

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.

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

March 31, 2011

Shares	Description (1)	Value
<b>Common Stocks 96.9%</b>		
<b>Aerospace &amp; Defense 2.5%</b>		
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
<b>Air Freight &amp; Logistics 1.9%</b>		
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
<b>Airlines 0.8%</b>		
147,900	Southwest Airlines Co.	1,867,977
<b>Auto Components 0.1%</b>		
8,600	Johnson Controls, Inc.	357,502
<b>Automobiles 0.5%</b>		
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
	<b>Construction &amp; Engineering 0.1%</b>	
5,400	Fluor Corporation	397,764
	<b>Consumer Finance 0.2%</b>	
2,500	Capital One Financial Corporation	129,900
11,300	Discover Financial Services	272,556
	Total Consumer Finance	402,456
	<b>Containers &amp; Packaging 0.2%</b>	
12,800	Ball Corporation	458,880
	<b>Diversified Consumer Services 0.0%</b>	
2,100	Devry, Inc.	115,647
	<b>Diversified Financial Services 0.9%</b>	
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
	<b>Diversified Telecommunication Services 1.7%</b>	
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
	<b>Electric Utilities 1.8%</b>	

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5,400	American Electric Power Company, Inc.	189,756
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

**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

**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

**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
27,700	National-Oilwell Varco Inc.	2,195,779
4,800	Noble Corporation	218,976
1,800	Rowan Companies Inc., (2)	79,524
22,642	Schlumberger Limited	2,111,593

Total Energy Equipment & Services 5,386,817

**Food & Staples Retailing 0.4%**

16,200	Walgreen Co.	650,268
3,200	Wal-Mart Stores, Inc.	166,560
1,500	Whole Foods Market, Inc., (2)	98,850

Total Food & Staples Retailing	915,678
<b>Food Products 4.6%</b>	
5,100 Archer-Daniels-Midland Company	183,651
95,800 General Mills, Inc.	3,501,490
3,500 H.J. Heinz Company	170,870
19,100 Hershey Foods Corporation	1,038,085
3,400 Hormel Foods Corporation	94,656
31,200 JM Smucker Company	2,227,368
1,400 Kellogg Company	75,572
10,300 Mead Johnson Nutrition Company, Class A Shares	596,679
168,900 Sara Lee Corporation	2,984,463
900 Tyson Foods, Inc., Class A	17,271
Total Food Products	10,890,105
<b>Gas Utilities 0.5%</b>	
1,200 Nicor Inc.	64,440
17,800 ONEOK, Inc.	1,190,464
Total Gas Utilities	1,254,904
<b>Health Care Equipment &amp; Supplies 2.4%</b>	
17,200 CareFusion Corporation, (2)	485,040
5,600 Covidien PLC	290,864
5,200 Intuitive Surgical, Inc., (2)	1,733,992
25,400 Stryker Corporation	1,544,320
21,900 Varian Medical Systems, Inc., (2)	1,481,316
3,700 Zimmer Holdings, Inc., (2)	223,961
Total Health Care Equipment & Supplies	5,759,493
<b>Health Care Providers &amp; Services 4.9%</b>	
116,900 AmerisourceBergen Corporation	4,624,564
78,500 Cardinal Health, Inc.	3,228,705
15,600 Coventry Health Care, Inc., (2)	497,484
18,900 Humana Inc., (2)	1,321,866
800 Laboratory Corporation of America Holdings, (2)	73,704
21,000 McKesson HBOC Inc.	1,660,050
35,800 Tenet Healthcare Corporation, (2)	266,710

Total Health Care Providers & Services 11,673,083

**Hotels, Restaurants & Leisure 3.0%**

1,500	Carnival Corporation, ADR	57,540
13,900	Darden Restaurants, Inc.	682,907
9,300	Marriott International, Inc., Class A	330,894
5,600	McDonald's Corporation	426,104
88,200	Starbucks Corporation	3,258,990
4,700	Starwood Hotels & Resorts Worldwide, Inc.	273,164
900	Wynn Resorts Ltd	114,525
40,900	YUM! Brands, Inc.	2,101,442
	Total Hotels, Restaurants & Leisure	7,245,566

**Household Durables 2.4%**

23,700	Fortune Brands Inc.	1,466,793
5,600	Lennar Corporation, Class A	101,472
53,987	Stanley Black & Decker Inc.	4,135,404
	Total Household Durables	5,703,669

**Household Products 0.1%**

1,700	Kimberly-Clark Corporation	110,959
2,600	Procter & Gamble Company	160,160
	Total Household Products	271,119

**Industrial Conglomerates 0.3%**

22,400	General Electric Company	449,120
4,100	Tyco International Ltd.	183,557
	Total Industrial Conglomerates	632,677

**Insurance 1.6%**

3,700	Ace Limited	239,390
2,600	AFLAC Incorporated	137,228
11,200	American International Group, (2)	393,568
16,600	Assurant Inc.	639,266
631	Berkshire Hathaway Inc., Class B, (2)	52,771
4,100	Chubb Corporation	251,371



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1,900	Hartford Financial Services Group, Inc.	51,167
2,200	Lincoln National Corporation	66,088
3,600	MetLife, Inc.	161,028
4,100	Principal Financial Group, Inc.	131,651
35,800	Progressive Corporation	756,454
1,300	Torchmark Corporation	86,424
15,000	Travelers Companies, Inc.	892,200
1,600	XL Capital Ltd, Class A	39,360

Total Insurance 3,897,966

**Internet & Catalog Retail 3.3%**

23,100	Amazon.com, Inc., (2)	4,161,003
7,400	Priceline.com Incorporated, (2)	3,747,656

Total Internet & Catalog Retail 7,908,659

**Internet Software & Services 3.1%**

2,800	Akamai Technologies, Inc., (2)	106,400
56,000	eBay Inc., (2)	1,738,240
9,100	Google Inc., Class A, (2)	5,334,511
3,300	Monster Worldwide Inc., (2)	52,470
5,700	VeriSign, Inc., (2)	206,397

Total Internet Software & Services 7,438,018

**IT Services 4.0%**

84,700	Cognizant Technology Solutions Corporation, Class A, (2)	6,894,580
9,600	Fidelity National Information Services	313,824
12,100	International Business Machines Corporation (IBM)	1,973,147
5,100	Teradata Corporation, (2)	258,570

Total IT Services 9,440,121

**Leisure Equipment & Products 1.0%**

50,300	Hasbro, Inc.	2,356,052
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**Life Sciences Tools & Services 0.8%**

41,400	Agilent Technologies, Inc., (2)	1,853,892
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**Machinery 4.8%**

24,800	Caterpillar Inc.	2,761,480
5,700	Cummins Inc.	624,834
17,700	Deere & Company	1,714,953
54,800	Eaton Corporation, DD	3,038,112
4,600	Ingersoll Rand Company Limited, Class A	222,226
1,900	Joy Global Inc.	187,739
8,200	PACCAR Inc.	429,270
5,300	Pall Corporation	305,333
15,600	Parker Hannifin Corporation	1,477,008
10,800	Snap-on Incorporated	648,648
	Total Machinery	11,409,603

**Media 3.3%**

15,100	Cablevision Systems Corporation	522,611
2,400	CBS Corporation, Class B	60,096
120,900	DIRECTV Group, Inc., (2)	5,658,120
1,200	Discovery Communications inc., Class A Shares, (2)	47,880
21,100	Interpublic Group Companies, Inc., (2)	265,227
4,400	McGraw-Hill Companies, Inc.	173,360
4,000	News Corporation, Class A	70,240
2,700	Omnicom Group, Inc.	132,462
1,000	Scripps Networks Interactive, Class A Shares	50,090
4,900	Time Warner Cable, Class A	349,566
1,700	Viacom Inc., Class B	79,084
6,800	Walt Disney Company	293,012
600	Washington Post Company	262,536
	Total Media	7,964,284

**Metals & Mining 0.4%**

17,600	Alcoa Inc.	310,640
11,400	Freeport-McMoRan Copper & Gold, Inc.	633,270
	Total Metals & Mining	943,910

**Multiline Retail 0.4%**

19,400	Family Dollar Stores, Inc.	995,608
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**Multi-Utilities 3.5%**

23,500	Ameren Corporation	659,645
41,600	CenterPoint Energy, Inc.	730,496
38,900	CMS Energy Corporation	763,996
8,300	Consolidated Edison, Inc.	420,976
12,200	Dominion Resources, Inc.	545,340
21,300	DTE Energy Company	1,042,848
28,800	Integrus Energy Group, Inc.	1,454,688
33,500	NiSource Inc.	642,530
5,100	PG&E Corporation	225,318
10,000	Scana Corporation	393,700
900	Sempra Energy	48,150
18,700	TECO Energy, Inc.	350,812
22,800	Wisconsin Energy Corporation	695,400
10,200	Xcel Energy, Inc.	243,678
	Total Multi-Utilities	8,217,577

**Oil, Gas, & Consumable Fuels 3.6%**

1,400	Anadarko Petroleum Corporation	114,688
1,000	Apache Corporation	130,920
600	Chevron Corporation	64,458
1,000	ConocoPhillips	79,860
2,300	CONSOL Energy Inc.	123,349
12,100	Denbury Resources Inc., (2)	295,240
3,700	Devon Energy Corporation	339,549
5,500	EQT Corporation	274,450
2,800	Exxon Mobil Corporation	235,564
17,900	Hess Corporation	1,525,259
1,900	Marathon Oil Corporation	101,289
2,900	Massey Energy Company	198,244
10,000	Murphy Oil Corporation	734,200
2,200	Newfield Exploration Company, (2)	167,222
1,200	Noble Energy, Inc.	115,980
1,700	Peabody Energy Corporation	122,332
28,700	Pioneer Natural Resources Company	2,925,104
2,800	Southwestern Energy Company, (2)	120,316
4,900	Sunoco, Inc.	223,391
3,100	Tesoro Corporation	83,173
16,700	Williams Companies, Inc.	520,706
	Total Oil, Gas, & Consumable Fuels	8,495,294

**Personal Products 1.3%**

6,300	Avon Products, Inc.	170,352
29,900	Estee Lauder Companies Inc., Class A	2,881,164

	Total Personal Products	3,051,516
	<b>Pharmaceuticals 2.0%</b>	
11,600	Abbott Laboratories	568,980
1,200	Allergan, Inc.	85,224
4,700	Bristol-Myers Squibb Company	124,221
2,400	Eli Lilly and Company	84,408
14,100	Hospira Inc., (2)	778,320
94,232	Merck & Company Inc.	3,110,598
4,300	Mylan Laboratories Inc., (2)	97,481
	Total Pharmaceuticals	4,849,232
	<b>Professional Services 0.1%</b>	
4,000	Equifax Inc.	155,400
	<b>Real Estate Investment Trust 1.1%</b>	
6,600	Apartment Investment & Management Company, Class A	168,102
4,400	AvalonBay Communities, Inc.	528,352
13,300	Equity Residential	750,253
1,900	Health Care REIT, Inc.	99,636
6,800	Public Storage, Inc.	754,188
800	Simon Property Group, Inc.	85,728
3,400	Ventas Inc.	184,620
4,800	Weyerhaeuser Company	118,080
	Total Real Estate Investment Trust	2,688,959
	<b>Real Estate Management &amp; Development 0.1%</b>	
6,300	CB Richard Ellis Group, Inc., Class A, (2)	168,210
	<b>Road &amp; Rail 0.1%</b>	
3,200	Union Pacific Corporation	314,656
	<b>Semiconductors &amp; Equipment 1.4%</b>	
8,800	Altera Corporation	387,376

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2,000	Analog Devices, Inc.	78,760
2,600	Broadcom Corporation, Class A	102,388
1,400	KLA-Tencor Corporation	66,318
9,900	NVIDIA Corporation, (2)	182,754
69,800	Texas Instruments Incorporated	2,412,288

Total Semiconductors & Equipment 3,229,884

**Software 3.0%**

1,400	Autodesk, Inc., (2)	61,754
5,100	BMC Software, Inc., (2)	253,674
38,000	Compuware Corporation, (2)	438,900
2,500	Electronic Arts Inc. (EA), (2)	48,825
27,400	Intuit, Inc., (2)	1,454,940
60,200	Microsoft Corporation	1,526,672
9,300	Novell Inc., (2)	55,149
22,700	Oracle Corporation	757,499
12,800	Red Hat, Inc., (2)	580,992
14,300	Salesforce.com, Inc., (2)	1,910,194

Total Software 7,088,599

**Specialty Retail 4.0%**

2,500	Abercrombie & Fitch Co., Class A	146,750
8,100	AutoNation Inc., (2)	286,497
5,100	AutoZone, Inc., (2)	1,395,156
17,300	CarMax, Inc., (2)	555,330
2,400	GameStop Corporation, (2)	54,048
8,000	Home Depot, Inc.	296,480
38,500	Limited Brands, Inc.	1,265,880
9,200	O Reilly Automotive Inc.	528,632
10,100	Tiffany & Co.	620,544
87,900	TJX Companies, Inc.	4,371,267

Total Specialty Retail 9,520,584

**Textiles, Apparel & Luxury Goods 0.5%**

18,100	Coach, Inc.	941,924
1,400	Polo Ralph Lauren Corporation	173,110

Total Textiles, Apparel & Luxury Goods 1,115,034

**Tobacco 2.0%**

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50,600	Altria Group, Inc.	1,317,118
14,400	Philip Morris International	945,072
72,000	Reynolds American Inc.	2,558,160
	Total Tobacco	4,820,350

**Trading Companies & Distributors 0.6%**

18,100	Fastenal Company	1,173,423
1,100	W.W. Grainger, Inc.	151,448
	Total Trading Companies & Distributors	1,324,871

**Wireless Telecommunication Services 1.6%**

74,300	American Tower Corporation, (2)	3,850,226
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**Total Common Stocks (cost \$180,564,949) 230,663,619**

<b>Principal Amount (000)</b>	<b>Description (1)</b>	<b>Coupon</b>	<b>Maturity</b>	<b>Ratings (3)</b>	<b>Value</b>
<b>Short-Term Investments 4.8%</b>					
<b>U.S. Government and Agency Obligations 0.9%</b>					
\$ 2,000	U.S. Treasury Bills (4)	0.000%	4/14/11	AAA	\$ 1,999,972
<b>Repurchase Agreements 3.9%</b>					
9,345	Repurchase Agreement with State Street Bank, dated 3/31/11, repurchase price \$9,345,349, collateralized by \$9,385,000 U.S. Treasury Notes, 1.375%, due 5/15/13, value \$9,536,129	0.010%	4/01/11	N/A	9,345,346
<b>\$ 11,345</b>	<b>Total Short-Term Investments (cost \$11,345,246)</b>				<b>11,345,318</b>
	<b>Total Investments (cost \$191,910,195) 101.7%</b>				<b>242,008,937</b>
	<b>Other Assets Less Liabilities (1.7)% (5)</b>				<b>(4,147,626)</b>
	<b>Net Assets 100%</b>				<b>\$ 237,861,311</b>

**Investments in Derivatives****Call Options Written outstanding at March 31, 2011:**

Number of Contracts	Type	Notional Amount (6)	Expiration Date	Strike Price	Value
	<b>Call Options Written</b>				
(471,756)	Custom Basket 3 NASDAQ	\$ (47,175,602)	4/21/11	\$ 103.0	\$ (464,963)
(495,142)	Custom Basket 4 NASDAQ	(49,514,205)	4/07/11	103.0	(41,493)
<b>(966,898)</b>	<b>Total Call Options Written (premiums received \$962,648)</b>	<b>\$ (96,689,807)</b>			<b>\$ (506,456)</b>

**Futures Contracts outstanding at March 31, 2011:**

Type	Contract Position	Number of Contracts	Contract Expiration	Value at March 31, 2011	Unrealized
					Appreciation (Depreciation)
S&P 500 Index	Long	125	6/11	\$8,256,250	\$123,063

**Fair Value Measurements**

Fair value is defined as the price that the Fund would receive upon selling an investment or transferring a liability in an orderly transaction to an independent buyer in the principal or most advantageous market of the investment. A three-tier hierarchy is used to maximize the use of observable market data and minimize the use of unobservable inputs and to establish classification of fair value measurements for disclosure purposes. Observable inputs reflect the assumptions market participants would use in pricing the asset or liability. Observable inputs are based on market data obtained from sources independent of the reporting entity. Unobservable inputs reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset or liability. Unobservable inputs are based on the best information available in the circumstances. The three-tier hierarchy of inputs is summarized in the three broad levels listed below:

Level 1 Quoted prices in active markets for identical securities.

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 methodologies 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 March 31, 2011:

	Level 1	Level 2	Level 3	Total
Investments:				
Common Stocks	\$230,663,619	\$	\$	\$230,663,619
Short-Term Investments		11,345,318		11,345,318
Derivatives:				
Call Options Written		(506,456)		(506,456)

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Futures Contracts*	123,063			123,063
Total	\$230,786,682	\$ 10,838,862	\$	\$241,625,544

\*Represents net unrealized appreciation (depreciation).

During the period ended March 31, 2011, the Fund recognized no significant transfers to/from Level 1, Level 2 or Level 3.

**Derivative Instruments and Hedging Activities**

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, they are considered to be hedge transactions for financial reporting purposes.

The following table presents the fair value of all derivative instruments held by the Fund as of March 31, 2011, 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	\$ 506,456
Equity Price	Futures contracts	Payable for variation margin on futures contracts	123,063		
Total			\$ 123,063		\$ 506,456

**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 March 31, 2011, the cost of investments was \$192,366,234.

Gross unrealized appreciation and gross unrealized depreciation of investments at March 31, 2011, were as follows:

Gross unrealized:	
Appreciation	\$ 50,630,514
Depreciation	(987,811)
Net unrealized appreciation (depreciation) of investments	\$ 49,642,703



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For Fund portfolio compliance purposes, the Fund's industry classifications refer to any one or more of the industry sub-classifications used by one or more widely recognized market indexes or ratings group indexes, as/or as defined by Fund management. This definition may not apply for purposes of this report, which may combine industry sub-classifications into sectors for reporting ease.

- (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 (not covered by the report of independent registered public accounting firm): Using the highest of Standard and Poor's Group ( Standard & Poor's ), Moody's Investor Service, Inc. ( Moody's ) or Fitch, Inc. ( Fitch ) rating. Rating below BBB by Standard & Poor's, Baa by Moody's or BBB by Fitch are considered to be below investment grade. Holdings designated N/R are not rated by any of these national rating agencies.
- (4) Investment, or portion of investment, has been pledged to collateralize the net payment obligations for investments in derivatives.
- (5) Other Assets Less Liabilities includes the Value and/or Unrealized Appreciation (Depreciation) of derivative instruments as listed within Investments in Derivatives.
- (6) For disclosure purposes, Notional Amount is calculated by multiplying the Number of Contracts by \$100.

N/A Not Applicable.

ADR American Depositary Receipt.

DD Investment, or portion of investment, purchased on a delayed delivery basis.

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**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.

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**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 May 27, 2011

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 May 27, 2011

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

Date May 27, 2011