

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 |
|-------|-------------------|--------|

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 |

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

| | | |
|--------|---------------------------|------------------|
| 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 |

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

| | | |
|---------|--|------------|
| | 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% | |

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

| | | |
|--------|---------------------------------------|---------|
| 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 |

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

Total Food & Staples Retailing 915,678

Food Products 4.6%

| | | |
|---------|---|-------------------|
| 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 |

Gas Utilities 0.5%

| | | |
|--------|----------------------------|------------------|
| 1,200 | Nicor Inc. | 64,440 |
| 17,800 | ONEOK, Inc. | 1,190,464 |
| | Total Gas Utilities | 1,254,904 |

Health Care Equipment & Supplies 2.4%

| | | |
|--------|---|------------------|
| 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 |

Health Care Providers & Services 4.9%

| | | |
|---------|--|-----------|
| 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 |

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

| | | |
|--------|---|-----------|
| 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 |
|--------|--------------|-----------|

Life Sciences Tools & Services 0.8%

| | | |
|--------|---------------------------------|-----------|
| 41,400 | Agilent Technologies, Inc., (2) | 1,853,892 |
|--------|---------------------------------|-----------|

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 |
|--------|----------------------------|---------|

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 |
| | Pharmaceuticals 2.0% | |
| 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 |
| | Professional Services 0.1% | |
| 4,000 | Equifax Inc. | 155,400 |
| | Real Estate Investment Trust 1.1% | |
| 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 |
| | Real Estate Management & Development 0.1% | |
| 6,300 | CB Richard Ellis Group, Inc., Class A, (2) | 168,210 |
| | Road & Rail 0.1% | |
| 3,200 | Union Pacific Corporation | 314,656 |
| | Semiconductors & Equipment 1.4% | |
| 8,800 | Altera Corporation | 387,376 |

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

| | | |
|--------|--------------------------------|-----------|
| 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%

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

| | | |
|--------|-----------------------------|-----------|
| 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 |
|--------|---------------------------------|-----------|

Total Common Stocks (cost \$180,564,949) 230,663,619

| Principal Amount (000) | Description (1) | Coupon | Maturity | Ratings (3) | Value |
|--|---|---------------|-----------------|--------------------|-----------------------|
| Short-Term Investments 4.8% | | | | | |
| U.S. Government and Agency Obligations 0.9% | | | | | |
| \$ 2,000 | U.S. Treasury Bills (4) | 0.000% | 4/14/11 | AAA | \$ 1,999,972 |
| Repurchase Agreements 3.9% | | | | | |
| 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 |
| \$ 11,345 | Total Short-Term Investments (cost \$11,345,246) | | | | 11,345,318 |
| | Total Investments (cost \$191,910,195) 101.7% | | | | 242,008,937 |
| | Other Assets Less Liabilities (1.7)% (5) | | | | (4,147,626) |
| | Net Assets 100% | | | | \$ 237,861,311 |

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

| Number of Contracts | Type | Notional Amount (6) | Expiration Date | Strike Price | Value |
|---------------------|---|------------------------|-----------------|--------------|---------------------|
| | Call Options Written | | | | |
| (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) |
| (966,898) | Total Call Options Written (premiums received \$962,648) | \$ (96,689,807) | | | \$ (506,456) |

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) |

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

| | | | | |
|--------------------|---------------|---------------|----|---------------|
| 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 |

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

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.

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 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