

Dreyfus Midcap Index Fund, Inc.

ANNUAL REPORT October 31, 2007



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A BNY Mellon CompanySM

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A LETTER FROM THE CEO

Dear Shareholder:

We are pleased to present this annual report for Dreyfus Midcap Index Fund, Inc., covering the 12-month period from November 1, 2006, through October 31, 2007.

After a prolonged period of relative price stability, volatility has returned to the U.S. stock market. The third quarter of 2007 provided greater swings in stock prices than we've seen on a relative year-to-date basis, as the economic cycle matured and credit concerns spread from the sub-prime mortgage sector of the bond market to other areas of the equity and fixed-income markets. A high degree of leverage within parts of the financial system has made recent price fluctuations more intense than they might be otherwise.

In our view, these developments signaled a shift to a new phase of the credit cycle. Although we expect somewhat slower financial conditions in the aftermath of the credit crisis, lower short-term interest rates from the Federal Reserve Board should help keep credit available to borrowers and forestall a more severe economic downturn. In addition, robust global economic growth may continue to support earnings for many U.S.-based companies. Such market events may indicate that it's a good time to review your portfolio with your financial advisor, who can help you evaluate your investments for a changing market environment.

For information about how the fund performed during the reporting period, as well as market perspectives, we have provided a Discussion of Fund Performance given by the fund's Portfolio Manager.

Thank you for your continued confidence and support.

Sincerely,

Thomas F. Eggers
Chief Executive Officer
The Dreyfus Corporation
November 15, 2007



DISCUSSION OF FUND PERFORMANCE

For the period of November 1, 2006, through October 31, 2007, as provided by Thomas Durante, CFA, Portfolio Manager

Fund and Market Performance Overview

U.S. midcap stocks posted generally favorable returns during the reporting period, with gains fueled by rising mergers-and-acquisitions activity, strong corporate earnings, moderate economic growth and generally stable interest rates. As they have for some time, midsize companies continue to post greater gains than most large- and small-cap companies during the reporting period. Results were particularly attractive in the industrials, materials, energy and information technology sectors. The difference in returns between the fund and the benchmark was primarily the result of transaction costs and operating expenses that are not reflected in the benchmark's results.

For the 12-month period from November 1, 2006, through October 31, 2007, Dreyfus Midcap Index Fund produced a total return of 16.45%.¹ The Standard & Poor's MidCap 400 Index ("S&P 400 Index"), the fund's benchmark, produced a total return of 17.02% for the same period.^{2,3}

The Fund's Investment Approach

The fund seeks to match the total return of the S&P 400 Index by generally investing in all 400 stocks in the S&P 400 Index, in proportion to their respective weightings. The fund may also use stock index futures whose performance is tied to the S&P 400 Index as a substitute for the sale or purchase of stocks. The S&P 400 Index is composed of 400 stocks of midsize domestic companies across 10 economic sectors. Each stock is weighted by its market capitalization; that is, larger companies have greater representation in the S&P 400 Index than smaller ones.

Midcap Stocks with International Ties Flourished

U.S. midcap stocks posted generally attractive returns during the reporting period despite growing pessimism later in the reporting period regarding the direction of the domestic economy. In late February, a higher-than-expected number of delinquencies and defaults among homeowners with sub-prime mortgages resulted in heightened market turbulence. By July, weakness in the sub-prime lending sector had spread to other areas of the financial markets, leading to a summer credit crunch in which investors sold riskier assets, including stocks. The Federal Reserve Board attempted to restore market liquidity and forestall a potential recession by reducing key short-term interest rates in August, September and October, which resulted in a sharp market rebound by the reporting period's end.

The global economy remained robust, however, boosting the fortunes of companies with products needed for infrastructure construction in overseas markets, exporters that are well-positioned to serve a growing middle class of consumers in international markets, and firms poised to improve their global competitiveness in light of the weaker U.S. dollar. For example, exporters with ample exposure to the global economy fared well, including industrial machinery producers and parts suppliers to the aerospace industry and agriculture equipment companies, which flourished due to larger crops of corn and sugar cane to be used in ethanol production. Engineering firms also gained value, most notably those that help build manufacturing facilities, refineries, power plants, major road projects and other infrastructure projects around the world.

Materials stocks also gained ground in an environment of strong global growth. Some of the S&P 400 Index's stronger gains stemmed from metals and mining stocks, including steel, aluminum and iron ore producers as well as granite, limestone and gravel producers and specialty chemicals firms. Energy stocks also advanced during the reporting period, including independent exploration and production companies and manufacturers of fluid control, measurement, loading and blending systems to subsea drilling and production companies.

In the information technology sector, companies that develop electronic components and computer products for government use fared especially well. Such products include wireless network transmission equipment, air traffic control systems, mobile radio systems and digital network broadcasting and management systems. Companies that sell complete lines of hardware suited for the latest version of gaming consoles also flourished amid anticipation of strong holiday sales.

While relatively few industry groups produced disappointing results during the reporting period, banks, consumer finance companies and thrifts generally languished due to the troubled housing market. A number of insurance companies also were hurt, especially those linked to title insurance and homeowner coverages. Consumer stocks produced mixed results, with declines in the homebuilders and apparel retailers offset by gains in certain restaurant chains.

A Diversified Portfolio of Midcap Stocks

An as index fund, we attempt to replicate the returns of the S&P 400 Index by closely approximating the composition of the S&P 400 Index. In our view, one of the benefits of an index fund is that it offers a diversified investment vehicle that can help investors manage the risks of investing in midcap stocks by limiting the impact on the overall portfolio of unexpected losses in any single industry group or holding.

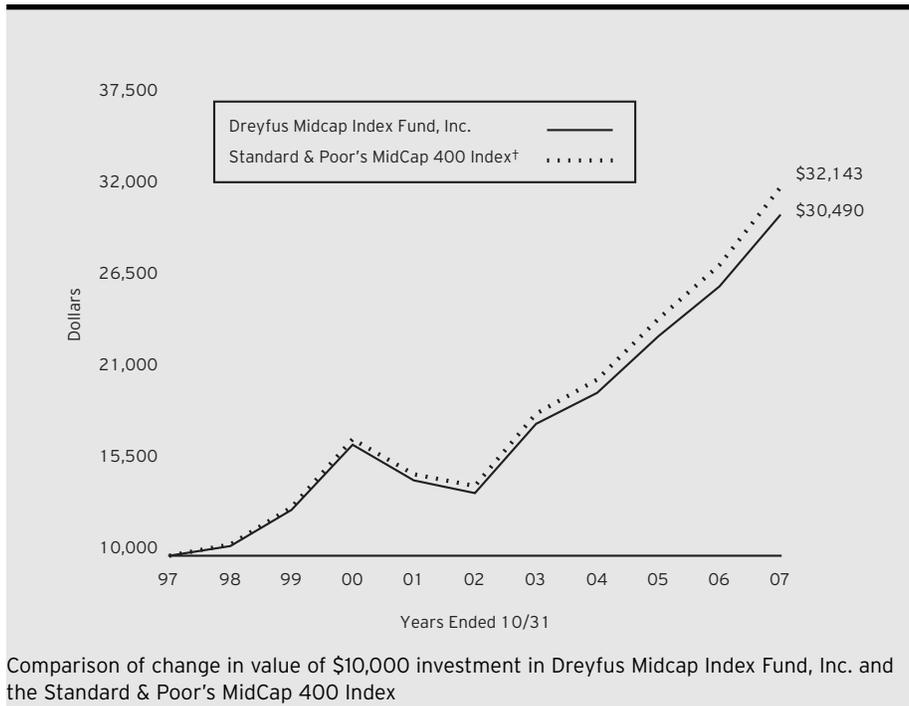
November 15, 2007

¹ *Total return includes reinvestment of dividends and any capital gains paid. Past performance is no guarantee of future results. Share price and investment return fluctuate such that upon redemption, fund shares may be worth more or less than their original cost. Return figure provided reflects the absorption of certain fund expenses by The Dreyfus Corporation pursuant to an agreement in effect that may be extended, terminated or modified. Had these expenses not been absorbed, the fund's return would have been lower.*

² *SOURCE: LIPPER INC. — Reflects reinvestment of dividends and, where applicable, capital gain distributions. The Standard & Poor's MidCap 400 Index is a widely accepted, unmanaged total return index measuring the performance of the midsize company segment of the U.S. market.*

³ *"Standard & Poor's®," "S&P®" and "Standard & Poor's MidCap 400 Index" are trademarks of The McGraw-Hill Companies, Inc., and have been licensed for use by the fund. The fund is not sponsored, endorsed, sold or promoted by Standard & Poor's and Standard & Poor's makes no representation regarding the advisability of investing in the fund.*

FUND PERFORMANCE



Average Annual Total Returns as of 10/31/07

	1 Year	5 Years	10 Years
Fund	16.45%	17.23%	11.79%

† Source: Lipper Inc.

Past performance is not predictive of future performance. The fund's performance shown in the graph and table does not reflect the deduction of taxes that a shareholder would pay on fund distributions or the redemption of fund shares. The above graph compares a \$10,000 investment made in Dreyfus Midcap Index Fund, Inc. on 10/31/97 to a \$10,000 investment made in the Standard & Poor's MidCap 400 Index (the "Index") on that date. All dividends and capital gain distributions are reinvested.

The fund's performance shown in the line graph takes into account all applicable fees and expenses. The Index is a widely accepted, unmanaged total return index measuring the performance of the midsize company segment of the U.S. stock market and does not take into account charges, fees and other expenses. Further information relating to fund performance, including expense reimbursements, if applicable, is contained in the Financial Highlights section of the prospectus and elsewhere in this report.

UNDERSTANDING YOUR FUND'S EXPENSES (Unaudited)

As a mutual fund investor, you pay ongoing expenses, such as management fees and other expenses. Using the information below, you can estimate how these expenses affect your investment and compare them with the expenses of other funds. You also may pay one-time transaction expenses, including sales charges (loads) and redemption fees, which are not shown in this section and would have resulted in higher total expenses. For more information, see your fund's prospectus or talk to your financial adviser.

Review your fund's expenses

The table below shows the expenses you would have paid on a \$1,000 investment in Dreyfus Midcap Index Fund, Inc. from May 1, 2007 to October 31, 2007. It also shows how much a \$1,000 investment would be worth at the close of the period, assuming actual returns and expenses.

Expenses and Value of a \$1,000 Investment	
assuming actual returns for the six months ended October 31, 2007	
Expenses paid per \$1,000†	\$ 2.57
Ending value (after expenses)	\$1,042.70

COMPARING YOUR FUND'S EXPENSES WITH THOSE OF OTHER FUNDS (Unaudited)

Using the SEC's method to compare expenses

The Securities and Exchange Commission (SEC) has established guidelines to help investors assess fund expenses. Per these guidelines, the table below shows your fund's expenses based on a \$1,000 investment, assuming a hypothetical 5% annualized return. You can use this information to compare the ongoing expenses (but not transaction expenses or total cost) of investing in the fund with those of other funds. All mutual fund shareholder reports will provide this information to help you make this comparison. Please note that you cannot use this information to estimate your actual ending account balance and expenses paid during the period.

Expenses and Value of a \$1,000 Investment	
assuming a hypothetical 5% annualized return for the six months ended October 31, 2007	
Expenses paid per \$1,000†	\$ 2.55
Ending value (after expenses)	\$1,022.68

† Expenses are equal to the fund's annualized expense ratio of .50%; multiplied by the average account value over the period, multiplied by 184/365 (to reflect the one-half year period).

STATEMENT OF INVESTMENTS

October 31, 2007

Common Stocks—98.5%	Shares	Value (\$)
Consumer Discretionary—14.2%		
99 Cents Only Stores	95,495 a,b	1,026,571
Advance Auto Parts	215,850	7,364,802
Aeropostale	156,827 a,b	3,591,338
American Eagle Outfitters	437,250	10,397,805
American Greetings, Cl. A	113,195 a	2,981,556
AnnTaylor Stores	126,640 b	3,924,574
Applebee's International	152,450 a	3,863,083
ArvinMeritor	147,038 a	2,180,574
Barnes & Noble	103,190 a	3,987,262
Belo, Cl. A	178,839 a	3,308,521
Blyth	52,250 a	997,452
Bob Evans Farms	71,994 a	2,028,791
Borders Group	119,745 a	1,846,468
BorgWarner	117,885	12,461,623
Boyd Gaming	114,250	4,777,935
Brinker International	213,949 a	5,432,165
Callaway Golf	144,095 a	2,495,725
Career Education	185,600 a,b	6,633,344
CarMax	442,830 a,b	9,241,862
CBRL Group	49,725	1,984,027
Charming Shoppes	249,400 a,b	1,850,548
Cheesecake Factory	146,825 a,b	3,293,285
Chico's FAS	358,110 b	4,705,565
Chipotle Mexican Grill, Cl. A	66,900 b	9,299,100
Coldwater Creek	125,700 a,b	1,125,015
Collective Brands	133,290 a,b	2,464,532
Corinthian Colleges	172,100 a,b	2,820,719
DeVry	121,495 a	6,644,562
Dick's Sporting Goods	168,700 b	5,629,519
Dollar Tree Stores	193,650 a,b	7,416,795
Entercom Communications, Cl. A	53,785 a	997,712
Foot Locker	314,090 a	4,676,800
Furniture Brands International	98,385 a	1,185,539
GameStop, Cl. A	323,600 b	19,163,592
Gentex	292,500 a	6,078,150
Getty Images	96,500 b	2,726,125

Common Stocks (continued)	Shares	Value (\$)
Consumer Discretionary (continued)		
Guess?	111,100	5,709,429
Hanesbrands	195,100 a,b	6,055,904
Harte-Hanks	100,680 a	1,774,988
Hovnanian Enterprises, Cl. A	74,640 a,b	848,657
International Speedway, Cl. A	63,550	2,823,526
ITT Educational Services	60,800 a,b	7,733,152
John Wiley & Sons, Cl. A	90,900 a	3,997,782
Lamar Advertising, Cl. A	166,300 a,b	8,890,398
Lear	156,845 a,b	5,572,703
Lee Enterprises	80,850 a	1,297,643
Life Time Fitness	64,400 a,b	3,905,216
M.D.C. Holdings	70,900 a	2,872,159
Matthews International, Cl. A	63,700 a	2,902,809
Media General, Cl. A	46,000 a	1,287,080
Modine Manufacturing	66,970 a	1,557,722
Mohawk Industries	112,140 a,b	9,570,028
NetFlix	100,500 a,b	2,660,235
NVR	11,100 a,b	5,280,825
O'Reilly Automotive	233,700 a,b	7,716,774
Pacific Sunwear of California	142,400 a,b	2,380,928
PetSmart	273,800 a	8,200,310
Phillips-Van Heusen	114,900	5,492,220
Regis	89,800 a	3,017,280
Rent-A-Center	140,700 a,b	2,251,200
Ross Stores	279,000 a	7,538,580
Ruby Tuesday	105,195 a	1,679,964
Ryland Group	85,100 a	2,419,393
Saks	291,770 a	6,173,853
Scholastic	52,950 a,b	2,095,761
Scientific Games, Cl. A	132,000 a,b	4,771,800
Sotheby's	134,727 a	7,298,162
Strayer Education	29,500 a	5,500,570
Thor Industries	70,385 a	3,378,480
Timberland, Cl. A	102,250 a,b	1,994,897
Toll Brothers	258,390 a,b	5,919,715
Tupperware Brands	125,640 a	4,535,604

STATEMENT OF INVESTMENTS (continued)

Common Stocks (continued)	Shares	Value (\$)
Consumer Discretionary (continued)		
Urban Outfitters	229,400 a,b	5,796,938
Valassis Communications	97,430 a,b	959,686
Warnaco Group	92,600 a,b	3,767,894
Washington Post, Cl. B	11,829	10,042,821
Williams-Sonoma	183,325 a	5,763,738
		354,039,860
Consumer Staples-3.1%		
Alberto-Culver	171,300	4,452,087
BJ's Wholesale Club	132,454 a,b	4,752,450
Church & Dwight	134,114 a	6,344,933
Corn Products International	151,200	6,432,048
Energizer Holdings	115,850 a,b	12,083,155
Hansen Natural	120,300 b	8,180,400
Hormel Foods	147,235 a	5,371,133
J.M. Smucker	116,988 a	6,250,669
Lancaster Colony	44,449 a	1,785,516
NBTY	115,100 b	4,097,560
PepsiAmericas	120,535	4,305,510
Ruddick	75,180 a	2,556,120
Smithfield Foods	237,620 a,b	6,812,565
Tootsie Roll Industries	54,844 a	1,413,330
Universal/Richmond, VA	55,666 a	2,713,161
		77,550,637
Energy-9.2%		
Arch Coal	291,200 a	11,939,200
Bill Barrett	68,100 a,b	3,187,080
Cameron International	221,170 a,b	21,533,111
Cimarex Energy	169,100 a	6,850,241
Denbury Resources	248,300 a,b	14,053,780
Encore Acquisition	108,200 a,b	3,970,940
Exterran Holdings	133,877 a,b	11,272,443
FMC Technologies	263,602 b	15,982,189
Forest Oil	179,035 a,b	8,699,311
Frontier Oil	218,000 a	9,982,220
Grant Prideco	260,948 a,b	12,828,204
Helmerich & Payne	210,070 a	6,642,413
Newfield Exploration	264,370 b	14,233,681

Common Stocks (continued)	Shares	Value (\$)
Energy (continued)		
Overseas Shipholding Group	57,845	4,303,668
Patterson-UTI Energy	318,700 a	6,354,878
Pioneer Natural Resources	246,925 a	12,598,114
Plains Exploration & Production	148,095 b	7,545,440
Pogo Producing	119,340 a	7,107,890
Pride International	339,335 a,b	12,521,461
Quicksilver Resources	103,700 a,b	5,910,900
Southwestern Energy	346,400 a,b	17,919,272
Superior Energy Services	165,800 a,b	6,147,864
Tidewater	113,490 a	6,204,498
		227,788,798
Financial-14.1%		
AMB Property	203,250 a	13,282,387
American Financial Group	152,981	4,574,132
AmeriCredit	232,945 a,b	3,286,854
Arthur J. Gallagher & Co.	193,955 a	5,161,143
Associated Banc-Corp	258,593 a	7,462,994
Astoria Financial	167,275 a	4,347,477
Bank of Hawaii	100,555 a	5,345,504
Brown & Brown	231,280 a	5,825,943
Cathay General Bancorp	101,700 a	3,149,649
City National/Beverly Hills, CA	83,287 a	5,630,201
Colonial BancGroup	311,975 a	5,983,680
Commerce Group	92,500 a	3,375,325
Cousins Properties	76,000 a	2,188,040
Cullen/Frost Bankers	120,230 a	6,393,831
Duke Realty	292,900	9,416,735
Eaton Vance	251,490 a	12,582,045
Equity One	75,100	1,966,118
Everest Re Group	128,585	13,699,446
Fidelity National Financial, Cl. A	449,470	6,917,343
First American	194,805 a	5,863,630
First Community Bancorp/CA	53,900 a	2,624,930
First Niagara Financial Group	214,400 a	2,830,080
FirstMerit	163,750 a	3,471,500
Hanover Insurance Group	105,585	4,864,301
HCC Insurance Holdings	229,110 a	6,848,098

STATEMENT OF INVESTMENTS (continued)

Common Stocks (continued)	Shares	Value (\$)
Financial (continued)		
Highwoods Properties	116,230 ^a	4,179,631
Horace Mann Educators	87,800	1,816,582
Hospitality Properties Trust	191,040 ^a	7,565,184
IndyMac Bancorp	149,890 ^a	2,011,524
Jefferies Group	227,860 ^a	6,090,698
Jones Lang LaSalle	76,100 ^a	7,254,613
Liberty Property Trust	185,650 ^a	6,984,153
Macerich	146,200 ^a	12,530,802
Mack-Cali Realty	138,185	5,470,744
Mercury General	72,400 ^a	3,714,844
Nationwide Health Properties	185,100 ^a	5,778,822
New York Community Bancorp	638,619	11,884,700
Nuveen Investments, Cl. A	162,600 ^a	10,536,480
Old Republic International	471,212 ^a	7,223,680
PMI Group	176,060 ^a	2,822,242
Potlatch	79,383 ^a	3,783,394
Protective Life	142,745 ^a	6,119,478
Radian Group	163,605 ^a	2,059,787
Raymond James Financial	191,992 ^a	7,151,702
Rayonier	158,373	7,647,832
Regency Centers	141,400 ^a	10,107,272
SEI Investments	259,000	8,189,580
StanCorp Financial Group	107,500	5,926,475
SVB Financial Group	69,925 ^{a,b}	3,621,416
TCF Financial	222,190 ^a	5,059,266
UDR	274,120 ^a	6,507,609
Unitrin	106,690 ^a	4,940,814
W.R. Berkley	335,350	10,090,681
Waddell & Reed Financial, Cl. A	170,550 ^a	5,665,671
Washington Federal	177,718 ^a	4,293,667
Webster Financial	111,230 ^a	4,030,975
Weingarten Realty Investors	156,600 ^a	5,991,516
Westamerica Bancorporation	60,500 ^a	2,908,840
Wilmington Trust	138,340 ^a	5,031,426
		352,083,486

Common Stocks (continued)	Shares	Value (\$)
Health Care—11.9%		
Advanced Medical Optics	122,976 a,b	3,375,691
Affymetrix	139,400 a,b	3,549,124
Apria Healthcare Group	89,000 a,b	2,151,130
Beckman Coulter	125,964	8,920,770
Cephalon	136,000 a,b	10,028,640
Cerner	133,500 a,b	7,951,260
Charles River Laboratories International	138,200 a,b	8,015,600
Community Health Systems	195,115 a,b	6,425,137
Covance	129,590 a,b	10,691,175
Dentsply International	309,300 a	12,829,764
Edwards Lifesciences	116,585 a,b	5,854,899
Endo Pharmaceuticals Holdings	272,700 b	7,990,110
Gen-Probe	107,700 a,b	7,541,154
Health Management Associates, Cl. A	493,300 a	3,260,713
Health Net	226,340 a,b	12,134,087
Henry Schein	181,200 b	10,853,880
Hillenbrand Industries	125,990 a	6,957,168
Hologic	233,042 b	15,830,543
Intuitive Surgical	76,800 a,b	25,103,616
Invitrogen	94,200 a,b	8,559,954
Kindred Healthcare	64,900 a,b	1,378,476
Kyphon	93,400 a,b	6,620,192
LifePoint Hospitals	118,100 a,b	3,604,412
Lincare Holdings	172,750 b	6,006,517
Medicis Pharmaceutical, Cl. A	113,600 a	3,372,784
Millennium Pharmaceuticals	652,062 a,b	7,707,373
Omnicare	247,465 a	7,300,217
Par Pharmaceutical Cos.	72,200 b	1,331,368
PDL BioPharma	237,750 a,b	5,040,300
Perrigo	158,200 a	3,750,922
Pharmaceutical Product Development	212,600 a	8,980,224
Psychiatric Solutions	110,500 a,b	4,375,800
Resmed	157,700 a,b	6,533,511
Sepracor	218,300 a,b	6,011,982
STERIS	132,245 a	3,840,395

STATEMENT OF INVESTMENTS (continued)

Common Stocks (continued)	Shares	Value (\$)
Health Care (continued)		
Techne	80,400 b	5,245,296
Universal Health Services, Cl. B	109,635	5,344,706
Valeant Pharmaceuticals International	187,050 a,b	2,721,577
Varian	62,100 a,b	4,588,569
VCA Antech	170,900 a,b	7,869,945
Ventana Medical Systems	59,500 a,b	5,236,000
Vertex Pharmaceuticals	268,150 a,b	8,671,971
WellCare Health Plans	84,900 a,b	2,053,731
		295,610,683
Industrial—14.8%		
AGCO	186,105 a,b	11,106,746
AirTran Holdings	186,450 a,b	1,940,944
Alaska Air Group	82,337 a,b	2,091,360
Alexander & Baldwin	87,437 a	4,579,950
Alliant Techsystems	68,300 a,b	7,539,637
AMETEK	217,776	10,235,472
Avis Budget Group	211,110 b	4,405,866
Brink's	98,635	6,179,483
Carlisle Cos.	126,964 a	5,008,730
CF Industries Holdings	97,400	8,561,460
ChoicePoint	152,871 b	6,010,888
Con-way	93,185 a	3,970,613
Copart	146,700 b	5,630,346
Corporate Executive Board	73,600 a	5,244,000
Crane	103,100	4,891,064
Deluxe	106,200 a	4,284,108
Donaldson	145,266 a	6,226,101
DRS Technologies	83,700 a	4,807,728
Dun & Bradstreet	119,740	11,596,819
Fastenal	257,400 a	11,449,152
Federal Signal	97,563 a	1,306,369
Flowserve	116,050	9,163,308
GATX	104,696 a	4,289,395
Graco	133,545 a	5,256,331
Granite Construction	71,687	3,069,637

Common Stocks (continued)	Shares	Value (\$)
Industrial (continued)		
Harsco	171,292	10,383,721
Herman Miller	125,150 a	3,406,583
HNI	97,552 a	4,229,855
Hubbell, Cl. B	120,665	6,636,575
IDEX	165,600 a	5,865,552
J.B. Hunt Transport Services	189,800 a	5,261,256
JetBlue Airways	366,325 a,b	3,344,547
Joy Global	219,800 a	12,761,588
KBR	343,800 b	14,742,144
Kelly Services, Cl. A	47,785 a	1,004,919
Kennametal	79,250	7,228,392
Korn/Ferry International	98,400 a,b	1,885,344
Lincoln Electric Holdings	87,200	6,300,200
Manpower	172,255	12,874,339
Mine Safety Appliances	59,700 a	2,733,663
MSC Industrial Direct, Cl. A	96,700	4,710,257
Navigant Consulting	90,700 a,b	1,195,426
Nordson	68,686 a	3,674,701
Oshkosh Truck	150,700 a	8,167,940
Pentair	203,040 a	7,185,586
Quanta Services	345,480 a,b	11,400,840
Republic Services	334,067	11,421,751
Rollins	58,023	1,762,159
Roper Industries	180,200 a	12,759,962
Sequa, Cl. A	14,886 a,b	2,587,485
SPX	110,795	11,223,534
Stericycle	178,300 a,b	10,400,239
Teleflex	80,175 a	5,869,612
Thomas & Betts	103,240 a,b	5,782,472
Timken	193,100 a	6,422,506
Trinity Industries	165,051 a	5,964,943
United Rentals	148,595 a,b	5,080,463
Werner Enterprises	93,550 a	1,779,321
YRC Worldwide	117,300 a,b	2,883,234
		367,776,616

STATEMENT OF INVESTMENTS (continued)

Common Stocks (continued)	Shares	Value (\$)
Information Technology—15.4%		
3Com	812,900 a,b	3,966,952
ACI Worldwide	74,650 a,b	1,707,246
Activision	580,854 a,b	13,737,197
Acxiom	140,700	1,848,798
ADC Telecommunications	239,100 b	4,471,170
ADTRAN	124,000 a	2,984,680
Advent Software	35,550 a,b	1,966,982
Alliance Data Systems	160,150 b	12,876,060
Amphenol, Cl. A	362,200 a	16,034,594
Andrew	317,400 b	4,653,084
Arrow Electronics	251,782 a,b	10,066,244
Atmel	994,700 a,b	4,864,083
Avnet	304,983 a,b	12,723,891
Avocent	102,850 a,b	2,780,036
Broadridge Financial Solutions	283,300	5,666,000
Cadence Design Systems	564,690 a,b	11,067,924
Ceridian	293,340 b	10,542,640
CheckFree	179,600 a,b	8,536,388
CommScope	125,490 a,b	5,919,363
Cree	172,400 a,b	4,827,200
CSG Systems International	86,550 a,b	1,776,872
Cypress Semiconductor	314,143 a,b	11,481,927
Diebold	133,896 a	5,602,209
Digital River	81,700 a,b	4,335,002
DST Systems	108,450 a,b	9,186,800
Dycom Industries	83,400 a,b	2,356,050
F5 Networks	171,400 b	6,175,542
Fair Isaac	116,195 a	4,406,114
Fairchild Semiconductor International	252,775 a,b	4,613,144
Gartner	141,730 a,b	3,103,887
Global Payments	164,700	7,833,132
Harris	279,580	16,931,365
Imation	69,600 a	1,550,688
Ingram Micro, Cl. A	297,400 b	6,316,776
Integrated Device Technology	399,360 b	5,363,405
International Rectifier	147,590 a,b	4,926,554
Intersil, Cl. A	270,900	8,219,106

Common Stocks (continued)	Shares	Value (\$)
Information Technology (continued)		
Jack Henry & Associates	159,850 a	4,670,817
Kemet	170,450 a,b	1,205,082
Lam Research	274,850 a,b	13,797,470
Lattice Semiconductor	233,500 a,b	976,030
Macrovision	111,700 a,b	2,680,800
McAfee	324,605 b	13,422,417
Mentor Graphics	182,259 a,b	2,919,789
Micrel	113,650 a	1,028,533
MoneyGram International	168,655 a	2,690,047
MPS Group	207,115 a,b	2,528,874
National Instruments	116,600 a	3,782,504
NCR	367,300 b	10,133,807
Palm	211,700 a	1,909,534
Parametric Technology	233,700 a,b	4,463,670
Plantronics	97,850 a	2,676,198
Polycom	186,100 a,b	5,207,078
Powerwave Technologies	266,050 a,b	1,479,238
RF Micro Devices	395,200 a,b	2,458,144
Semtech	129,300 a,b	2,212,323
Silicon Laboratories	112,300 a,b	4,907,510
SRA International, Cl. A	86,200 a,b	2,367,052
Sybase	185,960 a,b	5,318,456
Synopsys	294,900 a,b	8,333,874
Tech Data	112,400 b	4,420,692
Triquint Semiconductor	282,938 b	1,774,021
UTStarcom	216,400 a,b	692,480
ValueClick	204,200 a,b	5,552,198
Vishay Intertechnology	379,149 a,b	4,773,486
Western Digital	445,600 b	11,549,952
Wind River Systems	155,850 a,b	1,949,683
Zebra Technologies, Cl. A	140,495 a,b	5,491,950
		382,792,814
Materials—7.4%		
Airgas	161,195	8,135,512
Albemarle	161,300	7,703,688
Cabot	137,740 a	4,822,277
Carpenter Technology	52,600 a	7,622,266

STATEMENT OF INVESTMENTS (continued)

Common Stocks (continued)	Shares	Value (\$)
Materials (continued)		
Chemtura	491,603	4,581,740
Cleveland-Cliffs	83,500 ^a	7,986,775
Commercial Metals	243,500	7,641,030
Cytec Industries	85,400	5,697,034
Ferro	88,349	1,830,591
Florida Rock Industries	101,000	6,355,930
FMC	154,800	8,901,000
Louisiana-Pacific	212,400	3,496,104
Lubrizol	140,488	9,536,325
Lyondell Chemical	515,698	24,469,870
Martin Marietta Materials	85,080 ^a	11,005,098
Minerals Technologies	39,250 ^a	2,756,135
Olin	150,385 ^a	3,425,770
Packaging Corp. of America	188,615 ^a	6,005,502
Reliance Steel & Aluminum	135,000	7,877,250
RPM International	246,583 ^a	5,284,274
Scotts Miracle-Gro, Cl. A	89,300 ^a	4,097,977
Sensient Technologies	95,878 ^a	2,865,793
Sonoco Products	205,083	6,341,166
Steel Dynamics	211,900	11,277,318
Terra Industries	186,900 ^{a,b}	6,894,741
Valspar	204,660 ^a	5,122,640
Worthington Industries	140,300 ^a	3,507,500
		185,241,306
Telecommunication Services--9%		
Cincinnati Bell	504,850 ^b	2,736,287
NeuStar, Cl. A	155,500 ^{a,b}	5,318,100
Telephone & Data Systems	216,735	15,128,103
		23,182,490
Utilities--7.5%		
AGL Resources	158,102	6,249,772
Alliant Energy	227,749	9,109,960
Aqua America	269,723 ^a	6,273,757
Aquila	762,620 ^{a,b}	3,187,752
Black Hills	76,792 ^a	3,411,101

Common Stocks (continued)	Shares	Value (\$)
Utilities (continued)		
DPL	231,030 a	6,709,111
Energy East	322,066 a	8,979,200
Equitable Resources	247,480 a	13,938,074
Great Plains Energy	175,175 a	5,227,222
Hawaiian Electric Industries	167,953 a	3,896,510
IDACORP	90,133 a	3,144,740
MDU Resources Group	370,562	10,435,026
National Fuel Gas	170,024 a	8,244,464
Northeast Utilities	315,140	9,715,766
NSTAR	217,370 a	7,642,729
OGE Energy	186,651 a	7,148,733
ONEOK	211,415	10,558,065
Pepco Holdings	393,713	11,216,883
PNM Resources	156,131 a	3,904,836
Puget Energy	238,100 a	6,726,325
SCANA	237,379 a	9,635,214
Sierra Pacific Resources	450,936	7,607,290
Vectren	155,675 a	4,365,127
Westar Energy	186,105 a	4,954,115
WGL Holdings	100,340 a	3,403,533
Wisconsin Energy	237,912	11,391,227
		187,076,532
Total Common Stocks (cost \$1,783,119,649)		2,453,143,222
Short-Term Investments—1%		
	Principal Amount (\$)	Value (\$)
U.S. Treasury Bills; 3.94%, 12/13/07 (cost \$1,791,726)	1,800,000 c	1,791,900
Other Investment—1.5%		
	Shares	Value (\$)
Registered Investment Company; Dreyfus Institutional Preferred Plus Money Market Fund (cost \$36,833,000)	36,833,000 d	36,833,000

STATEMENT OF INVESTMENTS (continued)

Investment of Cash Collateral for Securities Loaned—25.8%	Shares	Value (\$)
Registered Investment Company;		
Dreyfus Institutional Cash Advantage Plus Fund (cost \$643,863,632)	643,863,632 ^d	643,863,632
Total Investments (cost \$2,465,608,007)	125.9%	3,135,631,754
Liabilities, Less Cash and Receivables	(25.9%)	(644,216,722)
Net Assets	100.0%	2,491,415,032

^a All or a portion of these securities are on loan. At October 31, 2007, the total market value of the fund's securities on loan is \$653,034,096 and the total market value of the collateral held by the fund is \$667,129,713, consisting of cash collateral of \$643,863,632 and U.S. Government and agency securities valued at \$23,266,081.

^b Non-income producing security.

^c All or partially held by a broker as collateral for open financial futures positions.

^d Investment in affiliated money market mutual fund.

Portfolio Summary (Unaudited)[†]

	Value (%)		Value (%)
Short-Term/Money		Energy	9.2
Market Investments	27.4	Utilities	7.5
Information Technology	15.4	Materials	7.4
Industrial	14.8	Consumer Staples	3.1
Consumer Discretionary	14.2	Telecommunication Services	.9
Financial	14.1		
Health Care	11.9		125.9

[†] Based on net assets.

See notes to financial statements.

STATEMENT OF FINANCIAL FUTURES

October 31, 2007

	Contracts	Market Value Covered by Contracts (\$)	Expiration	Unrealized Appreciation at 10/31/2007 (\$)
Financial Futures Long				
Standard & Poor's Midcap 400 E-mini	446	40,679,660	December 2007	501,412

See notes to financial statements.

STATEMENT OF ASSETS AND LIABILITIES

October 31, 2007

	Cost	Value
Assets (\$):		
Investments in securities—See Statement of Investments (including securities on loan, valued at \$653,034,096)—Note 1 (b):		
Unaffiliated issuers	1,784,911,375	2,454,935,122
Affiliated issuers	680,696,632	680,696,632
Cash		7,895,214
Receivable for investment securities sold		2,202,794
Receivable for shares of Common Stock subscribed		1,846,836
Dividends and interest receivable		1,465,004
Receivable for futures variation margin—Note 4		677,920
		3,149,719,522
Liabilities (\$):		
Due to The Dreyfus Corporation and affiliates—Note 3(b)		1,052,158
Liability for securities on loan—Note 1 (b)		643,863,632
Payable for investment securities purchased		10,028,786
Payable for shares of Common Stock redeemed		3,359,914
		658,304,490
Net Assets (\$)		2,491,415,032
Composition of Net Assets (\$):		
Paid-in capital		1,650,904,816
Accumulated undistributed investment income—net		22,167,718
Accumulated net realized gain (loss) on investments		147,817,339
Accumulated net unrealized appreciation (depreciation) on investments (including \$501,412 net unrealized appreciation on financial futures)		670,525,159
Net Assets (\$)		2,491,415,032
Shares Outstanding		
(200 million shares of \$.001 par value Common Stock authorized)		75,054,129
Net Asset Value , offering and redemption price per share—Note 3(c) (\$)		33.19

See notes to financial statements.

STATEMENT OF OPERATIONS

Year Ended October 31, 2007

Investment Income (\$):	
Income:	
Cash dividends:	
Unaffiliated issuers	38,332,306
Affiliated issuers	1,881,221
Income from securities lending	724,164
Interest	144,023
Total Income	41,081,714
Expenses:	
Management fee—Note 3(a)	6,034,807
Shareholder servicing costs—Note 3(b)	6,034,807
Director fees—Note 3(a)	120,405
Loan commitment fees—Note 2	17,411
Total Expenses	12,207,430
Less—Director fees reimbursed by the Manager—Note 3(a)	(120,405)
Net Expenses	12,087,025
Investment Income—Net	28,994,689
Realized and Unrealized Gain (Loss) on Investments—Note 4 (\$):	
Net realized gain (loss) on investments	189,468,339
Net realized gain (loss) on financial futures	3,640,102
Net Realized Gain (Loss)	193,108,441
Net unrealized appreciation (depreciation) on investments (including \$226,322 net unrealized appreciation on financial futures)	140,059,922
Net Realized and Unrealized Gain (Loss) on Investments	333,168,363
Net Increase in Net Assets Resulting from Operations	362,163,052

See notes to financial statements.

STATEMENT OF CHANGES IN NET ASSETS

	Year Ended October 31,	
	2007	2006
Operations (\$):		
Investment income–net	28,994,689	21,470,557
Net realized gain (loss) on investments	193,108,441	79,491,207
Net unrealized appreciation (depreciation) on investments	140,059,922	162,415,969
Net Increase (Decrease) in Net Assets Resulting from Operations	362,163,052	263,377,733
Dividends to Shareholders from (\$):		
Investment income–net	(20,998,329)	(19,493,377)
Net realized gain on investments	(88,327,491)	(86,704,318)
Total Dividends	(109,325,820)	(106,197,695)
Capital Stock Transactions (\$):		
Net proceeds from shares sold	576,117,327	734,836,127
Dividends reinvested	103,680,432	99,747,297
Cost of shares redeemed	(712,189,070)	(780,016,408)
Increase (Decrease) in Net Assets from Capital Stock Transactions	(32,391,311)	54,567,016
Total Increase (Decrease) in Net Assets	220,445,921	211,747,054
Net Assets (\$):		
Beginning of Period	2,270,969,111	2,059,222,057
End of Period	2,491,415,032	2,270,969,111
Undistributed investment income–net	22,167,718	16,275,271
Capital Share Transactions (Shares):		
Shares sold	18,393,370	25,223,648
Shares issued for dividends reinvested	3,504,973	3,549,776
Shares redeemed	(22,774,821)	(26,884,773)
Net Increase (Decrease) in Shares Outstanding	(876,478)	1,888,651

See notes to financial statements.

FINANCIAL HIGHLIGHTS

The following table describes the performance for the fiscal periods indicated. Total return shows how much your investment in the fund would have increased (or decreased) during each period, assuming you had reinvested all dividends and distributions. These figures have been derived from the fund's financial statements.

	Year Ended October 31,				
	2007	2006	2005	2004	2003
Per Share Data (\$):					
Net asset value, beginning of period	29.91	27.81	24.55	22.42	17.66
Investment Operations:					
Investment income—net ^a	.38	.28	.28	.16	.13
Net realized and unrealized gain (loss) on investments	4.36	3.23	3.87	2.18	5.07
Total from Investment Operations	4.74	3.51	4.15	2.34	5.20
Distributions:					
Dividends from investment income—net	(.28)	(.26)	(.16)	(.12)	(.12)
Dividends from net realized gain on investments	(1.18)	(1.15)	(.73)	(.09)	(.32)
Total Distributions	(1.46)	(1.41)	(.89)	(.21)	(.44)
Net asset value, end of period	33.19	29.91	27.81	24.55	22.42
Total Return (%)	16.45	12.95	17.14	10.50	30.05
Ratios/Supplemental Data (%):					
Ratio of total expenses to average net assets	.51	.50	.50	.50	.51
Ratio of net expenses to average net assets	.50	.50	.50	.50	.51
Ratio of net investment income to average net assets	1.20	.95	1.04	.68	.69
Portfolio Turnover Rate	22.53	16.05	19.54	14.13	12.12
Net Assets, end of period (\$ x 1,000)	2,491,415	2,270,969	2,059,222	1,526,260	1,119,730

^a Based on average shares outstanding at each month end.
See notes to financial statements.

NOTES TO FINANCIAL STATEMENTS

NOTE 1—Significant Accounting Policies:

Dreyfus Midcap Index Fund, Inc. (the “fund”) is registered under the Investment Company Act of 1940, as amended (the “Act”), as a non-diversified open-end management investment company. The fund’s investment objective is to match the performance of the Standard & Poor’s Midcap 400 Index. The Dreyfus Corporation (the “Manager” or “Dreyfus”) serves as the fund’s investment adviser. On July 1, 2007, Mellon Financial Corporation (“Mellon Financial”) and The Bank of New York Company, Inc. merged, forming The Bank of New York Mellon Corporation (“BNY Mellon”). As part of this transaction, Dreyfus became a wholly-owned subsidiary of BNY Mellon. MBSC Securities Corporation (the “Distributor”), a wholly-owned subsidiary of the Manager, is the Distributor of the fund’s shares, which are sold to the public without a sales charge.

The fund’s financial statements are prepared in accordance with U.S. generally accepted accounting principles, which may require the use of management estimates and assumptions. Actual results could differ from those estimates.

The fund enters into contracts that contain a variety of indemnifications. The fund’s maximum exposure under these arrangements is unknown. The fund does not anticipate recognizing any loss related to these arrangements.

(a) Portfolio valuation: Investments in securities are valued at the last sales price on the securities exchange or national securities market on which such securities are primarily traded. Securities listed on the National Market System for which market quotations are available are valued at the official closing price or, if there is no official closing price that day, at the last sale price. Securities not listed on an exchange or the national securities market, or securities for which there were no transactions, are valued at the average of the most recent bid and asked prices, except for open short positions, where the asked price is used for valuation purposes. Bid price is used when no asked price is available. Registered open-end investment companies that are not traded

on an exchange are valued at their net asset value. When market quotations or official closing prices are not readily available, or are determined not to reflect accurately fair value, such as when the value of a security has been significantly affected by events after the close of the exchange or market on which the security is principally traded (for example, a foreign exchange or market), but before the fund calculates its net asset value, the fund may value these investments at fair value as determined in accordance with the procedures approved by the Board of Directors. Fair valuing of securities may be determined with the assistance of a pricing service using calculations based on indices of domestic securities and other appropriate indicators, such as prices of relevant ADR's and futures contracts. For other securities that are fair valued by the Board of Directors, certain factors may be considered such as: fundamental analytical data, the nature and duration of restrictions on disposition, an evaluation of the forces that influence the market in which the securities are purchased and sold, and public trading in similar securities of the issuer or comparable issuers. Financial futures are valued at the last sales price.

The Financial Accounting Standards Board ("FASB") released Statement of Financial Accounting Standards No. 157 "Fair Value Measurements" ("FAS 157"). FAS 157 establishes an authoritative definition of fair value, sets out a framework for measuring fair value, and requires additional disclosures about fair-value measurements. The application of FAS 157 is required for fiscal years beginning after November 15, 2007 and interim periods within those fiscal years. Management does not believe that the application of this standard will have a material impact on the financial statements of the fund.

(b) Securities transactions and investment income: Securities transactions are recorded on a trade date basis. Realized gain and loss from securities transactions are recorded on the identified cost basis. Dividend income is recognized on the ex-dividend date and interest income, including, where applicable, accretion of discount and amortization of premium on investments is recognized on the accrual basis.

Pursuant to a securities lending agreement with Mellon Bank, N.A. (“Mellon Bank”), an affiliate of the Manager, the fund may lend securities to qualified institutions. It is the fund’s policy, that at originations, all loans are secured by collateral of at least 102% of the value of U.S. securities loaned and 105% of the value of foreign securities loaned. Collateral equivalent to at least 100% of the market value of securities on loan is maintained at all times. Cash collateral is invested in certain money market mutual funds managed by the Manager. The fund is entitled to receive all income on securities loaned, in addition to income earned as a result of the lending transaction. Although each security loaned is fully collateralized, the fund bears the risk of delay in recovery of, or loss of rights in, the securities loaned should a borrower fail to return the securities in a timely manner. During the period ended October 31, 2007, Mellon Bank earned \$310,356, pursuant to the securities lending agreement.

(c) Affiliated issuers: Investments in other investment companies advised by the Manager are defined as “affiliated” in the Act.

(d) Dividends to shareholders: Dividends are recorded on the ex-dividend date. Dividends from investment income-net and dividends from net realized capital gain, are normally declared and paid annually, but the fund may make distributions on a more frequent basis to comply with the distribution requirements of the Internal Revenue Code of 1986, as amended (the “Code”). To the extent that net realized capital gain can be offset by capital loss carryovers, if any, it is the policy of the fund not to distribute such gain. Income and capital gain distributions are determined in accordance with income tax regulations, which may differ from U.S. generally accepted accounting principles.

(e) Federal income taxes: It is the policy of the fund to continue to qualify as a regulated investment company, if such qualification is in the best interests of its shareholders, by complying with the applicable provisions of the Code, and to make distributions of taxable income sufficient to relieve it from substantially all federal income and excise taxes.

The FASB released FASB Interpretation No. 48 “Accounting for Uncertainty in Income Taxes” (FIN 48). FIN 48 provides guidance for how uncertain tax positions should be recognized, measured, presented and disclosed in the financial statements. FIN 48 requires the evaluation of tax positions taken or expected to be taken in the course of preparing the fund’s tax returns to determine whether the tax positions are “more-likely-than-not” of being sustained by the applicable tax authority. Tax positions not deemed to meet the more-likely-than-not threshold would be recorded as a tax benefit or expense in the current year. Adoption of FIN 48 is required for fiscal years beginning after December 15, 2006 and is to be applied to all open tax years as of the effective date. Management does not believe that the application of this standard will have a material impact on the financial statements of the fund.

At October 31, 2007, the components of accumulated earnings on a tax basis were as follows: undistributed ordinary income \$24,509,437, undistributed capital gains \$204,150,447 and unrealized appreciation \$611,850,332.

The tax characters of distributions paid to shareholders during the fiscal periods ended October 31, 2007 and October 31, 2006, were as follows: ordinary income \$22,941,235 and \$28,111,105 and long-term capital gains \$86,384,585 and \$78,086,590, respectively.

During the period ended October 31, 2007, as a result of permanent book to tax differences, primarily due to the tax treatment for real estate investment trusts, the fund decreased accumulated undistributed investment income-net by \$2,103,913 and increased net realized gain (loss) on investments by the same amount. Net assets and net asset value per share were not affected by this reclassification.

NOTE 2—Bank Line of Credit:

The fund participates with other Dreyfus-managed funds in a \$350 million redemption credit facility (the “Facility”) to be utilized for temporary or emergency purposes, including the financing of redemp-

tions. In connection therewith, the fund has agreed to pay commitment fees on its pro rata portion of the Facility. Interest is charged to the fund based on prevailing market rates in effect at the time of borrowings. During the period ended October 31, 2007, the fund did not borrow under the Facility.

NOTE 3—Management Fee and Other Transactions With Affiliates:

(a) Pursuant to a management agreement (“Agreement”) with the Manager, the management fee is computed at the annual rate of .25% of the value of the fund’s average daily net assets, and is payable monthly. Under the terms of the Agreement, the Manager has agreed to pay all of the fund’s expenses, except management fees, brokerage commissions, taxes, commitment fees, interest fees and expenses of non-interested Board members (including counsel fees), Shareholder Services Plan fees and extraordinary expenses. In addition, the Manager is required to reduce its fee in an amount equal to the fees and expenses of the non-interested Board members (including counsel fees). Each Board member also serves as a Board member of other funds within the Dreyfus complex (collectively, the “Fund Group”). Currently, the Fund and 13 other funds (comprised of 40 portfolios) in the Dreyfus Family of Funds pay each Board member their respective allocated portion of an annual retainer of \$85,000, and an attendance fee of \$10,000 for each regularly scheduled Board meeting, an attendance fee of \$2,000 for each separate in-person committee meeting that is not held in conjunction with a regularly scheduled Board meeting and an attendance fee \$1,000 for each Board meeting and separate committee meeting attended that are conducted by telephone. The Chairman of the Board receives an additional 25% of such compensation and the Audit Committee Chairman receives an additional \$15,000 per annum. The Fund also reimburses each Board member for travel and out of pocket expenses in connection with attending Board or committee meetings. Subject to the fund’s Emeritus Program Guidelines, Emeritus Board members, if any, receive 50% of the fund’s annual retainer fee and per meeting fee paid at the time the Board member achieves emeritus status.

(b) Under the Shareholder Services Plan, the fund pays the Distributor for the provision of certain services at the annual rate of .25% of the value of the fund's average daily net assets. The services provided may include personal services relating to shareholder accounts, such as answering shareholder inquiries regarding the fund and providing reports and other information, and services related to the maintenance of shareholder accounts. The Distributor may make payments to Service Agents (a securities dealer, financial institution or other industry professional) in respect of these services. The Distributor determines the amounts to be paid to Service Agents. During the period ended October 31, 2007, the fund was charged \$6,034,807 pursuant to the Shareholder Services Plan.

The components of "Due to The Dreyfus Corporation and affiliates" in the Statement of Assets and Liabilities consist of: management fees \$526,079 and shareholders services fee \$526,079.

(c) A 2% redemption fee is charged and retained by the fund on certain shares redeemed within 60 days of purchase subject to exceptions described in the fund's current prospectus. Effective December 1, 2007, the fund will no longer assess a redemption fee on shares that are reassessed or exchanged before the end of the required holding period. The fund reserves the right to reimpose a redemption fee in the future.

NOTE 4—Securities Transactions:

The aggregate amount of purchases and sales of investment securities, excluding short-term securities and financial futures, during the period ended October 31, 2007, amounted to \$532,085,146 and \$661,302,266, respectively.

The fund may invest in financial futures contracts in order to gain exposure to or protect against changes in the market. The fund is exposed to market risk as a result of changes in the value of the underlying financial instruments. Investments in financial futures require the fund to "mark to market" on a daily basis, which reflects the change in the market value of the contract at the close of each day's trading.

Accordingly, variation margin payments are received or made to reflect daily unrealized gains or losses. When the contracts are closed, the fund recognizes a realized gain or loss. These investments require initial margin deposits with a broker, which consist of cash or cash equivalents. The amount of these deposits is determined by the exchange or Board of Trade on which the contract is traded and is subject to change. Contracts open at October 31, 2007, are set forth in the Statement of Financial Futures.

At October 31, 2007, the cost of investments for federal income tax purposes was \$2,523,781,422; accordingly, accumulated net unrealized appreciation on investments was \$611,850,332, consisting of \$783,946,800 gross unrealized appreciation and \$172,096,468 gross unrealized depreciation.

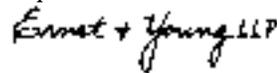
REPORT OF INDEPENDENT REGISTERED
PUBLIC ACCOUNTING FIRM

**Shareholders and Board of Directors
Dreyfus Midcap Index Fund, Inc.**

We have audited the accompanying statement of assets and liabilities of Dreyfus Midcap Index Fund, Inc., including the statements of investments and financial futures, as of October 31, 2007 and the related statement of operations for the year then ended, the statement of changes in net assets for each of the two years in the period then ended and financial highlights for each of the years indicated therein. These financial statements and financial highlights are the responsibility of the Fund's management. Our responsibility is to express an opinion on these financial statements and financial highlights based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements and financial highlights are free of material misstatement. We were not engaged to perform an audit of the Fund's internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Fund's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements and financial highlights, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our procedures included confirmation of securities owned as of October 31, 2007 by correspondence with the custodian and others or by other appropriate auditing procedures where replies from others were not received. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements and financial highlights referred to above present fairly, in all material respects, the financial position of Dreyfus Midcap Index Fund, Inc. at October 31, 2007, the results of its operations for the year then ended, the changes in its net assets for each of the two years in the period then ended, and the financial highlights for each of the indicated years, in conformity with U.S. generally accepted accounting principles.



New York, New York
December 10, 2007

The Fund

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IMPORTANT TAX INFORMATION (Unaudited)

For federal tax purposes, the fund hereby designates \$1.1560 per share as a long-term capital gain distribution and \$.0260 per share as a short-term capital gain distribution of the \$1.4630 per share paid on December 27, 2006. The fund also hereby designates 100% of the ordinary dividends paid during the fiscal year ended October 31, 2007 as qualifying for the corporate dividends received deduction. For the fiscal year ended October 31, 2007, certain dividends paid by the fund may be subject to a maximum tax rate of 15%, as provided for by the Jobs and Growth Tax Relief Reconciliation Act of 2003. Of the distributions paid during the fiscal year, \$5,761,719 represents the maximum amount that may be considered qualified dividend income. Shareholders will receive notification in January 2008 of the percentage applicable to the preparation of their 2007 income tax returns.

BOARD MEMBERS INFORMATION (Unaudited)

Joseph S. DiMartino (64) **Chairman of the Board (1995)**

Principal Occupation During Past 5 Years:

- Corporate Director and Trustee

Other Board Memberships and Affiliations:

- The Muscular Dystrophy Association, Director
- Century Business Services, Inc., a provider of outsourcing functions for small and medium size companies, Director
- The Newark Group, a provider of a national market of paper recovery facilities, paperboard mills and paperboard converting plants, Director
- Sunair Services Corporation, a provider of certain outdoor-related services to homes and businesses, Director

No. of Portfolios for which Board Member Serves: 165

Peggy C. Davis (64) **Board Member (2006)**

Principal Occupation During Past 5 Years:

- Shad Professor of Law, New York University School of Law (1983-present)
- Writer and teacher in the fields of evidence, constitutional theory, family law, social sciences and the law, legal process and professional methodology and training

No. of Portfolios for which Board Member Serves: 65

David P. Feldman (67) **Board Member (1989)**

Principal Occupation During Past 5 Years:

- Corporate Director and Trustee

Other Board Memberships and Affiliations:

- BBH Mutual Funds Group (11 funds), Director
- The Jeffrey Company, a private investment company, Director

No. of Portfolios for which Board Member Serves: 49

James F. Henry (76)
Board Member (2006)

Principal Occupation During Past 5 Years:

- President, The International Institute for Conflict Prevention and Resolution, a non-profit organization principally engaged in the development of alternatives to business litigation (Retired 2003)
- Advisor to The Elaw Forum, a consultant on managing corporate legal costs
- Advisor to John Jay Homestead (the restored home of the first U.S. Chief Justice)
- Individual Trustee of several trusts

Other Board Memberships and Affiliations:

- Director, advisor and mediator involved in several non-profit organizations, primarily engaged in domestic and international dispute resolution, and historic preservation

No. of Portfolios for which Board Member Serves: 40

Ehud Houminer (67)
Board Member (1996)

Principal Occupation During Past 5 Years:

- Executive-in-Residence at the Columbia Business School, Columbia University

Other Board Memberships and Affiliations:

- Avnet Inc., an electronics distributor, Director
- International Advisory Board to the MBA Program School of Management, Ben Gurion University, Chairman

No. of Portfolios for which Board Member Serves: 67

Gloria Messinger (77)
Board Member (1996)

Principal Occupation During Past 5 Years:

- Arbitrator for American Arbitration Association and National Association of Securities Dealers, Inc.
- Consultant in Intellectual Property

Other Board Memberships and Affiliations:

- Theater for a New Audience, Inc., Director
- Brooklyn Philharmonic, Director

No. of Portfolios for which Board Member Serves: 40

Dr. Martin Peretz (68)
Board Member (2006)

Principal Occupation During Past 5 Years:

- Editor-in-Chief of The New Republic Magazine
- Lecturer in Social Studies at Harvard University (1965-2002)
- Director of TheStreet.com, a financial information service on the web

Other Board Memberships and Affiliations:

- American Council of Trustees and Alumni, Director
- Pershing Square Capital Management, Adviser
- Montefiore Ventures, General Partner
- Harvard Center for Blood Research, Trustee
- Bard College, Trustee
- Board of Overseers of YIVO Institute for Jewish Research, Chairman

No. of Portfolios for which Board Member Serves: 40

Anne Wexler (77)
Board Member (1991)

Principal Occupation During Past 5 Years:

- Chairman of the Wexler & Walker Public Policy Associates, consultants specializing in government relations and public affairs from January 1981 to present

Other Board Memberships and Affiliations:

- Wilshire Mutual Funds (5 funds), Director
- The Community Foundation for the National Capital Region, Director
- Member of the Council of Foreign Relations
- Member of the National Park Foundation

No. of Portfolios for which Board Member Serves: 49

Once elected all Board Members serve for an indefinite term, but achieve Emeritus status upon reaching age 80. The address of the Board Members and Officers is in c/o The Dreyfus Corporation, 200 Park Avenue, New York, New York 10166. Additional information about the Board Members is available in the fund's Statement of Additional Information which can be obtained from Dreyfus free of charge by calling this toll free number: 1-800-554-4611.

John M. Fraser, Jr., Emeritus Board Member

Dr. Paul A. Marks, Emeritus Board Member

OFFICERS OF THE FUND (Unaudited)

J. DAVID OFFICER, President since December 2006.

Chief Operating Officer, Vice Chairman and a Director of the Manager, and an officer of 82 investment companies (comprised of 165 portfolios) managed by the Manager. He is 59 years old and has been an employee of the Manager since April 1998.

PHILLIP N. MAISANO, Executive Vice President since July 2007.

Chief Investment Officer, Vice Chair and a director of the Manager, and an officer of 82 investment companies (comprised of 165 portfolios) managed by the Manager. Mr. Maisano also is an officer and/or Board member of certain other investment management subsidiaries of The Bank of New York Mellon Corporation, each of which is an affiliate of the Manager. He is 60 years old and has been an employee of the Manager since November 2006. Prior to joining the Manager, Mr. Maisano served as Chairman and Chief Executive Officer of EACM Advisors, an affiliate of the Manager, since August 2004, and served as Chief Executive Officer of Evaluation Associates, a leading institutional investment consulting firm, from 1988 until 2004.

MICHAEL A. ROSENBERG, Vice President and Secretary since August 2005.

Associate General Counsel of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. He is 47 years old and has been an employee of the Manager since October 1991.

JAMES BITETTO, Vice President and Assistant Secretary since August 2005.

Associate General Counsel and Secretary of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. He is 41 years old and has been an employee of the Manager since December 1996.

JONI LACKS CHARATAN, Vice President and Assistant Secretary since August 2005.

Associate General Counsel of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. She is 51 years old and has been an employee of the Manager since October 1988.

JOSEPH M. CHIOFFI, Vice President and Assistant Secretary since August 2005.

Associate General Counsel of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. He is 45 years old and has been an employee of the Manager since June 2000.

JANETTE E. FARRAGHER, Vice President and Assistant Secretary since August 2005.

Associate General Counsel of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. She is 44 years old and has been an employee of the Manager since February 1984.

JOHN B. HAMMALIAN, Vice President and Assistant Secretary since August 2005.

Associate General Counsel of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. He is 44 years old and has been an employee of the Manager since February 1991.

ROBERT R. MULLERY, Vice President and Assistant Secretary since August 2005.

Associate General Counsel of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. He is 55 years old and has been an employee of the Manager since May 1986.

JEFF PRUSNOFSKY, Vice President and Assistant Secretary since August 2005.

Associate General Counsel of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. He is 42 years old and has been an employee of the Manager since October 1990.

JAMES WINDELS, Treasurer since November 2001.

Director – Mutual Fund Accounting of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. He is 49 years old and has been an employee of the Manager since April 1985.

ROBERT ROBOL, Assistant Treasurer since August 2005.

Senior Accounting Manager – Money Market and Municipal Bond Funds of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. He is 43 years old and has been an employee of the Manager since October 1988.

ROBERT SALVILOLO, Assistant Treasurer since May 2007.

Senior Accounting Manager – Equity Funds of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. He is 40 years old and has been an employee of the Manager since June 1989.

ROBERT SVAGNA, Assistant Treasurer since December 2002.

Senior Accounting Manager – Equity Funds of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. He is 40 years old and has been an employee of the Manager since November 1990.

GAVIN C. REILLY, Assistant Treasurer since December 2005.

Tax Manager of the Investment Accounting and Support Department of the Manager, and an officer of 83 investment companies (comprised of 182 portfolios) managed by the Manager. He is 39 years old and has been an employee of the Manager since April 1991.

JOSEPH W. CONNOLLY, Chief Compliance Officer since October 2004.

Chief Compliance Officer of the Manager and The Dreyfus Family of Funds (83 investment companies, comprised of 182 portfolios). From November 2001 through March 2004, Mr. Connolly was first Vice-President, Mutual Fund Servicing for Mellon Global Securities Services. In that capacity, Mr. Connolly was responsible for managing Mellon's Custody, Fund Accounting and Fund Administration services to third-party mutual fund clients. He is 50 years old and has served in various capacities with the Manager since 1980, including manager of the firm's Fund Accounting Department from 1997 through October 2001.

WILLIAM GERMENIS, Anti-Money Laundering Compliance Officer since September 2002.

Vice President and Anti-Money Laundering Compliance Officer of the Distributor, and the Anti-Money Laundering Compliance Officer of 79 investment companies (comprised of 178 portfolios) managed by the Manager. He is 37 years old and has been an employee of the Distributor since October 1998.

NOTES

For More Information

Dreyfus
Midcap Index Fund, Inc.
200 Park Avenue
New York, NY 10166

Manager
The Dreyfus Corporation
200 Park Avenue
New York, NY 10166

Custodian
Mellon Trust of
New England, N.A.
One Boston Place
Boston, MA 02109

**Transfer Agent &
Dividend Disbursing Agent**

Dreyfus Transfer, Inc.
200 Park Avenue
New York, NY 10166

Distributor
MBSC Securities Corporation
200 Park Avenue
New York, NY 10166

Ticker Symbol: PESPX

Telephone 1-800-645-6561

Mail The Dreyfus Family of Funds, 144 Glenn Curtiss Boulevard, Uniondale, NY 11556-0144

E-mail Send your request to info@dreyfus.com

Internet Information can be viewed online or downloaded at: <http://www.dreyfus.com>

The fund files its complete schedule of portfolio holdings with the Securities and Exchange Commission ("SEC") for the first and third quarters of each fiscal year on Form N-Q. The fund's Forms N-Q are available on the SEC's website at <http://www.sec.gov> and may be reviewed and copied at the SEC's Public Reference Room in Washington, DC. Information on the operation of the Public Reference Room may be obtained by calling 1-202-551-8090.

A description of the policies and procedures that the fund uses to determine how to vote proxies relating to portfolio securities, and information regarding how the fund voted these proxies for the 12-month period ended June 30, 2007, is available at <http://www.dreyfus.com> and on the SEC's website at <http://www.sec.gov>. The description of the policies and procedures is also available without charge, upon request, by calling 1-800-645-6561.

