

Institutional Real Estate, Inc. Global Investment Managers 2017





Special Report

Institutional Real Estate, Inc.

Global Investment Managers 2017

Prepared by:

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Expanding Universe

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Real estate's strong performance spawns new fans, heightened popularity

by Larry Gray

The real estate asset class continues to shine in an era of low interest rates, sluggish economic growth, volatile financial markets and political uncertainty. Strong or improving property fundamentals in many sectors and regions, along with a deep pool of capital, have pushed up property values in recent years. New and higher allocations to the asset class and property appreciation have bolstered investment managers' AUM.

The aggregate AUM of the top 100 largest investment managers increased 7.3 percent in 2016, totaling more than \$2.8 trillion, according to *Global Investment Managers 2017*, an annual survey and report produced by Property Funds Research and Institutional Real Estate, Inc. **A total of 199 real estate investment managers across the globe responded to the survey, representing an aggregate AUM of slightly more than \$3 trillion.** The top 10 largest investment managers accounted for \$1.038 trillion of AUM, which represents 34.5 percent of the total. This group of managers saw their AUM increase an average of 12.2 percent from 2015.

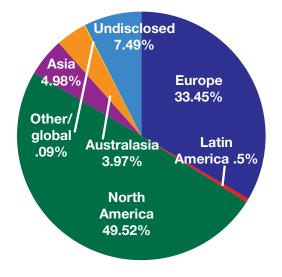
Blackstone topped the rankings with more than \$166 billion of AUM, followed by Brookfield Asset Management and PGIM, with \$148 billion and \$125 billion of AUM, respectively. Blackstone's AUM jumped 12.6 percent from the year prior. The firm continued to add to its menu of products last year, raising \$4.5 billion for its Blackstone Real Estate Debt Strategies III, \$1.3 billion for Strategic Partners Real Estate Fund VI, as well as billions more for its relatively new core-plus open-end fund, Blackstone Property Partners.

Rounding out the top 10 were Nuveen/TH Real Estate (\$96.8 billion), Hines (\$95.5 billion), MetLife Investment

Management (\$90.0 billion), CBRE Global Investors (\$86.6 billion), J.P. Morgan Asset Management – Global Real Assets (\$79.9 billion), UBS Global Asset Management (\$77.9 billion) and Principal Real Estate Investors (\$71.9 billion).

Looking at total market AUM on a geographic basis, North America-based assets account for approximately 50 percent, while Europe represents one-third. Asia claims 5 percent of the assets and Australasia accounts for 4 percent, while Latin America tallies only 0.6 percent. (For rankings of the top 10 largest investment managers in each region, see page 3.)

Assets under management by geographic distribution



Sources: Property Funds Research; Institutional Real Estate, Inc.

INSTITUTIONAL REAL ESTATE, INC.

PGIM ranks as the largest investment manager based on AUM just in North America. The firm manages more than \$100 billion in the region. In Europe, the top-ranking manager is Swiss Life Asset Managers, with AUM of \$70.9 billion, and in Asia, LaSalle Investment Management claims the most assets with AUM of \$16.5 billion. In the Australasia region, Dexus ranks No. 1 with AUM of \$16.3 billion. PGIM also oversees the most assets in Latin America, with

AUM of \$2.9 billion. The report also ranks real estate managers based on their total AUM in the categories of discretionary separate accounts under management, advisory separate accounts and assets, and indirect real estate investment vehicles. PGIM manages the most assets based solely on discretionary separate accounts, with AUM of \$67.5 billion (see page 12). In the category of advisory separate accounts, Principal Real Estate Investors tops the list, with AUM of approximately \$42.3 billion (see page 16). And based on indirect real estate investment vehicles, Blackstone rules the roost, with an asset base of more than \$166 billion (see page 20).

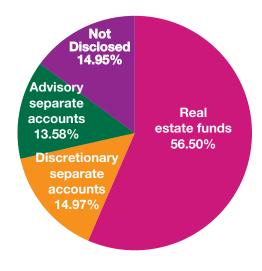
Larry Gray is editorial director of Institutional Real Estate, Inc.

The survey was conducted by U.K.-based Property Funds Research (PFR). PFR is an independent management-owned business that provides confidential research and strategic consulting for investors in European real estate. PFR's foundations are an expert team, a suite of products for underwriting investments in the European market, and access to a unique dataset describing the major investors, vehicles, and managers in the European and global institutional property markets. For more information, please visit www.propertyfundsresearch.com. For additional information on the global fund manager survey, contact Jane Fear at +44 (0)118-958 5848 or jf@ propertyfundsresearch.com.



Top 100 firms in aggregate (AUM, US\$ trillion)

Assets under management by investment structure



Sources: Property Funds Research; Institutional Real Estate, Inc.

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Largest investment managers by region

TOP 10	MANAGERS BASED ON NORTH AMERI	CA ASSETS (US	\$M)
Rank	Investment manager	North America	Total
1	PGIM	100,534.00	124,700.00
2	Brookfield Asset Management	93,800.00	148,028.00
3	MetLife Investment Management	81,267.00	90,044.00
4	Hines	73,170.00	95,456.00
5	J.P. Morgan Asset Management	72,434.00	79,939.00
6	Nuveen/TH Real Estate	69,307.00	96,757.00
7	Principal Real Estate Investors	68,271.48	71,888.49
8	Colony NorthStar	48,783.00	56,226.00
9	Barings	44,207.00	48,378.00
10	Clarion Partners	43,819.00	44,018.00

TOP 10	MANAGERS BASED ON EUROPE ASSET	rs (US\$M)	
Rank	Investment manager	Europe	Total
1	Swiss Life Asset Managers	70,924.07	70,924.07
2	AXA Investment Managers – Real Assets	65,108.17	69,916.87
3	Credit Suisse Real Estate Investment Management	46,579.00	51,252.00
4	Aviva Investors	44,763.06	46,157.82
5	CBRE Global Investors	41,400.00	86,600.00
6	Deka Immobilien Investment/WestInvest	35,076.92	38,077.95
7	Blackstone	33,428.00	166,198.00
8	M&G	31,725.56	36,586.87
9	AEW Global	28,097.00	63,406.00
10	UBS Global Asset Management	27,956.64	77,906.60

TOP 10	MANAGERS BASED ON ASIA ASSETS ((US\$M)	
Rank	Investment manager	Asia	Total
1	LaSalle Investment Management	16,474.00	58,013.00
2	UBS Global Asset Management	13,491.27	77,906.60
3	CBRE Global Investors	10,200.00	86,600.00
4	Gaw Capital Partners	8,688.30	12,663.40
5	Prologis	7,832.40	38,871.30
6	Blackstone	7,547.00	166,198.00
7	IGIS Asset Management	7,414.58	10,545.43
8	PGIM	6,442.00	124,700.00
9	PAG Investment Management	6,093.00	6,093.00
10	Invesco Real Estate	5,236.00	67,837.00

TOP 10	TOP 10 MANAGERS BASED ON AUSTRALASIA ASSETS (US\$M)										
Rank	Investment manager	Australasia	Total								
1	Dexus	16,347.41	16,347.41								
2	AMP Capital	16,052.86	21,273.95								
3	GPT Group	13,840.56	13,840.56								
4	Charter Hall	13,682.85	13,682.85								
5	QIC	10,144.32	13,258.68								
6	Lendlease Investment Management	9,938.07	17,499.65								
7	ISPT	9,578.00	9,578.00								
8	Investa Property Group	6,663.62	6,663.62								
9	AXA Investment Managers – Real Assets	3,653.85	69,916.87								
10	Cromwell Property Group	3,600.75	7,057.47								

Total assets rankings

	Total gross value o	of real estate	e assets under r	nanagement	(US\$ million, as	of December	r 31, 2016)		
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australasia	Midde East	Global/Other
1	Blackstone	166,198.00	19,363.00	33,428.00		7,547.00			105,860.00
2	Brookfield Asset Management	148,028.00	93,800.00				_	_	26,400.00
3	PGIM	124,700.00	100,534.00	10,029.00	2,854.00	6,442.00	395.00		4,446.99
4	Nuveen/TH Real Estate	96,757.00	69,307.00	25,340.00	152.00	1,241.00	718.00		
5	Hines	95,456.00	73,170.00	16,986.00	2,770.00	2,127.00	404.00	—	
6	MetLife Investment Management	90,044.00	81,267.00	3,688.00	1,349.00	3,037.00	703.00		_
7	CBRE Global Investors	86,600.00	35,000.00	41,400.00		10,200.00	—		—
8	J.P. Morgan Asset Management – Global Real Assets	79,939.00	72,434.00	5,446.00	—	1,861.00	198.00		
9	UBS Global Asset Management	77,906.60	35,425.74	27,956.64	62.78	13,491.27	970.18		_
10	Principal Real Estate Investors	71,888.49	68,271.48	1,238.63	51.18	1,826.58	500.63		
11	Swiss Life Asset Managers	70,924.07		70,924.07			_	_	
12	AXA Investment Managers – Real Assets	69,916.87	629.14	65,108.17		525.71	3,653.85		
13	Invesco Real Estate	67,837.00	28,553.00	7,710.00	—	5,236.00	_		26,339.00
14	AEW Global	63,406.00	33,348.00	28,097.00	—	1,961.00	—	—	
15	LaSalle Investment Management	58,013.00	19,050.00	21,012.00	22.00	16,474.00	1,438.00	17.00	—
16	Colony NorthStar	56,226.00	48,783.00	7,064.00			245.00	134.00	
17	Deutsche Asset Management	52,564.98	25,538.65	22,932.00	—	2,309.80	1,784.62		
18	Credit Suisse Real Estate Investment Management	51,252.00	2,039.00	46,579.00	1,210.00		1,423.00		_
19	Barings	48,378.00	44,207.00	4,024.00	—	104.00	43.00	—	
20	Starwood Capital Group	47,591.00	40,341.00	7,033.00	179.00	38.00			
21	Aviva Investors	46,157.82	858.31	44,763.06	_	536.45		—	—
22	Tishman Speyer Properties	45,817.00	31,917.00	7,547.00	1,427.00	4,926.00	—		_
23	Clarion Partners	44,018.00	43,819.00		199.00				
24	Prologis	38,871.30	18,155.80	12,740.40	142.70	7,832.40			_
25	Deka Immobilien Investment/WestInvest	38,077.95	1,406.86	35,076.92	588.21	746.05	259.91		
26	Cohen & Steers Capital Management	37,666.00	32,712.00	2,011.00		1,932.00	1,011.00		
27	M&G	36,586.87	2,195.11	31,725.56	—	2,666.20			

	Total gross value	of real estat	e assets under i	nanagement	: (US\$ million, as	of Decembe	r 31, 2016)		
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australasia	Midde East	Global/Other
28	Heitman	36,385.00	30,526.00	4,451.00	—	945.00	463.00		_
29	Bentall Kennedy	34,115.00	34,115.00		—				
30	Union Investment Real Estate	32,773.64	4,910.03	26,467.48	433.95	715.74	246.44		_
31	Morgan Stanley Real Estate Investing	31,626.00	22,396.00	5,546.00	28.00	3,424.00	233.00		
32	Standard Life Investments	27,411.01	3,087.81	23,241.45	—	1,081.76		_	
33	BNP Paribas Real Estate Investment Management	25,321.46	—	25,321.46	—		—		
34	Angelo Gordon	23,848.60	21,219.50	1,343.40	—	1,501.30	_		
35	LGIM Real Assets	22,895.53	—	22,895.53	—		—	—	_
36	Aberdeen Asset Management	22,113.92	—	22,113.92	—		—	_	
37	AMP Capital	21,273.95	3,201.07	864.18	—	1,155.84	16,052.86	—	_
38	BlackRock	20,491.00	9,877.00	5,476.00	—	5,138.00	—		1,156.60
39	Patrizia Immobilien	19,571.94	1,262.71	18,204.01	105.23		_		
40	USAA Real Estate Co.	17,643.00	17,444.00	199.00	—		—	—	_
41	Lendlease Investment Management	17,499.65	1,440.30	2,592.54	—	1,224.26	9,938.07	2,304.48	
42	Savills Investment Management	17,032.85	596.63	15,000.95		1,435.28	—		
43	Dexus	16,347.41	—		—		16,347.41	—	_
44	Greystar	15,947.00	12,111.00	3,684.00	152.00				
45	Fortress Investment Group	15,288.00	8,596.00	1,346.00	486.00	4,629.00	231.00		_
46	La Française Real Estate Managers	15,267.17		15,267.17	—				
47	Schroder Real Estate Investment Management	14,911.98	672.10	13,818.12	4.93	300.90	115.92		
48	GPT Group	13,840.56		—			13,840.56		
49	Charter Hall	13,682.85		—			13,682.85		
50	QIC	13,258.68	3,114.43				10,144.32		
51	Gaw Capital Partners	12,663.40	2,026.70	1,948.40		8,688.30			
52	Rockpoint Group	12,644.00	12,609.70	34.30					_
53	Patron Capital	12,251.40		12,251.40	—				
54	Harrison Street Real Estate Capital	12,174.00	11,852.80	321.20	—		—		_
55	Walton Street Capital	11,486.00	454.8	10076			954.7		
56	KBS	11,433.00	11,433.00						_
57	Columbia Threadneedle Investments	11,098.89		11,098.89			—		
58	Walton Street Capital	10,934.70	9,525.20	454.80	—	954.70			

	Total gross value	of real estat	e assets under n	nanagement	(US\$ million, as	of Decembe	r 31, 2016)		
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australasia	Midde East	Global/Other
59	IGIS Asset Management	10,545.43	1,846.36	1,284.50	—	7,414.58			
60	Hermes Real Estate Investment Management	10,292.24	914.18	9,072.18	—	56.00	249.87		_
61	DTZ Investors	10,076.56	—	10,076.56	—		_	_	
62	Ares Management	9,752.20	6,653.00	3,099.20					
63	ISPT	9,578.00			—	_	9,578.00		_
64	DRA Advisors	9,500.00	9,500.00		—	_			_
65	Rockwood Capital	9,498.10	9,498.10		—			_	
66	CenterSquare Investment Management	9,457.00	8,041.00	526.00	—	656.00	234.00	_	
67	Partners Group	9,346.00	—		—	_			
68	Bouwinvest Real Estate Investment Management	8,944.17	1,216.41	7,173.22	—	163.10	_		
69	Westbrook Partners	8,489.00	—		—		_	_	
70	Crow Holdings Capital Partners	8,438.50	8,438.50		—		_		
71	Rockspring Property Investment Managers	8,394.89		8,394.89	—				
72	Tristan Capital Partners	8,282.30	—	8,282.30	—	_	_	_	
73	American Realty Advisors	8,011.20	8,011.20		—		_		
74	Quadrant Real Estate Advisors	8,010.43	7,760.83	230.67	—		18.93		
75	Royal London Asset Management	7,908.58	—	7,908.58	—		_	_	
76	BMO Real Estate Partners	7,850.61	—	7,850.61	—		_		
77	InvestiRE SGR	7,681.46	—	7,681.46	—				
78	KGAL	7,600.96	—	7,551.30	—	49.67	_		
79	ASB Capital Management	7,470.00	7,470.00		—		_		
80	Kayne Anderson Real Estate Advisors	7,335.00	7,335.00		—				
81	Exeter Property Group	7,219.90	6,823.20	396.70	—	_			
82	Berkshire Group	7,112.60	7,112.60		—				
83	GreenOak Real Estate	7,064.00	4,066.00	2,186.00		812.00	_	_	_
84	Cromwell Property Group	7,057.47		3,456.72	—		3,600.75		_
85	PCCP	7,001.10	7,001.10						_
86	Orchard Street Investment Management	6,934.34		6,934.34	—				_
87	Sentinel Real Estate Corp.	6,777.00	6,736.00	35.00			6.00		_
88	Bridge Investment Group Partners	6,700.00	6,700.00		—		_		_

	Total gross valu	ue of real estat	e assets under i	nanagement	: (US\$ million, as	of Decembe	r 31, 2016)		
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australasia	Midde East	Global/Other
89	GLL Real Estate Partners	6,698.66	3,112.57	3,546.10	—	39.99			
90	Investa Property Group	6,663.62	—		—		6,663.62		
91	Beacon Capital Partners	6,565.30	6,565.30		—		_		
92	Intercontinental Real Estate Corp.	6,495.80	6,495.80		—	_	_		
93	Mesa West Capital	6,434.80	6,434.80		—	—	—		_
94	Amherst Capital Management	6,300.00	6,300.00						
95	Bouwfonds Investment Management	6,197.78	—	6,197.78	—				_
96	Carmel Partners	6,194.10	6,194.10	—	—	—	—		_
97	Meyer Bergman	6,112.55	338.83	5,773.72	—				_
98	PAG Investment Management	6,093.00				6,093.00	—		
99	Warburg-HIH invest Real Estate	5,460.15	—	5,460.15	—				
100	National Real Estate Advisors	5,023.00	5,023.00			—			
101	Lionstone Investments	4,917.00	4,917.00		—	—	—		_
102	M3 Capital Partners	4,730.00	1,550.00	2,105.00	100.00	475.00	500.00		
103	Vesteda Investment Management	4,603.62	—	4,603.62		—			
104	Timbercreek Asset Management	4,480.27	4,071.14	262.58	—	100.42	46.12		
105	Landmark Partners	4,325.80	—			—			4,325.80
106	GEM Realty Capital	4,300.00	4,300.00	—					
107	Forum Partners Investment Management	4,274.40	3,073.00	826.60	375.40	600.00			
108	Arcus Infrastructure Partners	4,202.34		4,202.34					
109	Torchlight Investors	4,096.00	4,096.00	—		—			
110	Amvest REIM	4,069.07		4,069.07		_			
111	Unite Integrated Solutions	4,065.89	—	4,065.89		—	—	—	
112	Prelios	3,998.57	—	3,998.57	—				
113	Canyon Partners Real Estate	3,800.00	3,800.00	—	—				_
114	ECE Real Estate Partners	3,746.03		3,746.03	—				
115	ICG-Longbow	3,692.23		3,692.23					_
116	Diamond Realty Management	3,626.58				3,626.58			_
117	GTIS Partners	3,621.00	1,515.00		2,106.00				
118	Waterton	3,615.30	3,615.30						
119	Grosvenor Europe	3,612.07	_	3,612.07	_		—	—	

	Total gross val	lue of real estate	e assets under i	nanagement	: (US\$ million, as	of Decembe	r 31, 2016)		
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australasia	Midde East	Global/Other
120	Equus Capital Partners	3,500.00	3,500.00		—				
121	InfraRed Capital Partners	3,499.00		2,536.80	—	962.20			
122	Related Fund Management	3,488.00	3,488.00		—		_		
123	Blue Vista Capital Management	3,465.40	3,465.40		—				
124	Capri Capital Partners	3,437.40	3,437.40		—				_
125	Franklin Real Estate Advisors	3,385.50	1,815.00	669.70	2.10	859.30	39.30		
126	Madison International Realty	3,167.00	1,827.00	1,339.00	—				
127	Madison Realty Capital	3,126.00	3,126.00		—				_
128	NIAM	3,057.54		3,057.54	—				
129	LBA Realty	3,000.00	3,000.00		—				
130	Realterm	2,950.00	2,000.00	50.00	—	900.00			_
131	Hahn Group	2,893.70		2,893.70	—				_
132	Artemis Real Estate Partners	2,852.00	2,852.00		—				_
133	Europa Capital	2,851.61	—	2,851.61	—		_		_
134	Internos Global Investors	2,848.45		2,848.45	—				
135	Pradera	2,672.73		2,009.81	—	662.92	_		_
136	M7 Real Estate	2,578.02		2,578.02	—				_
137	Lowe Enterprises	2,548.00	2,548.00		—				
138	Cording Real Estate Group	2,525.41		2,525.41	—				_
139	CS Capital Management	2,519.31	2,519.31		—				_
140	Lothbury Investment Management	2,272.81		2,272.81	—				
141	New Forests Asset Management	2,185.58	24.05		—	106.94	2,054.59		_
142	Sarofim Realty Advisors	2,025.00	2,025.00						
143	EURAMCO Group	2,024.54		1,772.00	—	150.47	102.07		_
144	DRC Capital	1,944.40		1,944.40	—				_
145	Altera Vastgoed	1,929.84		1,929.84			—		_
146	Bristol Group	1,919.00	1,919.00		—				
147	Vanbarton Group	1,906.00	1,906.00		—				_
148	Cheyne Capital Management	1,865.00		1,865.00	—				
149	Knight Frank Investment Management	1,847.10	_	1,847.10	_		_		_
150	LEM Capital	1,720.80	1,720.80			_			_

	Total gross value	of real estat	e assets under i	nanagement	(US\$ million, as	of Decembe	r 31, 2016)		
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australasia	Midde East	Global/Other
151	Alex. Brown Realty	1,663.00	1,663.00		—				
152	Westport Capital Partners	1,590.90	1,225.90	36.60	—	4.30	_		324.20
153	American Real Estate Partners	1,552.00	1,552.00		—		_		
154	TGM Associates	1,549.37	1,549.37				_		
155	Guggenheim Real Estate	1,520.60	1,498.50	9.70	2.80	9.60			
156	Hunt Investment Management	1,516.30	1,497.90	18.40					
157	Fidelity International	1,485.00	—	1,175.00	—		_	310.00	
158	CityView	1,382.00	1,382.00		—		_		
159	Brunswick Real Estate	1,367.93	—	1,367.93	—		_		
160	Oak Street Real Estate Capital	1,340.46	1,340.46		—		_		
161	Presima	1,319.37	743.94	196.65		301.20	77.57		
162	Long Wharf Real Estate Partners	1,310.00	1,310.00				_		
163	Patria Investimentos	1,274.88			1,274.88				
164	Pearlmark	1,258.30	1,258.30						
165	Altis Property Partners	1,212.30			—		1,212.30		
166	Mayfair Capital Investment Management	1,209.29		1,209.29					
167	Sparinvest Property Investors	1,148.01	594.52	243.07	32.62	277.80			
168	Conundrum Capital Corp.	1,121.74	1,121.74		—				
169	Degroof Petercam Asset Management	1,105.59		1,105.59					
170	VBI Real Estate	1,066.70	—		1,066.70		_	_	
171	Colliers Capital	1,012.47	—	1,012.47	—				
172	Kairos Investment Management Co.	994.10	994.10						
173	Rynda Property Investors	973.34	—	973.34	—				
174	Argosy Real Estate	945.00	945.00		—				
175	Trigate Capital	938.14	938.14		—				
176	Covenant Capital Group	922.80	922.80		—				_
177	Clearbell Fund Management	822.43		822.43					_
178	MaxCap Investment Management	806.57	—		—		806.57		_
179	Frogmore	791.72	—	791.72	—				—
180	Propertylink	750.40			_		750.40		

	Total gross value of real estate assets under management (US\$ million, as of December 31, 2016)										
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australasia	Midde East	Global/Other		
181	Northern Horizon Capital	713.43	—	713.43	—		—	—			
182	LendInvest Capital	616.61	—	616.61	_				_		
183	Ascentris	611.30	611.30		—		—	—			
184	IAM Real Estate Group	606.25	606.25				_	—			
185	Western National Group	591.60	591.60		_				_		
186	First Property Asset Management	588.24		588.24							
187	Velocis	574.30	574.30				_				
188	WHI Real Estate Partners	557.20	557.20					_			
189	Pamfleet	473.72	—			473.72	_	_			
190	Omni Partners	468.00	—	468.00	_				_		
191	Newport Capital Partners	450.00	450.00								
192	Novare Fund Manager	422.00					_	_			
193	BKM Capital Partners	310.70	310.70		_				_		
194	Hutensky Capital Partners	292.70	292.70				—	—			
195	Avenida Capital	260.00	—	—	260.00				_		
196	Evolve Fund Services	219.51		219.51				_			
197	IO Asset Management	184.98		184.98			_	—			
198	Newcore Capital Management	123.32		123.32	—						
199	Barwood Capital	94.96		94.96	—				_		
200	Belay Investment Group	18.40	18.40		—			—	_		

End notes

Aberdeen Asset Management

Figures supplied are net of approximately £2.35 billion (\$16 billion) in additional direct property assets managed on behalf of internal funds as part of a multi-asset investment solution. As with previous years' submissions, the above figures just cover Direct Property business. We do have a funds of funds business that has approximately £1.62 billion (\$2.11 billion) under management.

AEW Global

In February 2016 NGAM, La banque Postale and AEW Europe announced an agreement relating to the contribution of LBP owned retail real estate fund manager Ciloger to AEW Europe. As part of the transaction, NGAM purchased CDC's 40 percent interest in AEW Europe on June 15, 2016. On July 21, 2016, NGAM, LBP and AEW Europe signed an agreement to secure the acquisition of Ciloger. The transaction was completed on October 27, 2016.

American Real Estate Partners

AUM includes \$619 billion in nine joint ventures.

Angelo Gordon & Co.

AUM excludes \$2.7 billion in commingled funds. North America allocation includes 100 percent of CMBS and RMBS assets, and private equity real estate.

Argosy Real Estate

AUM includes \$110 million of uncalled equity.

ASB Capital Management

All numbers are at March 31, 2017.

Aviva Investors

There has been the acquisition of a friends Life Real Estate portfolio, some of which has been incorporated into Aviva Investors real estate during 2016.

AXA Investment Managers – Real Assets

AXA IM – Real Assets acquired Sydney-based real estate investment manager Eureka Funds Management in September 2016.

Barings

In March 2016, Barings asset Management, Babson Capital Management, Wood Creek Capital Management and Cornerstone Real Estate Advisers announced their intention to combine under the Barings brand. In July 2016, BAML became an indirect, wholly-owned subsidiary of Babson. In September 2016, Babson changed its name to Barings and Cornerstone was renamed Barings Real Estate Advisers; in addition, Wood Creek merged with Barings. On December 30, 2016, Barings Real Estate Advisers merged with and into Barings.

Blue Vista Capital Management

AUM provided for the 2016 survey reported total capitalization rather than gross $\ensuremath{\mathsf{AUM}}$.

BMO Real Estate Partners

BMO Global Asset Management bought the remaining 30 percent stake in BMO Real Estate Partners on March 8, 2017. As part of this transaction the value-add portion of the BMO REP business will be demerged.

BNP Paribas Real Estate Investment Management

AUM figure includes €5 billion (\$6.5 billion) of funds under administration.

Bouwfonds Investment Management

AUM includes fund and non-fund assets.

Brunswick Real Estate

Brunswick Real Estate is a new name for Sveafastigheter.

Colony NorthStar

Colony NorthStar was formed in 2017 through a tri-party merger between Colony Capital, NorthStar Asset Management Group and NorthStar Realty Finance.

Cording Real Estate Group

AUM includes €1.4 billion (\$1.6 billion) of non-fund activity. Davis Investment Ventures

AUM includes \$1.05 billion of legacy real estate. Diamond Realty Management

AUM includes a JPY 7,800 million (\$0.71 million) subadvisory mandate.

DIC Asset AG AUM includes fund and non-fund assets.

EURAMCO Group

EURAMCO Invest GmbH is the new name for SF Invest GmbH.

Fidelity International AUM as at June 30, 2017.

The GPT Group

AUM includes fund and non-fund assets.

Guggenheim Real Estate Net figures supplied.

Hermes Real Estate Investment Management

AUM includes $\pounds790$ million (\$1.02 billion) of assets held in four joint venture vehicles.

Hines

AUM includes fund and non-fund assets.

ICG-Longbow

AUM includes £21 millino (\$27.3 million) of warehoused assets.

IGIS Asset Management AUM includes KRW 10.884.099 (\$0.9 million) in 47 ioint venture vehicles.

Kairos Investment Management Company Previously known as Redwood-Kairos Real Estate Partners.

KGAL AUM includes fund and non-fund assets.

La Francaise Real Estate Managers

AUM includes €646 million (\$759 million) of joint shareholdings with affiliates.

LEM Capital

Figures as at March 31, 2017.

LGIM Real Assets

AUM includes four joint venture vehicles with a value of \pounds 1.42 million (\$1.84 million).

M7 Real Estate

AUM also includes €1.1 million (\$1.3 million) in joint ventures.

Mayfair Capital Investment Management

100 percent of the shares of Mayfair Capital were sold to Swiss Life at the end of 2016.

MetLife Investment Management

AUM includes fund and non-fund assets.

Meyer Bergman AUM includes €322 million (\$378 million) held in a co-investment structures.

Morgan Stanley Real Estate Investing

Gross value represents real estate assets under management, which represents gross fair market value of the real estate assets managed by Morgan Stanley on behalf of the firm and its clients, presented at direct ownership interest. Real estate AUM for certain minority interests represents Morgan Stanley's equity investment in the entity.

Omni Partners

Net figures supplied.

Patria Investimentos

Gross asset value equals the sum of the estimated fair equity value and the oustanding debt values of the fund's investment.

PGIM

Total real estate AUM includes the combined assets of PGIM Real Estate and PGIM Real Estate Finance, two units within PGIM that provide real estate investment management and commercial mortgage loan services solely through PGIM and some of its global subsidiaries. Until May 2016 PGIM Real Estate and PGIM Real Estate Finance were known as Prudential Real Estate Investors and Prudential Mortgage Capital Co., respectively, and Pramerica Real Estate and Pricoa Mortgage Capital, respectively, outside of the Americas, South Korea and Japan.

Prelios

AUM includes uncalled commitments.

Realterm

AUM includes \$260 million of partner owned assets.

Rockspring Property Investment Managers

AUM includes fund and non-fund assets.

Swiss Life Asset Managers

AUM includes €43.5 million (\$51 million) of real estate assets under management as well as €28.8 million (\$33.8 million) real estate under administration where we manage assets in general on behalf of third parties and our subsidiaries. Acquired Mayfair Capital Management in 2016.

Tishman Speyer Properties

Non-fund investments of \$26.3 million include 35 joint ventures .

Torchlight Investors

Net figures supplied. AUM includes unfunded commitments and CDO.

USAA Real Estate Company AUM includes fund and non-fund assets.

Walton Street Capital AUM includes the value of an asset that we manage but don't own.

Westport Capital Partners Net figure supplied.

Discretionary separate accounts

	Discretionary separate acco	ount mandates	by investor dor	nicile (gross,	US\$ million	, as of Decen	nber 31, 2016	5)	
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australasia	Middle East	Number of mandates
1	PGIM	67,527.00	58,561.00	5,760.00		1,535.00	395.00	1,276.00	56
2	Aviva Investors	32,162.12	16.03	31,825.45	—	83.86	—	236.78	57
3	AXA Investment Managers – Real Assets	28,705.52	125.53	28,579.98	—			_	11
4	CBRE Global Investors	26,100.00	2,100.00	20,000.00		1,900.00	2,100.00		186
5	Invesco Real Estate	24,554.20	7,602.70	792.50		16,159.00			29
6	Cohen & Steers Capital Management	22,810.00	6,404.00	1,792.00		14,561.00	53.00		66
7	M&G	21,319.73		19,091.32		2,228.41	_		19
8	Bentall Kennedy	18,807.00	18,807.00	—	—		—		4
9	LaSalle Investment Management	16,801.00	4,105.00	12,374.00	22.00	279.00	21.00		69
10	Prologis	15,216.70	6,667.00	5,721.60	71.40			2,756.70	12
11	Deutsche Asset Management	12,064.52	10,067.34	1,041.52		840.33	115.33	_	96
12	AEW Global	11,119.00	9,065.00	1,271.00	—	455.00	328.00		35
13	Standard Life Investments	8,679.04		8,679.04	—			_	12
14	Royal London Asset Management	7,431.32		7,431.32					6
15	Principal Real Estate Investors	7,310.58	3,679.75	1,208.96	53.94	1,645.87	588.92	133.14	55
16	Aberdeen Asset Management	7,008.33	70.54	6,937.79	—		—		19
17	Hermes Real Estate Investment Management	6,990.08		6,990.08	—		—		1
18	Orchard Street Investment Management	6,934.34		6,794.99	—			139.35	8
19	Heitman	6,683.00	2,813.00	182.00	—	2,706.00	970.00	12.00	33
20	LGIM Real Assets	6,634.55		6,452.89	—	181.65	—		5
21	BlackRock	6,195.00	4,675.00	274.00	—		—	_	26
22	CenterSquare Investment Management	6,042.00	4,751.00	611.00	—	279.00	401.00	_	52
23	Clarion Partners	5,881.00	5,277.00	—	—	604.00	—	_	8
24	UBS Global Asset Management	5,823.03	3,323.52	2,499.51	—		—	_	15
25	DTZ Investors	5,428.59		5,428.59	—		_	_	8
26	Schroder Real Estate Investment Management	4,855.15		4,781.16	—	73.99	—		32
27	BNP Paribas Real Estate Investment Management	4,565.10	—	4,565.10	—		_		20
28	USAA Real Estate Co.	4,278.00	4,278.00	_	—				12
29	Forum Partners Investment Management	3,673.10	3,038.60	613.90	—	20.60	_		10

	Discretionary separate acco	unt mandates	by investor don	nicile (gross,	US\$ million	, as of Decen	nber 31, 2016)	
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australasia	Middle East	Number of mandates
30	Columbia Threadneedle Investments	3,452.99		3,452.99			—		3
31	AMP Capital	3,214.03			_	1,458.30	1,644.82	110.90	25
32	Rockwood Capital	3,209.00	3,209.00	—	—		—		6
33	Lendlease Investment Management	2,808.59		—	—	1,008.21	1,800.38		4
34	Bouwinvest Real Estate Investment Management	2,754.80	1,178.53	1,068.04	—	355.66	152.58		4
35	Credit Suisse Real Estate Investment Management	2,243.00		2,243.00	—				2
36	KBS	2,172.00	2,172.00	_	—		—		6
37	Rockspring Property Investment Managers	2,114.14	_	1,044.84	—	1,069.30			4
38	Lionstone Investments	1,935.00	1,935.00						4
39	Vanbarton Group	1,906.00	1,906.00	—	—	—			6
40	Barings	1,882.00	1,115.00	122.00	—	645.00	—		17
41	J.P. Morgan Asset Management – Global Real Assets	1,875.00	1,875.00		—	—		—	3
42	Related Fund Management	1,825.00	1,595.00		—			230.00	12
43	Hines	1,783.00	1,437.00	—	—	318.00		28.00	11
44	Tishman Speyer Properties	1,643.90			—	1,643.90	—		3
45	Sentinel Real Estate Corp.	1,558.00	1,558.00						2
46	Amvest REIM	1,482.63		1,482.63		_			3
47	ICG-Longbow	1,453.95		928.61				525.35	7
48	Angelo Gordon	1,250.70	984.50	77.50		188.70			6
49	National Real Estate Advisors	1,147.00	1,147.00	<u> </u>	—				1
50	Ares Management	1,128.40	877.60	117.60	_	133.20	_		5
51	American Realty Advisors	1,108.90	1,108.90		—	—	—	—	20
52	Warburg-HIH invest Real Estate	1,089.08		1,089.08	—		—		13
53	Franklin Real Estate Advisors	1,077.40	311.30	299.00	—		467.10		12
54	Waterton	992.70	992.70	_					1
55	Nuveen/TH Real Estate	986.00	570.00	416.00	—				5
56	Knight Frank Investment Management	938.35		938.35					2
57	Savills Investment Management	816.55		816.55	_		_		2
58	Quadrant Real Estate Advisors	752.97	401.29	15.69	—		335.99		5
59	Presima	721.95	500.01	_	—		221.94		5
60	Sarofim Realty Advisors	716.00	716.00						2
61	Bristol Group	647.00	647.00		—	—			1

	Discretionary separate acco	unt mandates	by investor don	nicile (gross,	US\$ million	, as of Decen	nber 31, 2016)	
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australasia	Middle East	Number of mandates
62	Madison International Realty	614.00		614.00					1
63	Ascentris	611.30	611.30		—			_	2
64	LBA Realty	500.00	500.00						1
65	Colliers Capital	488.35		488.35			—		3
66	Timbercreek Asset Management	451.52	208.28	243.24					5
67	Amherst Capital Management	403.00			—			403.00	1
68	ASB Capital Management	351.00	351.00		—		—		1
69	Lothbury Investment Management	321.87		321.87	—		—		1
70	CityView	297.00	297.00						1
71	Walton Street Capital	262.50	112.30		—	150.20	—		5
72	Degroof Petercam Asset Management	259.48		259.48	—				
73	Diamond Realty Management	257.33			—	257.33	—		2
74	LendInvest Capital	221.98		221.98					5
75	First Property Asset Management	209.65		209.65	—		—	_	1
76	Omni Partners	208.00		208.00	—				2
77	ISPT	178.60			—		178.60		3
78	Cheyne Capital Management	147.00			—		—	147.00	1
79	CS Capital Management	105.16	105.16		—		—		1
80	Newport Capital Partners	100.00	100.00		—		—		1
81	InfraRed Capital Partners	99.20		—	—		—	99.20	1
82	Arcus Infrastructure Partners	96.26	96.26		—		—		1
83	Westport Capital Partners	94.43	94.43		—		—		3
84	Kairos Investment Management Co.	56.80	56.80		—				2
85	Oak Street Real Estate Capital	55.03	55.03		—				2
86	Lowe Enterprises	51.00	51.00						1
87	VBI Real Estate	37.80			37.80				1
88	Hunt Investment Management	20.50	20.50	—	—				1
89	GTIS Partners	1.00	1.00		—			—	1

End notes

Aberdeen Asset Management

Figures supplied are net of approximately £2.35 billion (\$3.1 billion) in additional direct property assets managed on behalf of internal funds as part of a multi-asset investment solution. As with previous years' submissions, the above figures just cover Direct Property business. We do have a funds of funds business that has approximately £1.62 billion (\$2.1 billion) under management.

AEW Global

In February 2016, NGAM, La banque Postale and AEW Europe announced an agreement relating to the contribution of LBP owned retail real estate fund manager Ciloger to AEW Europe. As part of the transaction, NGAM purchased CDC's 40 percent interest in AEW Europe on June 15, 2016. On July 21, 2016, NGAM, LBP and AEW Europe signed an agreement to secure the acquisition of Ciloger. The transaction was completed on October 27, 2016.

ASB Capital Managementt

All numbers are at March 31, 2017.

Aviva Investors

There has been the acquisition of a friends Life Real Estate portfolio, some of which has been incorporated into Aviva Investors real estate during 2017.

AXA Investment Managers – Real Assets

AXA IM – Real Assets acquired Sydney-based real estate investment manager Eureka Funds Management in September 2017.

Barings

In March 2016, Barings asset Management, Babson Capital Management, Wood Creek Capital Management and Cornerstone Real Estate Advisers announced their intention to combine under the Barings brand. In July 2016, BAML became an indirect, wholly-owned subsidiary of Babson. In September 2016, Babson changed its name to Barings and Cornerstone was renamed Barings Real Estate Advisers; in addition, Wood Creek merged with Barings. On December 30, 2016, Barings Real Estate Advisers merged with and into Barings.

BMO Real Estate Partners

BMO Global Asset Management bought the remaining 30 percent stake in BMO Real Estate Partners on March 8, 2017. As part of this transaction the value-add portion of the BMO REP business will be demerged.

Knight Frank Investment Management

Both discretionary mandates are semi-discretionary.

Mayfair Capital Investment Management

100 percent of the shares of Mayfair Capital were sold to Swiss Life at the end of 2017.

Omni Partners

Net figures supplied.

PGIM

Total real estate AUM includes the combined assets of PGIM Real Estate and PGIM Real Estate Finance, two units within PGIM that provide real estate investment management and commercial mortgage loan services solely through PGIM and some of its global subsidiaries. Until May 2016 PGIM Real Estate and PGIM Real Estate Finance were known as Prudential Real Estate Investors and Prudential Mortgage Capital Company, respoectively, and Pramerica Real Estate and Pricoa Mortgage Capital, respectively, outside of the Americas, South Korea and Japan.

Walton Street Capital

AUM includes the value of an asset that we manage but don't own.

Advisory separate accounts

	Advisory sepa	rate accoun	ts by investo	r domicile (gro	oss, US\$ mill	ion, as of Decei	mber 31, 2016)	
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australia	Middle East	Number of mandates
1	Principal Real Estate Investors	42,270.46	40,038.75	62.16	—	1,129.52	1,040.03		37
2	Barings	38,282.00	37,143.00	1,085.00		54.00			17
3	AEW Global	25,807.00	8,598.00	16,143.00		199.00	867.00		57
4	Heitman	18,896.00	16,411.00	1,276.00		1,209.00			20
5	CBRE Global Investors	16,400.00	6,000.00	5,800.00	—	2,300.00		2,300.00	36
6	Clarion Partners	15,304.00	13,170.00		—			2,134.00	12
7	Nuveen/TH Real Estate	14,910.00	3,316.00	8,351.00	—	1,396.00	1,847.00		29
8	LaSalle Investment Management	14,781.00	6,047.00	5,272.00		2,928.00	534.00		51
9	Greystar	12,905.00	9,069.00	3,684.00	152.00		—	—	21
10	Credit Suisse Real Estate Investment Management	12,658.00		12,550.00		108.00			5
11	Invesco Real Estate	12,109.10	5,858.40	2,380.60	—	3,870.10	—	—	29
12	J.P. Morgan Asset Management – Global Real Assets	10,869.00	7,760.00	3,103.00	—		6.00	—	16
13	Patrizia Immobilien	8,733.72		7,891.91	—	841.80	—	_	41
14	MetLife Investment Management	8,550.00	5,747.00	2,486.00	—	232.00	_	85.00	17
15	Savills Investment Management	7,563.61	772.36	4,634.13	—	2,157.12		_	22
16	Quadrant Real Estate Advisors	7,134.75	7,134.75	_	—			_	1
17	Deutsche Asset Management	6,513.56		3,993.20	—	2,520.36		_	11
18	Aberdeen Asset Management	6,272.72		5,493.09	—			779.64	32
19	AXA Investment Managers – Real Assets	6,053.20	72.40	1,558.49	_	414.06	3,246.84	761.41	19
20	Hines	5,903.00	1,725.00	1,398.00	—	2,332.00	_	448.00	12
21	La Française Real Estate Managers	5,676.92		4,540.48	—	1,136.44			19
22	GLL Real Estate Partners	4,803.54		4,066.97		736.58	—		11
23	M3 Capital Partners	4,730.00	4,730.00	_	—		—		2
24	Amherst Capital Management	4,689.00	4,689.00	_	—		_	_	1
25	DTZ Investors	4,638.10		4,638.10	_		—	_	10
26	AMP Capital	4,089.73	1,425.90		—		1,847.18	816.65	9
27	BMO Real Estate Partners	4,015.33		4,015.33	—		—	_	37

	Advisory sepa	rate accoun	ts by investor	domicile (gro	oss, US\$ milli	ion, as of Decei	nber 31, 2016)	
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australia	Middle East	Number of mandates
28	Exeter Property Group	3,869.40	3,472.70	396.70	—		—	—	4
29	Gaw Capital Partners	3,811.30	870.00	1,948.40	—	992.90		_	10
30	BNP Paribas Real Estate Investment Management	3,543.78		3,543.78	_	—		_	37
31	BlackRock	3,390.00	824.00			2,566.00	—	—	4
32	UBS Global Asset Management	3,350.99	183.44	1,985.48		1,182.07			12
33	PGIM	3,267.00	1,634.00	440.00		1,110.00	—	83.00	8
34	PCCP	3,193.10	3,193.10			—			18
35	Union Investment Real Estate	3,058.69		3,058.69		—	—	—	6
36	Sentinel Real Estate Corp.	3,006.00	2,675.00	331.00	—				9
37	Rockwood Capital	3,002.80	2,927.80			75.00	—		2
38	Lowe Enterprises	2,471.00	2,471.00			—			9
39	Lionstone Investments	2,455.00	2,192.00	263.00	—				6
40	GreenOak Real Estate	2,446.00	1,302.00	1,054.00	—	90.00			9
41	Timbercreek Asset Management	2,429.44	2,429.44		—				7
42	CS Capital Management	2,414.15	2,414.15		—				5
43	Bentall Kennedy	2,113.00	1,802.00	230.00				81.00	11
44	Berkshire Group	1,869.00			—		437.50	1,431.50	
45	TGM Associates	1,549.37	1,549.37			—	—		4
46	Arcus Infrastructure Partners	1,548.73	710.16	838.56		—			3
47	M&G	1,504.52		1,504.52	—				3
48	Pradera	1,479.05		816.13	—	662.92			5
49	QIC	1,367.56			—	—	1,367.56		1
50	Internos Global Investors	1,285.86		1,285.86		—			14
51	Rockspring Property Investment Managers	1,246.55		487.58		758.97	—		3
52	Hunt Investment Management	1,196.50	1,196.50				—		6
53	Sarofim Realty Advisors	1,099.00	1,099.00		—		—		4
54	Cording Real Estate Group	1,052.26		1,052.26					6
55	Rynda Property Investors	973.34		973.34		—	_	_	7
56	CenterSquare Investment Management	965.00	828.00		—		137.00	_	2
57	CityView	867.00	867.00		—				5

	Advisory se	parate accoun	ts by investor	domicile (gro	oss, US\$ milli	ion, as of Dece	mber 31, 2016)	
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australia	Middle East	Number of mandates
58	Bristol Group	801.00	801.00	_	—		—		2
59	Hahn Group	789.19	_	789.19	—				4
60	MaxCap Investment Management	766.96			—		766.96		4
61	Altis Property Partners	752.23			—		752.23		3
62	Blue Vista Capital Management	727.20	727.20		—		—		6
63	Standard Life Investments	688.25	165.00	523.25	—		—		2
64	Knight Frank Investment Management	685.54		615.87				69.68	4
65	Mesa West Capital	669.10	375.00		—	294.10	—		7
66	Diamond Realty Management	630.08			—	630.08	—		9
66	American Real Estate Partners	619.00	619.00		—				9
67	Mayfair Capital Investment Management	604.27		604.27	—		—		4
68	Investa Property Group	547.90			—		547.90		3
69	Grosvenor Europe	543.23		51.67				491.56	2
70	Prelios	489.30		489.30	—		—		3
71	Walton Street Capital	474.60				424.60		50.00	8
72	PAG Investment Management	443.00	_		—	443.00	—		5
73	Colliers Capital	435.32		435.32			—		1
74	Bouwfonds Investment Management	410.38		410.38	—				1
75	KBS	396.00	396.00						4
76	Charter Hall	395.36					395.36		1
77	Tishman Speyer Properties	383.00		383.00					1
78	Ares Management	340.10	340.10		—		—		1
79	M7 Real Estate	323.04		323.04					4
80	InvestiRE SGR	315.68		315.68	—				1
81	Fidelity International	310.00	_				—	310.00	1
82	Beacon Capital Partners	272.00	272.00						1
83	Northern Horizon Capital	268.33		268.33	—		—		2
84	Franklin Real Estate Advisors	259.90			—		259.90		6
85	ECE Real Estate Partners	242.02		242.02	—		_		1
86	Pearlmark	219.10	219.10		—		—	—	4

	Advisory sepa	rate accoun	ts by investor	domicile (gro	oss, US\$ milli	ion, as of Decei	mber 31, 2016)	
Rank	Fund manager	Total	North America	Europe	Latin America	Asia	Australia	Middle East	Number of mandates
87	VBI Real Estate	207.30			207.30		_		1
88	Omni Partners	117.00		117.00			—		1
89	InfraRed Capital Partners	104.40	_		_	—		104.40	1
90	Trigate Capital	74.00	74.00	—		_	—		1
91	DRC Capital	62.89	62.89	—			—		1
92	Newcore Capital Management	55.49	—	55.49	_	—		—	2
93	Europa Capital	53.67			—	53.67			1
94	Evolve Fund Services	37.00		37.00					5
95	Alex. Brown Realty	25.00	25.00						1
96	New Forests Asset Management	24.05	24.05	—	_	—			1
97	American Realty Advisors	13.90	13.90		—		—	—	1
98	First Property Asset Management	12.33		12.33			_		1
99	Royal London Asset Management	3.70		3.70			_		2

End notes

Aberdeen Asset Management

Figures supplied are net of approximately £2.35 billion (\$3.1 billion) in additional direct property assets managed on behalf of internal funds as part of a multi-asset investment solution. As with previous years' submissions, the above figures just cover Direct Property business. We do have a funds of funds business that has approximately £1.62 billion (\$2.1 billion) under management.

AEW Global

In February 2016 NGAM, La banque Postale and AEW Europe announced an agreement relating to the contribution of LBP owned retail real estate fund manager Ciloger to AEW Europe. As part of the transaction, NGAM purchased CDC's 40 percent interest in AEW Europe on June 15, 2016. On July 21, 2016, NGAM, LBP and AEW Europe signed an agreement to secure the acquisition of Ciloger. The transaction was completed on October 27, 2016.

AXA Investment Managers - Real Assets

AXA IM – Real Assets acquired Sydney-based real estate investment manager Eureka Funds Management in September 2017

Barings

In March 2016, Barings Asset Management, Babson Capital Management, Wood Creek Capital Management and Cornerstone Real Estate Advisers announced their intention to combine under the Barings brand. In July 2016, BAML became an indirect, wholly-owned subsidiary of Babson. In September 2016, Babson changed its name to Barings and Cornerstone was renamed Barings Real Estate Advisers; in addition, Wood Creek merged with Barings. On December 30, 2016, Barings Real Estate Advisers merged with and into Barings.

BMO Real Estate Partners

BMO Global Asset Management bought the remaining 30 percent stake in BMO Real Estate Partners on March 8, 2017. As part of this transaction the value-add portion of the BMO REP business will be demerged.

Knight Frank Investment Management

Both discretionary mandates are semi-discretionary.

Mayfair Capital Investment Management

100 percent of the shares of Mayfair Capital were sold to Swiss Life at the end of 2017.

Omni Partners

Net figures supplied.

PGIM

Total real estate AUM include the combined assets of PGIM Real Estate and PGIM Real Estate Finance, two units within PGIM that provide real estate investment management and commercial mortgage loan services solely through PGIM and some of its global subsidiaries. Until May 2016, PGIM Real Estate and PGIM Real Estate Finance were known as Prudential Real Estate Investors and Prudential Mortgage Capital Company, respectively, and Pramerica Real Estate and PGicoa Mortgage Capital, respectively, outside of the Americas, South Korea and Japan.

Walton Street Capital

AUM includes the value of an asset that we manage but don't own.

Indirect real estate vehicles

	Number and value of vehicles under management (gross, US\$ million, as of December 31, 201		
Rank	Fund manager	Total GAV	Total vehicles
1	Blackstone	166,198.00	33
2	Nuveen/TH Real Estate	80,857.00	54
3	Brookfield Asset Management	76,400.00	_
4	UBS Global Asset Management	68,728.66	42
5	J.P. Morgan Asset Management – Global Real Assets	67,195.00	26
6	PGIM	53,905.08	44
7	Starwood Capital Group	47,592.00	24
8	CBRE Global Investors	44,100.00	81
9	Deka Immobilien Investment/WestInvest	37,640.21	20
10	Credit Suisse Real Estate Investment Management	37,012.00	45
11	AXA Investment Managers – Real Assets	35,157.94	92
12	Deutsche Asset Management	33,985.52	38
13	Invesco Real Estate	31,173.59	39
14	Morgan Stanley Real Estate Investing	30,470.00	17
15	Union Investment Real Estate	29,718.14	12
16	AEW Global	26,481.00	54
17	LaSalle Investment Management	25,708.00	17
18	Prologis	23,654.60	6
19	Clarion Partners	22,862.00	9
20	Principal Real Estate Investors	22,307.46	7
21	Angelo Gordon	21,154.00	21
22	Standard Life Investments	18,123.87	23
23	Tishman Speyer Properties	16,638.00	13
24	Dexus	16,347.41	6
25	Fortress Investment Group	15,288.00	8
26	Cohen & Steers Capital Management	14,856.00	12
27	Lendlease Investment Management	14,691.06	11

	Number and value of vehicles under management (gross, US\$ million, as of December 31, 2016)					
Rank	Fund manager	Total GAV	Total vehicles			
28	LGIM Real Assets	14,515.62	11			
29	Aviva Investors	13,996.93	46			
30	AMP Capital	13,970.91	18			
31	M&G	13,760.16	12			
32	Charter Hall	13,279.57	30			
33	Bentall Kennedy	13,196.00	6			
34	Rockpoint Group	12,644.00	9			
35	Patron Capital	12,251.40	5			
36	Harrison Street Real Estate Capital	12,173.90	8			
37	BNP Paribas Real Estate Investment Management	11,929.73	41			
38	QIC	11,891.12	6			
39	BlackRock	10,906.00	16			
40	Patrizia Immobilien	10,838.23	35			
41	Heitman	10,806.00	12			
42	Walton Street Capital	10,073.00	11			
43	Schroder Real Estate Investment Management	10,059.29	23			
44	DRA Advisors	9,532.50	6			
45	ISPT	9,384.99	5			
46	La Française Real Estate Managers	8,910.50	56			
47	KBS	8,865.00	7			
48	Gaw Capital Partners	8,852.10	8			
49	Aberdeen Asset Management	8,834.72	25			
50	Savills Investment Management	8,651.64	25			
51	USAA Real Estate Co.	8,604.00	10			
52	Hines	8,553.00	7			
53	Westbrook Partners	8,489.00	6			
54	Walton Street Capital	8,480.24	10			
55	Ares Management	8,284.00	24			
56	Tristan Capital Partners	8,282.30	6			
57	Barings	8,214.00	22			

	Number and value of vehicles under management (gross, US\$ million, as of December 31, 2016	i)	
Rank	Fund manager	Total GAV	Total vehicles
58	Columbia Threadneedle Investments	7,645.90	5
59	GPT Group	7,459.31	2
60	InvestiRE SGR	7,366.63	35
61	Kayne Anderson Real Estate Advisors	7,335.00	10
62	KGAL	7,284.87	135
63	Crow Holdings Capital Partners	7,153.00	8
64	ASB Capital Management	7,118.00	2
65	American Realty Advisors	6,888.10	3
66	Bridge Investment Group Partners	6,658.00	9
67	Intercontinental Real Estate Corp.	6,485.80	6
68	Beacon Capital Partners	6,293.30	4
69	Carmel Partners	6,194.10	6
70	Investa Property Group	6,115.77	2
71	Meyer Bergman	5,773.72	3
72	Mesa West Capital	5,765.70	3
73	Bouwfonds Investment Management	5,667.45	18
74	PAG Investment Management	5,650.00	4
75	Berkshire Group	5,243.60	5
76	Bouwinvest Real Estate Investment Management	5,131.85	6
77	Rockspring Property Investment Managers	4,748.45	12
78	GreenOak Real Estate	4,618.00	11
79	Vesteda Investment Management	4,603.62	1
80	Warburg-HIH invest Real Estate	4,371.07	20
81	Unite Integrated Solutions	4,065.89	2
82	National Real Estate Advisors	3,875.00	1
83	Prelios	3,840.10	32
84	BMO Real Estate Partners	3,835.28	8
85	PCCP	3,807.90	9
86	Canyon Partners Real Estate	3,793.00	10
87	GTIS Partners	3,620.00	16
88	ECE Real Estate Partners	3,504.01	2

	Number and value of vehicles under management (gross, US\$ million, as of December 31, 2016	j)	
Rank	Fund manager	Total GAV	Total vehicles
89	Equus Capital Partners	3,500.00	7
90	MetLife Investment Management	3,497.60	2
91	Exeter Property Group	3,350.50	5
92	InfraRed Capital Partners	3,295.40	2
93	Rockwood Capital	3,286.30	6
94	Madison Realty Capital	3,126.00	6
95	Grosvenor Europe	3,069.46	9
96	NIAM	3,057.54	5
97	Madison International Realty	3,046.10	6
98	Greystar	3,042.00	2
99	Artemis Real Estate Partners	2,852.00	6
100	Europa Capital	2,797.95	6
101	Diamond Realty Management	2,739.17	8
102	Blue Vista Capital Management	2,738.30	7
103	Realterm	2,690.00	6
104	Amvest REIM	2,618.01	4
105	Arcus Infrastructure Partners	2,557.35	1
106	Westport Capital Partners	2,516.30	8
107	Hermes Real Estate Investment Management	2,327.31	4
108	CenterSquare Investment Management	2,286.00	19
109	Sentinel Real Estate Corp.	2,213.00	4
110	ICG-Longbow	2,212.38	4
111	Waterton	2,170.90	3
112	New Forests Asset Management	2,161.53	6
113	Hahn Group	2,104.51	6
114	Franklin Real Estate Advisors	2,048.10	12
115	EURAMCO Group	2,024.54	29
116	Lothbury Investment Management	1,950.94	2
117	Altera Vastgoed	1,929.84	3
118	Torchlight Investors	1,914.90	5

	Number and value of vehicles under management (gross, US\$ million, as of December 31, 2016	5)	
Rank	Fund manager	Total GAV	Total vehicles
119	GLL Real Estate Partners	1,889.85	7
120	DRC Capital	1,881.51	6
121	LEM Capital	1,720.80	3
122	Cheyne Capital Management	1,716.00	4
123	Related Fund Management	1,664.00	4
124	Alex. Brown Realty	1,638.00	7
125	Timbercreek Asset Management	1,599.45	12
126	Internos Global Investors	1,560.49	9
127	IGIS Asset Management	1,530.13	20
128	Guggenheim Real Estate	1,520.70	5
129	Long Wharf Real Estate Partners	1,310.00	3
130	Oak Street Real Estate Capital	1,285.43	4
131	Patria Investimentos	1,277.03	4
132	Pradera	1,194.10	4
133	Fidelity International	1,175.00	2
134	Sparinvest Property Investors	1,148.01	4
135	Conundrum Capital Corp.	1,121.74	3
136	M7 Real Estate	1,116.30	11
137	Pearlmark	1,039.20	7
138	Kairos Investment Management Co.	937.30	4
139	American Real Estate Partners	933.00	2
140	Covenant Capital Group	922.80	3
141	Amherst Capital Management	888.00	3
142	Degroof Petercam Asset Management	885.90	3
143	Trigate Capital	864.14	3
144	Argosy Real Estate	835.00	4
145	Clearbell Fund Management	822.43	3
146	VBI Real Estate	821.50	4
147	Frogmore	791.72	3
148	Propertylink	750.40	10

	Number and value of vehicles under management (gross, US\$ million, as of December 31, 2016)					
Rank	Fund manager	Total GAV	Total vehicles			
149	Mayfair Capital Investment Management	604.80	4			
150	Forum Partners Investment Management	601.80	7			
151	Presima	597.40	8			
152	Velocis	574.30	2			
153	WHI Real Estate Partners	557.20	6			
154	Western National Group	539.60	2			
155	Lionstone Investments	527.00	6			
156	Pamfleet	473.72	3			
157	Bristol Group	471.00	4			
158	Royal London Asset Management	468.62	1			
159	IAM Real Estate Group	463.42	4			
160	Northern Horizon Capital	445.10	5			
161	Novare Fund Manager	422.00	2			
162	Altis Property Partners	418.02	2			
163	LendInvest Capital	394.63	4			
164	Newport Capital Partners	350.00	3			
165	BKM Capital Partners	310.70	1			
166	Hunt Investment Management	299.40	6			
167	Hutensky Capital Partners	292.70	3			
168	First Property Asset Management	282.90	9			
169	Avenida Capital	260.00	2			
170	Knight Frank Investment Management	223.83	1			
171	CityView	218.00	2			
172	Sarofim Realty Advisors	210.00	3			
173	IO Asset Management	184.98	3			
174	Evolve Fund Services	180.62	5			
175	Omni Partners	143.00	2			
176	Barwood Capital	94.96	2			
177	Colliers Capital	88.79	1			
178	Newcore Capital Management	67.83	3			
179	MaxCap Investment Management	39.25	1			

Number and value of vehicles under management (gross, US\$ million, as of December 31, 2016)					
Rank	Fund manager	Total GAV	Total vehicles		
180	Quadrant Real Estate Advisors	39.00	3		
181	Belay Investment Group	18.40	1		
182	DTZ Investors	9.87	1		

End notes

Aberdeen Asset Management

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AEW Global

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American Realty Advisors

Vehicle values represent the gross fair value of all assets held by all accounts, including cash and cash equivalents.

ASB Capital Management

All numbers are at March 31, 2017.

AXA Investment Managers - Real Assets

AXA IM – Real Assets acquired Sydney-based real estate investment manager Eureka Funds Management in September 2018.

Barings

In March 2016, Barings Asset Management, Babson Capital Management, Wood Creek Capital Management and Cornerstone Real Estate Advisers announced their intention to combine under the Barings brand. In July 2016, BAML became an indirect, wholly-owned subsidiary of Babson. In September 2016, Babson changed its name to Barings and Cornerstone was renamed Barings Real Estate Advisers; in addition, Wood Creek merged with Barings. On December 30, 2016, Barings Real Estate Advisers merged with and into Barings.

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BMO Global Asset Management bought the remaining 30 percent stake in BMO Real Estate Partners on March 8, 2017. As part of this transaction the value-add portion of the BMO REP business will be demerged.

Brunswick Real Estate

Brunswick Real Estate is a new name for Sveafastigheter.

Colony NorthStar

Colony NorthStar was formed in 2017 through a tri-party merger between Colony Capital, NorthStar Asset Management Group and NorthStar Realty Finance.

EURAMCO Group

EURAMCO Invest GmbH is the new name for SF Invest GmbH.

Guggenheim Real Estate

Net figures supplied

Kairos Investment Management Company

Previously known as Redwood-Kairos Real Estate Partners.

LEM Capital

Figures as at March 31, 2017.

Mayfair Capital Investment Management

100 percent of the shares of Mayfair Capital were sold to Swiss Life at the end of 2016.

Omni Partners

Net figures supplied

Patria Investimentos

Gross asset value equals the sum of the estimated fair equity value and the oustanding debt values of the fund's investment.

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Torchlight Investors

Net figures supplied.

Walton Street Capital

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About Institutional Real Estate, Inc.

F ounded in 1987, Institutional Real Estate, Inc. (IREI) is an information company focused on providing institutional real estate investors with decision-making tools through its publications, conferences and consulting. IREI provides real estate investment fiduciaries with information and insights on the people, issues, ideas and events driving the global real estate investment marketplace. The firm publishes a number of special reports and directories, as well as seven regular news publications. The firm's flagship publication, *Institutional Real Estate Americas*, has covered the industry for more than 25 years. Other IREI titles include *Institutional Real Estate Europe, Institutional Real Estate Asia Pacific, Real Assets Adviser, Institutional Real Estate Newsline, Institutional Investing in Infrastructure and Institutional Real Estate FundTracker.* In 2006, the firm launched a conference and seminar division. IREI's events have quickly gained a stellar reputation and solid following within the industry. The firm's menu of events includes Institutional Investing in Infrastructure, and Visions, Insights & Perspectives (VIP) conferences in North America and Europe, as well as Springboard, an vent launched in 2014 for young industry executives.

On the consulting side, IREI has two decades of experience providing research and advice to the investment-management, brokerage, development and technology communities. Services include strategic information and advice on presentations, organisational structures, product development, proposal responses, and design and implementation of market research projects.

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Property Funds Research is an independent management-owned business that provides confidential research and strategic consulting for investors in European real estate. PFR's foundations are an expert team, a suite of products for underwriting investments in the European market, and access to a unique dataset describing the major investors, vehicles, and managers in the European and global institutional property markets. Founded in 2001, under its previous name, Oxford Property Consultants (OPC), the firm established the first European and global dataset of unlisted property vehicles, the major sources of capital and investment managers. OPC was sold to CBRE in 2006, and the research and information business (renamed Property Funds Research) was re-acquired by its management. PFR is now chaired by Andrew Baum, who is also visiting Professor of Management Practice at the Säid Business School, Oxford, and managed by Jane Fear.

PFR's global database includes nearly 3,000 unlisted funds, 1,500 fund managers and 3,000 investors. With this resource, PFR provides high-quality confidential research and strategic consulting for institutional real estate investment managers, investors and industry bodies around the world.

For more information about PFR, please contact Jane Fear at jf@propertyfundsresearch.com.

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