

Nuveen Core Equity Alpha Fund
Form N-Q
November 27, 2009

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549
FORM N-Q
QUARTERLY SCHEDULE OF PORTFOLIO HOLDINGS OF REGISTERED MANAGEMENT
INVESTMENT COMPANY

Investment Company Act file number 811-22003

Nuveen Core Equity Alpha Fund

(Exact name of registrant as specified in charter)

333 West Wacker Drive, Chicago, Illinois 60606

(Address of principal executive offices) (Zip code)

Kevin J. McCarthy Vice President and Secretary

333 West Wacker Drive, Chicago, Illinois 60606

(Name and address of agent for service)

Registrant's telephone number, including area code: 312-917-7700

Date of fiscal year end: 12/31

Date of reporting period: 9/30/2009

Form N-Q is to be used by management investment companies, other than small business investment companies registered on Form N-5 (§§ 239.24 and 274.5 of this chapter), to file reports with the Commission, not later than 60 days after the close of the first and third fiscal quarters, pursuant to rule 30b1-5 under the Investment Company Act of 1940 (17 CFR 270.30b1-5). The Commission may use the information provided on Form N-Q in its regulatory, disclosure review, inspection, and policymaking roles.

A registrant is required to disclose the information specified by Form N-Q, and the Commission will make this information public. A registrant is not required to respond to the collection of information contained in Form N-Q unless the Form displays a currently valid Office of Management and Budget (OMB) control number. Please direct comments concerning the accuracy of the information collection burden estimate and any suggestions for reducing the burden to the Secretary, Securities and Exchange Commission, 450 Fifth Street, NW, Washington, DC 20549-0609. The OMB has reviewed this collection of information under the clearance requirements of 44 U.S.C. § 3507.

Item 1. Schedule of Investments**Portfolio of Investments (Unaudited)****Nuveen Core Equity Alpha Fund (JCE)***September 30, 2009*

Shares	Description (1)	Value
Common Stocks 97.5%		
Aerospace & Defense 1.5%		
1,500	Boeing Company	\$ 81,225
700	General Dynamics Corporation	45,220
17,900	Goodrich Corporation	972,686
5,500	Honeywell International Inc.	204,325
1,000	ITT Industries, Inc.	52,150
10,200	Lockheed Martin Corporation	796,416
800	Precision Castparts Corporation	81,496
800	Raytheon Company	38,376
10,400	Rockwell Collins, Inc.	528,320
4,400	United Technologies Corporation	268,092
	Total Aerospace & Defense	3,068,306
Air Freight & Logistics 0.4%		
5,500	C.H. Robinson Worldwide, Inc.	317,625
7,800	Expeditors International of Washington, Inc.	274,170
3,100	United Parcel Service, Inc., Class B	175,057
	Total Air Freight & Logistics	766,852
Auto Components 0.3%		
36,100	Goodyear Tire & Rubber Company, (2)	614,783
Automobiles 0.3%		
78,100	Ford Motor Company, (2)	563,101
2,400	Harley-Davidson, Inc.	55,200
	Total Automobiles	618,301
Beverages 2.4%		

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900	Brown-Forman Corporation	43,398
33,700	Coca-Cola Company	1,809,690
41,500	Coca-Cola Enterprises Inc.	888,515
1,600	Constellation Brands, Inc., Class A, (2)	24,240
2,600	Dr. Pepper Snapple Group, (2)	74,750
13,600	Pepsi Bottling Group, Inc.	495,584
26,100	PepsiCo, Inc.	1,531,026

Total Beverages 4,867,203

Biotechnology 1.0%

21,400	Amgen Inc., (2)	1,288,922
5,100	Biogen Idec Inc., (2)	257,652
2,400	Celgene Corporation, (2)	134,160
3,200	Cephalon, Inc., (2)	186,368
1,700	Genzyme Corporation, (2)	96,441
2,900	Gilead Sciences, Inc., (2)	135,082

Total Biotechnology 2,098,625

Building Products 0.0%

2,600	Masco Corporation	33,592
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Capital Markets 2.9%

13,300	Ameriprise Financial, Inc.	483,189
23,900	Bank of New York Company, Inc.	692,861
19,700	Charles Schwab Corporation	377,255
17,300	Federated Investors Inc.	456,201
1,800	Franklin Resources, Inc.	181,080
5,100	Goldman Sachs Group, Inc.	940,185
16,400	Invesco LTD	373,264
6,700	Legg Mason, Inc.	207,901
20,200	Morgan Stanley	623,776
6,500	Northern Trust Corporation	378,040
18,800	State Street Corporation	988,880
2,700	T. Rowe Price Group Inc.	123,390

Total Capital Markets 5,826,022

Chemicals 0.7%

2,100	Air Products & Chemicals Inc.	162,918
1,400	Airgas, Inc.	67,718

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600	CF Industries Holdings, Inc.	51,738
900	E.I. Du Pont de Nemours and Company	28,926
7,800	Ecolab Inc.	360,594
1,600	FMC Corporation	90,000
3,800	International Flavors & Fragrances Inc.	144,134
2,000	Monsanto Company	154,800
2,700	PPG Industries, Inc.	157,167
3,000	Praxair, Inc.	245,070
800	Sigma-Aldrich Corporation	43,184
	Total Chemicals	1,506,249

Commercial Banks 2.5%

20,000	BB&T Corporation	544,800
8,700	Comerica Incorporated	258,129
30,800	Fifth Third Bancorp.	312,004
24,681	First Horizon National Corporation, (2)	326,534
51,300	Huntington BancShares Inc.	241,623
32,300	KeyCorp.	209,950
2,100	M&T Bank Corporation	130,872
34,900	Marshall and Ilsley Corporation	281,643
16,900	PNC Financial Services Group, Inc.	821,171
10,500	Regions Financial Corporation	65,205
13,400	U.S. Bancorp	292,924
51,350	Wells Fargo & Company	1,447,043
10,400	Zions Bancorporation	186,888
	Total Commercial Banks	5,118,786

Commercial Services & Supplies 1.3%

14,900	Cintas Corporation	451,619
26,900	Iron Mountain Inc., (2)	717,154
4,500	Pitney Bowes Inc.	111,825
335	Republic Services, Inc.	8,901
1,200	Stericycle Inc., (2)	58,140
41,100	Waste Management, Inc.	1,225,602
	Total Commercial Services & Supplies	2,573,241

Communications Equipment 2.3%

13,500	Ciena Corporation, (2)	219,780
98,100	Cisco Systems, Inc., (2)	2,309,274
33,200	JDS Uniphase Corporation, (2)	236,052
6,100	Juniper Networks Inc., (2)	164,822
39,100	Motorola, Inc.	335,869

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24,800	QUALCOMM, Inc.	1,115,504
33,900	Tellabs Inc., (2)	234,588
	Total Communications Equipment	4,615,889

Computers & Peripherals 4.2%

8,700	Apple, Inc., (2)	1,612,719
24,000	EMC Corporation, (2)	408,960
47,400	Hewlett-Packard Company	2,237,754
24,500	International Business Machines Corporation (IBM)	2,930,445
7,700	Network Appliance Inc., (2)	205,436
14,100	SanDisk Corporation, (2)	305,970
41,200	Sun Microsystems Inc., (2)	374,508
4,000	Teradata Corporation, (2)	110,080
12,700	Western Digital Corporation, (2)	463,931
	Total Computers & Peripherals	8,649,803

Construction & Engineering 0.4%

10,300	Fluor Corporation	523,755
6,300	Jacobs Engineering Group, Inc., (2)	289,485
500	Quanta Services Incorporated, (2)	11,065
	Total Construction & Engineering	824,305

Construction Materials 0.0%

1,800	Vulcan Materials Company	97,326
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Consumer Finance 0.7%

12,400	American Express Company	420,360
12,300	Capital One Financial Corporation	439,479
21,500	Discover Financial Services	348,945
24,800	SLM Corporation, (2)	216,256
	Total Consumer Finance	1,425,040

Containers & Packaging 0.7%

14,100	Ball Corporation	693,720
10,200	Bemis Company, Inc.	264,282
6,900	Owens-Illinois, Inc., (2)	254,610

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3,200	Pactiv Corporation, (2)	83,360
6,600	Sealed Air Corporation	129,558
	Total Containers & Packaging	1,425,530
	Distributors 0.2%	
12,700	Genuine Parts Company	483,362
	Diversified Consumer Services 0.1%	
10,100	H & R Block Inc.	185,638
	Diversified Financial Services 2.6%	
50,600	Bank of America Corporation	856,152
33,600	Citigroup Inc.	162,624
2,200	CME Group, Inc.	678,018
4,600	Intercontinental Exchange, Inc., (2)	447,074
36,005	JPMorgan Chase & Co.	1,577,739
25,400	Moody's Corporation	519,684
15,400	Nasdaq Stock Market, Inc., (2)	324,170
22,900	New York Stock Exchange Euronext	661,581
	Total Diversified Financial Services	5,227,042
	Diversified Telecommunication Services 5.0%	
241,900	AT&T Inc.	6,533,719
19,128	CenturyTel, Inc.	642,701
142,600	Qwest Communications International Inc.	543,306
76,900	Verizon Communications Inc.	2,327,763
4,900	Windstream Corporation	49,637
	Total Diversified Telecommunication Services	10,097,126
	Electric Utilities 2.6%	
6,400	American Electric Power Company, Inc.	198,336
16,900	Duke Energy Corporation	266,006
1,200	Entergy Corporation	95,832
25,800	FPL Group, Inc.	1,424,934
32,900	Northeast Utilities	781,046
20,100	Pinnacle West Capital Corporation	659,682
7,400	PPL Corporation	224,516

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24,400	Progress Energy, Inc.	953,064
21,000	Southern Company	665,070
	Total Electric Utilities	5,268,486

Electrical Equipment 0.3%

2,700	Emerson Electric Company	108,216
9,600	Rockwell Automation, Inc.	408,960
	Total Electrical Equipment	517,176

Electronic Equipment & Instruments 0.3%

39,500	Corning Incorporated	604,745
1,300	Molex Inc.	27,144
	Total Electronic Equipment & Instruments	631,889

Energy Equipment & Services 0.7%

3,100	BJ Services Company	60,233
1,100	Cooper Cameron Corporation, (2)	41,602
200	Diamond Offshore Drilling, Inc.	19,104
2,400	FMC Technologies Inc., (2)	125,376
10,300	National-Oilwell Varco Inc., (2)	444,239
10,300	Schlumberger Limited	613,880
900	Smith International, Inc.	25,830
	Total Energy Equipment & Services	1,330,264

Food & Staples Retailing 2.4%

6,400	CVS Caremark Corporation	228,736
51,400	Kroger Co.	1,060,896
2,000	Safeway Inc.	39,440
3,600	SUPERVALU INC.	54,216
16,300	Sysco Corporation	405,055
6,000	Walgreen Co.	224,820
51,900	Wal-Mart Stores, Inc.	2,547,771
13,400	Whole Foods Market, Inc., (2)	408,566
	Total Food & Staples Retailing	4,969,500

Food Products 3.1%

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9,300	Archer-Daniels-Midland Company	271,746
2,900	Campbell Soup Company	94,598
1,800	ConAgra Foods, Inc.	39,024
3,600	Dean Foods Company, (2)	64,044
16,600	General Mills, Inc.	1,068,708
14,100	H.J. Heinz Company	560,475
24,200	Hershey Foods Corporation	940,412
10,800	Hormel Foods Corporation	383,616
8,100	JM Smucker Company	429,381
15,000	Kellogg Company	738,450
60,100	Kraft Foods Inc.	1,578,827
1,800	Sara Lee Corporation	20,052
14,100	Tyson Foods, Inc., Class A	178,083

Total Food Products 6,367,416

Gas Utilities 0.4%

16,200	EQT Corporation	690,120
4,100	Questar Corporation	153,996

Total Gas Utilities 844,116

Health Care Equipment & Supplies 0.5%

13,300	Baxter International, Inc.	758,233
600	Becton, Dickinson and Company	41,850
5,000	Boston Scientific Corporation, (2)	52,950
600	C. R. Bard, Inc.	47,166
300	DENTSPLY International Inc.	10,362
1,800	Stryker Corporation	81,774
900	Varian Medical Systems, Inc., (2)	37,917

Total Health Care Equipment & Supplies 1,030,252

Health Care Providers & Services 2.3%

1,500	Aetna Inc.	41,745
12,400	AmerisourceBergen Corporation	277,512
7,300	CIGNA Corporation	205,057
4,100	Coventry Health Care, Inc., (2)	81,836
5,200	Davita Inc., (2)	294,528
1,300	Express Scripts, Inc., (2)	100,854
9,000	Humana Inc., (2)	335,700
11,600	Medco Health Solutions, Inc., (2)	641,596
17,700	Quest Diagnostics Incorporated	923,763
31,800	UnitedHealth Group Incorporated	796,272
19,100	Wellpoint Inc., (2)	904,576

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Total Health Care Providers & Services 4,603,439

Health Care Technology 0.0%

2,100 IMS Health Incorporated 32,235

Hotels, Restaurants & Leisure 3.1%

4,900 Carnival Corporation 163,072
 21,200 Darden Restaurants, Inc. 723,556
 40,200 International Game Technology 863,496
 16,032 Marriott International, Inc., Class A 442,317
 39,100 McDonald's Corporation 2,231,437
 35,100 Starbucks Corporation, (2) 724,815
 3,200 Starwood Hotels & Resorts Worldwide, Inc. 105,696
 10,300 Wyndham Worldwide Corporation 168,096
 3,800 Wynn Resorts Ltd, (2) 269,382
 17,000 YUM! Brands, Inc. 573,920

Total Hotels, Restaurants & Leisure 6,265,787

Household Durables 0.5%

19,600 D.R. Horton, Inc. 223,636
 1,100 Harman International Industries Inc. 37,268
 11,700 KB Home 194,337
 2,600 Leggett and Platt Inc. 50,440
 18,800 Lennar Corporation, Class A 267,900
 19,192 Pulte Corporation, (2) 210,920

Total Household Durables 984,501

Household Products 3.5%

14,600 Clorox Company 858,772
 11,300 Colgate-Palmolive Company 861,964
 10,600 Kimberly-Clark Corporation 625,188
 81,300 Procter & Gamble Company 4,708,896

Total Household Products 7,054,820

Independent Power Producers & Energy Traders 0.2%

9,700 AES Corporation, (2) 143,754
 6,000 Constellation Energy Group 194,220

Total Independent Power Producers & Energy Traders	337,974
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Industrial Conglomerates 1.7%

7,300 3M Co.	538,740
173,700 General Electric Company	2,852,154
Total Industrial Conglomerates	3,390,894

Insurance 3.3%

3,600 AFLAC Incorporated	153,864
3,000 American International Group, (2)	132,330
9,400 Chubb Corporation	473,854
29,900 Cincinnati Financial Corporation	777,101
10,500 Genworth Financial Inc., Class A	125,475
13,900 Hartford Financial Services Group, Inc.	368,350
16,700 Lincoln National Corporation	432,697
20,600 Loews Corporation	705,550
1,700 Marsh & McLennan Companies, Inc.	42,041
6,500 MBIA Inc., (2)	50,440
18,200 MetLife, Inc.	692,874
7,300 Principal Financial Group, Inc.	199,947
26,100 Progressive Corporation, (2)	432,738
15,200 Prudential Financial, Inc.	758,632
2,000 Torchmark Corporation	86,860
15,800 Travelers Companies, Inc.	777,834
6,500 Unum Group	139,360
20,200 XL Capital Ltd, Class A	352,692
Total Insurance	6,702,639

Internet & Catalog Retail 0.6%

7,200 Amazon.com, Inc., (2)	672,192
21,700 Expedia, Inc., (2)	519,715
Total Internet & Catalog Retail	1,191,907

Internet Software & Services 1.0%

24,500 Akamai Technologies, Inc., (2)	482,160
6,700 eBay Inc., (2)	158,187
2,000 Google Inc., Class A, (2)	991,700
2,700 VeriSign, Inc., (2)	63,963

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21,300	Yahoo! Inc., (2)	379,353
	Total Internet Software & Services	2,075,363

IT Services 2.3%

6,600	Affiliated Computer Services, Inc., (2)	357,522
42,700	Automatic Data Processing, Inc.	1,678,110
11,600	Cognizant Technology Solutions Corporation, Class A, (2)	448,456
10,600	Computer Sciences Corporation, (2)	558,726
9,400	Convergys Corporation, (2)	93,436
6,900	Fidelity National Information Services	176,019
6,800	Fiserv, Inc., (2)	327,760
1,600	MasterCard, Inc.	323,440
14,000	Paychex, Inc.	406,700
20,900	Total System Services Inc.	336,699
2,800	Western Union Company	52,976
	Total IT Services	4,759,844

Leisure Equipment & Products 0.0%

3,100	Mattel, Inc.	57,226
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Life Sciences Tools & Services 0.0%

900	Life Technologies Corporation, (2)	41,895
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Machinery 0.7%

900	Caterpillar Inc.	46,197
700	Cummins Inc.	31,367
12,300	Deere & Company	527,916
2,000	Dover Corporation	77,520
300	Flowserve Corporation	29,562
7,000	Illinois Tool Works, Inc.	298,970
2,800	PACCAR Inc.	105,588
1,400	Parker Hannifin Corporation	72,576
4,100	Stanley Works	175,029
	Total Machinery	1,364,725

Media 2.6%

1,200	CBS Corporation, Class B	14,460
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122,300	Comcast Corporation, Class A	2,065,647
31,200	DIRECTV Group, Inc., (2)	860,496
14,600	McGraw-Hill Companies, Inc.	367,044
6,900	Meredith Corporation	206,586
21,800	News Corporation, Class A	261,382
1,200	Omnicom Group, Inc.	44,328
1,200	Time Warner Cable, Class A	51,708
6,066	Time Warner Inc.	174,579
26,500	Viacom Inc., Class B, (2)	743,060
22,500	Walt Disney Company	617,850
	Total Media	5,407,140

Metals & Mining 1.0%

1,900	AK Steel Holding Corporation	37,487
14,500	Allegheny Technologies, Inc.	507,355
7,100	Freeport-McMoRan Copper & Gold, Inc.	487,131
6,700	Newmont Mining Corporation	294,934
14,400	Nucor Corporation	676,944
	Total Metals & Mining	2,003,851

Multiline Retail 0.8%

4,300	Family Dollar Stores, Inc.	113,520
5,300	Federated Department Stores, Inc.	96,937
4,200	J.C. Penney Company, Inc.	141,750
17,200	Kohl's Corporation, (2)	981,260
7,500	Nordstrom, Inc.	229,050
2,700	Target Corporation	126,036
	Total Multiline Retail	1,688,553

Multi-Utilities 3.9%

9,400	Ameren Corporation	237,632
37,800	CMS Energy Corporation	506,520
48,400	Consolidated Edison, Inc.	1,981,496
12,700	DTE Energy Company	446,278
300	Integrus Energy Group, Inc.	10,767
29,300	PG&E Corporation	1,186,357
6,500	Public Service Enterprise Group Incorporated	204,360
19,400	Scana Corporation	677,060
14,600	Sempra Energy	727,226
1,200	TECO Energy, Inc.	16,896
16,000	Wisconsin Energy Corporation	722,720
66,100	Xcel Energy, Inc.	1,271,764

Total Multi-Utilities	7,989,076
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Oil, Gas & Consumable Fuels 10.1%

6,100	Anadarko Petroleum Corporation	382,653
600	Apache Corporation	55,098
13,100	Cabot Oil & Gas Corporation	468,325
7,200	Chesapeake Energy Corporation	204,480
51,600	Chevron Corporation	3,634,188
13,300	ConocoPhillips	600,628
6,300	CONSOL Energy Inc.	284,193
27,700	Denbury Resources Inc., (2)	419,101
400	Devon Energy Corporation	26,932
2,500	El Paso Corporation	25,800
2,500	EOG Resources, Inc.	208,775
153,700	Exxon Mobil Corporation	10,545,357
900	Hess Corporation	48,114
7,600	Marathon Oil Corporation	242,440
4,700	Massey Energy Company	131,083
1,700	Murphy Oil Corporation	97,869
12,200	Occidental Petroleum Corporation	956,480
9,900	Peabody Energy Corporation	368,478
700	Pioneer Natural Resources Company	25,403
8,200	Range Resources Corporation	404,752
10,900	Southwestern Energy Company, (2)	465,212
5,700	Sunoco, Inc.	162,165
18,600	Tesoro Corporation	278,628
8,100	Valero Energy Corporation	157,059
2,100	Williams Companies, Inc.	37,527
8,500	XTO Energy, Inc.	351,220
	Total Oil, Gas & Consumable Fuels	20,581,960

Pharmaceuticals 8.2%

33,700	Abbott Laboratories	1,667,139
8,100	Allergan, Inc.	459,756
104,200	Bristol-Myers Squibb Company	2,346,584
2,200	Eli Lilly and Company	72,666
9,200	Forest Laboratories, Inc., (2)	270,848
72,600	Johnson & Johnson	4,420,614
4,500	King Pharmaceuticals Inc., (2)	48,465
54,300	Merck & Co. Inc.	1,717,509
39,800	Mylan Laboratories Inc., (2)	637,198
115,400	Pfizer Inc.	1,909,870
56,900	Schering-Plough Corporation	1,607,425
7,000	Watson Pharmaceuticals Inc., (2)	256,480
27,300	Wyeth	1,326,234

Total Pharmaceuticals	16,740,788
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Professional Services 0.2%

2,200	Dun and Bradstreet Inc.	165,704
8,300	Monster Worldwide Inc., (2)	145,084
4,000	Robert Half International Inc.	100,080
	Total Professional Services	410,868

Real Estate 0.6%

422	AvalonBay Communities, Inc.	30,692
1,200	Equity Residential	36,840
12,600	Health Care Property Investors Inc.	362,124
16,600	Host Hotels & Resorts Inc.	195,382
1,200	Plum Creek Timber Company	36,768
6,500	Public Storage, Inc.	489,060
319	Simon Property Group, Inc.	22,148
2,500	Ventas Inc.	96,250
180	Vornado Realty Trust	11,594
	Total Real Estate	1,280,858

Real Estate Management & Development 0.2%

26,900	CB Richard Ellis Group, Inc., Class A, (2)	315,806
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Road & Rail 0.4%

5,300	Burlington Northern Santa Fe Corporation	423,099
5,300	Norfolk Southern Corporation	228,483
3,600	Union Pacific Corporation	210,060
	Total Road & Rail	861,642

Semiconductors & Equipment 2.3%

53,900	Advanced Micro Devices, Inc., (2)	305,074
8,100	Altera Corporation	166,131
2,000	Analog Devices, Inc.	55,160
24,100	Broadcom Corporation, Class A, (2)	739,629
43,600	Intel Corporation	853,252
5,200	KLA-Tencor Corporation	186,472
6,200	Linear Technology Corporation	171,306

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14,000	MEMC Electronic Materials, (2)	232,820
49,200	Micron Technology, Inc., (2)	403,440
15,800	Novellus Systems, Inc., (2)	331,484
45,000	NVIDIA Corporation, (2)	676,350
16,500	Teradyne Inc., (2)	152,625
2,400	Texas Instruments Incorporated	56,856
15,600	Xilinx, Inc.	365,352

Total Semiconductors & Equipment 4,695,951

Software 3.2%

1,200	Adobe Systems Incorporated, (2)	39,648
26,200	BMC Software, Inc., (2)	983,286
6,800	CA Inc.	149,532
7,000	Citrix Systems, (2)	274,610
26,600	Intuit, Inc., (2)	758,100
8,200	McAfee Inc., (2)	359,078
43,400	Microsoft Corporation	1,123,626
99,100	Oracle Corporation	2,065,244
7,500	Red Hat, Inc., (2)	207,300
2,300	Salesforce.com, Inc., (2)	130,939
25,000	Symantec Corporation, (2)	411,750

Total Software 6,503,113

Specialty Retail 3.2%

2,900	Abercrombie & Fitch Co., Class A	95,352
13,500	AutoNation Inc., (2)	244,080
5,900	AutoZone, Inc., (2)	862,698
10,800	Bed Bath and Beyond Inc., (2)	405,432
14,800	Best Buy Co., Inc.	555,296
11,200	Gap, Inc.	239,680
43,900	Home Depot, Inc.	1,169,496
22,100	Lowe's Companies, Inc.	462,774
48,300	Office Depot, Inc., (2)	319,746
29,800	O'Reilly Automotive Inc., (2)	1,076,972
5,900	RadioShack Corporation	97,763
9,400	Sherwin-Williams Company	565,504
9,500	Staples, Inc.	220,590
2,900	TJX Companies, Inc.	107,735

Total Specialty Retail 6,423,118

Textiles, Apparel & Luxury Goods 0.3%

5,700	Coach, Inc.	187,644
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3,800	Nike, Inc., Class B	245,860
2,200	VF Corporation	159,346
	Total Textiles, Apparel & Luxury Goods	592,850

Thriffs & Mortgage Finance 0.4%

22,400	Hudson City Bancorp, Inc.	294,560
38,500	People's United Financial, Inc.	599,060
	Total Thriffs & Mortgage Finance	893,620

Tobacco 0.8%

23,800	Altria Group, Inc.	423,878
3,600	Lorillard Inc.	267,480
16,100	Philip Morris International	784,714
1,500	Reynolds American Inc.	66,780
	Total Tobacco	1,542,852

Trading Companies & Distributors 0.3%

2,100	Fastenal Company	81,270
6,900	W.W. Grainger, Inc.	616,584
	Total Trading Companies & Distributors	697,854

Wireless Telecommunication Services 0.0%

1,600	Metropcs Communications Inc., (2)	14,976
17,400	Sprint Nextel Corporation, (2)	68,730
	Total Wireless Telecommunication Services	83,706

Total Common Stocks (cost \$179,263,665) 198,658,975

Principal Amount

(000) Description (1) Coupon Maturity Ratings (3) Value

Short-Term Investments 4.6%

U.S. Government and Agency Obligations 3.0%

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\$	6,000	U.S. Treasury Bills (4)	0.000%	10/15/09	AAA	\$	5,999,958
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Repurchase Agreements 1.6%

3,351	Repurchase Agreement with State Street Bank, dated 09/30/09, repurchase price \$3,351,298, collateralized by \$3,425,000 U.S. Treasury Bills, 0.000%, due 3/11/10, value \$3,422,603	0.010%	10/01/09	N/A		3,351,297
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\$	9,351	Total Short-Term Investments (cost \$9,350,935)					9,351,255
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		Total Investments (cost \$188,614,600)					208,010,230
		102.1%					

Number of Contracts	Type	Notional Amount (5)	Expiration Date	Strike Price	Value
Call Options Written (0.3)%					
(455,953)	Custom Basket 1 NASDAQ	\$ (45,595,273)	10/22/09	\$105.0	\$ (331,341)
(441,137)	Custom Basket 2 NASDAQ	(44,113,745)	10/29/09	105.0	(350,748)
(897,090)	Total Call Options Written (premiums received \$592,672)	(89,709,018)			(682,089)
	Other Assets Less Liabilities (1.8)%				(3,588,694)
	Net Assets 100%				\$ 203,739,447

Investments in Derivatives

Futures Contracts outstanding at September 30, 2009:

Type	Contract Position	Number of Contracts	Contract Expiration	Unrealized Appreciation Value (Depreciation)
S&P 500 Index	Long	125	12/09	\$6,580,625 \$154,313

Fair Value Measurements

In determining the value of the Fund's investments various inputs are used. These inputs are summarized in the three broad levels listed below:

Level 1 Quoted prices in active markets for identical securities.

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Level 2 Other significant observable inputs (including quoted prices for similar securities, interest rates, prepayment speeds, credit risk, etc.).

Level 3 Significant unobservable inputs (including management's assumptions in determining the fair value of investments).

The inputs or methodology used for valuing securities are not an indication of the risk associated with investing in those securities.

The following is a summary of the Fund's fair value measurements as of September 30, 2009:

	Level 1	Level 2	Level 3	Total
Investments:				
Common Stocks	\$ 198,658,975	\$	\$	\$ 198,658,975
Short-Term Investments	9,351,255			9,351,255
Call Options Written		(682,089)		(682,089)
Derivatives:				
Futures Contracts*	154,313			154,313
Total	\$ 208,164,543	\$ (682,089)	\$	\$ 207,482,454

* Represents net unrealized appreciation (depreciation).

Derivative Instruments and Hedging Activities

During the current fiscal period, the Fund adopted amendments to authoritative guidance under GAAP on disclosures about derivative instruments and hedging activities. This guidance is intended to enhance financial statement disclosures for derivative instruments and hedging activities and enable investors to understand: a) how and why a fund uses derivative instruments; b) how derivative instruments are accounted for; and c) how derivative instruments affect a fund's financial position, results of operations and cash flows, if any. The Fund records derivative instruments at fair value with changes in fair value recognized on the Statement of Operations, when applicable. Even though the Fund's investments in derivatives may represent economic hedges, under this guidance they are considered to be non-hedge transactions for financial reporting purposes.

The table below presents the fair value of all derivative instruments held by the Fund as of September 30, 2009, the location of these instruments on the Statement of Assets and Liabilities, and the primary underlying risk exposure.

Underlying Risk Exposure	Derivative Instrument	Location on the Statement of Assets and Liabilities			
		Asset Derivatives		Liability Derivatives	
		Location	Value	Location	Value
Equity Price	Options		\$	Call options written, at value	\$ 682,089
Equity Price	Futures contracts	Receivable for variation margin on futures contracts*	154,313		

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Total \$ 154,313 \$ 682,089

* Value represents cumulative appreciation (depreciation) of futures contracts as reported in the Portfolio of Investments and not the deposits with brokers, if any, or the receivable or payable for variation margin presented on the Statements of Assets and Liabilities.

Income Tax Information

The following information is presented on an income tax basis. Differences between amounts for financial statement and federal income tax purposes are primarily due to timing differences in recognizing certain gains and losses on investment transactions and the recognition of unrealized gain or loss for tax (mark-to-market) on futures contracts. To the extent that differences arise that are permanent in nature, such amounts are reclassified within the capital accounts on the Statement of Assets and Liabilities presented in the annual report, based on their federal tax basis treatment; temporary differences do not require reclassification. Temporary and permanent differences do not impact the net asset value of the Fund.

At September 30, 2009, the cost of investments (excluding call options written) was \$194,618,779.

Gross unrealized appreciation and gross unrealized depreciation of investments (excluding call options written) at September 30, 2009, were as follows:

Gross unrealized:	
Appreciation	\$ 25,898,746
Depreciation	(12,507,295)
Net unrealized appreciation (depreciation) of investments	\$ 13,391,451

- (1) All percentages shown in the Portfolio of Investments are based on net assets.
- (2) Non-income producing; issuer has not declared a dividend within the past twelve months.
- (3) Ratings: Using the higher of Standard & Poor's Group (Standard & Poor's) or Moody's Investor Service, Inc. (Moody's) rating. Rating below BBB by Standard & Poor's or Baa by Moody's are considered to be below investment grade.
- (4) Investment, or portion of investment, has been pledged to collateralize the net payment obligations for call options written and investments in derivatives.
- (5) For disclosure purposes, Notional Amount is calculated by multiplying the Number of Contracts by \$100.

N/A Not applicable.

Item 2. Controls and Procedures.

- a. The registrant's principal executive and principal financial officers, or persons performing similar functions, have concluded that the registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940, as amended (the "1940 Act") (17 CFR 270.30a-3(c))) are effective, as of a date within 90 days of the filing date of this report that includes the disclosure required by this paragraph, based on their evaluation of the controls and procedures required by Rule 30a-3(b) under the 1940 Act (17 CFR 270.30a-3(b)) and Rule 13a-15(b) or 15d-15(b) under the Securities Exchange Act of 1934 (17 CFR 240.13a-15(b) or 240.15d-15(b)).
- b. There were no changes in the registrant's internal control over financial reporting (as defined in Rule 30a-3(d) under the 1940 Act (17 CFR 270.30a-3(d))) that occurred during the registrant's last fiscal quarter that have materially affected, or are reasonably likely to materially affect, the registrant's internal control over financial reporting.

Item 3. Exhibits.

File as exhibits as part of this Form a separate certification for each principal executive officer and principal financial officer of the registrant as required by Rule 30a-2(a) under the 1940 Act (17 CFR 270.30a-2(a)), exactly as set forth below: EX-99 CERT Attached hereto.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

(Registrant) Nuveen Core Equity Alpha Fund

By (Signature and Title) /s/ Kevin J. McCarthy
Kevin J. McCarthy
Vice President and Secretary

Date November 27, 2009

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

By (Signature and Title) /s/ Gifford R. Zimmerman
Gifford R. Zimmerman
Chief Administrative Officer (principal executive officer)

Date November 27, 2009

By (Signature and Title) /s/ Stephen D. Foy
Stephen D. Foy
Vice President and Controller (principal financial officer)

Date November 27, 2009