

Nuveen Core Equity Alpha Fund
Form N-Q
May 27, 2011

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: 3/31/2011

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)**

March 31, 2011

Shares	Description (1)	Value
	Common Stocks 96.9%	
	Aerospace & Defense 2.5%	
11,500	Boeing Company	\$ 850,195
1,900	Honeywell International Inc.	113,449
4,516	Huntington Ingalls Industries Inc.	187,414
27,100	Northrop Grumman Corporation	1,699,441
12,900	Precision Castparts Corporation	1,898,622
6,900	Rockwell Collins, Inc.	447,327
8,200	United Technologies Corporation	694,130
	Total Aerospace & Defense	5,890,578
	Air Freight & Logistics 1.9%	
21,700	C.H. Robinson Worldwide, Inc.	1,608,621
28,300	Expeditors International of Washington, Inc.	1,418,962
15,300	FedEx Corporation	1,431,315
	Total Air Freight & Logistics	4,458,898
	Airlines 0.8%	
147,900	Southwest Airlines Co.	1,867,977
	Auto Components 0.1%	
8,600	Johnson Controls, Inc.	357,502
	Automobiles 0.5%	
70,400	Ford Motor Company, (2)	1,049,664
1,100	Harley-Davidson, Inc.	46,739
	Total Automobiles	1,096,403

Beverages 0.9%

4,700	Brown-Forman Corporation	321,010
21,300	Coca Cola Enterprises Inc.	581,490
4,400	Coca-Cola Company	291,940
8,700	Constellation Brands, Inc., Class A, (2)	176,436
18,200	Dr. Pepper Snapple Group	676,312
1,300	Molson Coors Brewing Company, Class B	60,957
	Total Beverages	2,108,145

Biotechnology 0.6%

500	Amgen Inc., (2)	26,725
1,400	Biogen Idec Inc., (2)	102,746
17,100	Genzyme Corporation, (2)	1,302,165
	Total Biotechnology	1,431,636

Building Products 0.0%

4,100	Masco Corporation	57,072
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Capital Markets 2.0%

14,100	Ameriprise Financial, Inc.	861,228
21,700	Franklin Resources, Inc.	2,714,236
1,100	Goldman Sachs Group, Inc.	174,317
700	Invesco LTD	17,892
1,500	Legg Mason, Inc.	54,135
7,600	Morgan Stanley	207,632
1,500	State Street Corporation	67,410
10,200	T. Rowe Price Group Inc.	677,484
	Total Capital Markets	4,774,334

Chemicals 3.1%

6,300	Air Products & Chemicals Inc.	568,134
2,300	Airgas, Inc.	152,766
1,900	CF Industries Holdings, Inc.	259,901
37,700	E.I. Du Pont de Nemours and Company	2,072,369
15,800	Eastman Chemical Company	1,569,256
4,300	Ecolab Inc.	219,386
4,300	FMC Corporation	365,199
2,000	International Flavors & Fragrances Inc.	124,600

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1,400	Monsanto Company	101,164
4,900	PPG Industries, Inc.	466,529
3,400	Praxair, Inc.	345,440
10,700	Sherwin-Williams Company	898,693
3,900	Sigma-Aldrich Corporation	248,196
	Total Chemicals	7,391,633

Commercial Banks 1.4%

9,200	Comerica Incorporated	337,824
26,100	Fifth Third Bancorp.	362,268
37,400	Huntington BancShares Inc.	248,336
16,600	KeyCorp.	147,408
3,600	M&T Bank Corporation	318,492
14,600	Marshall and Ilsley Corporation	116,654
61,100	Regions Financial Corporation	443,586
7,300	SunTrust Banks, Inc.	210,532
11,500	U.S. Bancorp	303,945
8,950	Wells Fargo & Company	283,715
28,700	Zions Bancorporation	661,822
	Total Commercial Banks	3,434,582

Commercial Services & Supplies 0.4%

9,500	Stericycle Inc., (2)	842,365
3,200	Waste Management, Inc.	119,488
	Total Commercial Services & Supplies	961,853

Communications Equipment 1.2%

800	F5 Networks, Inc., (2)	82,056
15,500	Harris Corporation	768,800
3,900	Juniper Networks Inc., (2)	164,112
15,425	Motorola Mobility Holdings Inc.	376,370
17,628	Motorola Solutions Inc.	787,795
12,100	QUALCOMM, Inc.	663,443
	Total Communications Equipment	2,842,576

Computers & Peripherals 6.2%

34,200	Apple, Inc., (2)	11,916,990
59,400	Network Appliance Inc., (2)	2,861,892

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	Total Computers & Peripherals	14,778,882
	Construction & Engineering 0.1%	
5,400	Fluor Corporation	397,764
	Consumer Finance 0.2%	
2,500	Capital One Financial Corporation	129,900
11,300	Discover Financial Services	272,556
	Total Consumer Finance	402,456
	Containers & Packaging 0.2%	
12,800	Ball Corporation	458,880
	Diversified Consumer Services 0.0%	
2,100	Devry, Inc.	115,647
	Diversified Financial Services 0.9%	
64,400	Citigroup Inc., (2)	284,648
10,205	JP Morgan Chase & Co.	470,451
25,500	Leucadia National Corporation, (2)	957,270
9,300	Moody's Corporation	315,363
	Total Diversified Financial Services	2,027,732
	Diversified Telecommunication Services 1.7%	
8,500	AT&T Inc.	260,100
24,200	CenturyLink Inc.	1,005,510
20,500	Frontier Communications Corporation	168,510
236,600	Qwest Communications International Inc.	1,615,978
4,100	Verizon Communications Inc.	158,014
71,400	Windstream Corporation	918,918
	Total Diversified Telecommunication Services	4,127,030
	Electric Utilities 1.8%	
5,400	American Electric Power Company, Inc.	189,756

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14,800	Duke Energy Corporation	268,620
1,500	Edison International	54,885
2,000	FirstEnergy Corp.	74,180
4,000	NextEra Energy Inc.	220,480
17,200	Northeast Utilities	595,120
41,600	Pepco Holdings, Inc.	775,840
12,700	Pinnacle West Capital Corporation	543,433
20,300	Progress Energy, Inc.	936,642
18,100	Southern Company	689,791

Total Electric Utilities	4,348,747
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Electrical Equipment 1.8%

12,200	Emerson Electric Company	712,846
34,500	Rockwell Automation, Inc.	3,265,425
3,800	Roper Industries Inc.	328,548

Total Electrical Equipment	4,306,819
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Electronic Equipment & Instruments 0.1%

1,200	Amphenol Corporation, Class A	65,268
4,400	Corning Incorporated	90,772
1,900	Jabil Circuit Inc.	38,817

Total Electronic Equipment & Instruments	194,857
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Energy Equipment & Services 2.3%

1,400	Baker Hughes Incorporated	102,802
1,100	FMC Technologies Inc., (2)	103,928
7,800	Halliburton Company	388,752
2,700	Helmerich & Payne Inc.	185,463

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