

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
3,200	Pactiv Corporation, (2)	83,360

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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
24,400	Progress Energy, Inc.	953,064
21,000		