

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

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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.

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| 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% | | |

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

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

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

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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%

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| | | |
|--------|----------------------------------|------------------|
| 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) 102.5% | | | | 249,641,909 |
|--|--|--|--|--|--------------------|

| 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) |

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Item 2. Controls and Procedures.

- a. The registrant's principal executive and principal financial officers, or persons performing similar functions, have concluded that the registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940, as amended (the "1940 Act") (17 CFR 270.30a-3(c))) are effective, as of a date within 90 days of the filing date of this report that includes the disclosure required by this paragraph, based on their evaluation of the controls and procedures required by Rule 30a-3(b) under the 1940 Act (17 CFR 270.30a-3(b)) and Rule 13a-15(b) or 15d-15(b) under the Securities Exchange Act of 1934 (17 CFR 240.13a-15(b) or 240.15d-15(b)).
- b. There were no changes in the registrant's internal control over financial reporting (as defined in Rule 30a-3(d) under the 1940 Act (17 CFR 270.30a-3(d))) that occurred during the registrant's last fiscal quarter that have materially affected, or are reasonably likely to materially affect, the registrant's internal control over financial reporting.

Item 3. Exhibits.

File as exhibits as part of this Form a separate certification for each principal executive officer and principal financial officer of the registrant as required by Rule 30a-2(a) under the 1940 Act (17 CFR 270.30a-2(a)), exactly as set forth below: EX-99 CERT Attached hereto.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

(Registrant) Nuveen Core Equity Alpha Fund

By (Signature and Title)* /s/ Kevin J. McCarthy
Kevin J. McCarthy
Vice President and Secretary

Date 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.