

Nuveen Core Equity Alpha Fund
Form N-Q
May 30, 2012

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: 3/31/2012

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

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Portfolio of Investments (Unaudited)
Nuveen Core Equity Alpha Fund (JCE)
 March 31, 2012

Shares	Description (1)	Value
	Common Stocks 97.7%	
	Aerospace & Defense 1.5%	
1,500	Boeing Company	\$ 111,555
800	General Dynamics Corporation	58,704
10,200	Goodrich Corporation	1,279,488
3,000	Honeywell International Inc.	183,150
800	Lockheed Martin Corporation	71,888
9,900	Northrop Grumman Corporation	604,692
3,800	Precision Castparts Corporation	657,020
1,300	Raytheon Company	68,614
6,900	Rockwell Collins, Inc.	397,164
2,600	United Technologies Corporation	215,644
	Total Aerospace & Defense	3,647,919
	Air Freight & Logistics 1.2%	
21,700	C.H. Robinson Worldwide, Inc.	1,421,133
3,900	Expeditors International of Washington, Inc.	181,389
15,300	FedEx Corporation	1,406,988
	Total Air Freight & Logistics	3,009,510
	Auto Components 0.2%	
1,700	BorgWarner Inc., (2)	143,378
21,200	Goodyear Tire & Rubber Company, (2)	237,864
	Total Auto Components	381,242
	Automobiles 0.1%	
9,600	Ford Motor Company	119,904
3,500	Harley-Davidson, Inc.	171,780
	Total Automobiles	291,684
	Beverages 1.3%	
23,700	Beam Inc.	1,388,109
9,400	Brown-Forman Corporation	783,866
2,700	Coca Cola Enterprises Inc.	77,220
12,700	Coca-Cola Company	939,927
	Total Beverages	3,189,122
	Biotechnology 1.0%	
2,300	Amgen Inc.	156,377
14,700	Biogen Idec Inc., (2)	1,851,759
3,100	Celgene Corporation, (2)	240,312
2,400	Gilead Sciences, Inc., (2)	117,240
	Total Biotechnology	2,365,688
	Building Products 0.1%	
18,200	Masco Corporation	243,334
	Capital Markets 0.9%	
10,100	Ameriprise Financial, Inc.	577,013
1,700	Franklin Resources, Inc.	210,851
10,400	Invesco LTD	277,368
28,600	Morgan Stanley	561,704
2,000	Northern Trust Corporation	94,900
3,100	State Street Corporation	141,050
2,900	T. Rowe Price Group Inc.	189,370
	Total Capital Markets	2,052,256
	Chemicals 2.2%	
12,700	Airgas, Inc.	1,129,919
500	CF Industries Holdings, Inc.	91,325
37,700	E.I. Du Pont de Nemours and Company	1,994,330
31,600	Eastman Chemical Company	1,633,404
4,800	Sherwin-Williams Company	521,616
	Total Chemicals	5,370,594
	Commercial Banks 1.4%	
15,000	BB&T Corporation	470,850
62,000	Fifth Third Bancorp.	871,100

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47,600	Huntington BancShares Inc.	307,020
33,800	KeyCorp.	287,300
3,600	M&T Bank Corporation	312,768
1,400	PNC Financial Services Group, Inc.	90,286
51,600	Regions Financial Corporation	340,044
11,500	U.S. Bancorp	364,320
8,650	Wells Fargo & Company	295,311
	Total Commercial Banks	3,338,999
	Commercial Services & Supplies 0.2%	
800	Cintas Corporation	31,296
11,900	Iron Mountain Inc.	342,720
400	Stericycle Inc., (2)	33,456
2,100	Waste Management, Inc.	73,416
	Total Commercial Services & Supplies	480,888
	Communications Equipment 1.1%	
51,800	Cisco Systems, Inc.	1,095,570
3,700	F5 Networks, Inc., (2)	499,352
13,928	Motorola Solutions Inc.	707,960
6,800	QUALCOMM, Inc.	462,536
	Total Communications Equipment	2,765,418
	Computers & Peripherals 3.5%	
12,600	Apple, Inc., (2)	7,553,322
6,700	Dell Inc., (2)	111,220
3,500	EMC Corporation, (2)	104,580
4,300	Lexmark International, Inc., Class A	142,932
6,400	SanDisk Corporation, (2)	317,376
3,100	Western Digital Corporation, (2)	128,309
	Total Computers & Peripherals	8,357,739
	Construction Materials 0.1%	
7,800	Vulcan Materials Company	333,294
	Consumer Finance 0.4%	
7,500	American Express Company	433,950
1,000	Capital One Financial Corporation	55,740
11,000	Discover Financial Services	366,740
7,100	SLM Corporation	111,896
	Total Consumer Finance	968,326
	Containers & Packaging 0.1%	
1,400	Ball Corporation	60,032
3,100	Owens-Illinois, Inc., (2)	72,354
	Total Containers & Packaging	132,386
	Distributors 0.7%	
26,500	Genuine Parts Company	1,662,875
	Diversified Consumer Services 0.2%	
5,700	Apollo Group, Inc., (2)	220,248
3,900	Devry, Inc.	132,093
9,200	H & R Block Inc.	151,524
	Total Diversified Consumer Services	503,865
	Diversified Financial Services 1.1%	
25,200	Bank of America Corporation	241,164
7,800	Citigroup Inc.	285,090
10,205	JP Morgan Chase & Co.	469,226
14,300	Leucadia National Corporation	373,230
24,700	Moody's Corporation	1,039,870
5,300	NASDAQ Stock Market, Inc., (2)	137,270
2,000	New York Stock Exchange Euronext	60,020
	Total Diversified Financial Services	2,605,870
	Diversified Telecommunication Services 1.1%	
2,600	AT&T Inc.	81,198
63,570	CenturyLink Inc.	2,456,981
	Total Diversified Telecommunication Services	2,538,179
	Electric Utilities 3.9%	
12,700	American Electric Power Company, Inc.	489,966
39,200	Duke Energy Corporation	823,592
34,376	Exelon Corporation	1,347,883
27,200	FirstEnergy Corp.	1,240,048
6,300	Northeast Utilities	233,856
1,200	Pepco Holdings, Inc.	22,668
28,500	Pinnacle West Capital Corporation	1,365,150
29,400	PPL Corporation	830,844
44,200	Progress Energy, Inc.	2,347,462

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14,300	Southern Company	642,499
	Total Electric Utilities	9,343,968
	Electrical Equipment 0.9%	
18,800	Rockwell Automation, Inc.	1,498,360
6,200	Roper Industries Inc.	614,792
	Total Electrical Equipment	2,113,152
	Electronic Equipment & Instruments 0.4%	
21,300	Jabil Circuit Inc.	535,056
8,100	Molex Inc.	227,772
8,300	TE Connectivity Limited	305,025
	Total Electronic Equipment & Instruments	1,067,853
	Energy Equipment & Services 2.3%	
9,800	Baker Hughes Incorporated	411,012
1,200	Cooper Cameron Corporation, (2)	63,396
3,000	FMC Technologies Inc., (2)	151,260
500	Halliburton Company	16,595
1,600	Helmerich & Payne Inc.	86,320
7,300	Nabors Industries Inc., (2)	127,677
38,500	National-Oilwell Varco Inc.	3,059,595
22,642	Schlumberger Limited	1,583,355
	Total Energy Equipment & Services	5,499,210
	Food & Staples Retailing 0.6%	
4,200	Costco Wholesale Corporation	381,360
8,900	CVS Caremark Corporation	398,720
41,700	SUPERVALU INC.	238,107
2,500	Sysco Corporation	74,650
4,500	Wal-Mart Stores, Inc.	275,400
	Total Food & Staples Retailing	1,368,237
	Food Products 4.7%	
2,800	Archer-Daniels-Midland Company	88,648
15,400	ConAgra Foods, Inc.	404,404
23,300	Dean Foods Company, (2)	282,163
21,600	General Mills, Inc.	852,120
17,000	H.J. Heinz Company	910,350
14,200	Hershey Foods Corporation	870,886
20,000	Hormel Foods Corporation	590,400
31,200	JM Smucker Company	2,538,432
5,300	Kellogg Company	284,239
20,400	Kraft Foods Inc.	775,404
1,400	McCormick & Company, Incorporated	76,202
16,900	Mead Johnson Nutrition Company, Class A Shares	1,393,912
99,700	Sara Lee Corporation	2,146,541
	Total Food Products	11,213,701
	Gas Utilities 1.4%	
6,349	AGL Resources Inc.	249,008
39,600	ONEOK, Inc.	3,233,736
	Total Gas Utilities	3,482,744
	Health Care Equipment & Supplies 1.2%	
9,400	Baxter International, Inc.	561,932
5,000	Covidien PLC	273,400
3,400	DENTSPLY International Inc.	136,442
2,800	Intuitive Surgical, Inc., (2)	1,516,900
3,800	Saint Jude Medical Inc.	168,378
4,200	Stryker Corporation	233,016
1,500	Varian Medical Systems, Inc., (2)	103,440
	Total Health Care Equipment & Supplies	2,993,508
	Health Care Providers & Services 3.4%	
7,700	Aetna Inc.	386,232
59,100	AmerisourceBergen Corporation	2,345,088
34,000	Cardinal Health, Inc.	1,465,740
13,200	CIGNA Corporation	650,100
6,600	Coventry Health Care, Inc., (2)	234,762
3,400	Express Scripts, Holding Company, (2)	184,212
10,300	Humana Inc.	952,544
7,900	McKesson HBOC Inc.	693,383
700	Medco Health Solutions, Inc.	49,210
16,400	Tenet Healthcare Corporation, (2)	87,084
16,900	UnitedHealth Group Incorporated	996,086
800	Wellpoint Inc.	59,040
	Total Health Care Providers & Services	8,103,481

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	Health Care Technology 0.8%	
25,800	Cerner Corporation, (2)	1,964,928
	Hotels, Restaurants & Leisure 2.6%	
1,400	Carnival Corporation, ADR	44,912
18,400	McDonald's Corporation	1,805,040
44,600	Starbucks Corporation	2,492,694
2,800	Starwood Hotels & Resorts Worldwide, Inc.	157,948
5,300	Wyndham Worldwide Corporation	246,503
22,300	YUM! Brands, Inc.	1,587,314
	Total Hotels, Restaurants & Leisure	6,334,411
	Household Durables 0.7%	
34,200	D.R. Horton, Inc.	518,814
1,800	Harman International Industries Inc.	84,258
24,200	Lennar Corporation, Class A	657,756
16,400	Newell Rubbermaid Inc.	292,084
25,600	Pulte Corporation, (2)	226,560
	Total Household Durables	1,779,472
	Household Products 0.5%	
6,700	Colgate-Palmolive Company	655,126
7,100	Kimberly-Clark Corporation	524,619
	Total Household Products	1,179,745
	Independent Power Producers & Energy Traders 0.0%	
3,600	NRG Energy Inc., (2)	56,412
	Industrial Conglomerates 0.2%	
600	Danaher Corporation	33,600
27,500	General Electric Company	551,925
	Total Industrial Conglomerates	585,525
	Insurance 3.4%	
3,700	Ace Limited	270,840
15,700	AFLAC Incorporated	722,043
1,300	Allstate Corporation	42,796
3,300	American International Group, (2)	101,739
34,900	Aon Corporation	1,712,194
7,100	Assurant Inc.	287,550
9,500	Chubb Corporation	656,545
4,000	Cincinnati Financial Corporation	138,040
75,100	Genworth Financial Inc., Class A, (2)	624,832
5,000	Hartford Financial Services Group, Inc.	105,400
7,200	Lincoln National Corporation	189,792
8,900	Marsh & McLennan Companies, Inc.	291,831
4,500	MetLife, Inc.	168,075
6,600	Principal Financial Group, Inc.	194,766
35,800	Progressive Corporation	829,844
4,400	Prudential Financial, Inc.	278,916
4,050	Torchmark Corporation	201,893
15,000	Travelers Companies, Inc.	888,000
6,200	Unum Group	151,776
10,300	XL Capital Ltd, Class A	223,407
	Total Insurance	8,080,279
	Internet & Catalog Retail 0.7%	
4,100	Amazon.com, Inc., (2)	830,291
800	NetFlix.com Inc., (2)	92,032
1,200	Priceline.com Incorporated, (2)	861,000
	Total Internet & Catalog Retail	1,783,323
	Internet Software & Services 1.7%	
20,300	eBay Inc., (2)	748,867
5,100	Google Inc., Class A, (2)	3,270,324
	Total Internet Software & Services	4,019,191
	IT Services 3.5%	
10,500	Accenture Limited	677,250
3,800	Automatic Data Processing, Inc.	209,722
30,900	Cognizant Technology Solutions Corporation, Class A, (2)	2,377,755
600	Computer Sciences Corporation	17,964
1,000	Fiserv, Inc., (2)	69,390
12,100	International Business Machines Corporation (IBM)	2,524,665
2,200	MasterCard, Inc.	925,188
14,400	Paychex, Inc.	446,256
5,100	Teradata Corporation, (2)	347,565
10,100	Total System Services Inc.	233,007
4,200	Visa Inc.	495,600

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	Total IT Services	8,324,362
	Leisure Equipment & Products 0.3%	
20,800	Mattel, Inc.	700,128
	Life Sciences Tools & Services 0.4%	
21,400	Agilent Technologies, Inc., (2)	952,514
1,000	Waters Corporation, (2)	92,660
	Total Life Sciences Tools & Services	1,045,174
	Machinery 3.7%	
27,300	Caterpillar Inc.	2,907,996
1,200	Cummins Inc.	144,048
1,300	Deere & Company	105,170
800	Dover Corporation	50,352
54,800	Eaton Corporation	2,730,684
2,700	Joy Global Inc.	198,450
1,600	PACCAR Inc.	74,928
11,100	Pall Corporation	661,893
1,600	Parker Hannifin Corporation	135,280
1,200	Snap-on Incorporated	73,164
24,287	Stanley Black & Decker Inc.	1,869,128
	Total Machinery	8,951,093
	Media 4.0%	
57,700	CBS Corporation, Class B	1,956,607
22,100	Comcast Corporation, Class A	663,221
87,000	DIRECTV Group, Inc., (2)	4,292,580
30,600	Gannett Company Inc.	469,098
5,300	Interpublic Group Companies, Inc.	60,473
11,400	McGraw-Hill Companies, Inc.	552,558
2,500	Omnicom Group, Inc.	126,625
200	Time Warner Cable, Class A	16,300
17,000	Time Warner Inc.	641,750
14,900	Viacom Inc., Class B	707,154
2,300	Walt Disney Company	100,694
400	Washington Post Company	149,428
	Total Media	9,736,488
	Metals & Mining 0.4%	
2,600	Cliffs Natural Resources Inc.	180,076
2,900	Freeport-McMoRan Copper & Gold, Inc.	110,316
3,100	Newmont Mining Corporation	158,937
9,000	Nucor Corporation	386,550
3,700	Titanium Metals Corporation	50,172
4,200	United States Steel Corporation	123,354
	Total Metals & Mining	1,009,405
	Multiline Retail 1.0%	
4,400	Dollar Tree Stores Inc., (2)	415,756
200	Family Dollar Stores, Inc.	12,656
6,200	J.C. Penney Company, Inc.	219,666
30,300	Macy's, Inc.	1,203,819
7,000	Sears Holding Corporation, (2)	463,750
3,600	Target Corporation	209,772
	Total Multiline Retail	2,525,419
	Multi-Utilities 4.9%	
30,700	Ameren Corporation	1,000,206
143,700	CenterPoint Energy, Inc.	2,833,764
38,900	CMS Energy Corporation	855,800
22,100	Consolidated Edison, Inc.	1,291,082
34,300	Dominion Resources, Inc.	1,756,503
9,600	DTE Energy Company	528,288
71,200	NiSource Inc.	1,733,720
13,200	Scana Corporation	602,052
22,800	Wisconsin Energy Corporation	802,104
15,200	Xcel Energy, Inc.	402,344
	Total Multi-Utilities	11,805,863
	Oil, Gas & Consumable Fuels 7.5%	
15,000	Alpha Natural Resources Inc., (2)	228,150
25,200	Cabot Oil & Gas Corporation	785,484
16,900	Chesapeake Energy Corporation	391,573
18,200	Chevron Corporation	1,951,768
10,100	ConocoPhillips	767,701
3,700	CONSOL Energy Inc.	126,170
7,200	Denbury Resources Inc., (2)	131,256

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49,900	El Paso Corporation	1,474,545
700	EOG Resources, Inc.	77,770
12,100	EQT Corporation	583,341
33,500	Exxon Mobil Corporation	2,905,453
900	Hess Corporation	53,055
52,800	Marathon Oil Corporation	1,673,760
29,450	Marathon Petroleum Corporation	1,276,952
800	Noble Energy, Inc.	78,224
800	Occidental Petroleum Corporation	76,184
12,000	Pioneer Natural Resources Company	1,339,080
46,400	Spectra Energy Corporation	1,463,920
11,900	Tesoro Corporation, (2)	319,396
6,200	Valero Energy Corporation	159,774
71,300	Williams Companies, Inc.	2,196,753
1,466	WPX Energy Inc., (2)	26,403
	Total Oil, Gas & Consumable Fuels	18,086,712
	Paper & Forest Products 0.3%	
20,200	MeadWestvaco Corporation	638,118
	Personal Products 1.7%	
64,400	Estee Lauder Companies Inc., Class A	3,988,936
	Pharmaceuticals 2.4%	
7,400	Abbott Laboratories	453,546
7,300	Allergan, Inc.	696,639
58,800	Bristol-Myers Squibb Company	1,984,500
17,400	Eli Lilly and Company	700,698
600	Forest Laboratories, Inc., (2)	20,814
10,600	Johnson & Johnson	699,176
6,832	Merck & Company Inc.	262,349
14,500	Watson Pharmaceuticals Inc., (2)	972,370
	Total Pharmaceuticals	5,790,092
	Professional Services 0.6%	
14,900	Equifax Inc.	659,474
23,300	Robert Half International Inc.	705,990
	Total Professional Services	1,365,464
	Real Estate Investment Trust 3.1%	
30,400	American Tower Corporation	1,915,808
11,400	AvalonBay Communities, Inc.	1,611,390
8,400	Boston Properties, Inc.	881,916
13,300	Equity Residential	832,846
15,900	Host Hotels & Resorts Inc.	261,078
6,800	Public Storage, Inc.	939,556
6,900	Simon Property Group, Inc.	1,005,192
2,700	Weyerhaeuser Company	59,184
	Total Real Estate Investment Trust	7,506,970
	Real Estate Management & Development 0.1%	
6,700	CBRE Group Inc., (2)	133,732
	Road & Rail 0.6%	
31,600	CSX Corporation	680,032
4,300	Norfolk Southern Corporation	283,069
2,900	Ryder System, Inc.	153,120
2,500	Union Pacific Corporation	268,700
	Total Road & Rail	1,384,921
	Semiconductors & Equipment 2.3%	
2,000	Analog Devices, Inc.	80,800
11,000	Applied Materials, Inc.	136,840
1,200	Broadcom Corporation, Class A, (2)	47,160
46,300	Intel Corporation	1,301,493
17,500	KLA-Tencor Corporation	952,350
1,500	Linear Technology Corporation	50,550
8,900	Novellus Systems, Inc., (2)	444,199
14,600	Teradyne Inc., (2)	246,594
69,800	Texas Instruments Incorporated	2,345,978
1,400	Xilinx, Inc.	51,002
	Total Semiconductors & Equipment	5,656,966
	Software 1.5%	
3,300	Autodesk, Inc., (2)	139,656
1,900	Citrix Systems, (2)	149,929
22,600	Electronic Arts Inc. (EA), (2)	372,448
27,400	Intuit, Inc.	1,647,562
26,900	Microsoft Corporation	867,525

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6,400	Oracle Corporation	186,624
1,400	Red Hat, Inc., (2)	83,846
1,600	Salesforce.com, Inc., (2)	247,216
	Total Software	3,694,806
	Specialty Retail 5.5%	
3,400	Abercrombie & Fitch Co., Class A	168,674
1,200	AutoNation Inc., (2)	41,172
5,100	AutoZone, Inc., (2)	1,896,180
9,100	Bed Bath and Beyond Inc., (2)	598,507
6,000	CarMax, Inc., (2)	207,900
11,700	GameStop Corporation, (2)	255,528
29,300	Home Depot, Inc.	1,474,083
23,000	Limited Brands, Inc.	1,104,000
11,100	Lowe's Companies, Inc.	348,318
16,700	O'Reilly Automotive Inc., (2)	1,525,545
20,400	Ross Stores, Inc.	1,185,240
9,300	Staples, Inc.	150,474
2,100	Tiffany & Co.	145,173
107,800	TJX Companies, Inc.	4,280,738
	Total Specialty Retail	13,381,532
	Textiles, Apparel & Luxury Goods 0.7%	
4,300	Nike, Inc., Class B	466,292
700	Ralph Lauren Corporation	122,031
7,500	VF Corporation	1,094,850
	Total Textiles, Apparel & Luxury Goods	1,683,173
	Thrifts & Mortgage Finance 0.0%	
6,300	Hudson City Bancorp, Inc.	46,053
	Tobacco 3.2%	
50,600	Altria Group, Inc.	1,562,022
7,200	Lorillard Inc.	932,256
26,600	Philip Morris International	2,357,026
72,000	Reynolds American Inc.	2,983,680
	Total Tobacco	7,834,984
	Trading Companies & Distributors 2.1%	
52,100	Fastenal Company	2,818,610
10,300	W.W. Grainger, Inc.	2,212,543
	Total Trading Companies & Distributors	5,031,153
	Wireless Telecommunication Services 0.1%	
3,900	Crown Castle International Corporation, (2)	208,026
	Total Common Stocks (cost \$187,454,403)	235,737,898

Principal Amount (000)	Description (1)	Coupon	Maturity	Ratings (3)	Value
	Short-Term Investments 4.2%				
	U.S. Government and Agency Obligations 1.4%				
\$ 3,350	U.S. Treasury Bills, (4)	0.000%	9/20/12	N/R	\$ 3,347,853
6,693	Repurchase Agreements 2.8%	0.010%	4/02/12	N/A	6,692,899
	Repurchase Agreement with State Street Bank, dated 3/30/12, repurchase price \$6,692,905, collateralized by \$6,115,000 U.S. Treasury Notes, 3.125%, 5/15/21 value \$6,831,079				
\$ 10,043	Total Short-Term Investments (cost \$10,041,460)				10,040,752
	Total Investments (cost \$197,495,863) 101.9%				245,778,650
	Other Assets Less Liabilities (1.9)% (5)				(4,602,002)
	Net Assets 100%				\$ 241,176,648

Investments in Derivatives at March 31, 2012

Call Options Written outstanding:

Number of Contracts	Type	Notional Amount (6)	Expiration Date	Strike Price	Value (5)
	Call Options (0.2)%				

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(461,788)	Custom Basket 2 NASDAQ	\$ (46,178,781)	4/10/12	\$ 103.0	\$ (481,552)
(202,380)	Custom Basket 4 NASDAQ	(20,238,032)	4/11/12	103.0	(69,194)
(664,168)	Total Call Options Written	\$ (66,416,813)			\$ (550,746)

(premiums received \$340,694)

Futures Contracts outstanding:

Type	Contract Position	Number of Contracts	Contract Expiration	Value	Unrealized Appreciation (Depreciation) (5)
S&P 500 Index	Long	120	6/12	\$ 8,419,200	\$ 85,440

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 for 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, 2012:

	Level 1	Level 2	Level 3	Total
Long-Term Investments:				
Common Stocks	\$ 235,737,898	\$	\$	\$ 235,737,898
Short-Term Investments:				
Repurchase Agreements		6,692,899		6,692,899
U.S. Government and Agency Obligations		3,347,853		3,347,853
Derivatives:				
Call Options Written		(550,746)		(550,746)
Futures Contracts*	85,440			85,440
Total	\$ 235,823,338	\$ 9,490,006	\$	\$ 245,313,344

* Represents net unrealized appreciation (depreciation) as reported in the Fund's Portfolio of Investments.

The following is a reconciliation of the Fund's Level 3 investments held at the beginning and end of the measurement period:

	Level 3 Common Stocks	Level 3 Preferred Stocks	Level 3 Total
Balance at the beginning of year	\$ 765	\$ 765	\$ 1,530
Gains (losses):			
Net realized gains (losses)	(11,741)	27	(11,714)
Net change in unrealized appreciation (depreciation)	15,995	(255)	15,740
Purchases at cost			
Sales at proceeds	(5,019)	(537)	(5,556)
Net discounts (premiums)			
Transfers in to			
Transfers out of			
Balance at the end of period	\$	\$	\$

During the period ended March 31, 2012, the Fund recognized no transfers to or 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 not considered to be hedge transactions for financial reporting purposes.

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The following tables presents the fair value of all derivative instruments held by the Fund as of March 31, 2012, 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
	Futures contracts	Variation margin futures contracts*	\$ 85,440	Variation margin futures contracts*	\$
	Equity Price Options			Call options written, at value	550,746
	Total		\$ 85,440		\$ 550,746

* Value represents cumulative gross appreciation (depreciation) of futures contracts as reported in Portfolio of Investments.

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, 2012, the cost of investments was (excluding investments in derivatives) \$197,692,857.

Gross unrealized appreciation and gross unrealized depreciation of investments (excluding investments in derivatives) at March 31, 2012, were as follows:

Gross unrealized:		
Appreciation	\$	50,350,069
Depreciation		(2,264,276)
Net unrealized appreciation (depreciation) of investments	\$	48,085,793

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, and/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: Using the highest of Standard & Poor's Group (Standard & Poor's), Moody's Investors Service, Inc.

(Moody's) or Fitch, Inc. (Fitch) rating. Ratings 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 the Unrealized Appreciation (Depreciation) of derivative instruments as noted within Investments in Derivatives at March 31, 2012.

(6) For disclosure purposes, Notional Amount is calculated by multiplying the Number of Contracts by \$100.

ADR American Depositary Receipt.

N/R Not rated.

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 May 30, 2012

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 30, 2012

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

Date May 30, 2012