

Nuveen Core Equity Alpha Fund
Form N-Q
November 29, 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: 9/30/2012

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)
 September 30, 2012

| Shares | Description (1) | Value |
|---------|---|------------|
| | Common Stocks 98.0% | |
| | Aerospace & Defense 0.6% | |
| 2,600 | Honeywell International Inc. | \$ 155,350 |
| 400 | Northrop Grumman Corporation | 26,572 |
| 1,100 | Precision Castparts Corporation | 179,674 |
| 4,300 | Raytheon Company | 245,788 |
| 29,900 | Textron Inc. | 782,483 |
| | Total Aerospace & Defense | 1,389,867 |
| | Air Freight & Logistics 0.2% | |
| 4,900 | FedEx Corporation | 414,638 |
| | Airlines 0.1% | |
| 14,900 | Southwest Airlines Co. | 130,673 |
| | Automobiles 0.1% | |
| 7,100 | Harley-Davidson, Inc. | 300,827 |
| | Beverages 1.3% | |
| 23,700 | Beam Inc. | 1,363,698 |
| 6,900 | Brown-Forman Corporation | 450,225 |
| 11,000 | Coca-Cola Company | 417,230 |
| 8,400 | Dr. Pepper Snapple Group | 374,052 |
| 1,300 | Molson Coors Brewing Company, Class B | 58,565 |
| 7,800 | Monster Beverage Corporation, (2) | 422,448 |
| 3,200 | PepsiCo, Inc. | 226,464 |
| | Total Beverages | 3,312,682 |
| | Biotechnology 1.4% | |
| 8,000 | Alexion Pharmaceuticals Inc., (2) | 915,200 |
| 2,300 | Amgen Inc. | 193,936 |
| 14,700 | Biogen Idec Inc., (2) | 2,193,681 |
| 2,400 | Gilead Sciences, Inc., (2) | 159,192 |
| | Total Biotechnology | 3,462,009 |
| | Building Products 0.1% | |
| 10,300 | Masco Corporation | 155,015 |
| | Capital Markets 0.8% | |
| 2,400 | Ameriprise Financial, Inc. | 136,056 |
| 600 | BlackRock Inc. | 106,980 |
| 5,200 | Charles Schwab Corporation | 66,508 |
| 7,400 | E*Trade Group Inc., (2) | 65,194 |
| 18,800 | Federated Investors Inc. | 388,972 |
| 600 | Goldman Sachs Group, Inc. | 68,208 |
| 26,700 | Invesco LTD | 667,233 |
| 4,200 | Legg Mason, Inc. | 103,656 |
| 15,500 | Morgan Stanley | 259,470 |
| 1,200 | State Street Corporation | 50,352 |
| | Total Capital Markets | 1,912,629 |
| | Chemicals 4.4% | |
| 12,700 | Airgas, Inc. | 1,045,210 |
| 6,400 | E.I. Du Pont de Nemours and Company | 321,728 |
| 31,600 | Eastman Chemical Company | 1,801,516 |
| 3,100 | Ecolab Inc. | 200,911 |
| 37,900 | FMC Corporation | 2,098,902 |
| 5,900 | LyondellBasell Industries NV | 304,794 |
| 800 | Monsanto Company | 72,816 |
| 6,800 | PPG Industries, Inc. | 780,912 |
| 27,700 | Sherwin-Williams Company | 4,124,807 |
| | Total Chemicals | 10,751,596 |
| | Commercial Banks 2.7% | |
| 116,800 | BB&T Corporation | 3,873,088 |
| 5,600 | Fifth Third Bancorp. | 86,856 |
| 14,500 | First Horizon National Corporation | 139,635 |
| 700 | M&T Bank Corporation | 66,612 |

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|---------|--|------------|
| 139,100 | Regions Financial Corporation | 1,002,911 |
| 3,200 | SunTrust Banks, Inc. | 90,464 |
| 11,500 | U.S. Bancorp | 394,450 |
| 30,050 | Wells Fargo & Company | 1,037,627 |
| | Total Commercial Banks | 6,691,643 |
| | Commercial Services & Supplies 0.4% | |
| 19,600 | Cintas Corporation | 812,420 |
| 8,200 | R.R. Donnelley & Sons Company | 86,920 |
| 2,100 | Waste Management, Inc. | 67,368 |
| | Total Commercial Services & Supplies | 966,708 |
| | Communications Equipment 0.6% | |
| 23,100 | Cisco Systems, Inc. | 440,979 |
| 6,800 | F5 Networks, Inc., (2) | 711,960 |
| 1,500 | Harris Corporation | 76,830 |
| 7,028 | Motorola Solutions Inc. | 355,265 |
| | Total Communications Equipment | 1,585,034 |
| | Computers & Peripherals 4.9% | |
| 14,700 | Apple, Inc., (2) | 9,808,722 |
| 6,700 | Dell Inc., (2) | 66,062 |
| 3,600 | EMC Corporation, (2) | 98,172 |
| 12,900 | NetApp, Inc., (2) | 424,152 |
| 16,800 | Seagate Technology | 520,800 |
| 27,700 | Western Digital Corporation, (2) | 1,072,821 |
| | Total Computers & Peripherals | 11,990,729 |
| | Construction Materials 0.2% | |
| 11,200 | Vulcan Materials Company | 529,760 |
| | Consumer Finance 0.6% | |
| 37,800 | Discover Financial Services | 1,501,794 |
| | Distributors 0.6% | |
| 26,500 | Genuine Parts Company | 1,617,295 |
| | Diversified Consumer Services 0.2% | |
| 25,300 | H & R Block Inc. | 438,449 |
| | Diversified Financial Services 0.6% | |
| 16,600 | Bank of America Corporation | 146,578 |
| 800 | Citigroup Inc. | 26,176 |
| 3,000 | CME Group, Inc. | 171,900 |
| 10,205 | JP Morgan Chase & Co. | 413,098 |
| 10,100 | Moody's Corporation | 446,117 |
| 6,500 | New York Stock Exchange Euronext | 160,225 |
| | Total Diversified Financial Services | 1,364,094 |
| | Diversified Telecommunication Services 1.1% | |
| 17,100 | AT&T Inc. | 644,670 |
| 34,770 | CenturyLink Inc. | 1,404,708 |
| 13,800 | Verizon Communications Inc. | 628,866 |
| | Total Diversified Telecommunication Services | 2,678,244 |
| | Electric Utilities 3.1% | |
| 1,700 | American Electric Power Company, Inc. | 74,698 |
| 51,556 | Duke Energy Corporation | 3,340,829 |
| 1,300 | Edison International | 59,397 |
| 11,700 | FirstEnergy Corp. | 515,970 |
| 10,800 | NextEra Energy Inc. | 759,564 |
| 28,500 | Pinnacle West Capital Corporation | 1,504,800 |
| 3,000 | PPL Corporation | 87,150 |
| 14,300 | Southern Company | 659,087 |
| 15,200 | Xcel Energy, Inc. | 421,192 |
| | Total Electric Utilities | 7,422,687 |
| | Electrical Equipment 0.8% | |
| 3,800 | Cooper Industries Inc. | 285,228 |
| 500 | Emerson Electric Company | 24,135 |
| 4,300 | Rockwell Automation, Inc. | 299,065 |
| 11,500 | Roper Industries Inc. | 1,263,735 |
| | Total Electrical Equipment | 1,872,163 |
| | Electronic Equipment & Instruments 0.3% | |
| 9,000 | Amphenol Corporation, Class A | 529,920 |
| 13,900 | Jabil Circuit Inc. | 260,208 |
| | Total Electronic Equipment & Instruments | 790,128 |
| | Energy Equipment & Services 1.0% | |
| 2,400 | Diamond Offshore Drilling, Inc. | 157,944 |
| 3,500 | EnSCO PLC | 190,960 |
| 7,600 | Nabors Industries Inc., (2) | 106,628 |

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| 20,700 | National-Oilwell Varco Inc. | 1,658,277 |
| 2,300 | Noble Corporation, (2) | 82,294 |
| 3,700 | Rowan Companies Inc., (2) | 124,949 |
| 842 | Schlumberger Limited | 60,902 |
| | Total Energy Equipment & Services | 2,381,954 |
| | Food & Staples Retailing 0.5% | |
| 1,300 | Costco Wholesale Corporation | 130,163 |
| 3,400 | CVS Caremark Corporation | 164,628 |
| 13,500 | Safeway Inc. | 217,215 |
| 2,500 | Sysco Corporation | 78,175 |
| 3,400 | Wal-Mart Stores, Inc. | 250,920 |
| 2,900 | Whole Foods Market, Inc. | 282,460 |
| | Total Food & Staples Retailing | 1,123,561 |
| | Food Products 2.4% | |
| 3,700 | Campbell Soup Company | 128,834 |
| 15,400 | ConAgra Foods, Inc. | 424,886 |
| 27,000 | Dean Foods Company, (2) | 441,450 |
| 4,900 | General Mills, Inc. | 195,265 |
| 7,600 | H.J. Heinz Company | 425,220 |
| 14,200 | Hershey Foods Corporation | 1,006,638 |
| 20,400 | Kraft Foods Inc. | 843,540 |
| 15,400 | JM Smucker Company | 1,329,482 |
| 1,200 | Kellogg Company | 61,992 |
| 11,300 | McCormick & Company, Incorporated | 701,052 |
| 3,700 | Mead Johnson Nutrition Company, Class A Shares | 271,136 |
| | Total Food Products | 5,829,495 |
| | Gas Utilities 1.1% | |
| 52,900 | ONEOK, Inc. | 2,555,599 |
| | Health Care Equipment & Supplies 0.9% | |
| 700 | Baxter International, Inc. | 42,182 |
| 1,100 | Becton, Dickinson and Company | 86,416 |
| 20,500 | Boston Scientific Corporation, (2) | 117,670 |
| 1,300 | C. R. Bard, Inc. | 136,045 |
| 1,300 | Edwards Lifesciences Corporation, (2) | 139,581 |
| 2,800 | Intuitive Surgical, Inc., (2) | 1,387,764 |
| 3,800 | Medtronic, Inc. | 163,856 |
| 2,100 | Saint Jude Medical Inc. | 88,473 |
| 1,500 | Varian Medical Systems, Inc., (2) | 90,480 |
| | Total Health Care Equipment & Supplies | 2,252,467 |
| | Health Care Providers & Services 1.4% | |
| 3,400 | Aetna Inc. | 134,640 |
| 18,100 | Coventry Health Care, Inc. | 754,589 |
| 2,700 | Davita Inc., (2) | 279,747 |
| 1,867 | Express Scripts, Holding Company, (2) | 117,005 |
| 2,800 | Humana Inc. | 196,420 |
| 1,600 | Laboratory Corporation of America Holdings, (2) | 147,952 |
| 7,900 | McKesson HBOC Inc. | 679,637 |
| 800 | Quest Diagnostics Incorporated | 50,744 |
| 16,900 | UnitedHealth Group Incorporated | 936,429 |
| 1,300 | Wellpoint Inc. | 75,413 |
| | Total Health Care Providers & Services | 3,372,576 |
| | Health Care Technology 0.4% | |
| 12,700 | Cerner Corporation, (2) | 983,107 |
| | Hotels, Restaurants & Leisure 3.7% | |
| 23,200 | Marriott International, Inc., Class A | 907,120 |
| 18,400 | McDonald's Corporation | 1,688,200 |
| 44,600 | Starbucks Corporation | 2,263,450 |
| 50,900 | Wyndham Worldwide Corporation | 2,671,232 |
| 22,300 | YUM! Brands, Inc. | 1,479,382 |
| | Total Hotels, Restaurants & Leisure | 9,009,384 |
| | Household Durables 1.9% | |
| 71,900 | D.R. Horton, Inc. | 1,484,016 |
| 46,900 | Lennar Corporation, Class A | 1,630,713 |
| 48,100 | Newell Rubbermaid Inc. | 918,229 |
| 5,500 | Whirlpool Corporation | 456,005 |
| | Total Household Durables | 4,488,963 |
| | Household Products 0.8% | |
| 3,700 | Clorox Company | 266,585 |
| 6,700 | Colgate-Palmolive Company | 718,374 |
| 7,100 | Kimberly-Clark Corporation | 609,038 |

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| 4,100 | Procter & Gamble Company | 284,376 |
| | Total Household Products | 1,878,373 |
| | Independent Power Producers & Energy Traders 0.0% | |
| 3,700 | NRG Energy Inc., (2) | 79,143 |
| | Industrial Conglomerates 0.3% | |
| 27,500 | General Electric Company | 624,525 |
| | Insurance 3.4% | |
| 1,400 | Ace Limited | 105,840 |
| 15,700 | AFLAC Incorporated | 751,716 |
| 36,900 | Allstate Corporation | 1,461,609 |
| 6,600 | American International Group, (2) | 216,414 |
| 17,300 | AON PLC | 904,617 |
| 7,100 | Assurant Inc. | 264,830 |
| 700 | Berkshire Hathaway Inc., Class B, (2) | 61,740 |
| 9,500 | Chubb Corporation | 724,660 |
| 45,300 | Cincinnati Financial Corporation | 1,716,417 |
| 5,600 | Lincoln National Corporation | 135,464 |
| 2,300 | Principal Financial Group, Inc. | 61,962 |
| 2,200 | Progressive Corporation | 45,628 |
| 14,850 | Torchmark Corporation | 762,548 |
| 15,000 | Travelers Companies, Inc. | 1,023,900 |
| | Total Insurance | 8,237,345 |
| | Internet & Catalog Retail 1.2% | |
| 24,300 | Expedia, Inc. | 1,405,512 |
| 5,000 | NetFlix.com Inc., (2) | 272,200 |
| 1,200 | priceline.com Incorporated, (2) | 742,476 |
| 11,200 | TripAdvisor Inc., (2) | 368,816 |
| | Total Internet & Catalog Retail | 2,789,004 |
| | Internet Software & Services 2.3% | |
| 9,500 | Akamai Technologies, Inc., (2) | 363,470 |
| 20,300 | eBay Inc., (2) | 982,723 |
| 5,100 | Google Inc., Class A, (2) | 3,847,950 |
| 3,400 | VeriSign, Inc., (2) | 165,546 |
| 6,000 | Yahoo! Inc., (2) | 95,850 |
| | Total Internet Software & Services | 5,455,539 |
| | IT Services 4.4% | |
| 10,500 | Accenture Limited | 735,315 |
| 3,800 | Automatic Data Processing, Inc. | 222,908 |
| 30,900 | Cognizant Technology Solutions Corporation, Class A, (2) | 2,160,528 |
| 71,300 | Fidelity National Information Services | 2,225,986 |
| 3,100 | Fiserv, Inc., (2) | 229,493 |
| 12,100 | International Business Machines Corporation (IBM) | 2,510,145 |
| 600 | MasterCard, Inc. | 270,888 |
| 7,800 | Paychex, Inc. | 259,662 |
| 7,200 | SAIC, Inc. | 86,688 |
| 4,400 | Teradata Corporation, (2) | 331,804 |
| 12,500 | Total System Services Inc. | 296,250 |
| 9,600 | Visa Inc. | 1,289,088 |
| | Total IT Services | 10,618,755 |
| | Leisure Equipment & Products 0.0% | |
| 1,500 | Mattel, Inc. | 53,220 |
| | Life Sciences Tools & Services 0.6% | |
| 800 | Agilent Technologies, Inc. | 30,760 |
| 1,500 | Life Technologies Corporation, (2) | 73,320 |
| 46,300 | Perkinelmer Inc. | 1,364,461 |
| 900 | Thermo Fisher Scientific, Inc. | 52,947 |
| | Total Life Sciences Tools & Services | 1,521,488 |
| | Machinery 2.8% | |
| 27,300 | Caterpillar Inc. | 2,348,892 |
| 3,300 | Cummins Inc. | 304,293 |
| 20,800 | Eaton Corporation | 983,008 |
| 3,100 | Flowserve Corporation | 395,994 |
| 3,700 | Illinois Tool Works, Inc. | 220,039 |
| 4,200 | Ingersoll Rand Company Limited, Class A | 188,244 |
| 20,900 | Pall Corporation | 1,326,941 |
| 12,087 | Stanley Black & Decker Inc. | 921,634 |
| | Total Machinery | 6,689,045 |
| | Media 5.7% | |
| 31,400 | CBS Corporation, Class B | 1,140,762 |
| 97,700 | Comcast Corporation, Class A | 3,494,729 |

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| 31,100 | DirecTV | 1,631,506 |
| 2,900 | Discovery Communications inc., Class A Shares, (2) | 172,927 |
| 72,800 | Gannett Company Inc. | 1,292,200 |
| 3,000 | McGraw-Hill Companies, Inc. | 163,770 |
| 8,500 | News Corporation, Class A | 208,505 |
| 15,500 | Scripps Networks Interactive, Class A Shares | 949,065 |
| 5,600 | Time Warner Cable, Class A | 532,336 |
| 17,000 | Time Warner Inc. | 770,610 |
| 8,000 | Viacom Inc., Class B | 428,720 |
| 57,100 | Walt Disney Company | 2,985,188 |
| | Total Media | 13,770,318 |
| | Metals & Mining 0.3% | |
| 12,500 | Nucor Corporation | 478,250 |
| 7,000 | United States Steel Corporation | 133,490 |
| | Total Metals & Mining | 611,740 |
| | Multiline Retail 0.7% | |
| 1,800 | Big Lots, Inc., (2) | 53,244 |
| 4,300 | Dollar Tree Stores Inc., (2) | 207,583 |
| 2,300 | Family Dollar Stores, Inc. | 152,490 |
| 6,700 | J.C. Penney Company, Inc., (2) | 162,743 |
| 30,300 | Macy's, Inc. | 1,139,886 |
| | Total Multiline Retail | 1,715,946 |
| | Multi-Utilities 3.6% | |
| 30,700 | Ameren Corporation | 1,002,969 |
| 2,800 | CenterPoint Energy, Inc. | 59,640 |
| 38,900 | CMS Energy Corporation | 916,095 |
| 22,100 | Consolidated Edison, Inc. | 1,323,569 |
| 15,800 | Dominion Resources, Inc. | 836,452 |
| 9,600 | DTE Energy Company | 575,424 |
| 1,200 | Integrus Energy Group, Inc. | 62,640 |
| 71,200 | NiSource Inc. | 1,814,176 |
| 1,900 | PG&E Corporation | 81,073 |
| 2,500 | Public Service Enterprise Group Incorporated | 80,450 |
| 4,700 | Scana Corporation | 226,869 |
| 12,900 | Sempra Energy | 831,921 |
| 3,800 | TECO Energy, Inc. | 67,412 |
| 22,800 | Wisconsin Energy Corporation | 858,876 |
| | Total Multi-Utilities | 8,737,566 |
| | Oil, Gas & Consumable Fuels 6.0% | |
| 10,800 | Alpha Natural Resources Inc., (2) | 70,956 |
| 7,700 | Chevron Corporation | 897,512 |
| 4,400 | ConocoPhillips | 251,592 |
| 3,600 | Devon Energy Corporation | 217,800 |
| 33,500 | Exxon Mobil Corporation | 3,063,575 |
| 39,612 | Kinder Morgan, Inc. | 1,407,018 |
| 27,900 | Marathon Oil Corporation | 825,003 |
| 4,850 | Marathon Petroleum Corporation | 264,762 |
| 2,800 | Peabody Energy Corporation | 62,412 |
| 5,050 | Phillips 66 | 234,169 |
| 12,000 | Pioneer Natural Resources Company | 1,252,800 |
| 4,200 | QEP Resources Inc. | 132,972 |
| 1,000 | Range Resources Corporation | 69,870 |
| 46,400 | Spectra Energy Corporation | 1,362,304 |
| 35,100 | Sunoco, Inc. | 1,643,733 |
| 4,000 | Tesoro Corporation, (2) | 167,600 |
| 3,600 | Valero Energy Corporation | 114,048 |
| 71,300 | Williams Companies, Inc. | 2,493,361 |
| | Total Oil, Gas, & Consumable Fuels | 14,531,487 |
| | Paper & Forest Products 0.1% | |
| 9,700 | International Paper Company | 352,304 |
| | Personal Products 0.7% | |
| 28,100 | Estee Lauder Companies Inc., Class A | 1,730,117 |
| | Pharmaceuticals 2.0% | |
| 7,900 | Abbott Laboratories | 541,624 |
| 3,000 | Allergan, Inc. | 274,740 |
| 58,800 | Bristol-Myers Squibb Company | 1,984,500 |
| 17,400 | Eli Lilly and Company | 824,934 |
| 3,000 | Hospira Inc., (2) | 98,460 |
| 1,400 | Johnson & Johnson | 96,474 |
| 18,932 | Merck & Company Inc. | 853,833 |

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| 5,900 | Pfizer Inc. | 146,615 |
| 700 | Watson Pharmaceuticals Inc., (2) | 59,612 |
| | Total Pharmaceuticals | 4,880,792 |
| | Professional Services 1.0% | |
| 9,900 | Dun and Bradstreet Inc. | 788,238 |
| 32,200 | Equifax Inc. | 1,499,876 |
| 7,900 | Robert Half International Inc. | 210,377 |
| | Total Professional Services | 2,498,491 |
| | Real Estate Investment Trust 2.1% | |
| 15,100 | American Tower REIT Inc. | 1,077,989 |
| 4,000 | AvalonBay Communities, Inc. | 543,960 |
| 4,200 | Boston Properties, Inc. | 464,562 |
| 2,200 | Equity Residential | 126,566 |
| 2,000 | Health Care Property Investors Inc. | 88,960 |
| 6,800 | Public Storage, Inc. | 946,356 |
| 8,800 | Simon Property Group, Inc. | 1,335,928 |
| 3,100 | Ventas Inc. | 192,975 |
| 12,500 | Weyerhaeuser Company | 326,750 |
| | Total Real Estate Investment Trust | 5,104,046 |
| | Road & Rail 0.2% | |
| 2,700 | CSX Corporation | 56,025 |
| 3,200 | Union Pacific Corporation | 379,840 |
| | Total Road & Rail | 435,865 |
| | Semiconductors & Equipment 1.3% | |
| 46,300 | Intel Corporation | 1,050,084 |
| 9,100 | KLA-Tencor Corporation | 434,116 |
| 11,000 | Lam Research Corporation, (2) | 349,635 |
| 109,700 | LSI Logic Corporation, (2) | 758,027 |
| 27,600 | Micron Technology, Inc., (2) | 165,186 |
| 6,000 | Teradyne Inc., (2) | 85,320 |
| 7,600 | Texas Instruments Incorporated | 209,380 |
| | Total Semiconductors & Equipment | 3,051,748 |
| | Software 1.5% | |
| 1,800 | Adobe Systems Incorporated, (2) | 58,428 |
| 2,500 | BMC Software, Inc., (2) | 103,725 |
| 66,000 | CA Inc. | 1,700,490 |
| 12,100 | Intuit, Inc. | 712,448 |
| 26,900 | Microsoft Corporation | 801,082 |
| 1,700 | Oracle Corporation | 53,533 |
| 5,200 | Red Hat, Inc., (2) | 296,088 |
| | Total Software | 3,725,794 |
| | Specialty Retail 10.7% | |
| 5,100 | AutoZone, Inc., (2) | 1,885,317 |
| 1,800 | Bed Bath and Beyond Inc., (2) | 113,400 |
| 61,800 | Gap, Inc. | 2,211,204 |
| 118,700 | Home Depot, Inc. | 7,165,919 |
| 9,600 | Limited Brands, Inc. | 472,896 |
| 73,200 | Lowe's Companies, Inc. | 2,213,568 |
| 16,700 | O'Reilly Automotive Inc., (2) | 1,396,454 |
| 63,900 | Ross Stores, Inc. | 4,127,940 |
| 139,400 | TJX Companies, Inc. | 6,243,726 |
| | Total Specialty Retail | 25,830,424 |
| | Textiles, Apparel & Luxury Goods 0.5% | |
| 7,500 | VF Corporation | 1,195,200 |
| | Thriffs & Mortgage Finance 0.0% | |
| 14,400 | Hudson City Bancorp, Inc. | 114,624 |
| | Tobacco 3.1% | |
| 50,600 | Altria Group, Inc. | 1,689,534 |
| 7,200 | Lorillard Inc. | 838,440 |
| 26,600 | Philip Morris International | 2,392,404 |
| 61,500 | Reynolds American Inc. | 2,665,410 |
| | Total Tobacco | 7,585,788 |
| | Trading Companies & Distributors 3.5% | |
| 104,200 | Fastenal Company | 4,479,558 |
| 19,000 | W.W. Grainger, Inc. | 3,959,029 |
| | Total Trading Companies & Distributors | 8,438,587 |
| | Wireless Telecommunication Services 0.8% | |
| 30,000 | Crown Castle International Corporation, (2) | 1,922,999 |
| 15,000 | Sprint Nextel Corporation, (2) | 82,799 |
| | Total Wireless Telecommunication Services | 2,005,798 |

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Total Common Stocks (cost \$190,859,766) 237,538,842

| Principal Amount (000) | Description (1) | Coupon | Maturity | Ratings(4) | Value |
|------------------------|---|--------|----------|------------|-----------------------|
| | Short-Term Investments 3.8% | | | | |
| | U.S. Government and Agency Obligations 1.1% | | | | |
| \$ 2,500 | U.S. Treasury Bills, (3) | 0.000% | 2/21/13 | N/R | \$ 2,498,883 |
| | Repurchase Agreements 2.7% | | | | |
| 6,606 | Repurchase Agreement with State Street Bank, dated 9/28/12, repurchase price \$6,606,054, collateralized by \$6,735,000 U.S. Treasury Notes, 0.250%, due 2/28/14, value \$6,739,196 | 0.010% | 10/01/12 | N/A | 6,606,048 |
| \$ 9,106 | Total Short-Term Investments (cost \$9,104,866) | | | | 9,104,931 |
| | Total Investments (cost \$199,964,632) 101.8% | | | | 246,643,773 |
| | Other Assets Less Liabilities (1.8)% (5) | | | | (4,453,119) |
| | Net Assets 100% | | | | \$ 242,190,654 |

Investments in Derivatives at September 30, 2012

Call Options Written Outstanding:

| Number of Contracts | Type | Notional Amount | Expiration Date | Strike Price | Value (5) |
|---------------------|---|-----------------------|-----------------|--------------|-------------------|
| | Call Options (0.0)% | | | | |
| (404,355) | Custom Basket 1 NASDAQ | \$(40,435,496)(6) | 11/05/12 | \$ 104.00 | \$(64,656) |
| (120) | S&P 400 Midcap Index | (12,260,400)(7) | 10/20/12 | 1,021.70 | (2,402) |
| (120) | S&P 400 Midcap Index | (12,432,840)(7) | 10/20/12 | 1,036.07 | (1,009) |
| (150) | S&P 400 Midcap Index | (15,543,600)(7) | 10/20/12 | 1,036.24 | (1,237) |
| (404,745) | Total Call Options Written (premiums received \$347,762) | \$(80,672,336) | | | \$(69,304) |

Future Contracts Outstanding:

| Type | Contract Position | Number of Contracts | Contract Expiration | Value | Unrealized Appreciation (Depreciation) |
|---------------|-------------------|---------------------|---------------------|-------------|--|
| S&P 500 Index | Long | 60 | 12/12 | \$4,302,600 | \$(56,880) |

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 following is a summary of the three-tiered hierarchy of valuation input levels.

Level 1 Inputs are unadjusted and prices are determined using quoted prices in active markets for identical securities.

Level 2 Prices are determined using other significant observable inputs (including quoted prices for similar securities, interest rates, prepayment speeds, credit risk, etc.).

Level 3 Prices are determined using significant unobservable inputs (including management's assumptions in determining the fair value of investments).

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The inputs or methodologies used for valuing securities are not an indication of the risks associated with investing in those securities. The following is a summary of the Fund's fair value measurements as of the end of the reporting period:

| | Level 1 | Level 2 | Level 3 | Total |
|--|---------------|-------------|---------|---------------|
| Long-Term Investments*: | | | | |
| Common Stocks | \$237,538,842 | \$ | \$ | \$237,538,842 |
| Short-Term Investments: | | | | |
| U.S. Government and Agency Obligations | | 2,498,883 | | 2,498,883 |
| Repurchase Agreements | | 6,606,048 | | 6,606,048 |
| Derivatives: | | | | |
| Call Options Written | (4,648) | (64,656) | | (69,304) |
| Futures Contracts** | (56,880) | | | (56,880) |
| Total | \$237,477,314 | \$9,040,275 | \$ | \$246,517,589 |

* Refer to the Fund's Portfolio of Investments for industry classifications.

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

The Nuveen funds' Board of Directors/Trustees is responsible for the valuation process and has delegated the oversight of the daily valuation process to the Adviser's Valuation Committee. The Valuation Committee, pursuant to the valuation policies and procedures adopted by the Board of Directors/Trustees, is responsible for making fair value determinations, evaluating the effectiveness of the funds' pricing policies, and reporting to the Board of Directors/Trustees. The Valuation Committee is aided in its efforts by the Adviser's dedicated Securities Valuation Team, which is responsible for administering the daily valuation process and applying fair value methodologies as approved by the Valuation Committee. When determining the reliability of independent pricing services for investments owned by the funds, the Valuation Committee, among other things, conducts due diligence reviews of the pricing services and monitors the quality of security prices received through various testing reports conducted by the Securities Valuation Team.

The Valuation Committee will consider pricing methodologies it deems relevant and appropriate when making fair value determinations. Examples of possible methodologies include, but are not limited to, multiple of earnings; discount from market of a similar freely traded security; discounted cash-flow analysis; book value or a multiple thereof; risk premium/yield analysis; yield to maturity; and/or fundamental investment analysis. The Valuation Committee will also consider factors it deems relevant and appropriate in light of the facts and circumstances. Examples of possible factors include, but are not limited to, the type of security; the issuer's financial statements; the purchase price of the security; the discount from market value of unrestricted securities of the same class at the time of purchase; analysts' research and observations from financial institutions; information regarding any transactions or offers with respect to the security; the existence of merger proposals or tender offers affecting the security; the price and extent of public trading in similar securities of the issuer or comparable companies; and the existence of a shelf registration for restricted securities.

For each portfolio security that has been fair valued pursuant to the policies adopted by the Board of Directors/Trustees, the fair value price is compared against the last available and next available market quotations. The Valuation Committee reviews the results of such testing and fair valuation occurrences are reported to the Board of Directors/Trustees.

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.

The following table presents the fair value of all derivative instruments held by the Fund as of September 30, 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 |
| Equity Price | Futures contracts | | \$ | Payable for variation margin on futures contracts* | \$ (56,880) |
| Equity Price | Options | | | Call options written, at value | (69,304) |
| Total | | | \$ | | \$ (126,184) |

* Value represents unrealized appreciation (depreciation) of futures contracts as reported in the Fund's Portfolio of Investments.

Income Tax Information

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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 September 30, 2012, the cost of investments (excluding investments in derivatives) was \$200,161,543.

Gross unrealized appreciation and gross unrealized depreciation of investments (excluding investments in derivatives) at September 30, 2012, were as follows:

| | |
|---|---------------|
| Gross unrealized: | |
| Appreciation | \$ 48,303,502 |
| Depreciation | (1,821,272) |
| Net unrealized appreciation (depreciation) of investments | \$ 46,482,230 |

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) Investment, or portion of investment, has been pledged to collateralize the net payment obligations for investments in derivatives.
 - (4) 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.
 - (5) Other Assets Less Liabilities includes Value and the Unrealized Appreciation (Depreciation) of derivative instruments as noted within Investments in Derivatives at September 30, 2012.
 - (6) For disclosure purposes, Notional Amount is calculated by multiplying the Number of Contracts by \$100.
 - (7) For disclosure purposes, Notional Amount is calculated by multiplying the Number of Contracts by the Strike Price by \$100.
- 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: November 29, 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: November 29, 2012

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

Date: November 29, 2012
