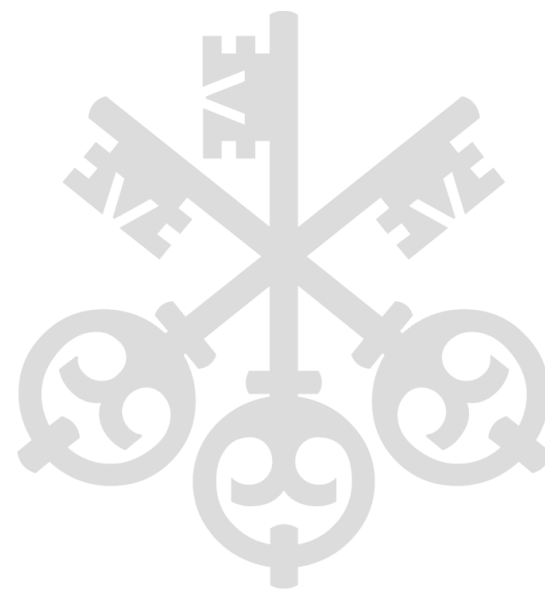


CIO Alternative Investments

Private Markets Update

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The market prices provided are closing prices on the respective principal stock exchange. This applies to all performance charts and tables in this publication.



US PE demonstrates substantial outperformance over the long term

US performances are attractive (mid to long term), but benchmarking remains difficult (lack of index and representativeness)

Private Equity	5-Year	10-Year	15-Year	Data
Venture capital*	16.07	10.28	4.84	1569 funds (1981-2014)
VC mPME	15.53	8.52	6.64	Russell 3000 Index
Value add (bps)	54	175	(180)	
Growth equity	16.63	13.02	10.89	174 funds (1986-2014)
GE mPME	15.66	9.01	7.50	Russell 3000 Index
Value add (bps)	97	402	339	
LBO**	16.87	12.99	10.76	746 funds (1986-2014)
LBO mPME	15.58	8.58	6.56	Russell 3000 Index
Value add (bps)	129	441	421	

Private Debt	5-Year	10-Year	15-Year	Data
Mezzanine debt	12.44	10.56	7.83	117 funds (1986-2014)
MD mPME	16.21	9.48	6.00	Russell 3000 Index
Value add (bps)	(377)	109	183	
Distressed debt	13.65	10.58	11.07	171 funds (1987-2014)
DD mPME	15.40	8.98	7.77	Russell 3000 Index
Value add (bps)	(176)	160	330	

Real Assets	5-Year	10-Year	15-Year	Data
Energy***	8.88	12.76	14.35	234 funds (1986-2014)
E mPME	9.22	7.49	7.99	Wilshire 5000 Energy Index
Value add (bps)	(34)	527	636	
Timber	6.55	5.73	5.78	33 funds (1986-2014)
T mPME	5.52	7.53	7.16	NCREIF Timberland Index
Value add (bps)	103	(180)	(138)	
Real Estate****	13.64	5.62	6.62	514 funds (1986-2014)
RE mPME	12.15	8.01	8.43	NCREIF Property Index
Value add (bps)	(149)	(239)	(181)	

Other	5-Year	10-Year	15-Year	Data
Funds of funds	13.34	9.91	7.38	390 funds (1987-2014)
Secondary funds	13.57	11.50	11.45	135 funds (1991-2014)

Note: CA Modified Public Market Equivalent (mPME) replicates private investments cash flows with public market indexes (shares are purchased and sold according to the private fund flows). Distributions are calculated in the same proportion as the private fund. The mPME NAV is a function of mPME cash flows and public index returns.

* includes early stage, late and expansion stage, multi-stage and venture debt funds (including fully liquidated).

** includes small cap, mid cap, large cap and mega cap funds (including fully liquidated).

*** includes "energy PE" and "upstream energy and royalties"

**** includes opportunistic and value-added funds.



Source: Cambridge Associates (as of 31/12/2014), UBS CIO, June 2015.

European PE demonstrates substantial outperformance over the long term

European performances are more differentiated depending on strategies; benchmarking difficulties are compounded by a lack of data (growth, mezz., DD)

Private Equity	5-Year	10-Year	15-Year	Data
Venture capital*	11.53	6.54	5.51	118 funds (1986-2014)
VC mPME	5.55	4.69	5.05	MSCI Europe Index
Value add (bps)	597	205	46	
Growth equity	11.30	10.06	9.45	30 funds (1994-2014)
GE mPME	6.88	7.04	6.55	MSCI Europe Index
Value add (bps)	442	303	290	
LBO**	10.38	12.68	14.23	364 funds (1986-2014)
LBO mPME	5.59	4.34	4.57	MSCI Europe Index
Value add (bps)	479	833	966	

Real Assets	5-Year	10-Year	15-Year	Data
Energy***	-1.1	5.9	29.95	6 funds (1996-2014)
E mPME	-1.45	1.63	N/A	MSCI Europe Energy Index
Value add (bps)	35	453	N/A	
Timber	N/A	N/A	N/A	
T mPME	N/A	N/A	N/A	
Value add (bps)	N/A	N/A	N/A	
Real Estate****	3.47	0.77	1.18	102 funds (1999-2014)
RE mPME	11.14	7.68	8.79	FTSE EPRA/NAREIT Dev Eur RE Index
Value add (bps)	(767)	(691)	(761)	

Private Debt	5-Year	10-Year	15-Year	Data
Mezzanine debt	4.23	10.53	8.35	11 funds (1990-2014)
MD mPME	0.91	4.41	6.38	MSCI Europe Index
Value add (bps)	332	612	196	
Distressed debt	6.77	7.92	8.28	13 funds (1987-2014)
DD mPME	6.63	6.05	6.04	MSCI Europe Index
Value add (bps)	13	187	224	

Other	5-Year	10-Year	15-Year	Data
Funds of funds	8.59	8.92	8.55	82 funds (1998-2014)
Secondary funds	13.49	11.70	13.72	36 funds (1992-2014)

Note: CA Modified Public Market Equivalent (mPME) replicates private investments cash flows with public market indexes (shares are purchased and sold according to the private fund flows). Distributions are calculated in the same proportion as the private fund. The mPME NAV is a function of mPME cash flows and public index returns.

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**** includes opportunistic and value-added funds.



Source: Cambridge Associates (as of 31/12/2014), UBS CIO, June 2015.

PE demonstrates substantial outperformance over the long term

Rest of the World performances are attractive, but the investment universe is more difficult to address

Private Equity	5-Year	10-Year	15-Year	Data
Venture capital*	24.15	15.17	11.26	179 funds (1986-2014)
VC mPME	10.48	6.97	5.73	MSCI World Index
Value add (bps)	1'367	820	553	
Growth equity	11.22	12.32	9.55	219 funds (1989-2014)
GE mPME	10.89	7.42	5.57	MSCI World Index
Value add (bps)	33	490	398	
LBO**	11.51	12.06	9.99	164 funds (1992-2014)
LBO mPME	10.46	6.38	5.24	MSCI World Index
Value add (bps)	104	568	476	

Real Assets	5-Year	10-Year	15-Year	Data
Energy***	9.10	16.96	14.11	4 funds (1996-2014)
E mPME	1.27	6.69	6.93	MSWI World Energy I.
Value add (bps)	782	1'027	718	
Timber	N/A	N/A	N/A	
T mPME	N/A	N/A	N/A	
Value add (bps)	N/A	N/A	N/A	
Real Estate****	7.49	3.13	N/A	100 funds (2003-2014)
RE mPME	12.85	8.62	N/A	DJ Global Select RE Ind.
Value add (bps)	(536)	(549)	N/A	

Private Debt	5-Year	10-Year	15-Year	Data
Mezzanine debt	5.54	N/A	N/A	7 funds (1998-2014)
MD mPME	N/A	N/A	N/A	MSCI World Index
Value add (bps)	N/A	N/A	N/A	
Distressed debt	7.82	6.55	N/A	19 funds (1999-2014)
DD mPME	10.28	5.93	N/A	MSCI World Index
Value add (bps)	(246)	63	N/A	

Other	5-Year	10-Year	15-Year	Data
Funds of funds	10.85	8.01	8.18	50 funds (1998-2014)
Secondary funds	N/A	N/A	N/A	

Note: CA Modified Public Market Equivalent (mPME) replicates private investments cash flows with public market indexes (shares are purchased and sold according to the private fund flows). Distributions are calculated in the same proportion as the private fund. The mPME NAV is a function of mPME cash flows and public index returns.

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Source: Cambridge Associates (as of 31/12/2014), UBS CIO, June 2015.

Section 1

Private equity

Summary

Fund raising

- Back at 2006 levels: record distributions have not so far fuelled excessive fund raising
- Uninvested capital: all time high, but seems at reasonable levels per strategy
- Larger established brands raise fast (matter of few months); smaller, specialized or more recent teams face an average of 15 months

Investments

- LBO investments increased worldwide and are close to their long term average
- Late stage venture capital investments show signs of overheating
- LBOs valuations: high in the US; historical highs in Europe (mid-market higher than large cap)

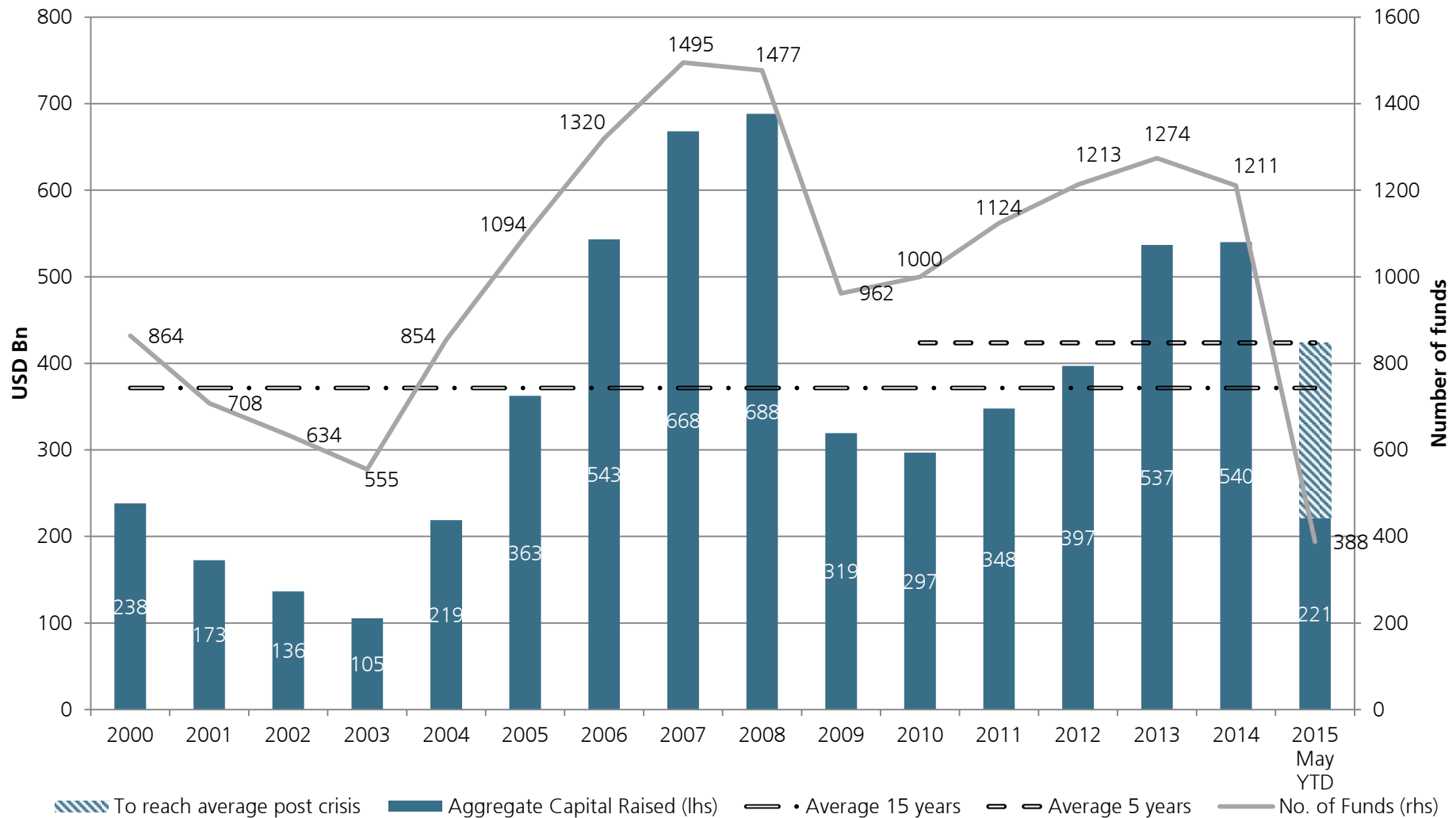
Exits

- Low interest rates support buyers in M&A (driving valuations up)
- Strong equity markets propel M&A (Q1 2015 is a record high)
- IPOs may have peaked: post IPO performance disappointing and shelving of offerings
- Portfolio build-up has stabilized, due to moderate investment activity and high level of divestments

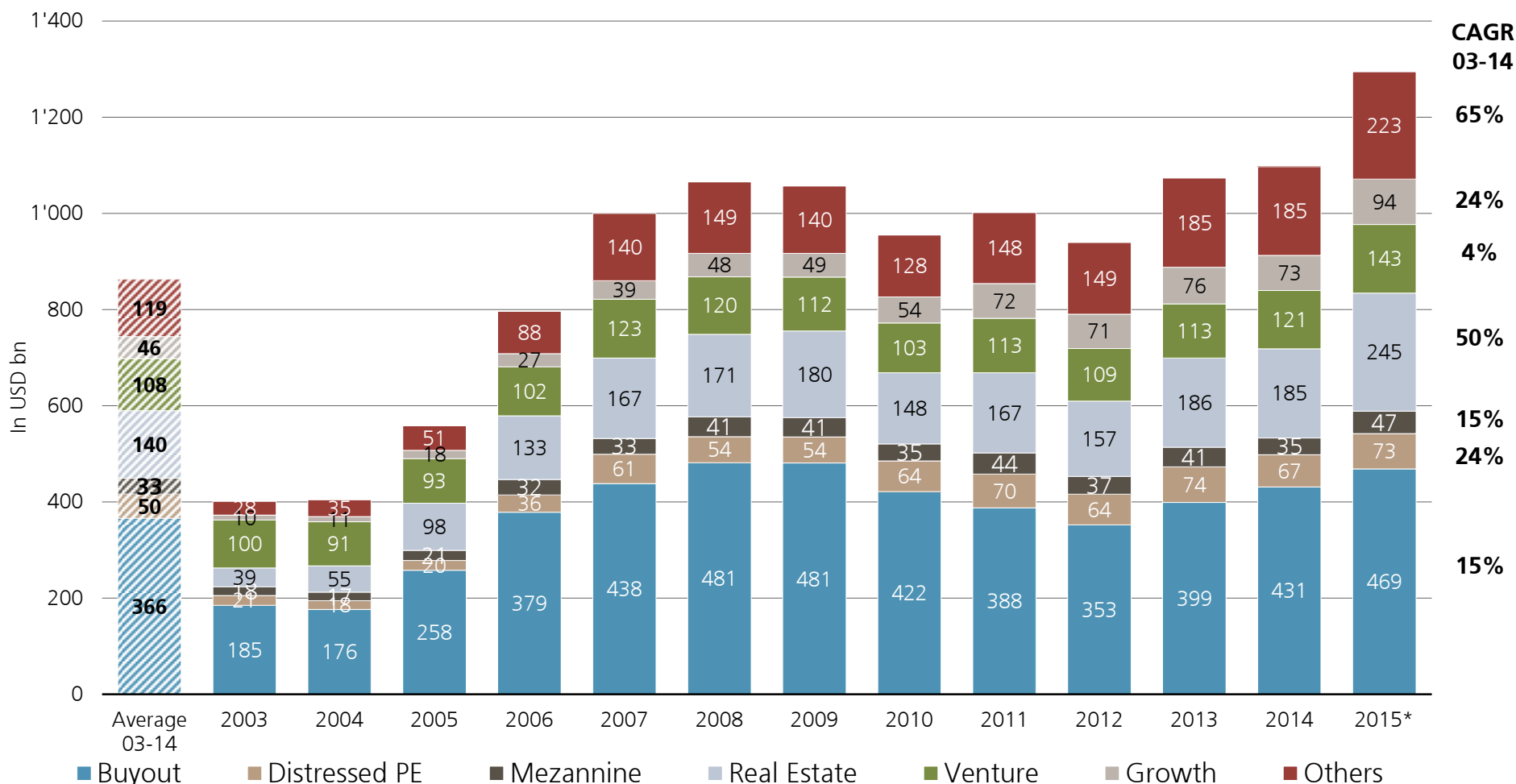
Prospects

- Overleveraged acquirers and targets could fuel a wave of carve-outs (LBOs) and distressed opportunities

Fund near pre-bubble levels, with on average 10% fewer funds



Dry powder: continued progression, potential inflation of valuations



*Others include real assets, co-investments and secondaries

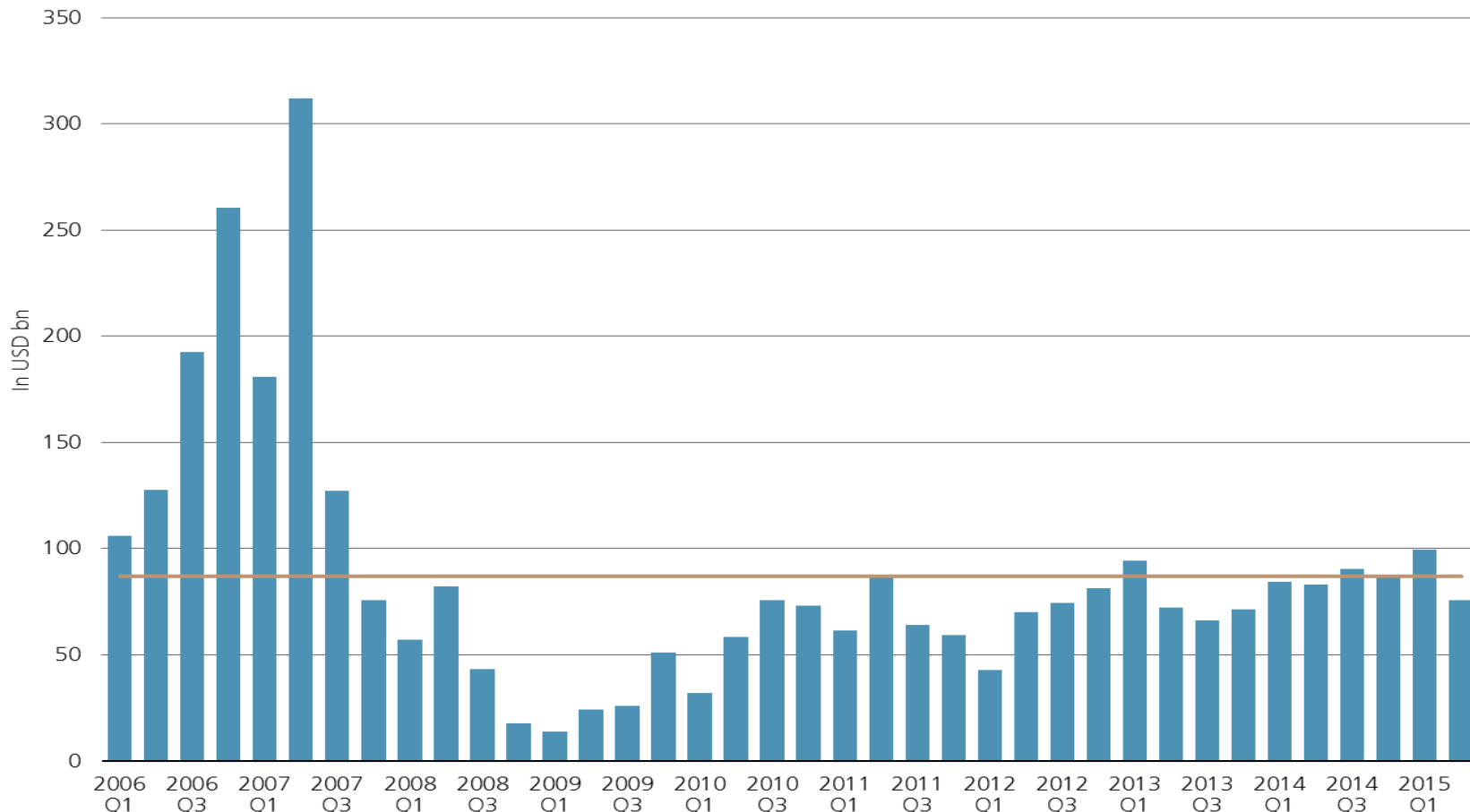
Dry powder has risen by 57% for real estate funds and 33% for LBO funds since the end of 2012; suggesting ammunition for future deals



Source: Preqin, UBS CIO, as of June 2015.

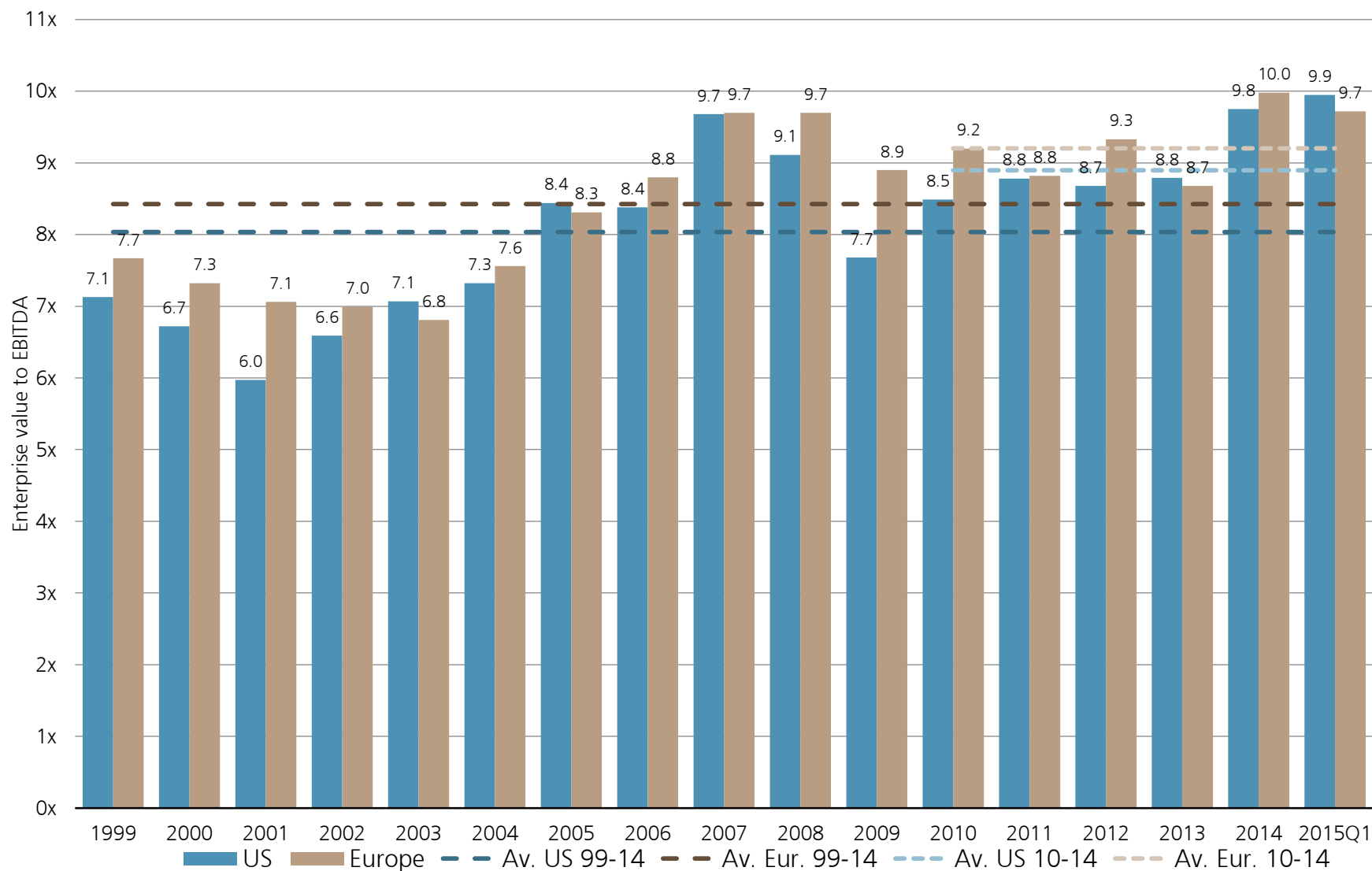
LBO: global investment volumes are close to the long term average

Q1 would be substantially lower excluding Heinz/Kraft deal (58 vs 99)



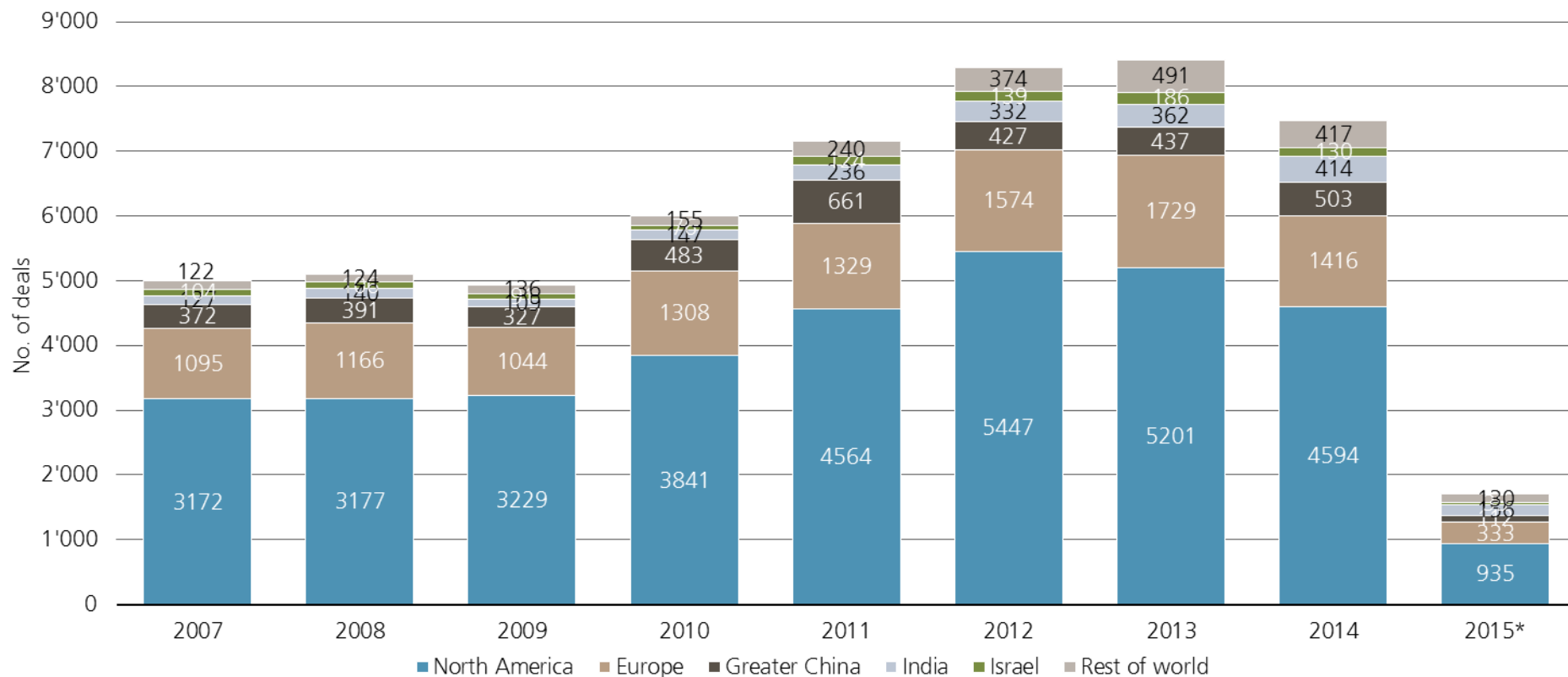
2015Q1 LTM volumes have risen YoY by 22.3% (USD 344bn), above average since 2010 (USD 285n) but about half of the amount during the peak years of 2006 and 2007

2015 Valuations at or above 2007 levels, at all-time high



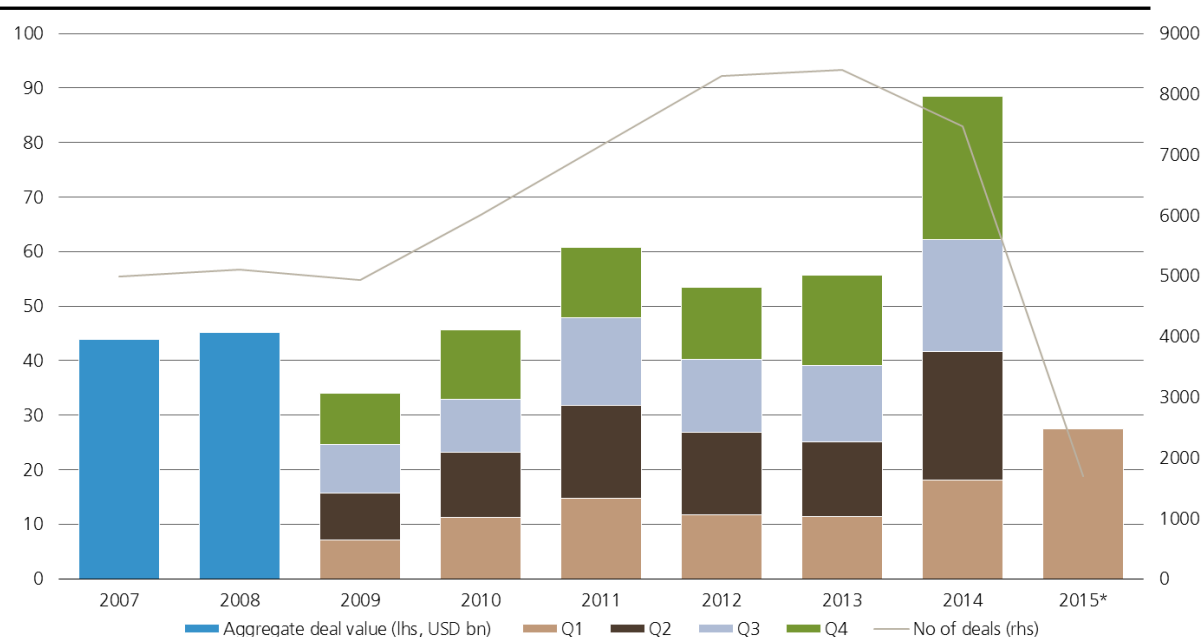
Venture capital: less deals consummated in the developed world

US: -30%, Europe: -24%, Greater China: stable, India: +43%, Israel: stable, RoW: +6%

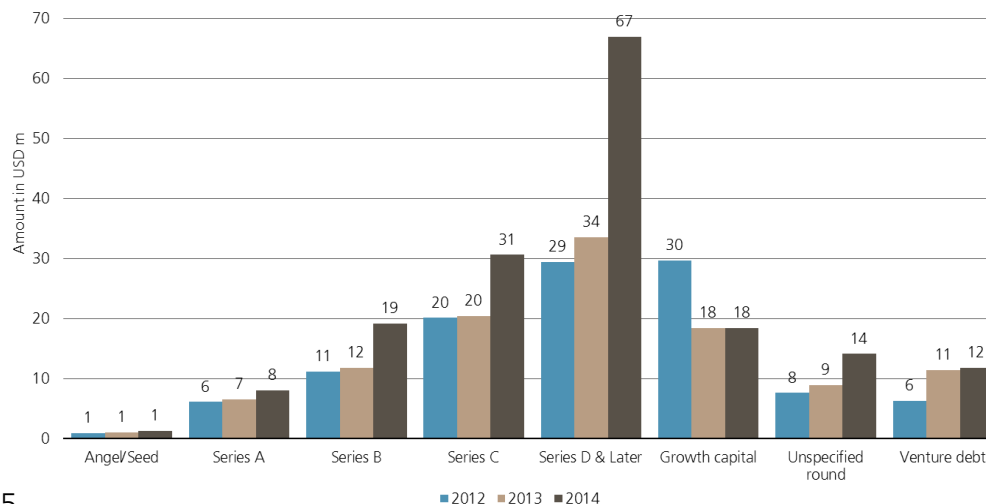


Venture capital: opportunistic VC fund managers shift towards later-stage rounds

Larger deals have been consummated on average

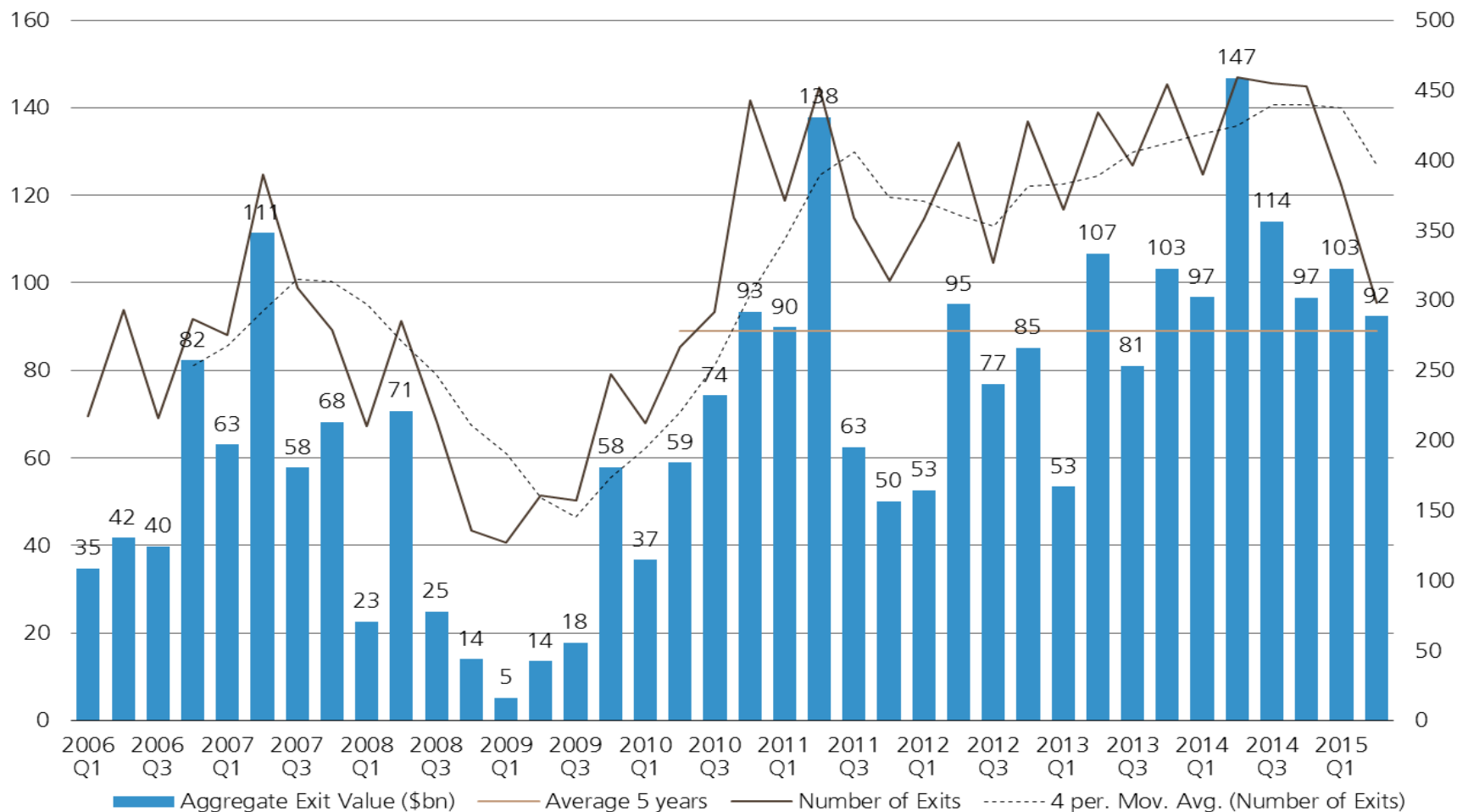


Later stage large deals have captured the headlines and the bulk of financings



Global realizations: the end of a long term boom?

2011-2014 were particularly favourable, 2015 starts on a reduced number of deals



2014 was a record year at 32% higher than 2013.

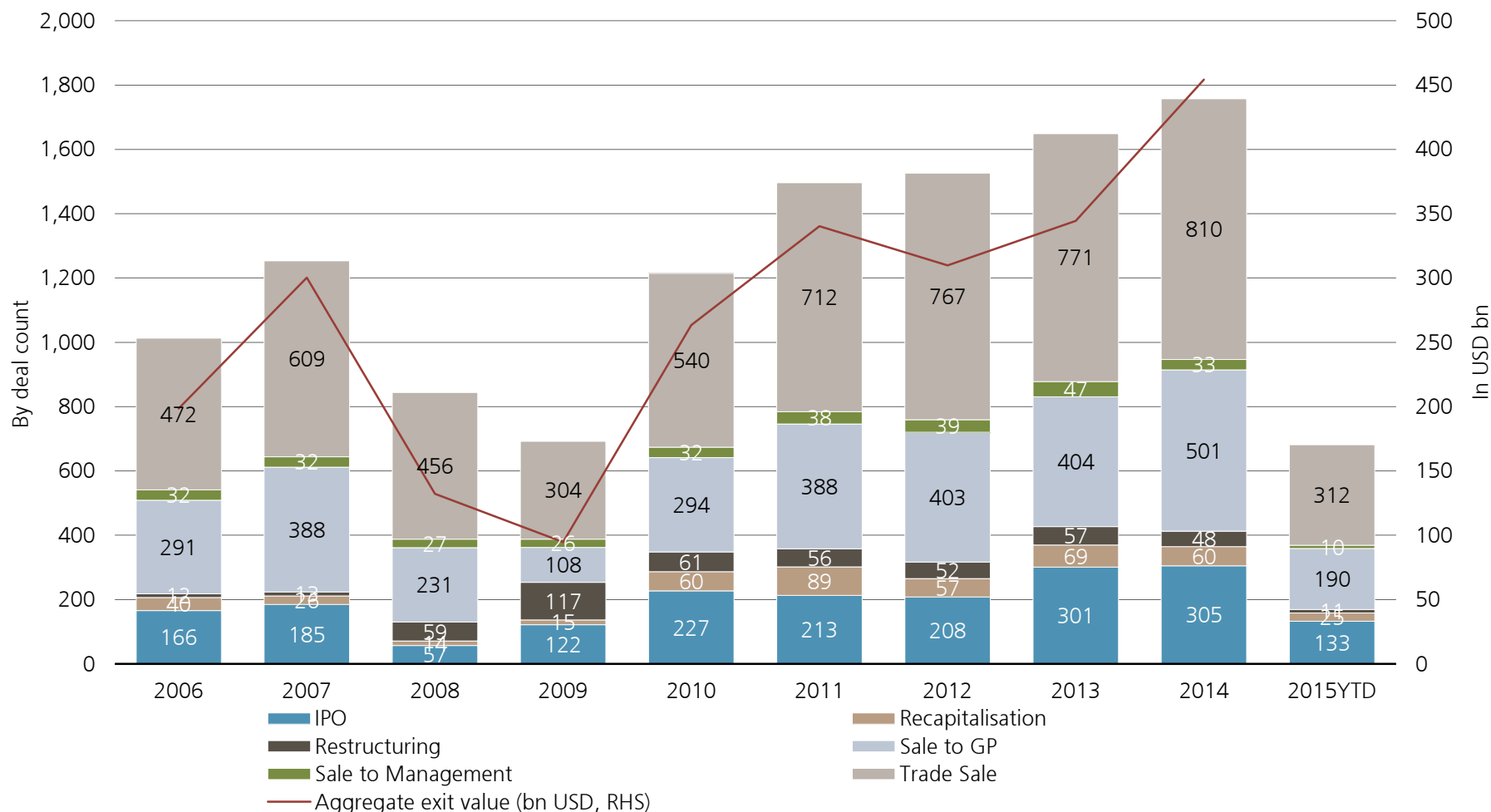


UBS

Source: Preqin, UBS CIO, as of June 2015.

Secondary BO have emerged as the second most common exit route

M&A still the preferred exit path, IPOs remain very active since 2010



Aggregate exit activity has progressed regularly since 2011



Source: Preqin, UBS CIO, as of June 10 2015.

Section 2

Private debt

Summary

Fund raising

- Uninvested capital: progression in 2015 across the board
- Uptick visible in the US and Europe

Investments

- Low interest rates support the equity side of leveraged transactions and dividend recaps
- Capital structures tilted toward senior rather than subordinated debt
- Second lien register low levels of activity in the US and in Europe
- Mezzanine debt market virtually shut down in Europe

Maturity, covenants and defaults

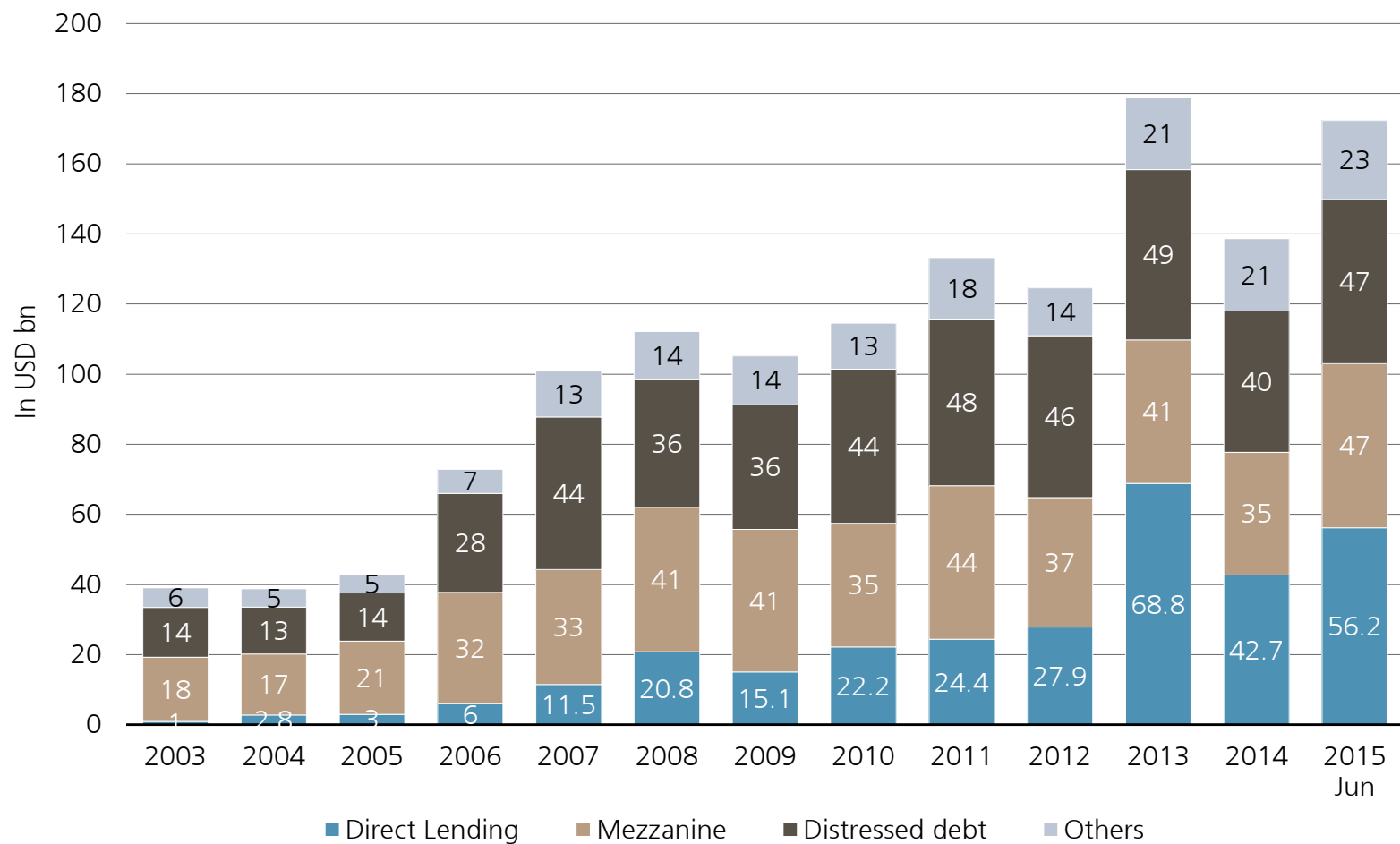
- The "maturity wall" of LBO debt receded to 2020
- Default rates remain below the long term average

Prospects

- NPL investment opportunities are increasingly materializing in portfolios:
 - Major transactions announced in Europe
 - Still significant opportunities in peripheral Europe (CEE, Greece, Southern)
- Direct lending remains a long term opportunity as banks retreat from SMB financing

Dry powder: Uptick of dry powder

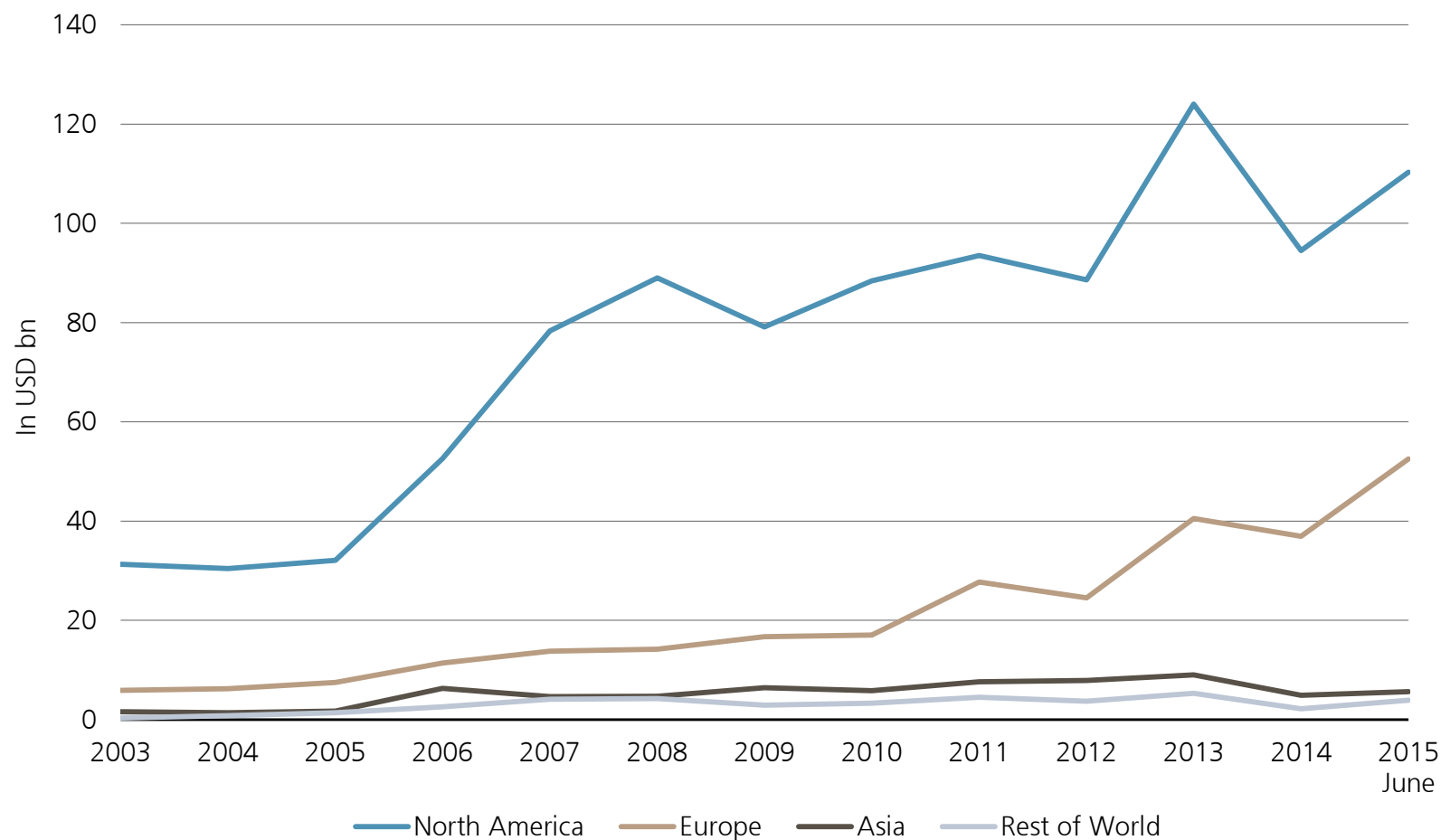
Dry powder has increased into 2015 but is down from end of 2013



Note: Others include venture debt and special situations

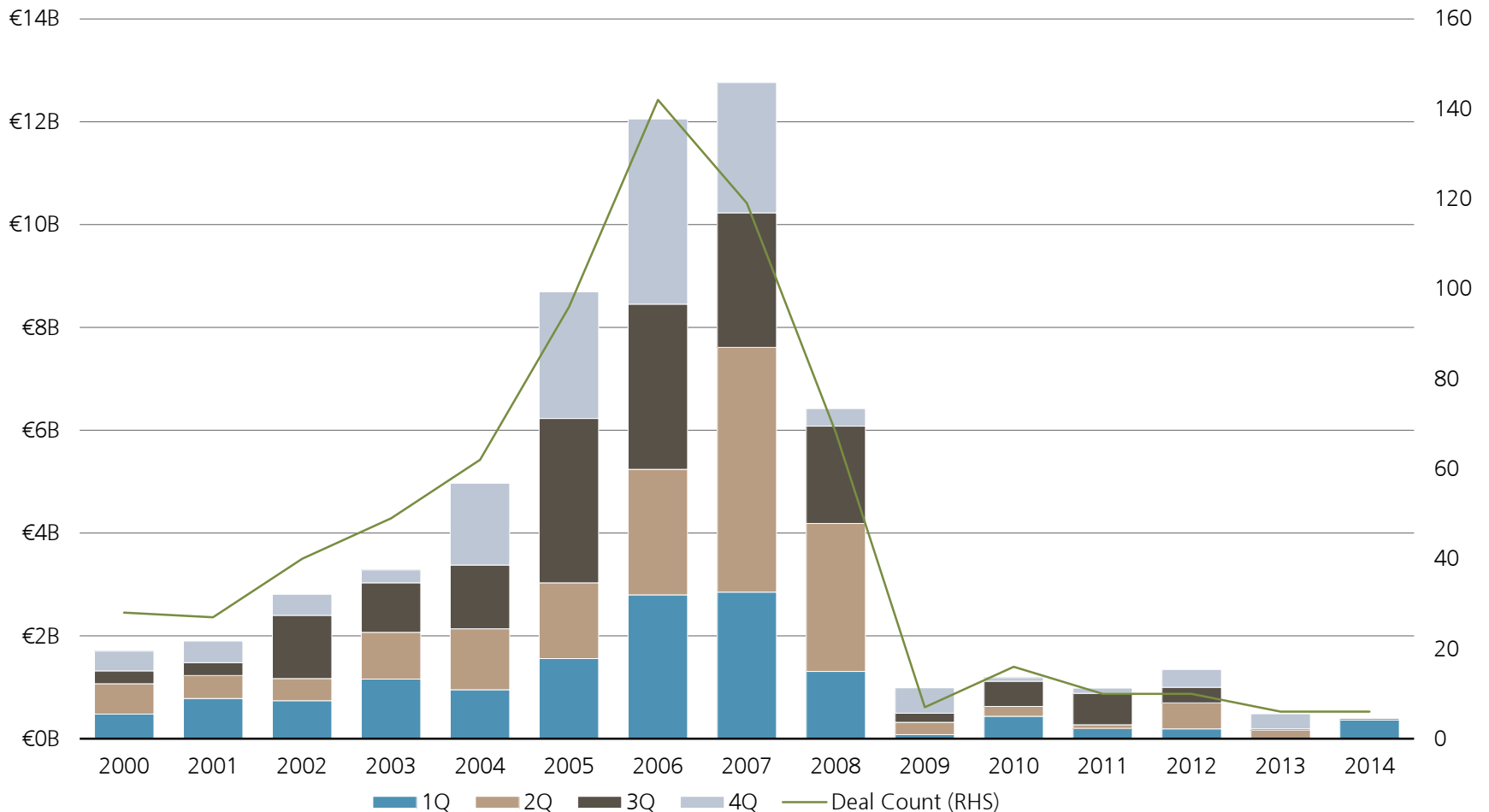
Dry powder: US still accounts for bulk of dry powder

US and Europe dry powder edges up



Note: based on target company location.

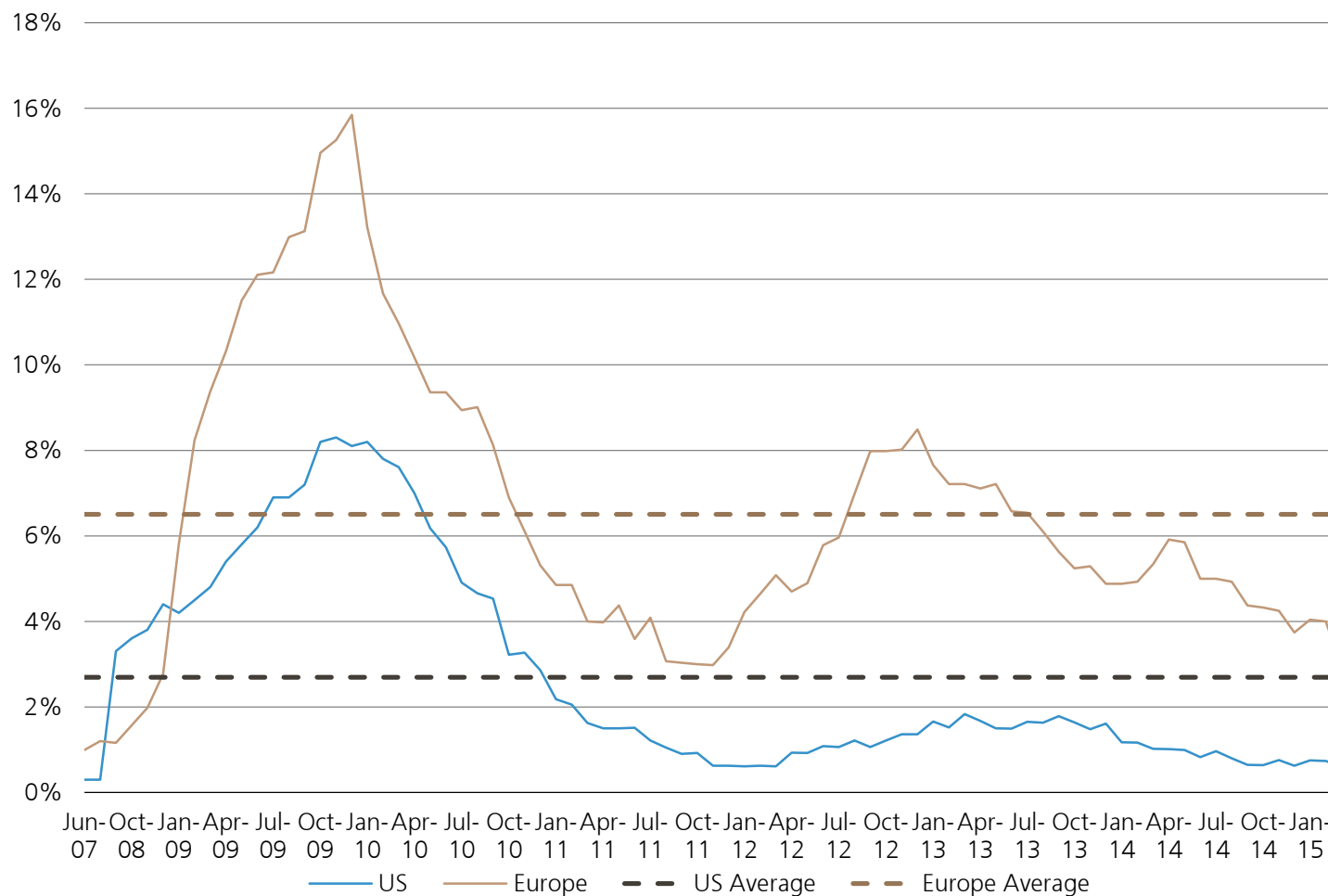
European mezzanine market virtually shut down



Mezzaners are reinventing themselves as "unitranche" providers

Leveraged loan default rates by count continue to be low

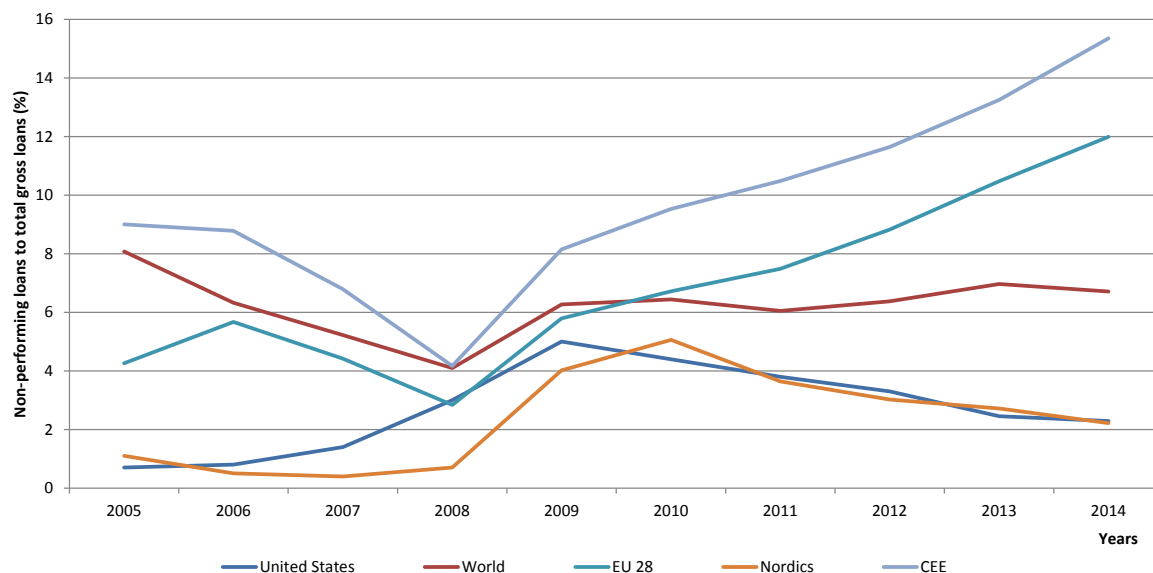
US and European default rates are reaching all time lows



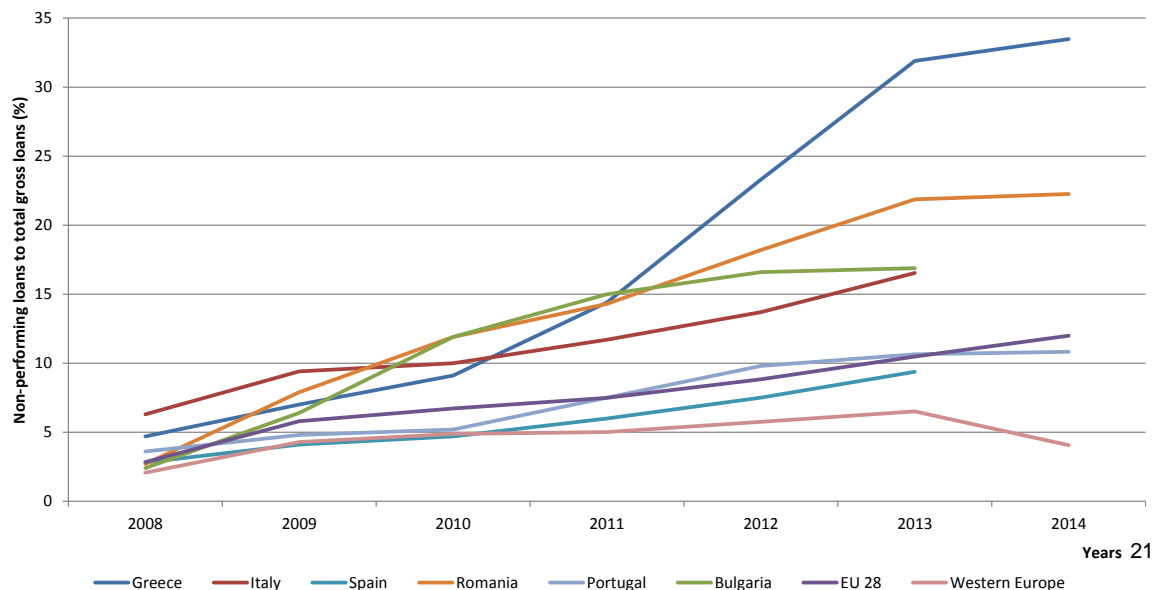
Source: S&P LCD, UBS CIO, data as of March 2015, June 2015.

Private debt: opportunities in European NPLs acquisitions

NPL remain an opportunity, notably from CEE banks

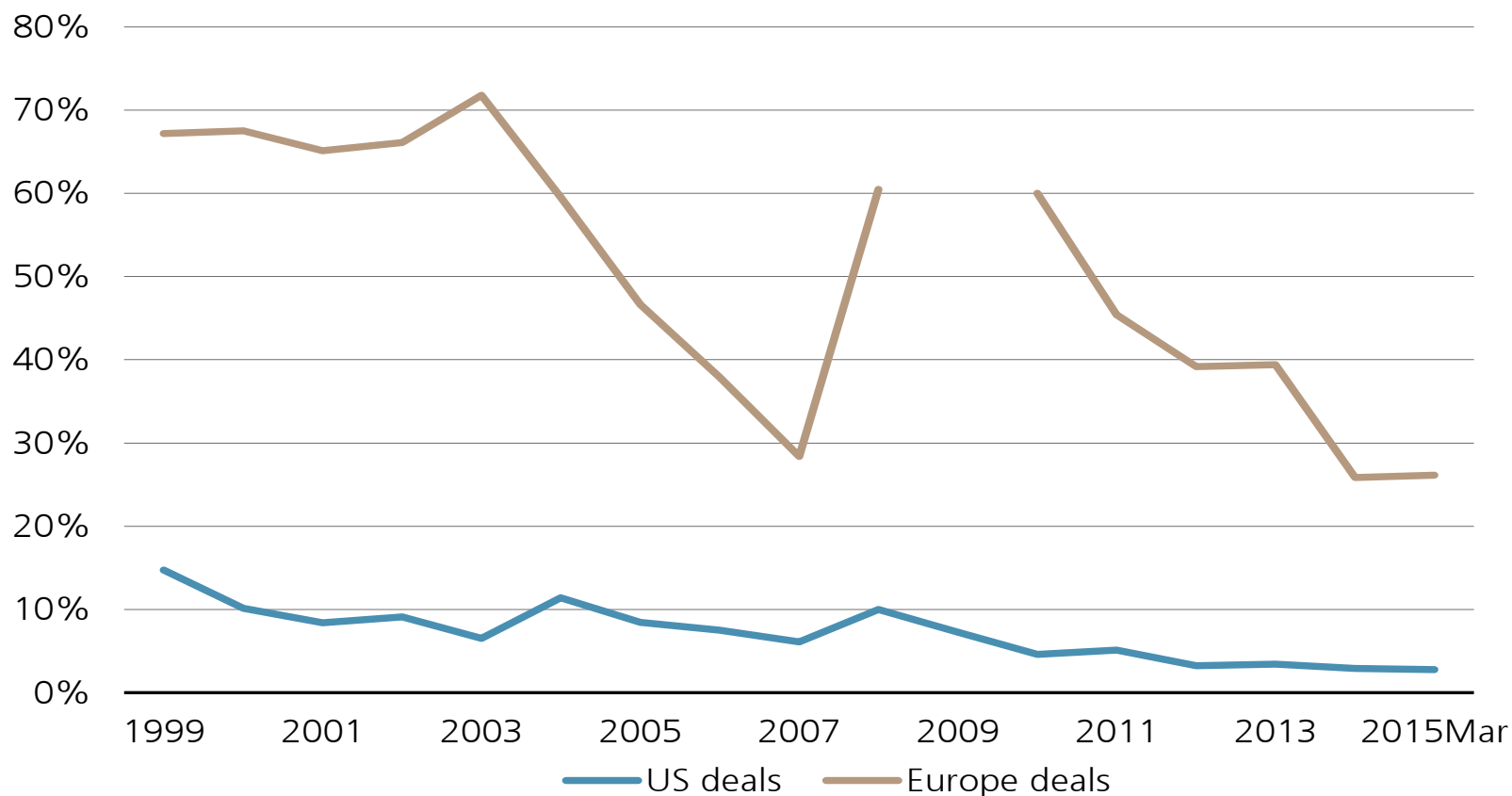


Greece, Romania, Bulgaria, Italy, Portugal and Spain offer higher levels of NPLs



Private debt: opportunities in direct lending as European banks pullback

European banks' share of leverage loan markets



*insufficient data for Europe deals in 2009

Source: S&P LCD, UBS CIO, May. 2015.

Section 3

Real assets

Summary

Fund raising

- 2014 amounts stable compared to 2013, slightly above 2006 levels
- Real estate: smaller funds raised in the US, raising concern on cost efficiency and future returns
- Real estate: North America and Europe lead the way, at par on aggregate amounts sought
- Infrastructure dry powder has reached a new high in North America

Investments

- Infrastructure: competition is high for core projects, triggering a more reserved stance in the asset class
- Real estate: transaction volumes have risen YoY but declined QoQ after a strong Q4 in 2014
- Real estate: spreads have slightly widened and continue to be attractive in low yield environment

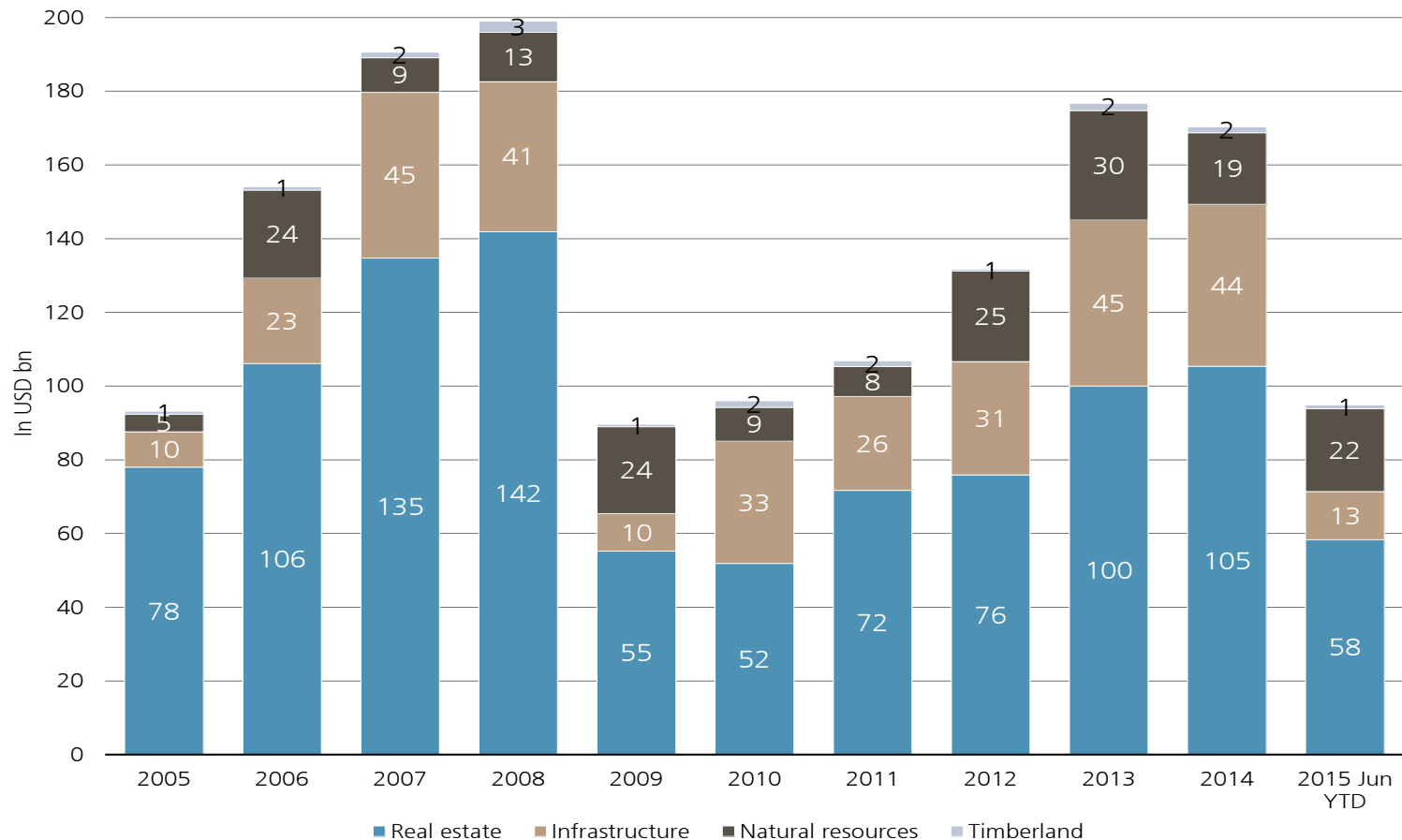
Prospects

- Sustained opportunities in the North American energy value chain including energy servicing companies and midstream assets.
- Recent decline in energy prices provides opportunity for long term investors presents opportunity for long-term oriented stressed/distressed energy specialists.

Real assets fund raising dominated by private real estate

Infrastructure comes next, amounts collected for natural resources remain limited

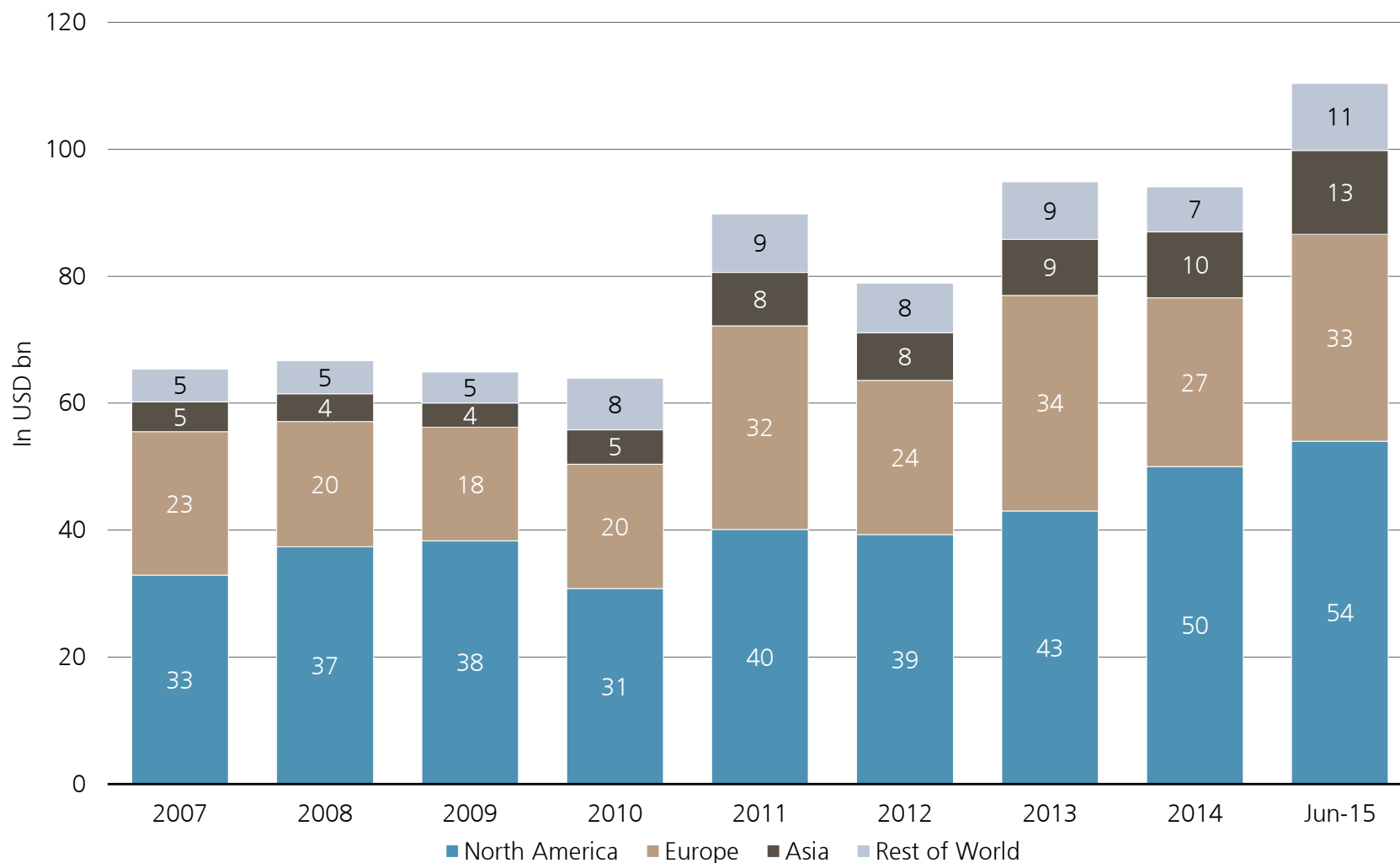
Amounts raised for real assets investments (in US bn)



Note: no data for farmland

Infrastructure: dry powder in North America has reached a new high

Core infrastructure continues to be competitive



Our most and least preferred strategies

Themes	Region	Strategy	Sub-strategy	Drivers	Our view
Deleveraging of banks	Europe	Distr. debt	Non perf. loans	Trend: Structural reduction of bank lending Catalyst: Regulations of banks (bal. Sheet) ➔ Shift from banks to alternative lending	✓✓✓
		Private debt	Direct lending		
Evolutions of the energy value chain	N. America	O&G/P. Infra.	Midstream assets	Trend: Increase of production of shale O&G Catalyst: Volatility of oil prices ➔ Solve bottlenecks; opportunistic financing	✓✓✓
		Distr. debt	Consolidation		
Differentiated attractiveness of specialized inv. Strategies	EM	Growth capital	Contrarian play	Trend: Stable growth sectors enter new macro cycle Catalyst: FDI shift from EM to US ➔ Best assets need capital (growth or M&A)	✓✓
	DM	Private debt	Litigation financing	Trend: Corporate balance sheet work out Catalyst: Reduction of bank lending ➔ Uncorrelated niche activities financing	✓✓
Cheap debt inflates asset prices	DM & EM	Large LBO	Leverage-dependent strategies	Trend: Cheap debt inflates prices of large and cash generative assets Catalyst: Significant dry powder to deploy ➔ High prices lead to mediocre performance	xx
		P. RE & Infra			
Premium paid for liquidity exceeds benefits	DM	Pre-IPO/LS VC	Shorter time-to-liquidity strategies	Trend: Thirst for liquidity and opportunism Catalyst: Cycle peak encourages herding ➔ High visibility assets are overpriced	xxx
	Global	Secondaries			



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