	0.17	0.23	0.10	0.56	0.05	1.00					
GLOBAL RE SECURITIES	0.65	0.59	0.56	0.62	0.66	0.58	-0.05	0.17	0.22	0.11	0.62	0.03	0.94	1.00				
PRIVATE REAL ESTATE	0.54	0.44	0.44	0.47	0.52	0.51	-0.05	0.19	0.25	0.09	0.57	0.05	0.77	0.76	1.00			
COMMODITIES	0.25	0.34	0.39	0.38	0.32	0.27	0.00	-0.02	-0.02	0.25	0.29	-0.10	0.25	0.28	0.25	1.00		
REAL ASSET BASKET	0.42	0.43	0.50	0.48	0.47	0.43	0.01	0.24	0.25	0.41	0.53	0.06	0.65	0.69	0.69	0.59	1.00	
INFLATION (CPI)	-0.10	-0.15	-0.13	-0.15	-0.13	-0.10	0.10	-0.12	-0.12	0.15	-0.08	-0.08	0.05	0.03	0.05	0.44	0.26	1.00

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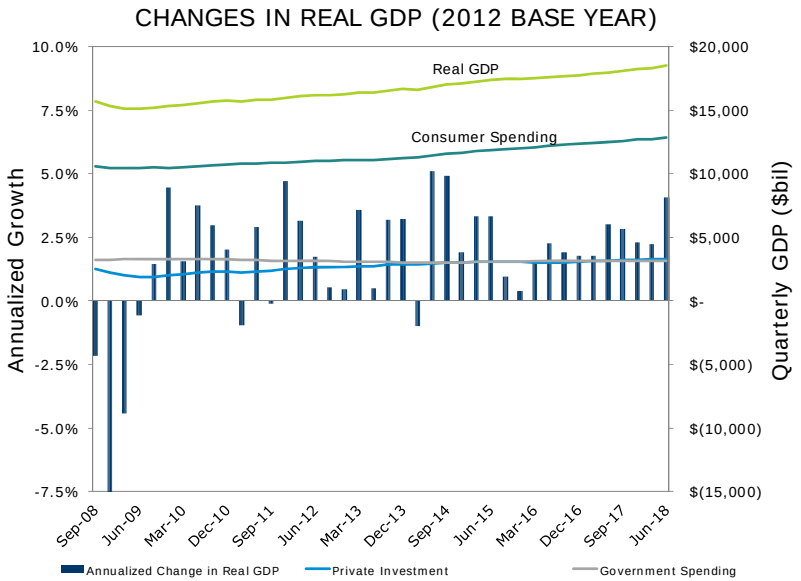
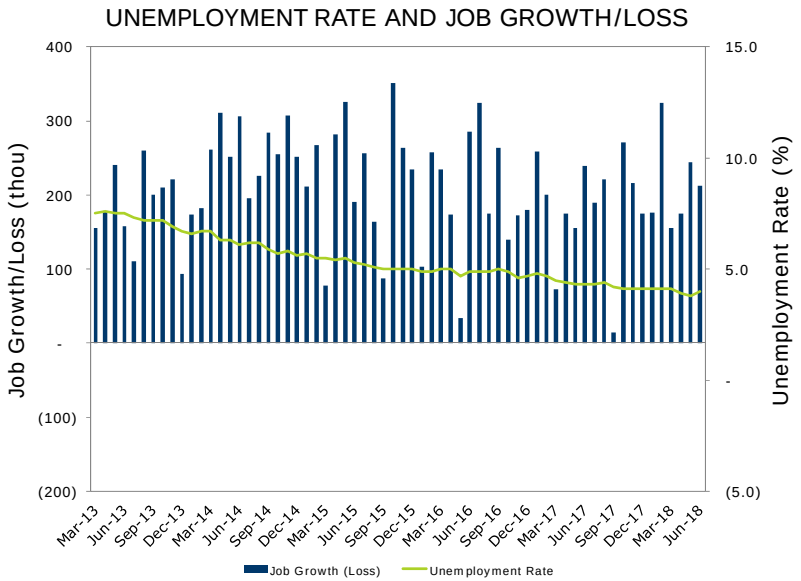
ECONOMIC REVIEW

AS OF JUNE 30, 2018	KEY ECONOMIC INDICATORS			
CPI (ALL ITEMS)	MONTHLY CHANGE		CUMULATIVE CHANGE	
SEASONALLY ADJUSTED	Jun-18	0.1	3-Mo.	0.6
	May-18	0.2	12-Mo.	2.8
	Apr-18	0.2	10-Yr. (Annual)	1.4
BREAKEVEN INFLATION	10-Yr.	2.1		
CONSUMER SENTIMENT	Jun-18	98.2		
U. OF MICHIGAN SURVEY	May-18	98.0		
	1-Yr. Ago	95.0	10-Yr. Avg	80.7
MANUFACTURING	Jun-18	60.2	CHANGE IN SECTOR	
INST. FOR SUPPLY MGMT	May-18	58.7	>50	Expansion
PURCHASING MNGRS' IDX	1-Yr. Avg.	59.0	<50	Contraction

Note: Seasonally adjusted CPI data is utilized to better reflect short-term pricing activity.





Data sources: Bureau of Labor Statistics, U.S. Treasury, University of Michigan, Institute for Supply Management, Bureau of Economic Analysis

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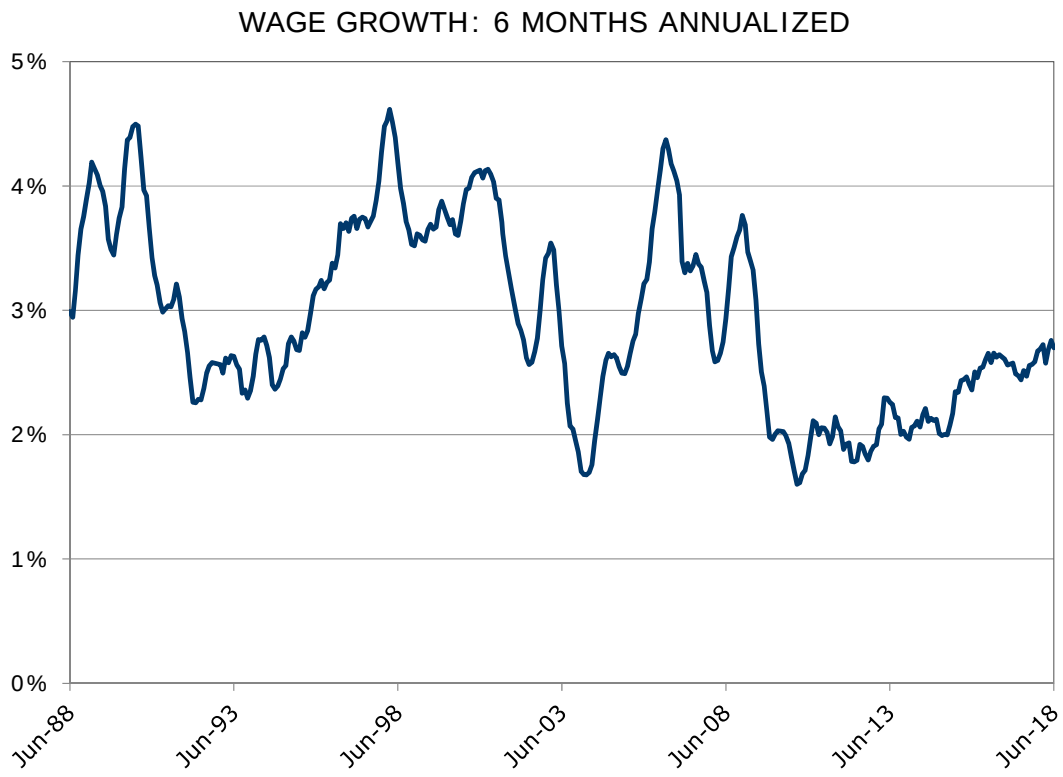
EMPLOYMENT CONDITIONS

- While the U.S. has averaged 200,000 new jobs a month for the past year and the unemployment rate is at 4%, wage growth is climbing slowly
- One reason is the labor force participation rate, which has been slow to recover



Data sources: U.S. Bureau of Labor Statistics

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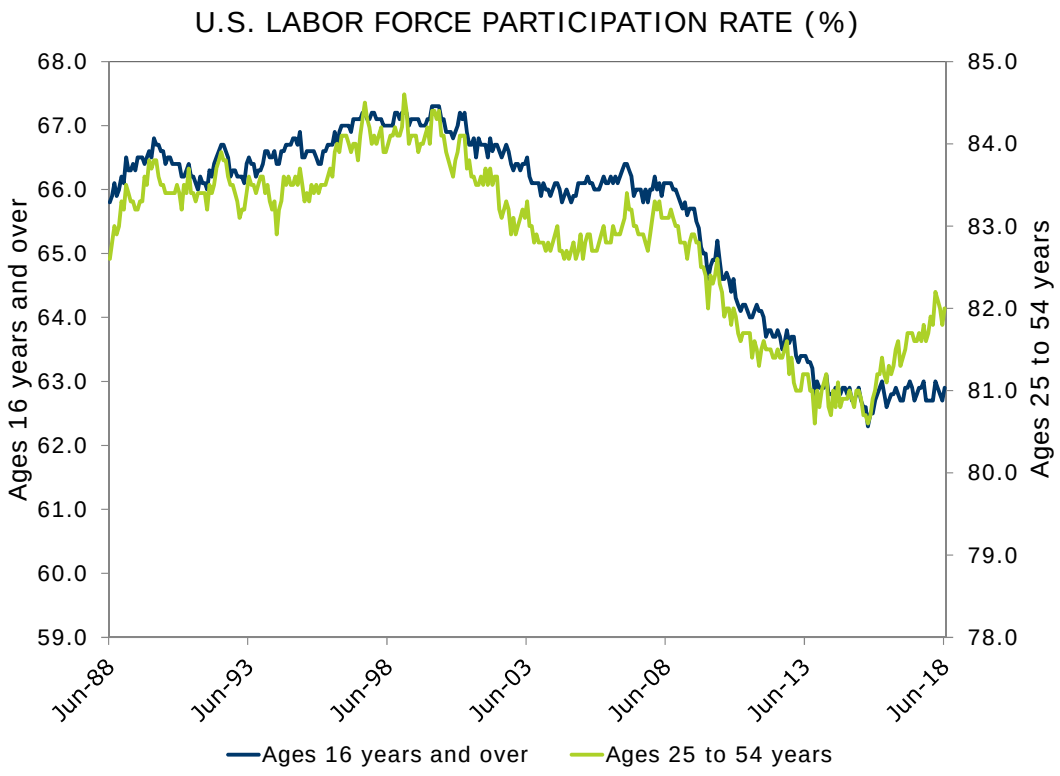
EMPLOYMENT CONDITIONS

- Broad participation rate has stagnated; 25-54 years rate is recovering during the past 24 months
- Results, in total, suggest there may be more slack in the labor market than the unemployment rate indicates, which would decrease pressure on the Fed to raise rates much further



Data sources: U.S. Bureau of Labor Statistics

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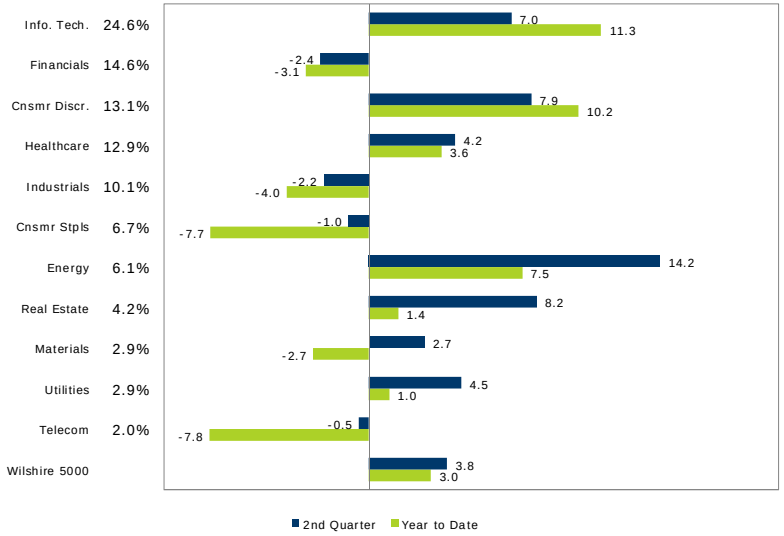
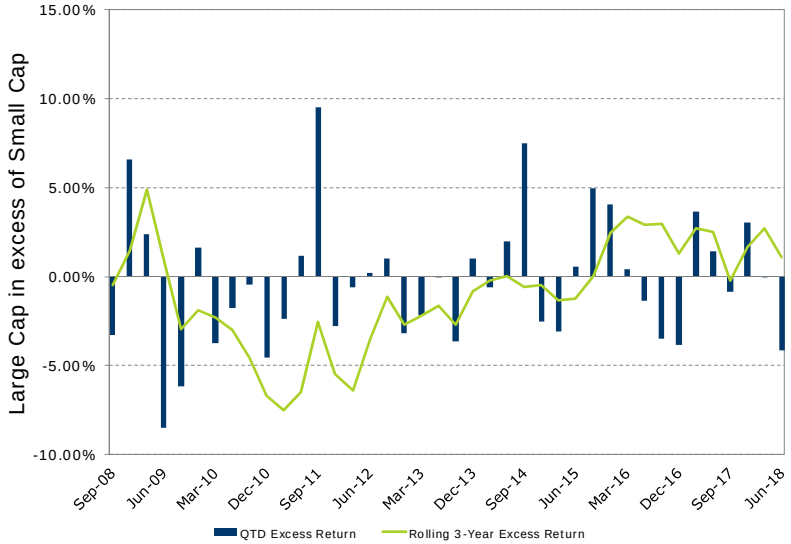
U.S. EQUITY MARKET

AS OF JUNE 30, 2018	QTR	YTD	1 YR	3 YR	5 YR	10 YR
WILSHIRE 5000 INDEX	3.8	3.0	14.7	11.8	13.4	10.2
WILSHIRE U.S. LARGE CAP	3.4	2.6	14.4	12.0	13.5	10.1
WILSHIRE U.S. SMALL CAP	7.9	7.1	16.9	10.8	12.6	11.7
WILSHIRE U.S. LARGE GROWTH	4.8	6.2	19.7	13.5	16.2	11.3
WILSHIRE U.S. LARGE VALUE	2.1	-0.9	9.4	10.2	10.9	8.9
WILSHIRE U.S. SMALL GROWTH	6.4	7.9	19.9	10.2	12.8	11.6
WILSHIRE U.S. SMALL VALUE	9.3	6.1	13.7	11.1	12.2	11.7
WILSHIRE REIT INDEX	9.7	1.5	3.9	7.8	8.4	7.8
MSCI USA MIN. VOL. INDEX	2.7	1.4	10.2	11.3	12.0	10.4
FTSE RAFI U.S. 1000 INDEX	2.9	0.4	11.6	10.2	11.9	11.3

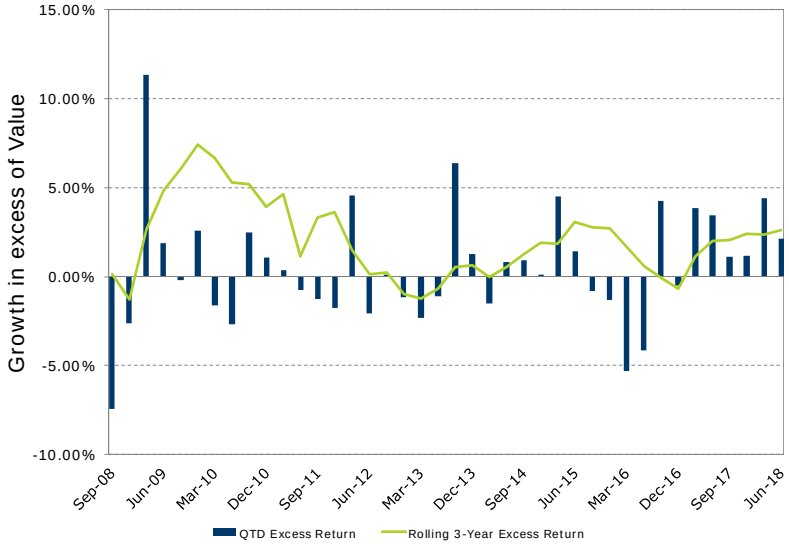
WILSHIRE 5000 SECTOR WEIGHT & RETURN (%)



LARGE CAP VS SMALL CAP



GROWTH VS VALUE



Data sources: Wilshire Compass, Wilshire Atlas

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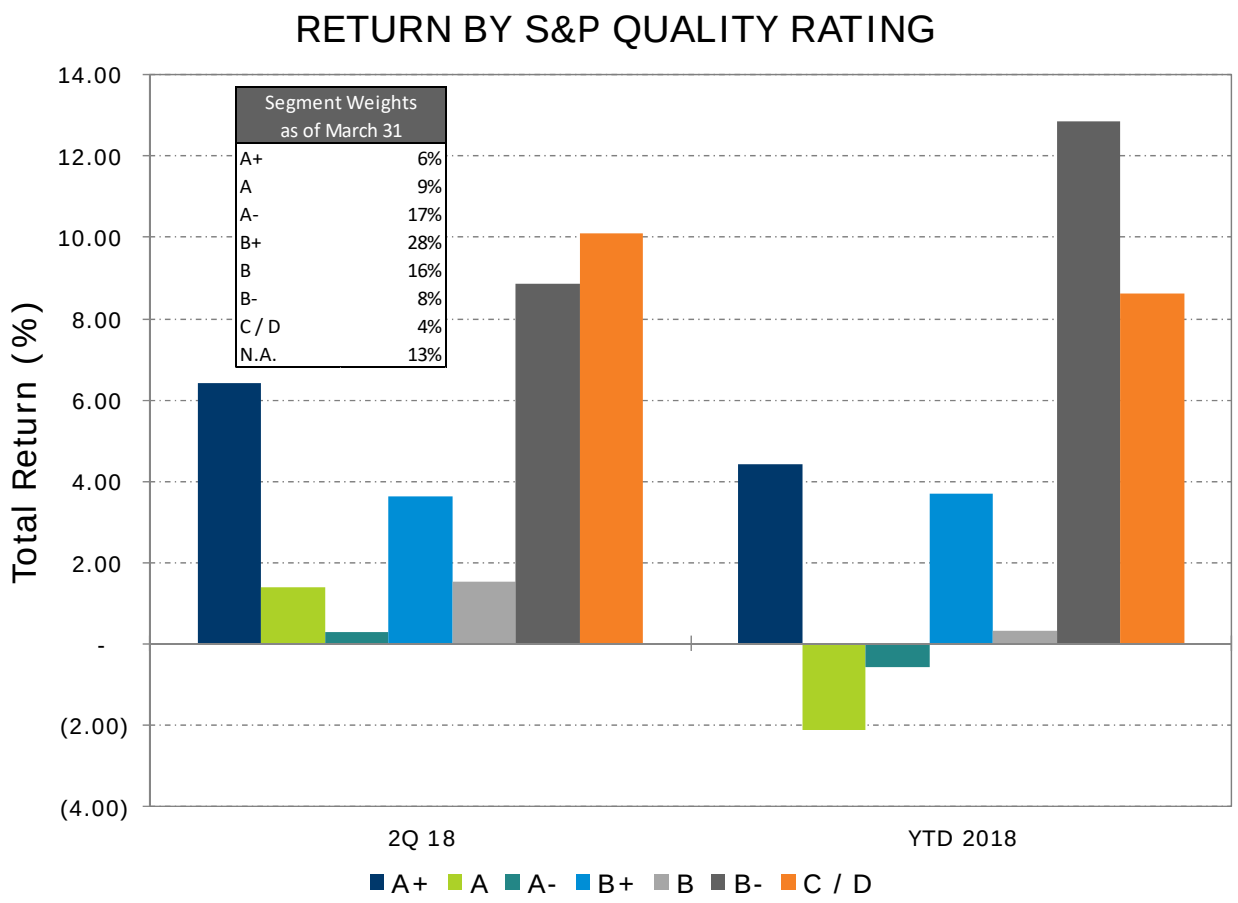
RETURNS BY QUALITY SEGMENT

Lower quality names are outperforming during 2018



Data sources: Wilshire Atlas

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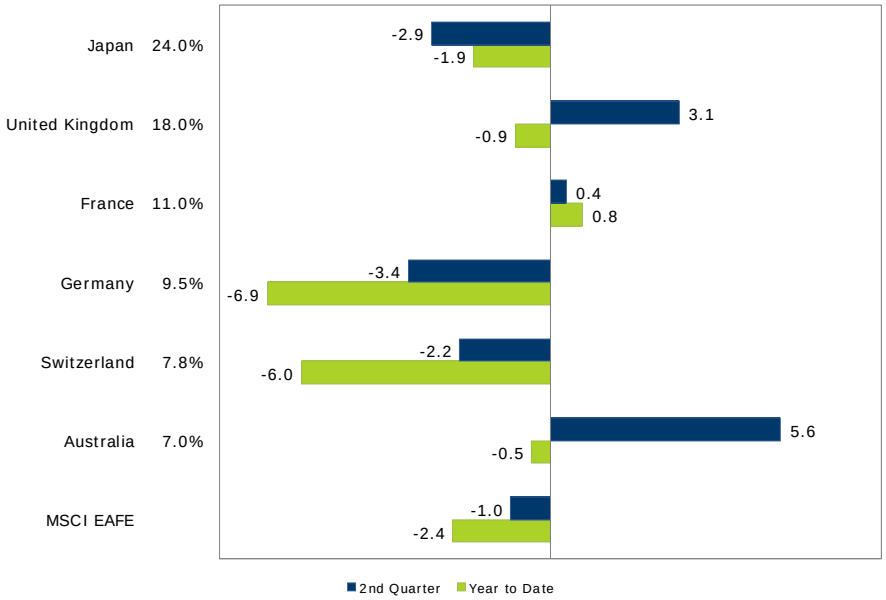
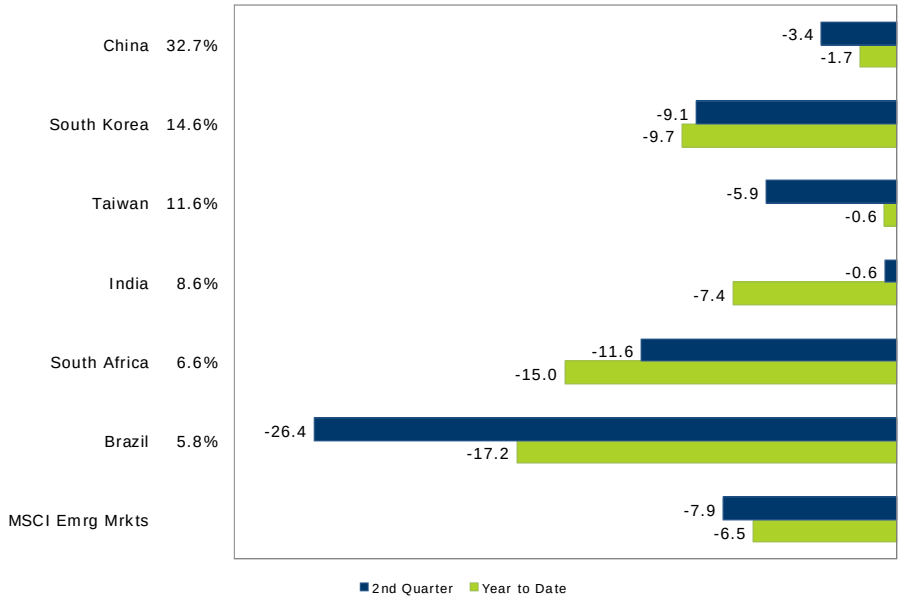
NON-U.S. EQUITY MARKET

AS OF JUNE 30, 2018	QTR	YTD	1 YR	3 YR	5 YR	10 YR
MSCI ACWI EX-US ($G)	-2.4	-3.4	7.8	5.6	6.5	3.0
MSCI EAFE ($G)	-1.0	-2.4	7.4	5.4	6.9	3.3
MSCI EMERGING MARKETS ($G)	-7.9	-6.5	8.6	6.0	5.4	2.6
MSCI FRONTIER MARKETS ($G)	-15.1	-10.7	2.0	2.5	4.9	-1.9
MSCI ACWI EX-US GROWTH ($G)	-1.2	-2.0	10.3	6.9	7.6	3.4
MSCI ACWI EX-US VALUE ($G)	-3.6	-4.9	5.3	4.1	5.3	2.6
MSCI ACWI EX-US SMALL ($G)	-2.4	-2.7	11.0	8.5	9.5	6.2
MSCI ACWI MINIMUM VOLATILITY	0.6	0.0	8.0	9.0	9.7	8.3
MSCI EAFE MINIMUM VOLATILITY	-0.5	0.0	6.5	6.8	8.4	6.3
FTSE RAFI DEVELOPED EX-US	-1.6	-3.5	7.6	5.9	7.4	3.8
MSCI EAFE LC (G)	3.8	-0.6	6.6	5.7	9.4	5.5

MSCI EAFE: LARGEST COUNTRIES & RETURN (USD)



MSCI EM: LARGEST COUNTRIES & RETURN (USD)



Data sources: Wilshire Compass

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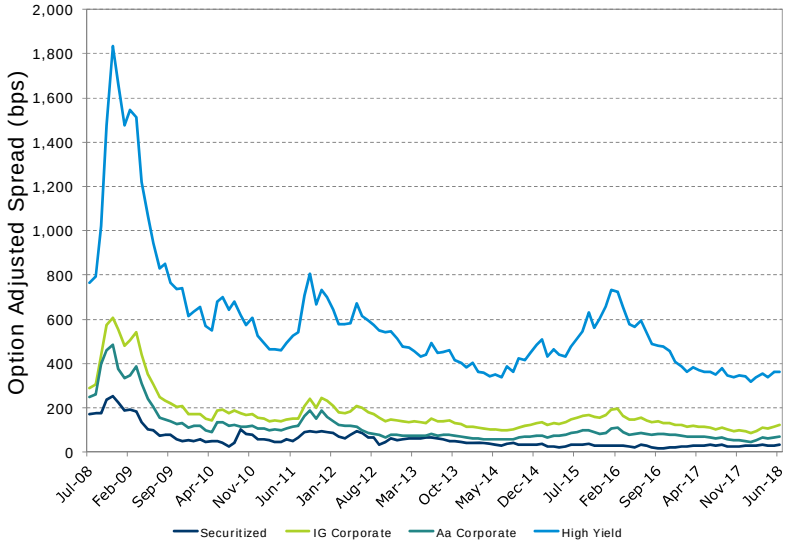
U.S. FIXED INCOME

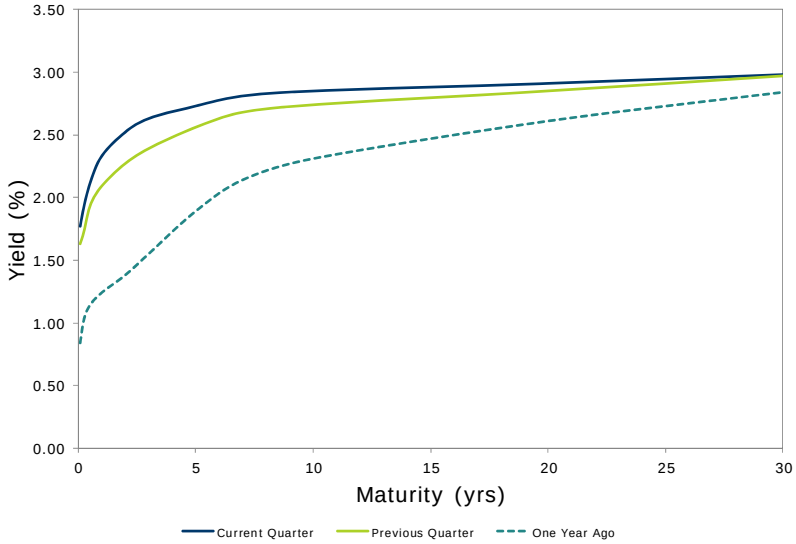
AS OF JUNE 30, 2018	YTM	DURATION	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS AGGREGATE	3.3	6.0	-0.2	-1.6	-0.4	1.7	2.3	3.7
BLOOMBERG BARCLAYS TREASURY	2.7	6.1	0.1	-1.1	-0.7	1.0	1.5	3.0
BLOOMBERG BARCLAYS GOV'T-REL.	3.3	5.3	-0.3	-1.3	0.1	1.7	2.3	3.4
BLOOMBERG BARCLAYS SECURITIZED	3.4	5.0	0.2	-1.0	0.1	1.5	2.2	3.6
BLOOMBERG BARCLAYS CORPORATE	4.0	7.3	-1.0	-3.3	-0.8	3.1	3.5	5.4
BLOOMBERG BARCLAYS LT G/C	4.0	14.9	-1.5	-5.0	-0.8	4.3	5.1	6.8
BLOOMBERG BARCLAYS LT TREASURY	3.0	17.2	0.3	-3.0	-0.1	3.4	4.5	6.1
BLOOMBERG BARCLAYS LT GOV't-REL.	4.5	12.1	-1.4	-3.7	1.2	4.3	5.4	6.6
BLOOMBERG BARCLAYS LT CORP.	4.7	13.6	-2.8	-6.8	-1.8	5.1	5.5	7.4
BLOOMBERG BARCLAYS U.S. TIPS *	2.8	7.6	0.8	0.0	2.1	1.9	1.7	3.0
BLOOMBERG BARCLAYS HIGH YIELD	6.7	3.9	1.0	0.2	2.6	5.5	5.5	8.2
TREASURY BILLS	1.9	0.25	0.5	0.8	1.4	0.7	0.4	0.4

* Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index

BLOOMBERG BARCLAYS FIXED INCOME INDEXES



TREASURY YIELD CURVE



Data sources: Wilshire Compass, Bloomberg Barclays, U.S. Treasury

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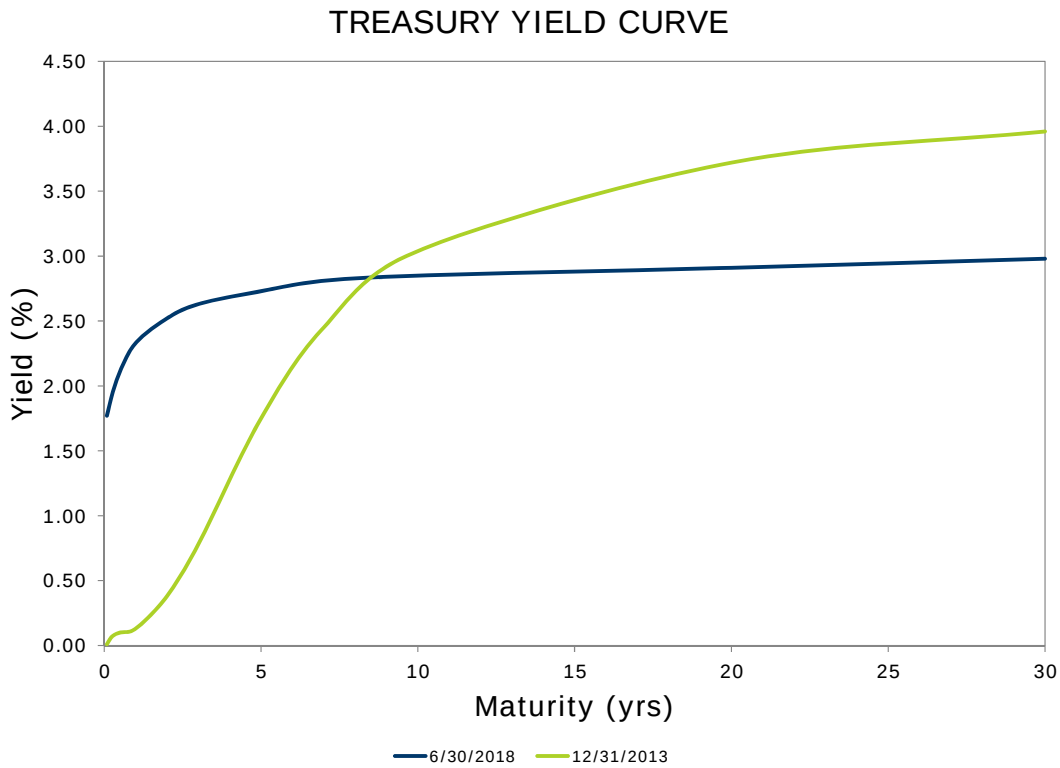
FLATTENING YIELD CURVE

- U.S. yield curve has changed dramatically during the past 5 years
  - Last time the slope peaked was year-end 2013; 10 minus 2-Year Treasury = 2.6%
  - Currently flatter than any time in the previous decade; yield difference now at 0.4%
- Continued economic growth without upward movement in long rates could be an indication that market participants are expecting a slowdown on the horizon



Data source: Federal Reserve

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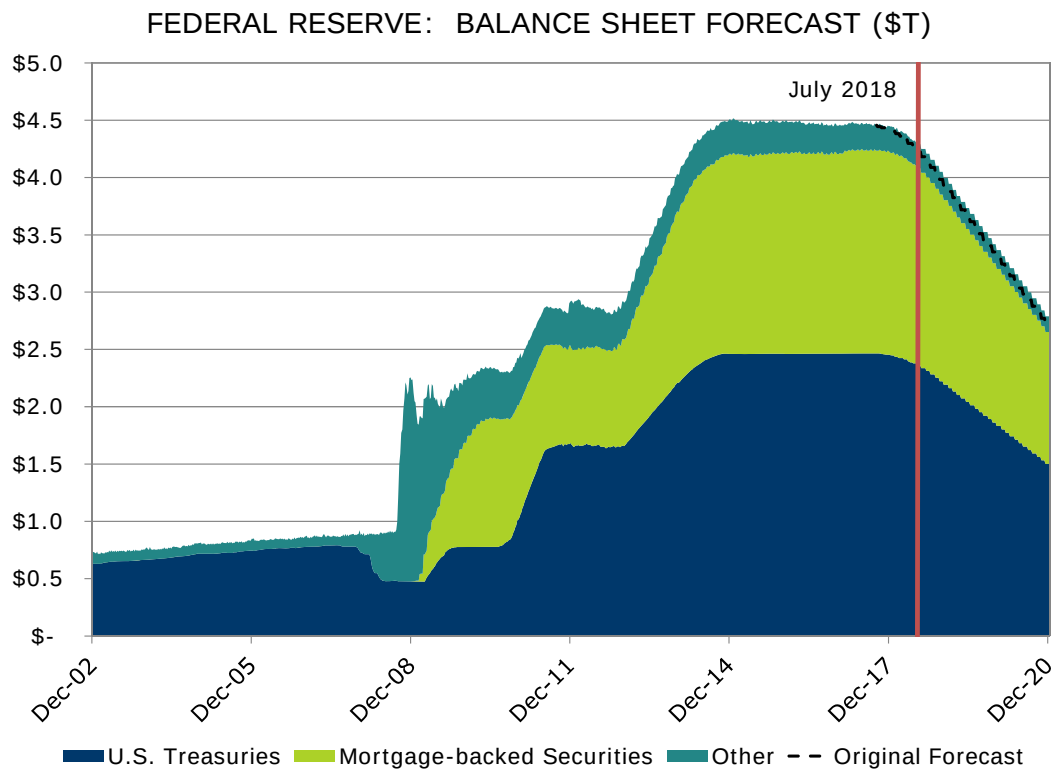
FEDERAL RESERVE

- Federal Reserve began their balance sheet normalization program during October 2017; targeting $10B in reductions per month while increasing to $50B per month in Q4 2018

- European Central Bank has announced their intention to end their quantitative easing program this year; Bank of Japan reduced their bond purchases for the third time in June



Data sources: Federal Reserve

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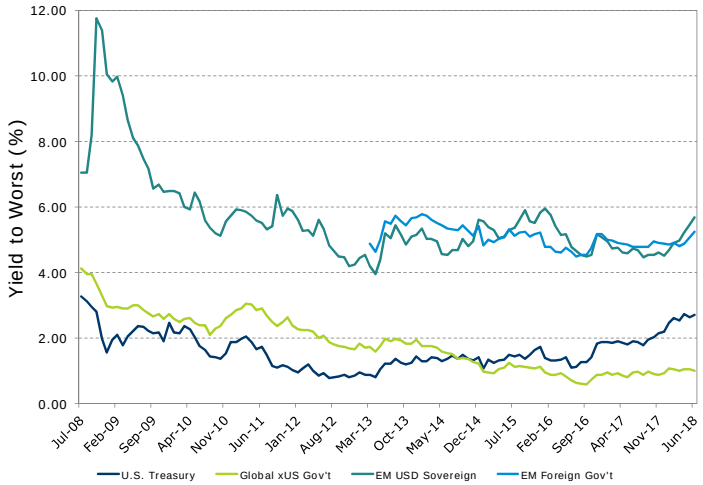
NON-U.S. FIXED INCOME

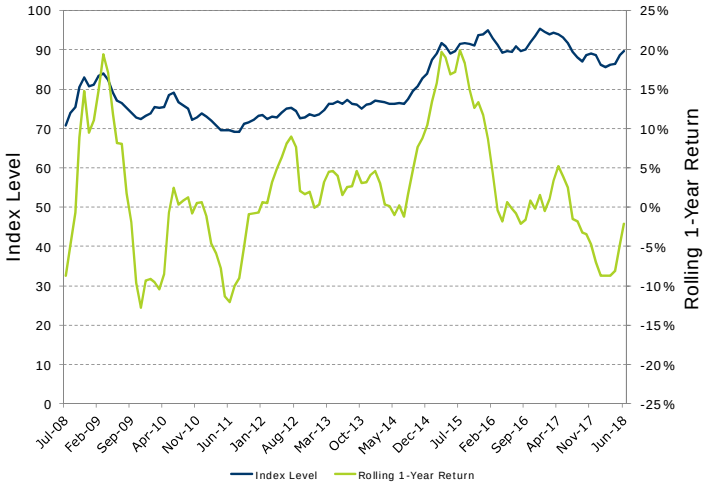
AS OF JUNE 30, 2018	QTR	YTD	1 YR	3 YR	5 YR	10 YR
DEVELOPED MARKETS						
BLMBRG BRCLYS GLBL AGGREGATE xUS	-4.8	-1.3	2.8	3.2	0.9	1.8
BLMBRG BRCLYS GLBL AGGREGATE xUS *	0.5	1.4	3.3	3.6	4.0	4.4
BLMBRG BRCLYS GLOBAL INF LNKD xUS	-5.8	-2.8	4.2	2.5	3.0	2.2
BLMBRG BRCLYS GLOBAL INF LNKD xUS *	0.0	0.7	4.3	5.9	6.2	5.6
EMERGING MARKETS (HARD CURRENCY)						
BLMBRG BRCLYS EM USD AGGREGATE	-2.4	-3.8	-1.1	4.0	4.5	6.6
EMERGING MARKETS (FOREIGN CURRENCY)						
BLMBRG BRCLYS EM LOCAL CURR. GOV'T	-8.2	-5.5	-0.8	1.9	0.5	2.6
BLMBRG BRCLYS EM LOCAL CURR. GOV'T *	-1.4	-0.4	0.7	2.2	2.2	3.7
EURO vs. DOLLAR	-5.1	-2.8	2.4	1.6	-2.1	-3.0
YEN vs. DOLLAR	-4.0	1.7	1.4	3.4	-2.2	-0.4
POUND vs. DOLLAR	-5.9	-2.4	1.7	-5.7	-2.7	-4.0

* Returns are reported in terms of local market investors, which removes currency effects.

BLOOMBERG BARCLAYS FIXED INCOME INDEXES



U.S. DOLLAR INDEX: MAJOR CURRENCIES



Data sources: Wilshire Compass, Bloomberg Barclays, Federal Reserve Bank of St. Louis

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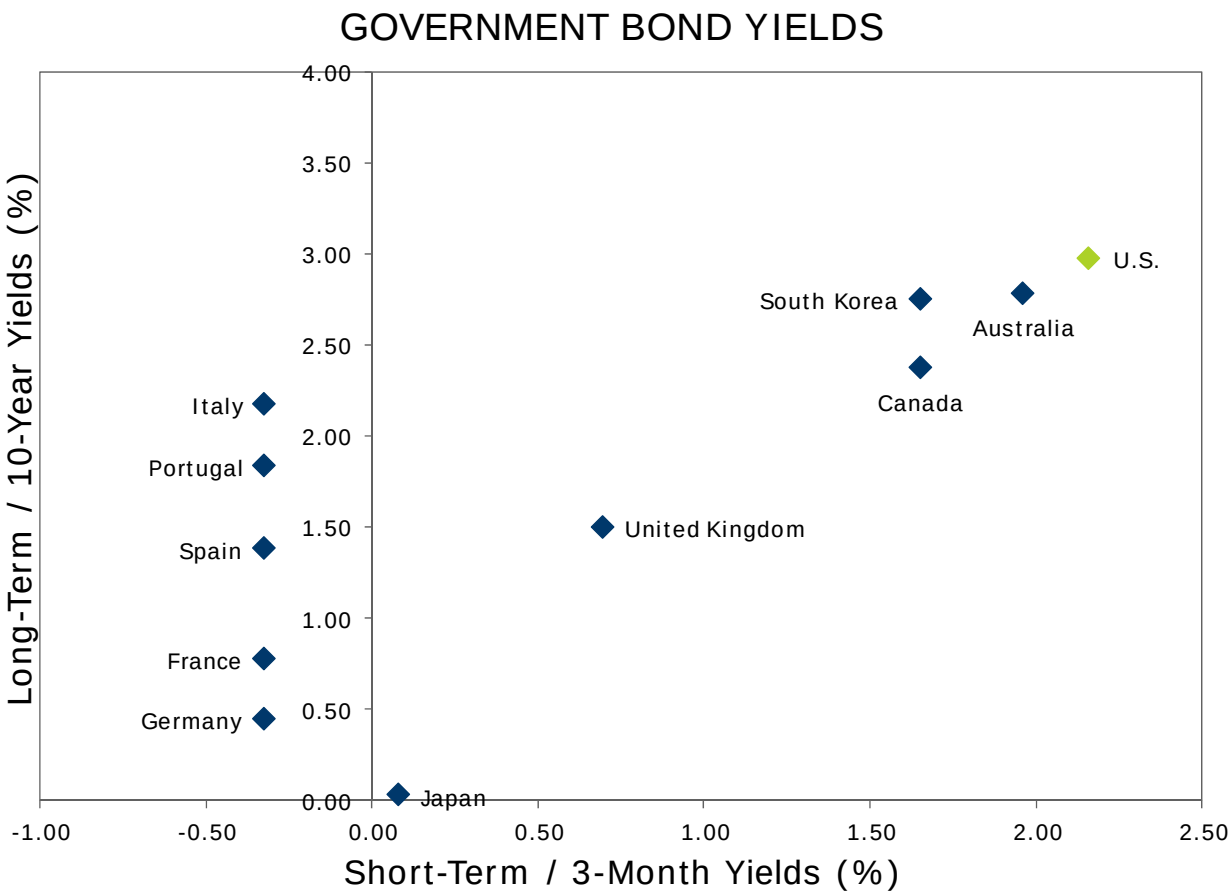
GLOBAL INTEREST RATES

Negative short-term rates remain in Europe while the major economies of France and Germany also offer long-term rates below 1%



Data sources: Organization for Economic Co-operation and Development

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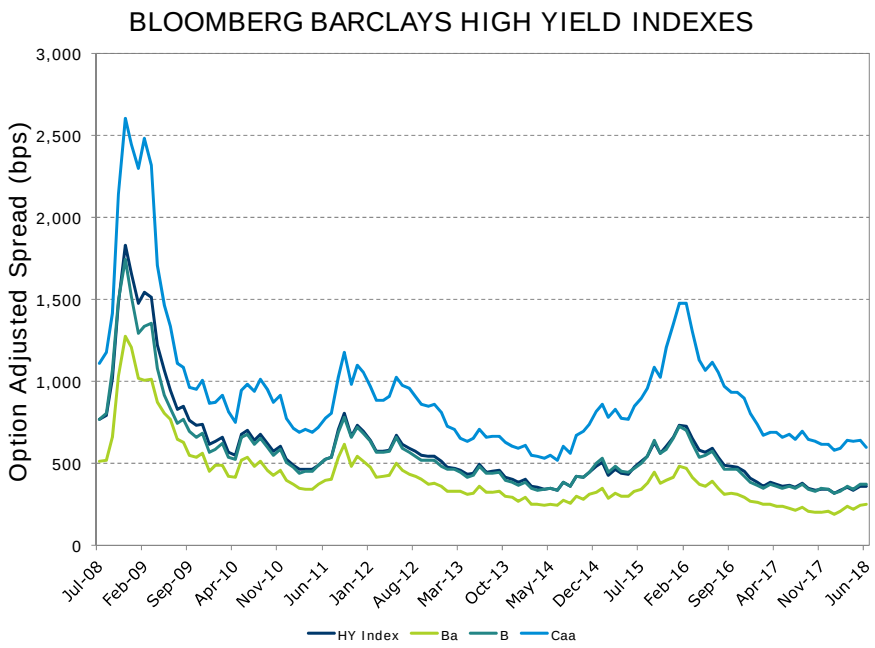
HIGH YIELD BOND MARKET

AS OF JUNE 30, 2018		QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS HIGH YIELD		1.0	0.2	2.6	5.5	5.5	8.2
CREDIT SUISSE LEVERAGED LOAN		0.8	2.4	4.7	4.3	4.2	5.0
HIGH YIELD QUALITY DISTRIBUTION	WEIGHT						
Ba U.S. HIGH YIELD	43.2%	-0.2	-1.8	0.6	4.8	5.4	8.2
B U.S. HIGH YIELD	42.2%	1.4	0.9	3.0	4.8	5.0	6.8
Caa U.S. HIGH YIELD	13.5%	2.9	3.2	6.8	8.7	7.1	8.3
Ca to D U.S. HIGH YIELD	0.9%	18.9	21.6	24.1	12.1	-6.6	5.5
Non-Rated U.S. HIGH YIELD	0.2%	1.2	1.4	2.0	-1.3	0.8	2.0



Data sources: Wilshire Compass, Bloomberg Barclays

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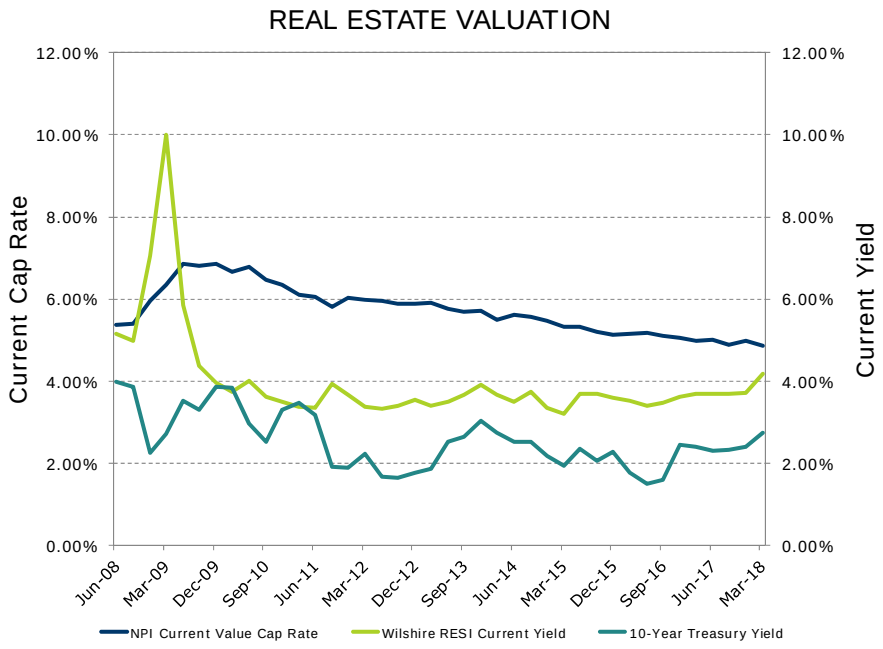
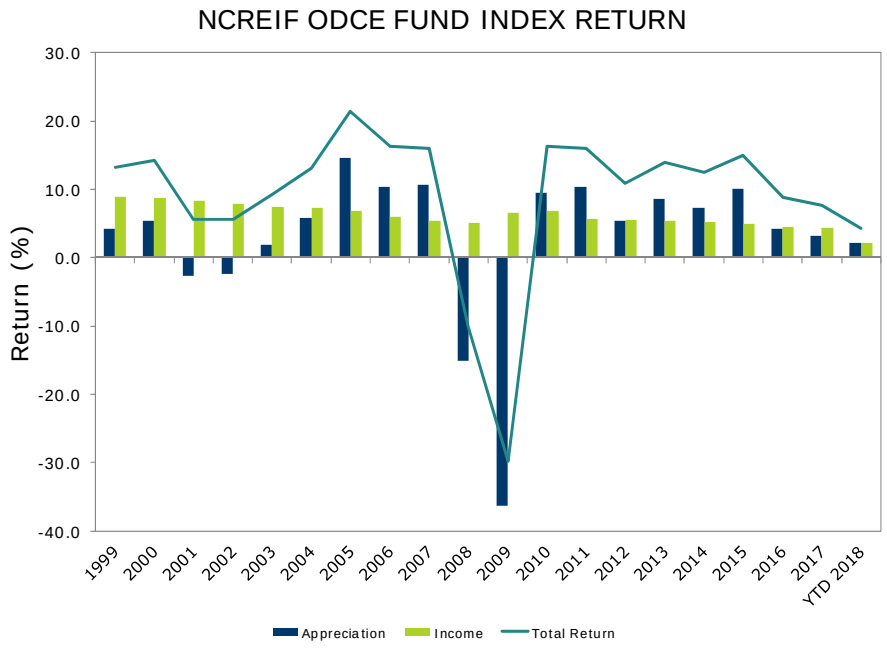
REAL ASSETS

AS OF JUNE 30, 2018	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS U.S. TIPS	0.8	0.0	2.1	1.9	1.7	3.0
BLOOMBERG COMMODITY INDEX	0.4	0.0	7.3	-4.5	-6.4	-9.0
WILSHIRE GLOBAL RESI INDEX	6.0	0.5	5.1	6.8	7.5	6.6
NCREIF ODCE FUND INDEX	2.0	4.3	8.4	9.4	11.0	5.3
NCREIF TIMBERLAND INDEX	0.5	1.4	3.6	3.4	6.0	4.0
ALERIAN MLP INDEX (OIL & GAS)	11.8	-0.6	-4.6	-5.9	-4.1	6.5





Data sources: Wilshire Compass, National Council of Real Estate Investment Fiduciaries

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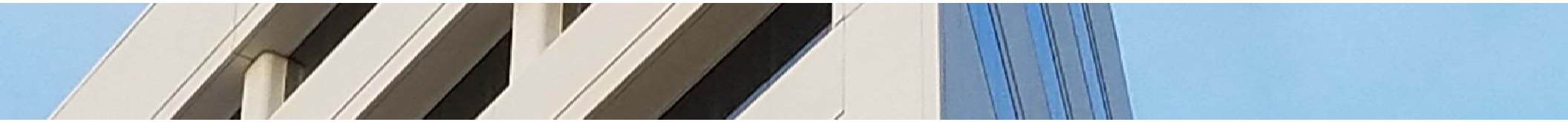
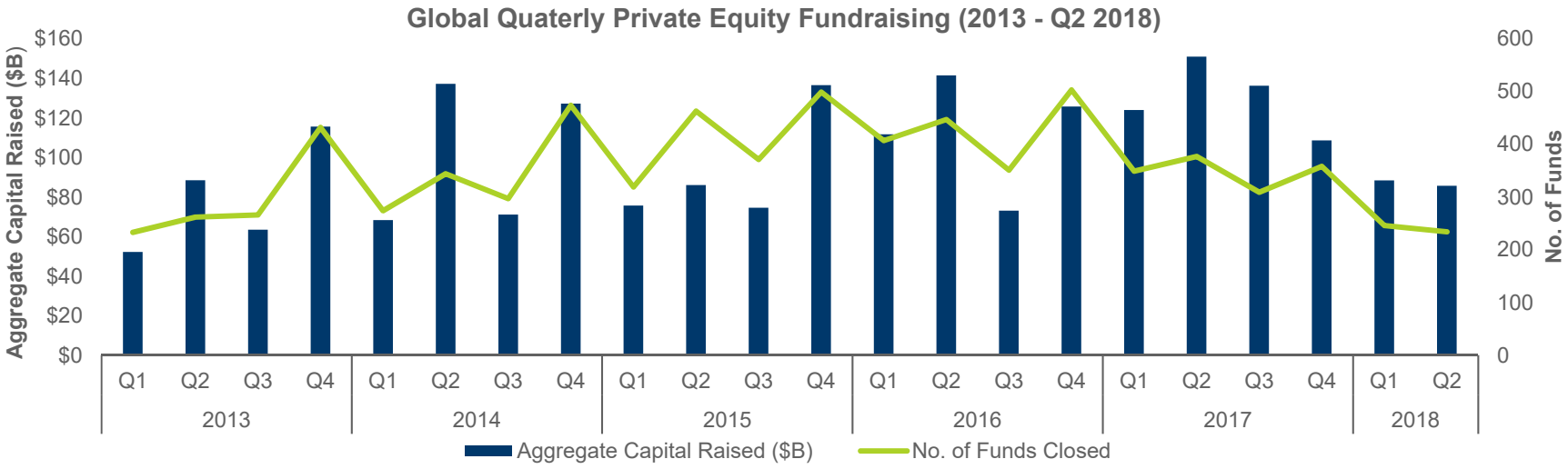
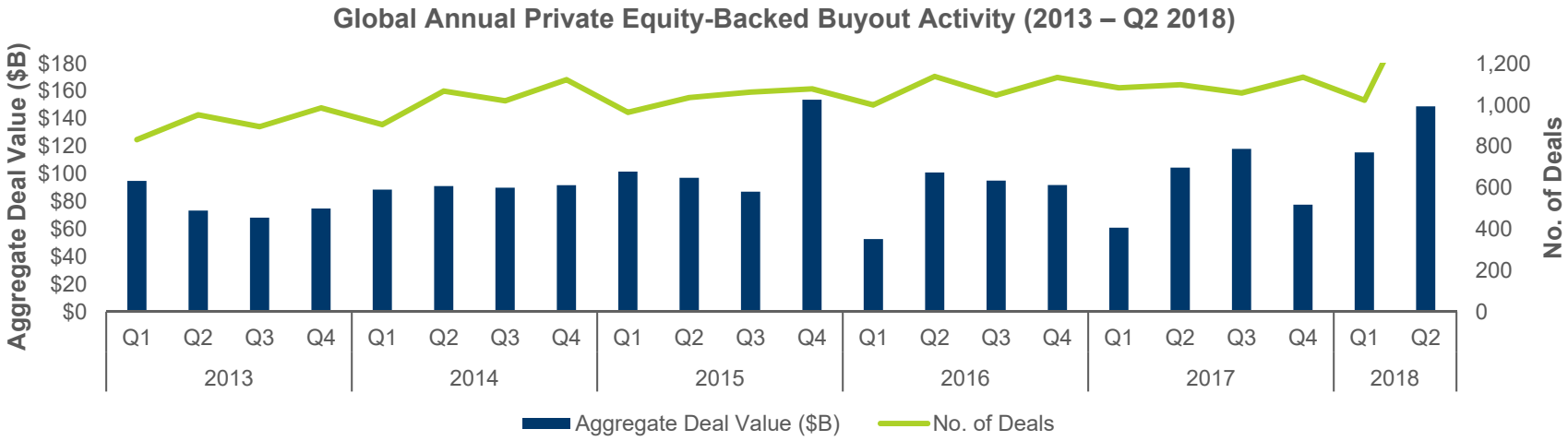


APPENDIX: PRIVATE MARKETS UPDATE

PRIVATE EQUITY – FUNDRAISING & INVESTMENT ACTIVITY





Source: Preqin, as of June 30, 2018.

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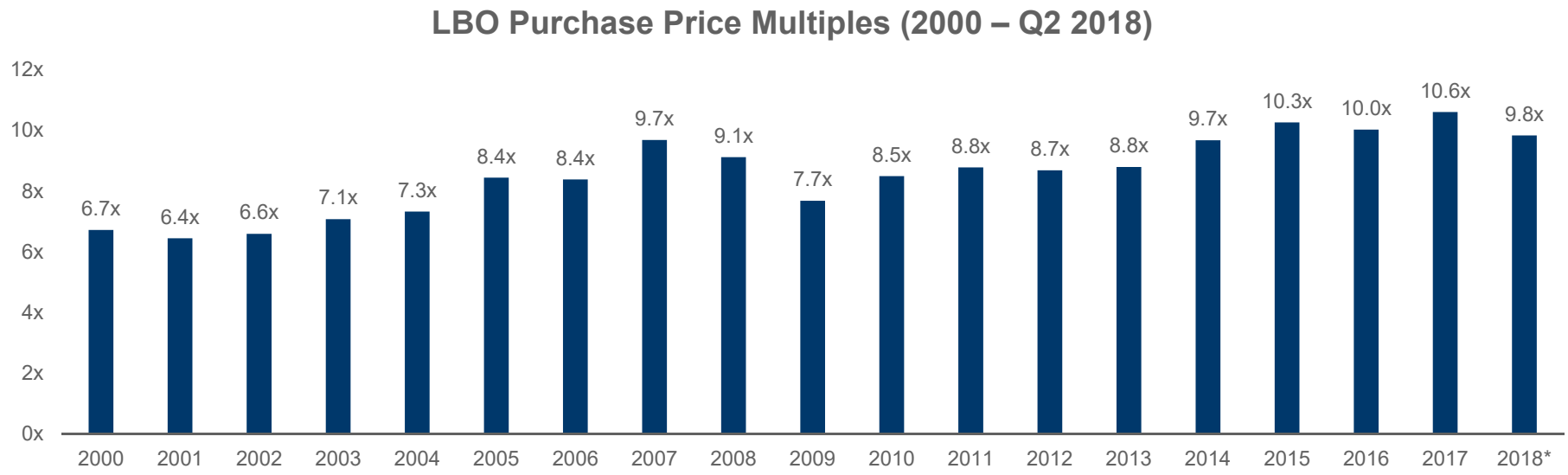
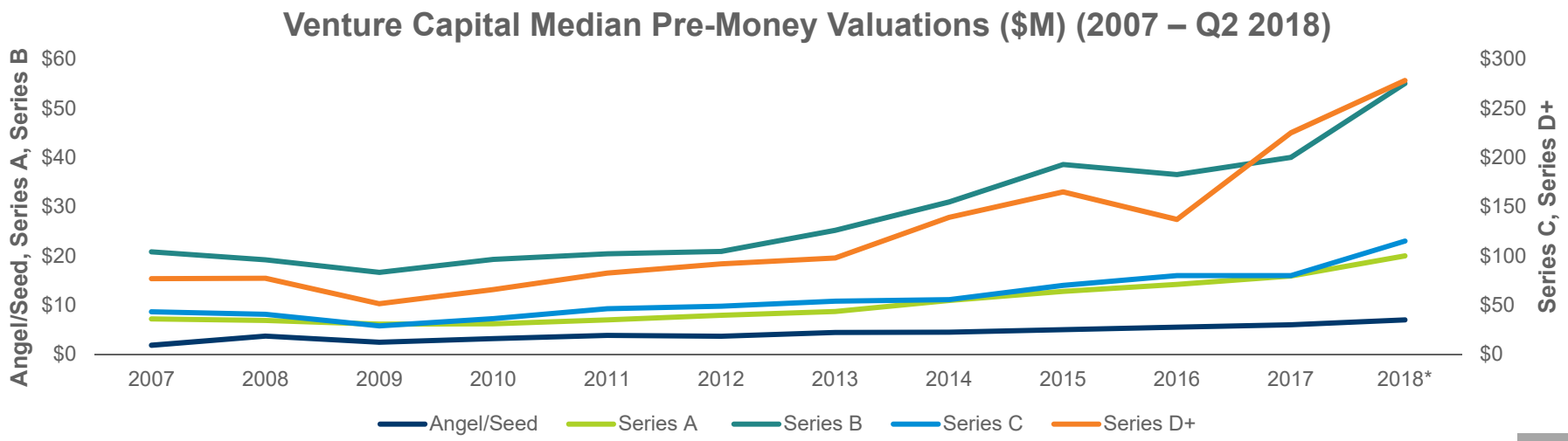
PRIVATE EQUITY – PRICING & VALUATIONS





Source: S&P LBO; Pitchbook, *as of June 30, 2018.

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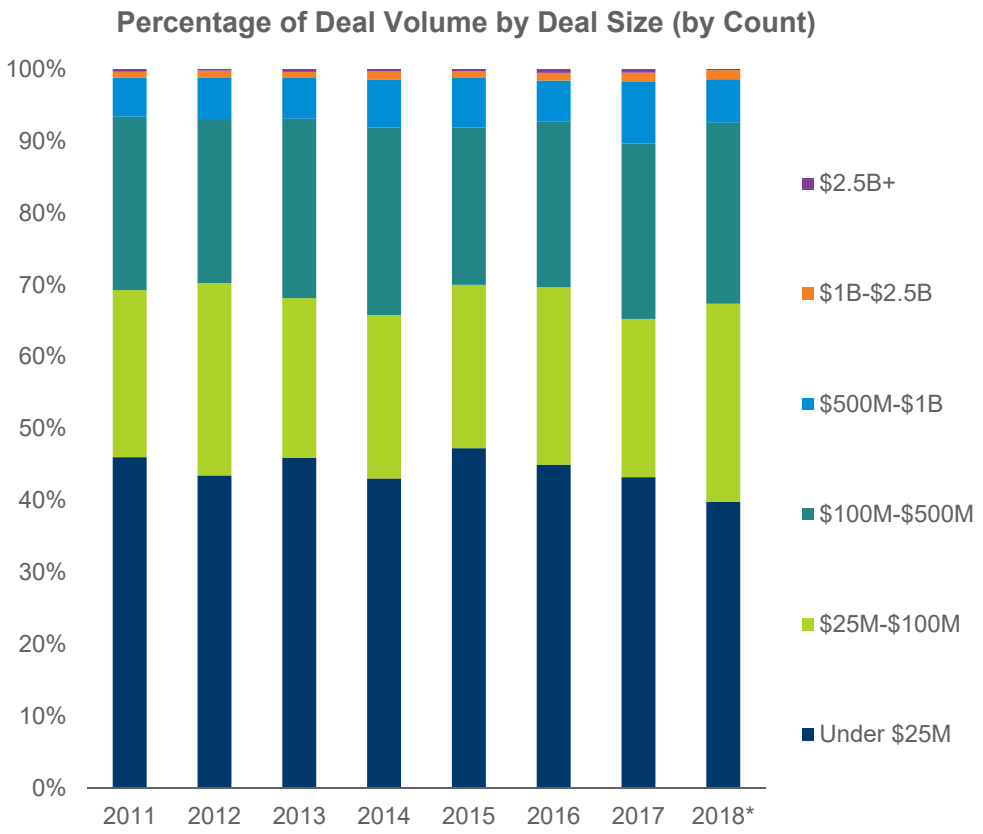
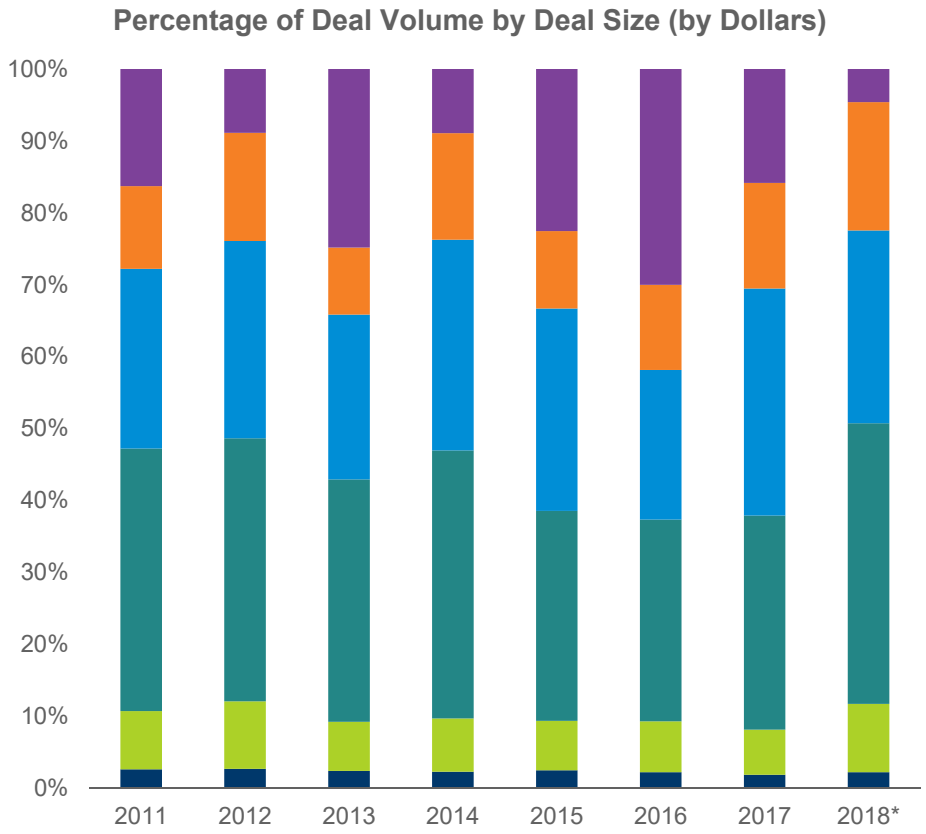
U.S. INVESTMENT ACTIVITY BY DEAL SIZE





- Deal volume continues to be dominated by lower middle market deals with investments sizes below $100 million through the second quarter of 2018
- However, deals with below $100 million check sizes comprised only 13% of all deal volume by amount of capital invested in the second quarter of 2018

Source: PitchBook, *as of June 30, 2018.

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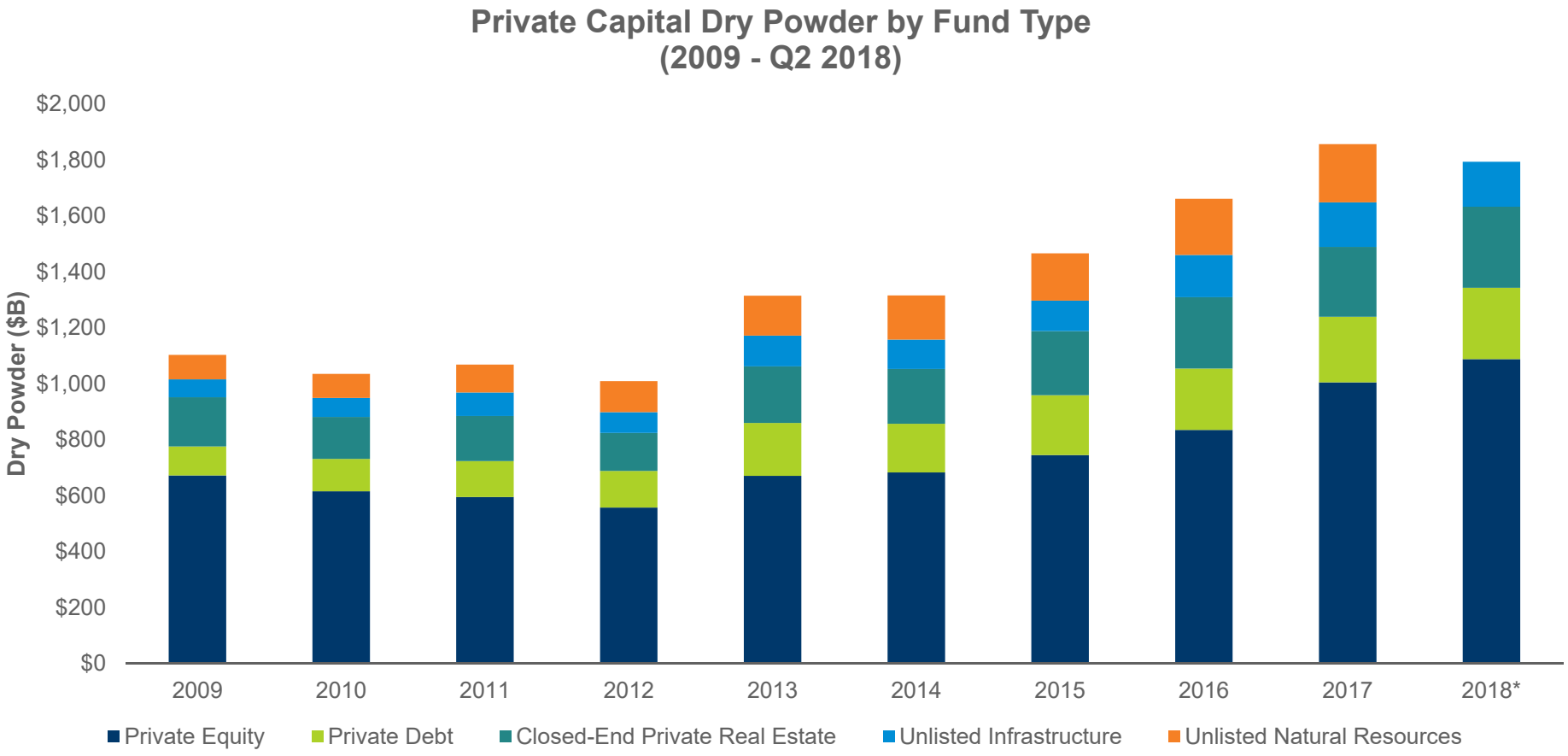
PRIVATE CAPITAL DRY POWDER



- Global private capital dry powder continues to increase, topping $1.7 trillion across all fund types
- Private equity comprised over 60% of total dry powder in the market as of Q2 2018

Source: Preqin, *as of June 30, 2018.

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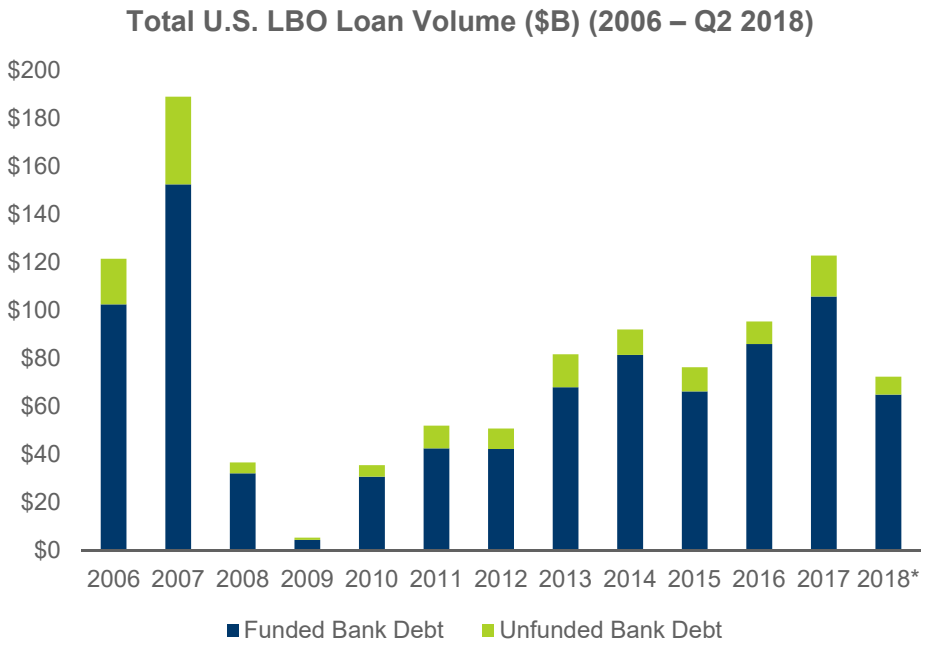
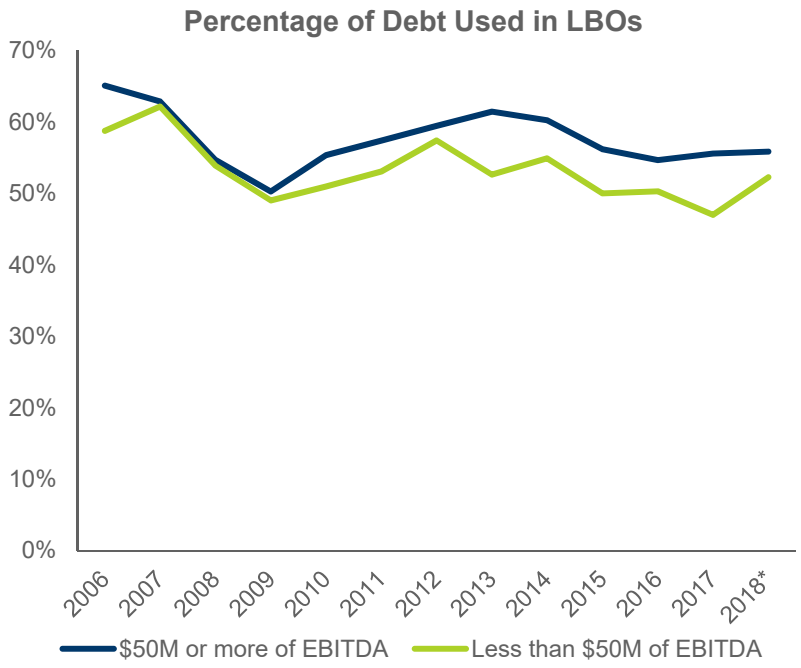
PRIVATE EQUITY - U.S. DEBT MARKETS





- Loan volume in 2017 increased by approximately $27 billion from the prior year and is on pace to once again increase year-over-year through the second quarter of 2018
- Availability of debt capital has slightly driven up the percentage of debt used to finance leveraged buyouts through the second quarter of 2018

Source: S&P LBO, *as of June 30, 2018.

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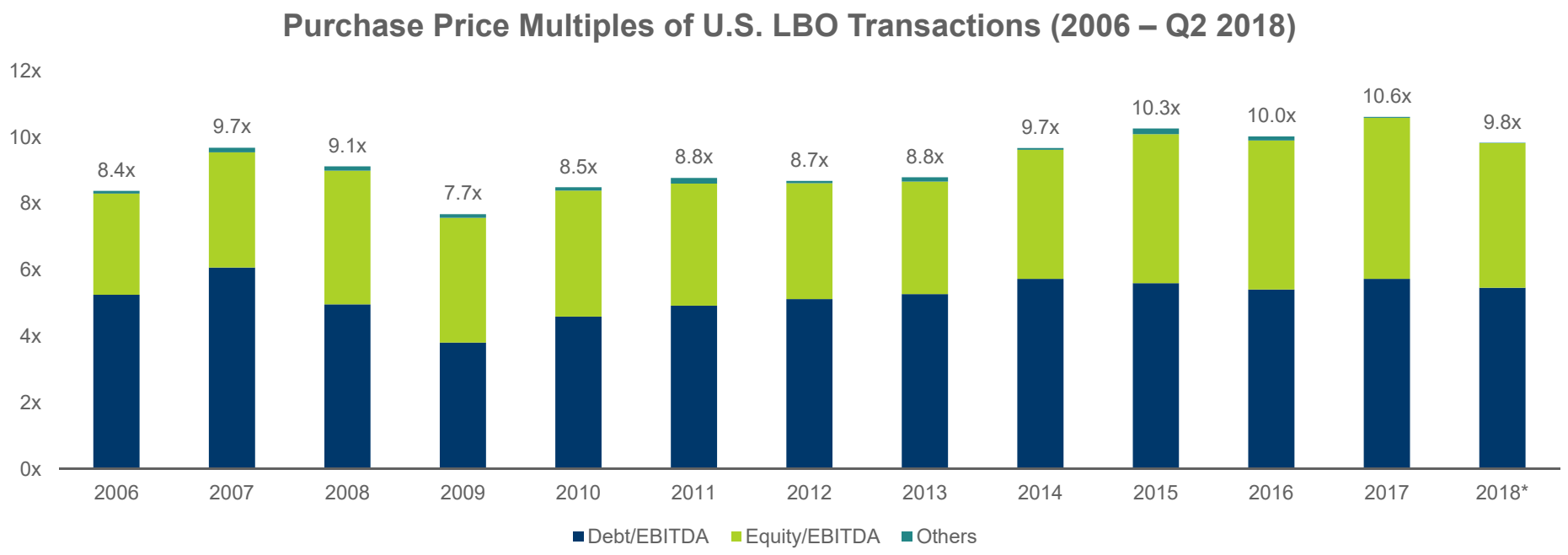
PRIVATE EQUITY - U.S. LBO PURCHASE PRICE MULTIPLES



- Despite the amount of debt that is readily available, purchase price multiples for U.S. LBOs decreased slightly through Q2 2018 relative to 2017 levels

Source: S&P LBO, *as of June 30, 2018.

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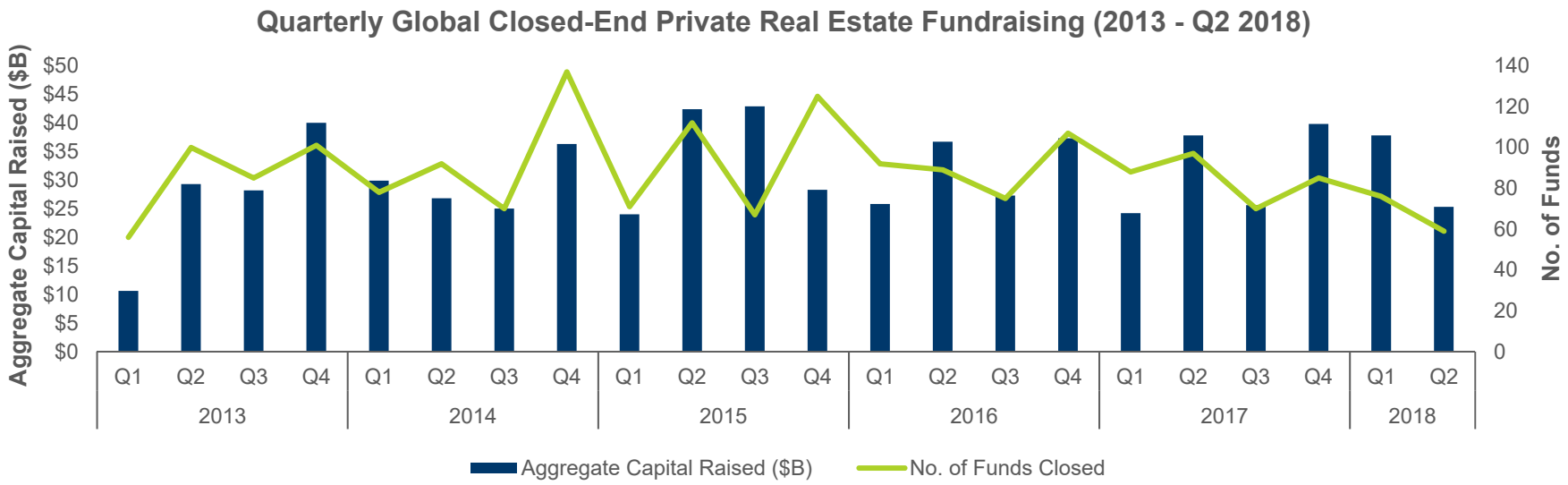
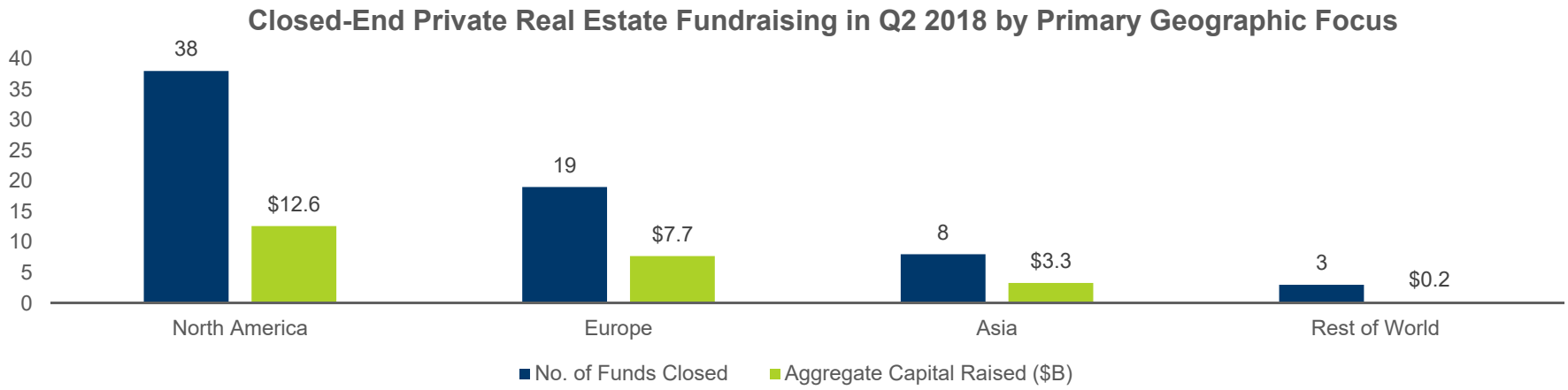
PRIVATE REAL ESTATE – FUNDRAISING ACTIVITY





Source: Preqin, as of June 30, 2018.

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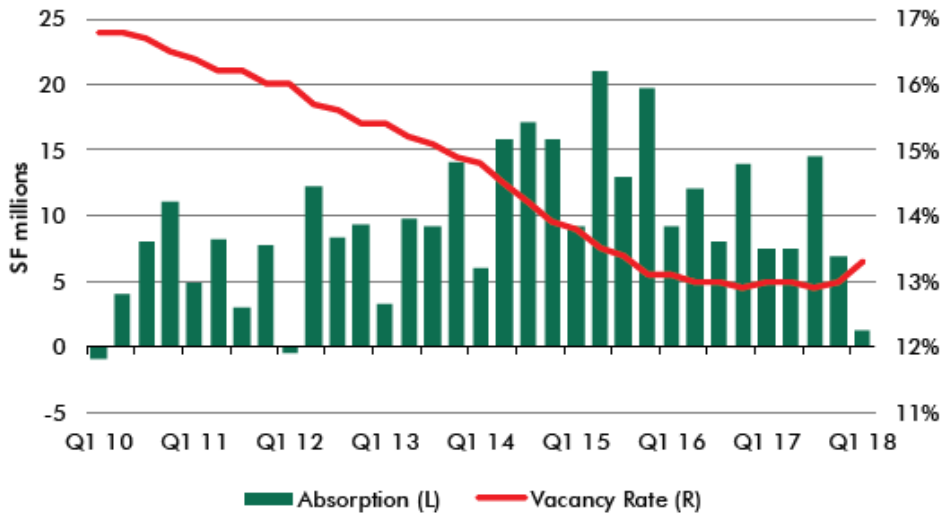
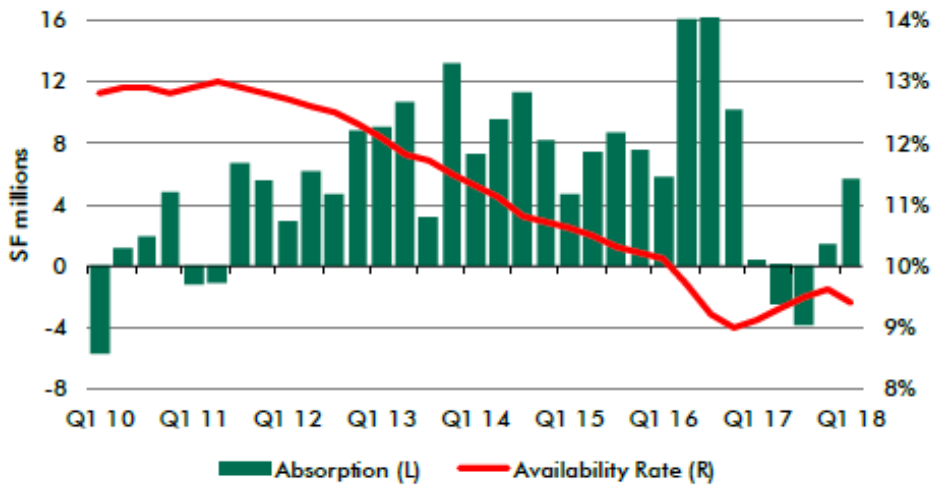
COMMERCIAL PROPERTY

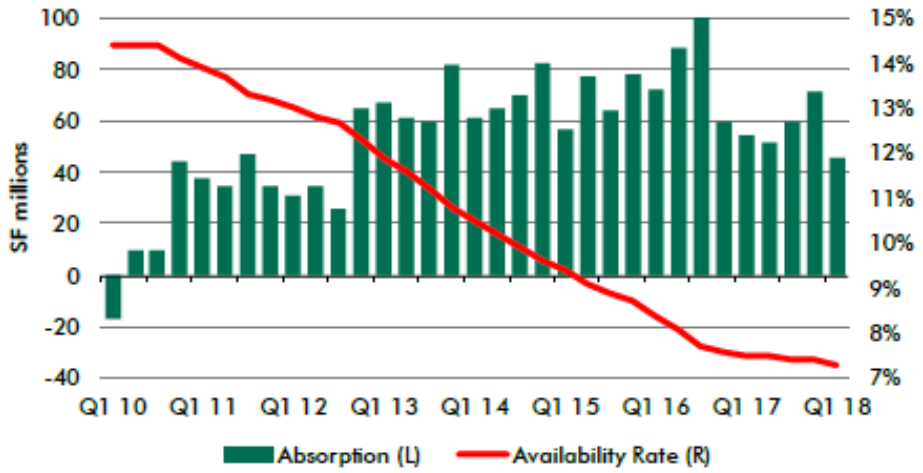
OFFICE



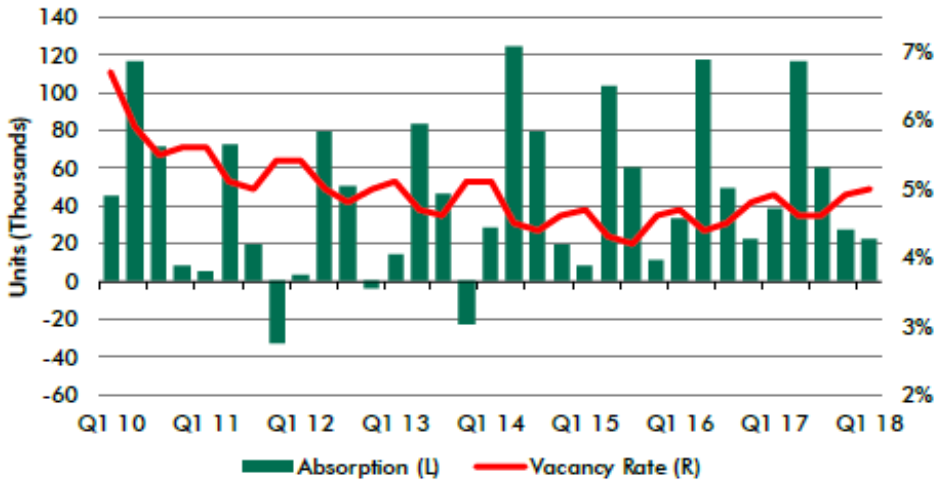
RETAIL



INDUSTRIAL



APARTMENTS



Data sources: CB Richard Ellis

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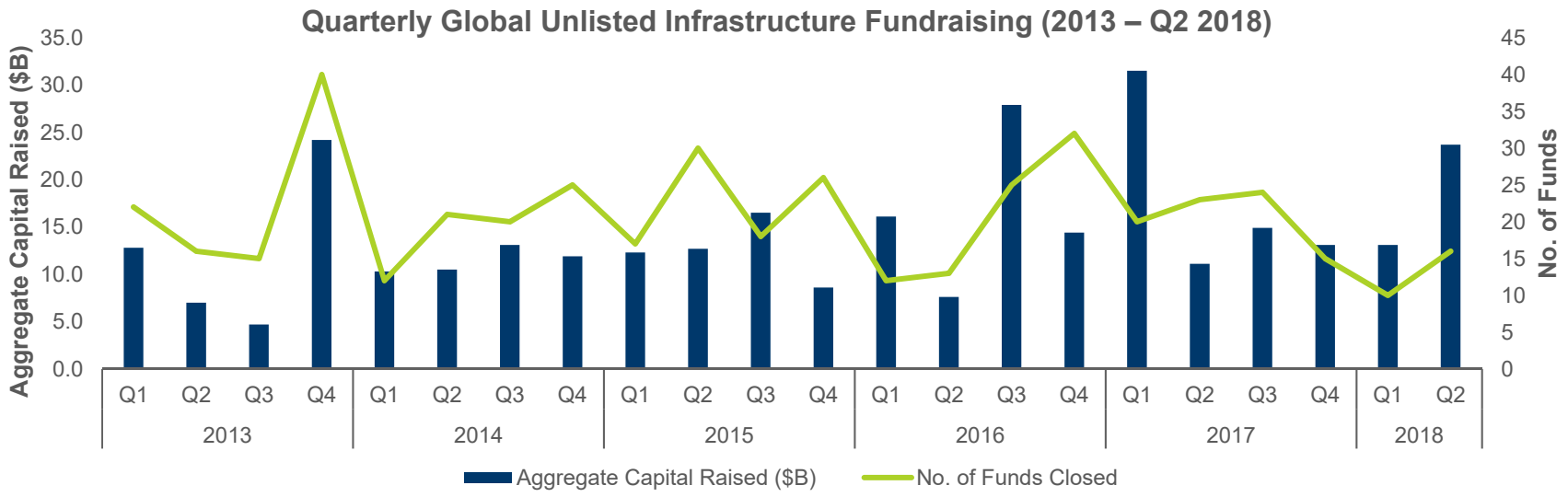
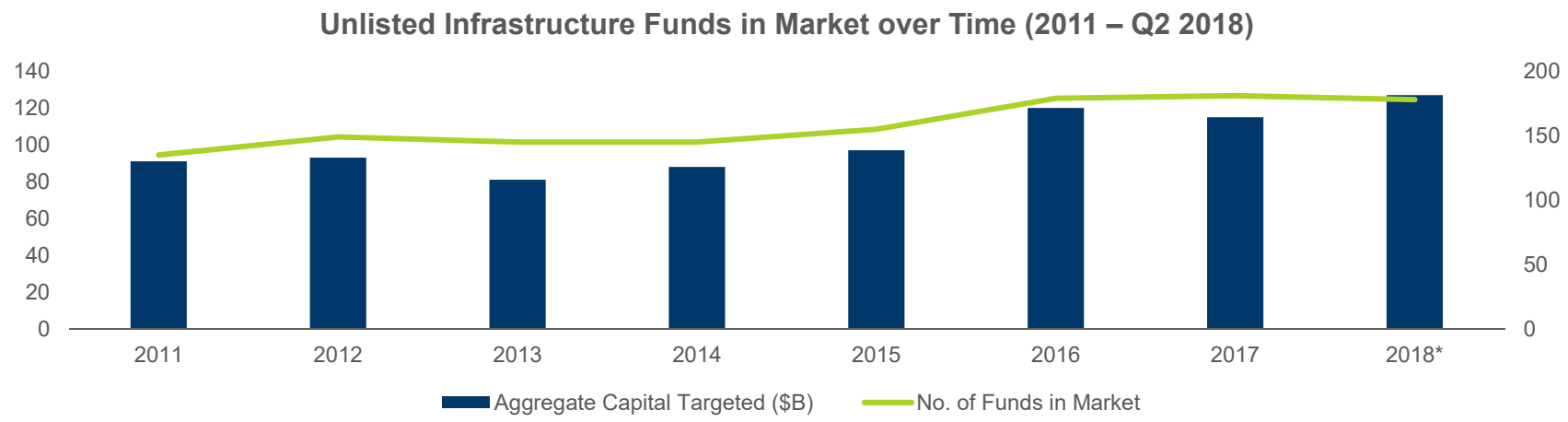
UNLISTED INFRASTRUCTURE – FUNDRAISING & INVESTMENT ACTIVITY





Source: Preqin, as of June 30, 2018.

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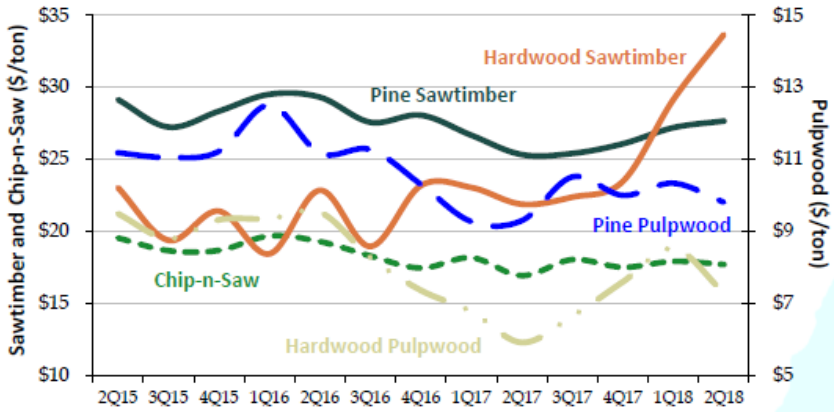
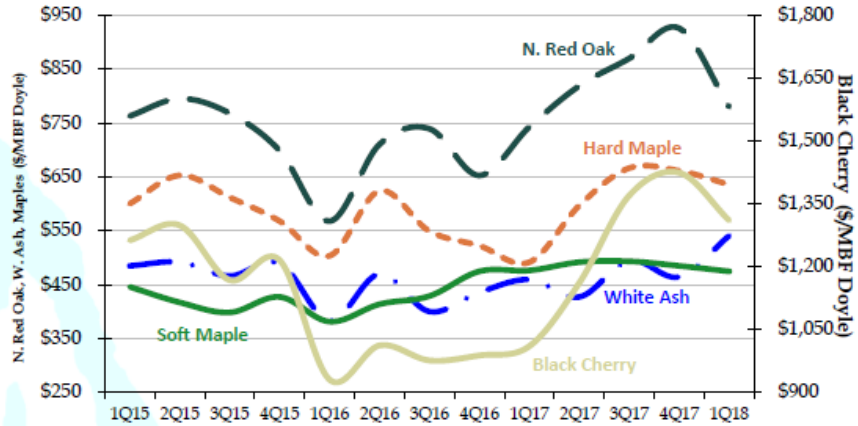
TIMBER

Southeastern Timber Prices



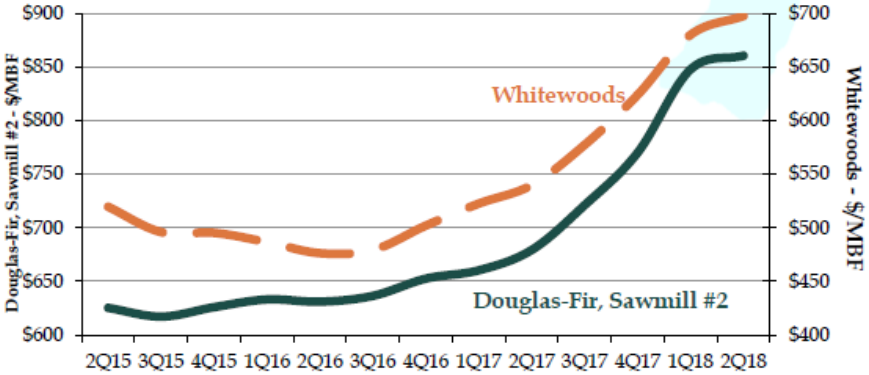
Source: Forest2Market®

Northeastern Hardwood Timber Prices



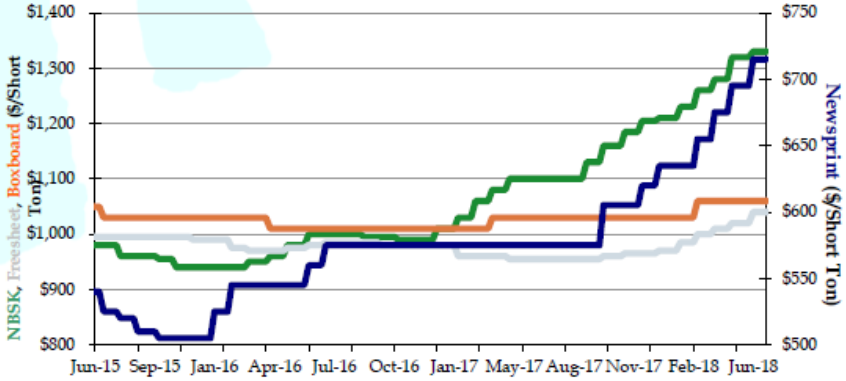
Source: Pennsylvania Woodlands Timber Market Report - Northwest Region

Pacific Northwest Timber Prices



Source: Log Lines®

Pulp and Paper



Source: FOEX Indexes, Ltd., RISI Pulp & Paper Week

Data sources: Forest Investment Associates

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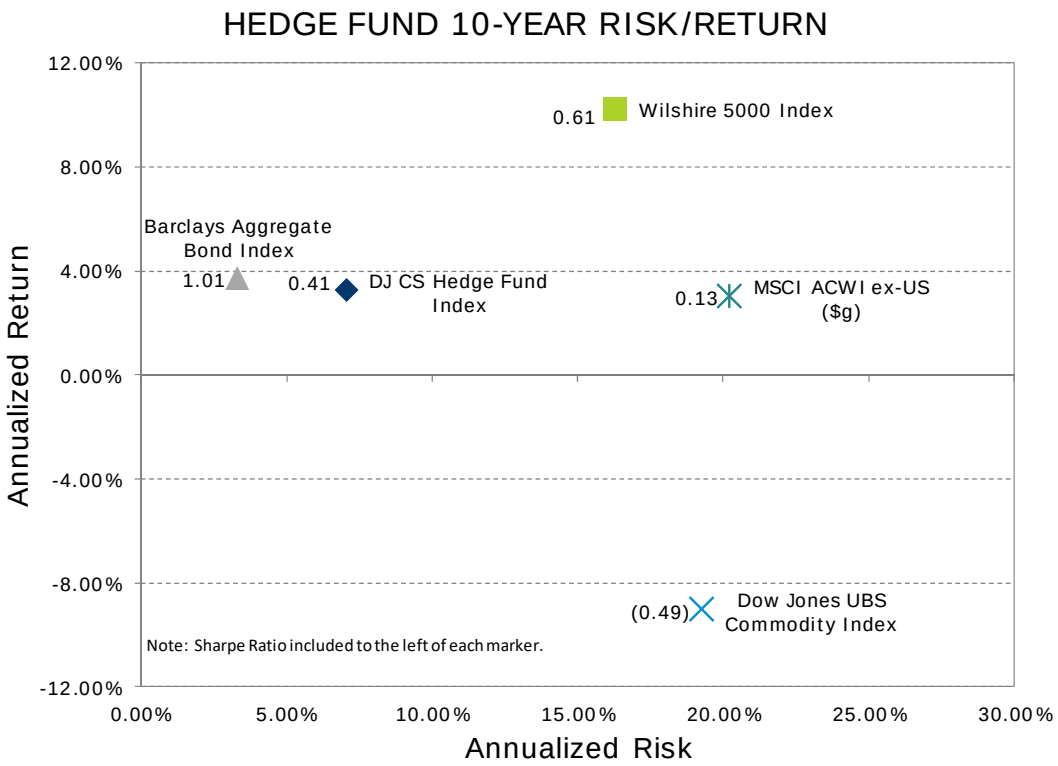
HEDGE FUND PERFORMANCE

AS OF JUNE 30, 2018	QTR	YTD	1 YR	3 YR	5 YR	10 YR
DJ CS HEDGE FUND INDEX	0.1	0.6	4.7	2.0	3.6	3.2
EVENT DRIVEN	1.6	1.3	3.8	0.5	2.6	3.3
GLOBAL MACRO	1.3	1.8	5.7	1.7	2.8	3.6
LONG/SHORT EQUITY	-0.4	0.7	7.1	3.3	5.8	4.1
MULTI-STRATEGY	0.1	1.8	3.5	4.5	6.0	5.3
WILSHIRE 5000	3.8	3.0	14.7	11.8	13.4	10.2
MSCI ACWI EX-US ($G)	-2.4	-3.4	7.8	5.6	6.5	3.0
BLOOMBERG BARCLAYS AGGREGATE	-0.2	-1.6	-0.4	1.7	2.3	3.7
DOW JONES UBS COMMODITY	0.4	0.0	7.3	-4.5	-6.4	-9.0



Data sources: Wilshire Compass

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