

Nuveen Core Equity Alpha Fund
Form N-Q
November 28, 2008

Table of Contents

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: 9/30/2008

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.

TABLE OF CONTENTS

Item 1. Schedule of Investments

Item 2. Controls and Procedures

Item 3. Exhibits

SIGNATURES

EX-99.CERT

Table of Contents**Item 1. Schedule of Investments****Portfolio of Investments (Unaudited)****Nuveen Core Equity Alpha Fund (JCE)***September 30, 2008*

Shares	Description (1)	Value
Common Stocks 95.9%		
Aerospace & Defense 4.5%		
12,700	Boeing Company	\$ 728,345
12,500	General Dynamics Corporation	920,250
23,200	Goodrich Corporation	965,120
43,800	Honeywell International Inc.	1,819,890
4,900	L-3 Communications Holdings, Inc.	481,768
27,200	Lockheed Martin Corporation	2,983,024
3,900	Northrop Grumman Corporation	236,106
15,000	Precision Castparts Corporation	1,181,700
11,900	Raytheon Company	636,769
15,200	United Technologies Corporation	912,912
	Total Aerospace & Defense	10,865,884
Air Freight & Logistics 0.4%		
8,800	C.H. Robinson Worldwide, Inc.	448,448
8,700	Expeditors International of Washington Inc.	303,108
3,600	United Parcel Service, Inc., Class B	226,404
	Total Air Freight & Logistics	977,960
Airlines 0.0%		
1,300	Southwest Airlines Co.	18,863
Auto Components 0.8%		
26,000	Goodyear Tire & Rubber Company, (2)	398,060
47,500	Johnson Controls, Inc.	1,440,675
	Total Auto Components	1,838,735
Automobiles 0.2%		

Edgar Filing: Nuveen Core Equity Alpha Fund - Form N-Q

41,900	General Motors Corporation, (2)	395,955
300	Harley-Davidson, Inc.	11,190
	Total Automobiles	407,145

Beverages 4.0%

10,200	Brown-Forman Corporation	732,462
84,700	Coca-Cola Company	4,478,936
31,600	Coca-Cola Enterprises Inc.	529,932
5,000	Constellation Brands, Inc., Class A, (2)	107,300
8,400	Molson Coors Brewing Company, Class B	392,700
9,200	Pepsi Bottling Group, Inc.	268,364
44,700	PepsiCo, Inc.	3,185,769
	Total Beverages	9,695,463

Biotechnology 1.0%

3,500	Amgen Inc., (2)	207,445
5,000	Biogen Idec Inc., (2)	251,450
8,200	Celgene Corporation, (2)	518,896
9,100	Genzyme Corporation, (2)	736,099
13,400	Gilead Sciences, Inc., (2)	610,772
	Total Biotechnology	2,324,662

Building Products 0.1%

2,700	Fastenal Company	133,353
-------	------------------	---------

Capital Markets 1.9%

5,000	American Capital Limited	127,550
7,600	Bank of New York Company, Inc.	247,608
19,100	Charles Schwab Corporation	496,600
19,000	Federated Investors Inc.	548,150
4,600	Goldman Sachs Group, Inc.	588,800
9,000	Invesco LTD	188,820
22,705	JPMorgan Chase & Co.	1,060,324
3,800	Morgan Stanley	87,400
10,300	State Street Corporation	585,864
13,300	T. Rowe Price Group Inc.	714,343
	Total Capital Markets	4,645,459

Chemicals 1.6%

10,300	Air Products & Chemicals Inc.	705,447
2,000	CF Industries Holdings, Inc.	182,920
1,700	Dow Chemical Company	54,026
7,200	E.I. Du Pont de Nemours and Company	290,160
1,300	Eastman Chemical Company	71,578
12,200	Ecolab Inc.	591,944
2,500	PPG Industries, Inc.	145,800
10,600	Praxair, Inc.	760,444
600	Rohm and Haas Company	42,000
19,000	Sigma-Aldrich Corporation	995,980
	Total Chemicals	3,840,299

Commercial Banks 3.6%

97,900	Bank of America Corporation	3,426,500
23,000	BB&T Corporation	869,400
5,200	M&T Bank Corporation	464,100
3,500	Marshall and Ilsley Corporation	70,525
16,100	Northern Trust Corporation	1,162,420
5,000	PNC Financial Services Group, Inc.	373,500
10,900	Regions Financial Corporation	104,640
30,300	U.S. Bancorp	1,091,406
5,200	Wachovia Corporation	18,200
34,200	Wells Fargo & Company	1,283,526
	Total Commercial Banks	8,864,217

Commercial Services & Supplies 0.1%

5,100	Allied Waste Industries, Inc., (2)	56,661
4,300	Equifax Inc.	148,135
2,800	Robert Half International Inc.	69,300
	Total Commercial Services & Supplies	274,096

Communications Equipment 1.9%

7,600	Ciena Corporation, (2)	76,608
121,900	Cisco Systems, Inc., (2)	2,750,064
45,500	Corning Incorporated	711,620
2,500	Harris Corporation	115,500
20,500	Juniper Networks Inc., (2)	431,935
1,000	Motorola, Inc.	7,140
13,200	QUALCOMM Inc.	567,204

	Total Communications Equipment	4,660,071
Computers & Peripherals 3.8%		
16,700	Apple, Inc., (2)	1,898,122
2,000	Dell Inc., (2)	32,960
47,600	EMC Corporation, (2)	569,296
83,500	Hewlett-Packard Company	3,861,040
23,200	International Business Machines Corporation (IBM)	2,713,472
3,100	Lexmark International, Inc., Class A, (2)	100,967
10,300	Network Appliance Inc., (2)	187,769
	Total Computers & Peripherals	9,363,626
Construction & Engineering 0.8%		
17,400	Fluor Corporation	969,180
20,100	Jacobs Engineering Group Inc., (2)	1,091,631
	Total Construction & Engineering	2,060,811
Construction Materials 0.0%		
800	Vulcan Materials Company	59,600
Consumer Finance 0.5%		
1,400	Capital One Financial Corporation	71,400
4,500	MasterCard, Inc.	797,985
16,200	Western Union Company	399,654
	Total Consumer Finance	1,269,039
Containers & Packaging 0.3%		
1,200	Ball Corporation	47,388
1,800	Bemis Company, Inc.	47,178
2,300	Pactiv Corporation, (2)	57,109
22,700	Sealed Air Corporation	499,173
	Total Containers & Packaging	650,848
Diversified Consumer Services 0.5%		

Edgar Filing: Nuveen Core Equity Alpha Fund - Form N-Q

10,600	Apollo Group, Inc., (2)	628,580
23,700	H & R Block Inc.	539,175
	Total Diversified Consumer Services	1,167,755

Diversified Financial Services 1.1%

5,800	CIT Group Inc.	40,368
3,200	Citigroup Inc.	65,632
800	CME Group, Inc.	297,208
1,000	Intercontinental Exchange Inc., (2)	80,680
39,900	Leucadia National Corporation	1,813,056
7,700	Moody's Corporation	261,800
4,800	New York Stock Exchange Euronext	188,064
	Total Diversified Financial Services	2,746,808

Diversified Telecommunication Services 3.7%

275,200	AT&T Inc.	7,683,584
42,500	Verizon Communications Inc.	1,363,825
	Total Diversified Telecommunication Services	9,047,409

Electric Utilities 3.9%

2,200	Allegheny Energy, Inc.	80,894
9,900	Ameren Corporation	386,397
16,600	American Electric Power Company, Inc.	614,698
2,300	Edison International	91,770
20,900	Entergy Corporation	1,860,309
1,400	Exelon Corporation	87,668
17,500	FirstEnergy Corp.	1,172,325
47,600	FPL Group, Inc.	2,394,280
1,000	PG&E Corporation	37,450
5,300	Pinnacle West Capital Corporation	182,373
53,700	PPL Corporation	1,987,974
13,600	Southern Company	512,584
7,600	TECO Energy, Inc.	119,548
	Total Electric Utilities	9,528,270

Electrical Equipment 0.1%

Edgar Filing: Nuveen Core Equity Alpha Fund - Form N-Q

8,200	Emerson Electric Co.	334,478
400	Rockwell Automation, Inc.	14,936
	Total Electrical Equipment	349,414

Electronic Equipment & Instruments 1.0%

16,300	MEMC Electronic Materials, (2)	460,638
3,300	Molex Inc.	74,085
26,300	Thermo Fisher Scientific, Inc., (2)	1,446,500
10,800	Tyco Electronics, Limited	298,728
700	Waters Corporation, (2)	40,726
	Total Electronic Equipment & Instruments	2,320,677

Energy Equipment & Services 2.5%

17,500	Anadarko Petroleum Corporation	848,925
400	Baker Hughes Incorporated	24,216
4,700	BJ Services Company	89,911
15,700	Cabot Oil & Gas Corporation	567,398
1,000	Cooper Cameron Corporation, (2)	38,540
900	ENSCO International Incorporated	51,867
1,200	Halliburton Company	38,868
7,900	Nabors Industries Limited, (2)	196,868
19,000	National-Oilwell Varco Inc., (2)	954,370
1,200	Noble Corporation	52,680
18,700	Schlumberger Limited	1,460,283
10,000	Smith International, Inc.	586,400
5,946	Transocean Inc., (2)	653,109
21,400	Weatherford International Ltd, (2)	537,996
	Total Energy Equipment & Services	6,101,431

Food & Staples Retailing 2.4%

6,100	Costco Wholesale Corporation	396,073
38,200	CVS Caremark Corporation	1,285,812
59,100	Kroger Co.	1,624,068
20,000	Safeway Inc.	474,400
1,200	SUPERVALU INC.	26,040
2,600	Sysco Corporation	80,158
23,900	Wal-Mart Stores, Inc.	1,431,371
28,600	Whole Foods Market, Inc., (2)	572,858
	Total Food & Staples Retailing	5,890,780

Food Products 1.7%

17,600	Archer-Daniels-Midland Company	385,616
2,200	General Mills, Inc.	151,184
10,500	H.J. Heinz Company	524,685
10,400	Kellogg Company	583,440
9,000	Kraft Foods Inc.	294,750
14,000	Monsanto Company	1,385,720
6,000	Tyson Foods, Inc., Class A	71,640
9,300	Wm. Wrigley Jr. Company	738,420
	Total Food Products	4,135,455

Gas Utilities 0.1%

7,300	Questar Corporation	298,716
-------	---------------------	---------

Health Care Equipment & Supplies 3.1%

19,600	Applera Corporation-Applied Biosystems	671,300
30,800	Baxter International Inc.	2,021,404
6,000	Becton, Dickinson and Company	481,560
28,100	Boston Scientific Corporation, (2)	344,787
4,000	C. R. Bard, Inc.	379,480
6,100	Covidien Limited	327,936
4,100	Hospira Inc., (2)	156,620
1,200	Intuitive Surgical, Inc., (2)	289,176
6,100	Patterson Companies Inc., (2)	185,501
1,200	Saint Jude Medical Inc., (2)	52,188
26,900	Stryker Corporation	1,675,870
13,000	Varian Medical Systems, Inc., (2)	742,690
3,300	Zimmer Holdings, Inc., (2)	213,048
	Total Health Care Equipment & Supplies	7,541,560

Health Care Providers & Services 2.2%

4,500	Aetna Inc.	162,495
33,000	CIGNA Corporation	1,121,340
500	Coventry Health Care, Inc., (2)	16,275
1,200	Davita Inc., (2)	68,412
11,700	Express Scripts, Inc., (2)	863,694
1,100	Humana Inc., (2)	45,320
49,900	Medco Health Solutions, Inc., (2)	2,245,500
7,700	Quest Diagnostics Incorporated	397,859
73,600	Tenet Healthcare Corporation, (2)	408,480
	Total Health Care Providers & Services	5,329,375

Hotels, Restaurants & Leisure 1.8%

7,800	Carnival Corporation	275,730
19,400	International Game Technology	333,292
2,100	Marriott International, Inc., Class A	54,789
46,100	McDonald's Corporation	2,844,370
7,700	Starwood Hotels & Resorts Worldwide, Inc.	216,678
16,200	YUM! Brands, Inc.	528,282
	Total Hotels, Restaurants & Leisure	4,253,141

Household Durables 1.1%

24,600	Centex Corporation	398,520
52,800	D.R. Horton, Inc.	687,456
16,600	KB Home	326,688
4,400	Leggett and Platt Inc.	95,876
15,700	Lennar Corporation, Class A	238,483
36,700	Pulte Corporation	512,699
6,300	Snap-on Incorporated	331,758
200	Whirlpool Corporation	15,858
	Total Household Durables	2,607,338

Household Products 3.2%

33,600	Colgate-Palmolive Company	2,531,760
75,600	Procter & Gamble Company	5,268,564
	Total Household Products	7,800,324

Independent Power Producers & Energy Traders 0.2%

20,000	Constellation Energy Group	486,000
--------	----------------------------	---------

Industrial Conglomerates 3.5%

9,600	3M Co.	655,776
278,800	General Electric Company	7,109,400
18,400	Textron Inc.	538,752
7,000	Tyco International Ltd.	245,140
	Total Industrial Conglomerates	8,549,068

Insurance 3.3%

24,000	AFLAC Incorporated	1,410,000
4,100	Allstate Corporation	189,092
30,800	American International Group, Inc., (2)	102,564
2,800	Aon Corporation	125,888
14,000	Assurant Inc.	770,000
2,400	Chubb Corporation	131,760
4,700	Cincinnati Financial Corporation	133,668
68,300	Loews Corporation	2,697,167
10,400	Marsh & McLennan Companies, Inc.	330,304
3,100	MetLife, Inc.	173,600
11,500	Principal Financial Group, Inc.	500,135
17,100	Progressive Corporation	297,540
3,700	Prudential Financial, Inc.	266,400
1,700	Torchmark Corporation	101,660
3,500	Travelers Companies, Inc.	158,200
23,900	Unum Group	599,890
	Total Insurance	7,987,868

Internet & Catalog Retail 0.7%

22,900	Amazon.com, Inc., (2)	1,666,204
9,600	Expedia, Inc., (2)	145,056
	Total Internet & Catalog Retail	1,811,260

Internet Software & Services 0.5%

2,800	Google Inc., Class A, (2)	1,121,456
11,700	Yahoo! Inc., (2)	202,410
	Total Internet Software & Services	1,323,866

IT Services 0.3%

9,700	Affiliated Computer Services Inc., (2)	491,111
7,600	Convergys Corporation, (2)	112,328
3,600	Fiserv, Inc., (2)	170,352
	Total IT Services	773,791

Leisure Equipment & Products 0.3%

16,100	Hasbro, Inc.	558,992
6,000	Mattel, Inc.	108,240

	Total Leisure Equipment & Products	667,232
	Life Sciences Tools & Services 0.0%	
1,400	Perkinelmer Inc.	34,958
	Machinery 1.6%	
16,100	Caterpillar Inc.	959,560
15,300	Cummins Inc.	668,916
3,300	Danaher Corporation	229,020
17,900	Deere & Company	886,050
2,700	Illinois Tool Works Inc.	120,015
14,461	Ingersoll Rand Company Limited, Class A	450,749
3,800	Manitowoc Company Inc.	59,090
11,100	PACCAR Inc.	423,909
2,300	Parker Hannifin Corporation	121,900
2,400	Terex Corporation, (2)	73,248
	Total Machinery	3,992,457
	Media 1.5%	
31,600	Comcast Corporation, Class A	620,308
44,800	DIRECTV Group, Inc., (2)	1,172,416
19,300	Interpublic Group Companies, Inc., (2)	149,575
3,800	McGraw-Hill Companies, Inc.	120,118
4,100	New York Times, Class A	58,589
46,100	News Corporation, Class A	552,739
15,100	Scripps Networks Interactive, Class A Shares	548,281
8,200	Viacom Inc., Class B, (2)	203,688
5,100	Walt Disney Company	156,519
100	Washington Post Company	55,676
	Total Media	3,637,909
	Metals & Mining 1.1%	
11,400	AK Steel Holding Corporation	295,488
1,200	Alcoa Inc.	27,096
19,200	CONSOL Energy Inc.	881,088
5,200	Freeport-McMoRan Copper & Gold, Inc.	295,620
6,000	Newmont Mining Corporation	232,560
10,200	Nucor Corporation	402,900
6,400	United States Steel Corporation	496,704

Edgar Filing: Nuveen Core Equity Alpha Fund - Form N-Q

Total Metals & Mining 2,631,456

Multiline Retail 0.1%

3,700 Big Lots, Inc., (2) 102,971
 1,300 Kohl's Corporation, (2) 59,904
 3,100 Target Corporation 152,055

Total Multiline Retail 314,930

Multi-Utilities 0.6%

300 Dominion Resources, Inc. 12,834
 4,000 NiSource Inc. 59,040
 33,900 Public Service Enterprise Group Incorporated 1,111,581
 1,000 Sempra Energy 50,470
 12,600 Xcel Energy, Inc. 251,874

Total Multi-Utilities 1,485,799

Oil, Gas & Consumable Fuels 11.0%

6,700 Apache Corporation 698,676
 8,600 Chesapeake Energy Corporation 308,396
 48,200 Chevron Corporation 3,975,536
 28,300 ConocoPhillips 2,072,975
 5,700 Devon Energy Corporation 519,840
 8,800 EOG Resources, Inc. 787,248
 152,100 Exxon Mobil Corporation 11,812,086
 9,100 Hess Corporation 746,928
 21,600 Marathon Oil Corporation 861,192
 13,400 Massey Energy Company 477,978
 14,800 Murphy Oil Corporation 949,272
 16,800 Occidental Petroleum Corporation 1,183,560
 5,900 Peabody Energy Corporation 265,500
 2,500 Pioneer Natural Resources Company 130,700
 18,300 Range Resources Corporation 784,521
 20,500 Southwestern Energy Company, (2) 626,070
 4,600 Valero Energy Corporation 139,380
 3,400 Williams Companies, Inc. 80,410
 8,450 XTO Energy, Inc. 393,094

Total Oil, Gas & Consumable Fuels 26,813,362

Paper & Forest Products 0.1%

3,700 Weyerhaeuser Company 224,146

Personal Products 0.1%

5,400	Avon Products, Inc.	224,478
1,200	Estee Lauder Companies Inc., Class A	59,892
	Total Personal Products	284,370

Pharmaceuticals 4.4%

31,600	Abbott Laboratories	1,819,528
4,900	Allergan, Inc.	252,350
1,500	Barr Laboratories Inc., (2)	97,950
16,000	Bristol-Myers Squibb Company	333,600
6,600	Eli Lilly and Company	290,598
7,800	Forest Laboratories, Inc., (2)	220,584
35,700	Johnson & Johnson	2,473,296
14,300	King Pharmaceuticals Inc., (2)	136,994
131,100	Merck & Co. Inc.	4,137,516
7,300	Mylan Laboratories Inc., (2)	83,366
40,200	Pfizer Inc.	741,288
4,300	Schering-Plough Corporation	79,421
2,500	Watson Pharmaceuticals Inc., (2)	71,250
1,300	Wyeth	48,022
	Total Pharmaceuticals	10,785,763

Real Estate 2.5%

15,573	Apartment Investment & Management Company, Class A	545,366
700	AvalonBay Communities, Inc.	68,894
5,000	Boston Properties, Inc.	468,300
2,000	Developers Diversified Realty Corporation	63,380
16,500	Equity Residential	732,765
31,500	Health Care Property Investors Inc.	1,264,095
7,700	Kimco Realty Corporation	284,438
7,900	Plum Creek Timber Company	393,894
7,900	ProLogis	326,033
12,400	Public Storage, Inc.	1,227,724
6,200	Simon Property Group, Inc.	601,400
	Total Real Estate	5,976,289

Real Estate Management & Development 0.1%

9,300	CB Richard Ellis Group, Inc., Class A, (2)	124,341
-------	--	---------

Road & Rail 1.5%

9,200	Burlington Northern Santa Fe Corporation	850,356
17,000	CSX Corporation	927,690
9,200	Norfolk Southern Corporation	609,132
9,400	Ryder System, Inc.	582,800
10,400	Union Pacific Corporation	740,064
	Total Road & Rail	3,710,042

Semiconductors & Equipment 1.2%

9,300	Advanced Micro Devices, Inc., (2)	48,825
2,300	Analog Devices, Inc.	60,605
6,700	Applied Materials, Inc.	101,371
68,000	Intel Corporation	1,273,640
100	KLA-Tencor Corporation	3,165
1,000	Linear Technology Corporation	30,660
46,200	LSI Logic Corporation, (2)	247,632
4,600	Microchip Technology Incorporated	135,378
15,500	Micron Technology, Inc., (2)	62,775
24,300	QLogic Corporation, (2)	373,248
19,500	Teradyne Inc., (2)	152,295
11,700	Texas Instruments Incorporated	251,550
6,700	Xilinx, Inc.	157,115
	Total Semiconductors & Equipment	2,898,259

Software 2.8%

1,300	Adobe Systems Incorporated, (2)	51,311
11,200	Akamai Technologies, Inc., (2)	195,328
14,600	BMC Software, Inc., (2)	417,998
2,500	CA Inc.	49,900
5,100	Compuware Corporation, (2)	49,419
2,900	Electronic Arts Inc. (EA), (2)	107,271
12,000	Intuit Inc., (2)	379,320
99,700	Microsoft Corporation	2,660,993
75,300	Oracle Corporation, (2)	1,529,343
3,600	Salesforce.com, Inc., (2)	174,240
40,400	Symantec Corporation, (2)	791,032
18,800	VeriSign, Inc., (2)	490,304
	Total Software	6,896,459

Specialty Retail 2.0%

Edgar Filing: Nuveen Core Equity Alpha Fund - Form N-Q

8,700	Abercrombie & Fitch Co., Class A	343,215
9,800	AutoNation Inc., (2)	110,152
2,400	AutoZone, Inc., (2)	296,016
7,400	Bed Bath and Beyond Inc., (2)	232,434
11,500	Best Buy Co., Inc.	431,250
22,400	GameStop Corporation, (2)	766,304
32,800	Gap, Inc.	583,184
7,800	Home Depot, Inc.	201,942
7,600	Lowe's Companies, Inc.	180,044
9,000	Office Depot, Inc., (2)	52,380
25,400	Staples, Inc.	571,500
8,000	Tiffany & Co.	284,160
26,800	TJX Companies, Inc.	817,936
	Total Specialty Retail	4,870,517

Textiles, Apparel & Luxury Goods 1.1%

11,800	Coach, Inc., (2)	295,472
6,400	Jones Apparel Group, Inc.	118,464
24,300	Nike, Inc., Class B	1,625,670
900	Polo Ralph Lauren Corporation	59,976
7,400	VF Corporation	572,094
	Total Textiles, Apparel & Luxury Goods	2,671,676

Thrifts & Mortgage Finance 0.8%

99,800	Hudson City Bancorp, Inc.	1,841,310
18,500	Washington Mutual, Inc., (2)	1,517
	Total Thrifts & Mortgage Finance	1,842,827

Tobacco 0.7%

33,700	Altria Group, Inc.	668,608
800	Lorillard Inc.	56,920
17,900	Philip Morris International	860,990
1,000	UST Inc.	66,540
	Total Tobacco	1,653,058

Trading Companies & Distributors 0.0%

500	W.W. Grainger, Inc.	43,485
-----	---------------------	--------

Wireless Telecommunication Services 0.0%

2,000	American Tower Corporation, (2)				71,940
	Total Common Stocks (cost \$258,164,478)				233,631,712

**Principal
Amount
(000)**

Description (1)	Coupon	Maturity	Rating (3)	Value
------------------------	---------------	-----------------	-------------------	--------------

Short-Term Investments 6.6%**U.S. Government and Agency Obligations 2.5%**

\$ 6,000	U.S. Treasury Bills (4)	0.000%	10/16/08	Aaa	\$ 5,996,535
----------	-------------------------	--------	----------	-----	--------------

Repurchase Agreements 4.1%

10,014	Repurchase Agreement with State Street Bank, dated 9/30/08, repurchase price \$1,013,690, collateralized by \$10,220,000 U.S. Treasury Bills, 0.000%, due 12/18/08, value \$10,214,890	0.100%	10/01/08	N/A	10,013,662
--------	--	--------	----------	-----	------------

\$ 16,014	Total Short-Term Investments (cost \$16,010,197)				16,010,197
-----------	---	--	--	--	-------------------

	Total Investments (cost \$274,174,675)				249,641,909
	102.5%				

Number of Contracts	Type	Notional Amount (5)	Expiration Date	Strike Price	Value
	Call Options Written (0.8)%				
(694,335)	Custom Basket 9 NASDAQ	\$ (69,433,527)	10/18/08	\$100.0	\$ (334,323)
(658,646)	Custom Basket 4 NASDAQ	(65,864,621)	10/18/08	100.0	(1,734,281)
(1,352,981)	Total Call Options Written (premiums received \$3,904,763)	(135,298,148)			(2,068,604)
	Other Assets Less Liabilities (1.7)%				(4,080,307)
	Net Assets 100%				\$ 243,492,998

Futures Contracts Outstanding at September 30, 2008:

Type	Contract Position	Number of Contracts	Contract Expiration	Unrealized	
				Value at September 30, 2008	Appreciation (Depreciation)
S&P 500 Index	Long	150	12/08	\$ 8,767,500	\$ 43,050

- (1) All percentages shown in Portfolio of Investments are based on net assets.
- (2) Non-income producing.
- (3) Rating Using the higher of Standard & Poor's Group (Standard & Poor's) or Moody's Investor Service, Inc. (Moody's) rating. Ratings below BBB by Standard & Poor's or Baa by Moody's are considered to be below investment grade.
- (4) Portion of investment has been pledged to collateralize the net payment obligations under call options written.
- (5) For disclosure purposes, Notional Amount is calculated by multiplying the Number of Contracts by the Strike Price.

N/A Not applicable/not available.

Fair Value Measurements

During the current fiscal period, the Fund adopted the provisions of Statement of Financial Accounting Standards No. 157 (SFAS No. 157), Fair Value Measurements. SFAS No. 157 defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles, and expands disclosure about 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.

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, 2008:

	Level 1	Level 2	Level 3	Total
Investments	\$ 249,641,909	\$	\$	\$ 249,641,909
Derivatives*	43,050			43,050
Call options written		(2,068,604)		(2,068,604)
Total	\$ 249,684,959	\$ (2,068,604)	\$	\$ 247,616,355

* Represents net unrealized appreciation (depreciation).

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 the recognition of unrealized gain or loss for tax (mark-to-market) on futures contracts and timing differences in recognizing certain gains and losses on investment transactions. 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, 2008, the cost of investments was \$274,783,394.

Gross unrealized appreciation and gross unrealized depreciation of investments at September 30, 2008, were as follows:

Gross unrealized:	
Appreciation	\$ 8,711,313
Depreciation	(33,852,798)
Net unrealized appreciation (depreciation) of investments	 \$ (25,141,485)

Table of Contents

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.

Table of Contents

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 28, 2008

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 28, 2008

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

Date November 28, 2008

* Print the name and title of each signing officer under his or her signature.