

Eaton Vance Enhanced Equity Income Fund II
Form N-CSR
February 25, 2011

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form N-CSR

**CERTIFIED SHAREHOLDER REPORT OF REGISTERED
MANAGEMENT INVESTMENT COMPANIES**

Investment Company Act File Number: 811-21670

Eaton Vance Enhanced Equity Income Fund II

(Exact Name of Registrant as Specified in Charter)

Two International Place, Boston, Massachusetts 02110

(Address of Principal Executive Offices)

Maureen A. Gemma

Two International Place, Boston, Massachusetts 02110

(Name and Address of Agent for Services)

(617) 482-8260

(Registrant's Telephone Number)

December 31

Date of Fiscal Year End

December 31, 2010

Date of Reporting Period

Item 1. Reports to Stockholders

Annual Report December 31, 2010 EATON VANCE ENHANCED EQUITY INCOME FUND II

IMPORTANT NOTICES

Managed Distribution Plan. On March 10, 2009, the Fund received authorization from the Securities and Exchange Commission to distribute long-term capital gains to shareholders more frequently than once per year. In this connection, the Board of Trustees formally approved the implementation of a Managed Distribution Plan (MDP) to make monthly cash distributions to common shareholders, stated in terms of a fixed amount per common share.

The Fund intends to pay monthly cash distributions equal to \$0.0922 per share. You should not draw any conclusions about the Fund's investment performance from the amount of these distributions or from the terms of the MDP. The MDP will be subject to regular periodic review by the Fund's Board of Trustees.

With each distribution, the Fund will issue a notice to shareholders and an accompanying press release which will provide detailed information required by the Fund's exemptive order. The Fund's Board of Trustees may amend or terminate the MDP at any time without prior notice to Fund shareholders. However, at this time there are no reasonably foreseeable circumstances that might cause the termination of the MDP.

Delivery of Shareholder Documents. The Securities and Exchange Commission (the SEC) permits funds to deliver only one copy of shareholder documents, including prospectuses, proxy statements and shareholder reports, to fund investors with multiple accounts at the same residential or post office box address. This practice is often called "householding" and it helps eliminate duplicate mailings to shareholders.

Eaton Vance, or your financial adviser, may household the mailing of your documents indefinitely unless you instruct Eaton Vance, or your financial adviser, otherwise. If you would prefer that your Eaton Vance documents not be househanded, please contact Eaton Vance at 1-800-262-1122, or contact your financial adviser. Your instructions that householding not apply to delivery of your Eaton Vance documents will be effective within 30 days of receipt by Eaton Vance or your financial adviser.

Portfolio Holdings. Each Eaton Vance Fund and its underlying Portfolio(s) (if applicable) will file a schedule of portfolio holdings on Form N-Q with the SEC for the first and third quarters of each fiscal year. The Form N-Q will be available on the Eaton Vance website at www.eatonvance.com, by calling Eaton Vance at 1-800-262-1122 or in the EDGAR database on the SEC's website at www.sec.gov. Form N-Q may also be reviewed and copied at the SEC's public reference room in Washington, D.C. (call 1-800-732-0330 for information on the operation of the public reference room).

Proxy Voting. From time to time, funds are required to vote proxies related to the securities held by the funds. The Eaton Vance Funds or their underlying Portfolios (if applicable) vote proxies according to a set of policies and

procedures approved by the Funds' and Portfolios' Boards. You may obtain a description of these policies and procedures and information on how the Funds or Portfolios voted proxies relating to portfolio securities during the most recent 12 month period ended June 30, without charge, upon request, by calling 1-800-262-1122. This description is also available on the SEC's website at www.sec.gov.

Additional Notice to Shareholders. The Fund may purchase shares of its common stock in the open market when they trade at a discount to net asset value or at other times if the Fund determines such purchases are advisable. There can be no assurance that the Fund will take such action or that such purchases would reduce the discount.

Please refer to the inside back cover of this report for an important notice about the privacy policies adopted by the Eaton Vance organization.

Eaton Vance Enhanced Equity Income Fund II as of December 31, 2010

MANAGEMENT'S DISCUSSION OF FUND PERFORMANCE

Walter A. Row, CFA

Eaton Vance Management

Co-Portfolio Manager

Michael A. Allison, CFA

Eaton Vance Management

Co-Portfolio Manager

Economic and Market Conditions

U.S. stocks finished 2010 with solid double-digit returns for the major market indices, despite the lingering effects of the Great Recession. The year overall was bracketed by solid quarters at both ends, with some weakness in the middle. The weakness came as a variety of concerns including a stubborn European credit crisis, a devastating oil spill in the Gulf of Mexico and growing political uncertainties in the U.S. caused a spike in volatility at midyear, taking many markets down.

The year ended on a decidedly higher note, however, as equity investors seemed encouraged by the continued modest growth of the U.S. economy and by ongoing signs of improvements in corporate business fundamentals. Investment flows started to favor equities over bonds as longer-term interest rates began to rise toward year-end.

The broad-based S&P 500 Index was up 15.06% for the year ending December 31, 2010, while the blue-chip Dow Jones Industrial Average gained 14.06% and the technology-heavy NASDAQ Composite Index rose 18.16%. Growth indices outperformed value indices across all market capitalizations for the year. Meanwhile, small-cap and mid-cap stocks outperformed their larger-cap counterparts by wide margins, although all of the corresponding indices were firmly anchored in positive territory.

Management Discussion

The Fund is a closed-end fund that trades on the New York Stock Exchange (NYSE) under the symbol EOS. At net asset value (NAV) for the year ending December 31, 2010, the Fund underperformed its primary benchmark, the Russell 1000 Growth Index, and its Lipper peer group, but it outpaced both the CBOE S&P 500 BuyWrite Index and the CBOE NASDAQ-100 BuyWrite Index.¹ The Fund's market price traded at a 4.83% discount to NAV as of period end.

The Fund's primary objective is to provide current income, with a secondary objective of capital appreciation. Under normal market conditions, the Fund pursues its investment objectives by investing primarily in a portfolio of mid- and large-capitalization common stocks, seeking to invest mostly in companies with above-average growth and financial strength potential. The Fund seeks to generate current earnings in part by employing an options strategy of writing (selling) covered call options on a substantial portion of its portfolio securities. During the year ending December 31, 2010, the covered call program prevented the Fund from attaining greater upside market capture. In the aggregate, stocks in the portfolio moved higher and in excess of their respective call strikes by more than the premiums received, resulting in an overall option loss. The Fund did, however, outperform its option benchmark, the CBOE S&P 500 BuyWrite Index.

Total Return Performance 12/31/09 – 12/31/10

NYSE Symbol	EOS
At Net Asset Value (NAV)	10.19%
At Market Price	-4.51%
Russell 1000 Growth Index ¹	16.71%
CBOE S&P 500 BuyWrite Index ¹	5.86%

Edgar Filing: Eaton Vance Enhanced Equity Income Fund II - Form N-CSR

CBOE NASDAQ-100 BuyWrite Index ¹		6.11%
Lipper Options Arbitrage/Options Strategies Funds Average ¹		11.58%
Premium/(Discount) to NAV (12/31/10)		(4.83)%
Total Distributions per share		\$1.412
Distribution Rate ²	At NAV	8.62%
	At Market Price	9.06%

See page 3 for more performance information.

¹ It is not possible to invest directly in an Index or a Lipper Classification. The Indices' total returns do not reflect commissions or expenses that would have been incurred if an investor individually purchased or sold the securities represented in the Indices. The Lipper total return is the average total return, at net asset value, of the funds that are in the same Lipper Classification as the Fund.

² The Distribution Rate is based on the Fund's last regular distribution per share in the period (annualized) divided by the Fund's NAV or market price at the end of the period. The Fund's distributions may be comprised of ordinary income, net realized capital gains and return of capital.

Past performance is no guarantee of future results. Returns are historical and are calculated by determining the percentage change in net asset value or market price (as applicable) with all distributions reinvested. The Fund's performance at market price will differ from its results at NAV. Although market price performance generally reflects investment results over time, during shorter periods, returns at market price can also be affected by factors such as changing perceptions about the Fund, market conditions, fluctuations in supply and demand for the Fund's shares, or changes in Fund distributions. The Fund has no current intention to utilize leverage, but may do so in the future through borrowings and/or other permitted methods. Investment return and principal value will fluctuate so that shares, when sold, may be worth more or less than their original cost. Performance is for the stated time period only; due to market volatility, the Fund's current performance may be lower or higher than the quoted return. For performance as of the most recent month end, please refer to www.eatonvance.com.

Fund shares are not insured by the FDIC and are not deposits or other obligations of, or guaranteed by, any depository institution. Shares are subject to investment risks, including possible loss of principal invested.

Eaton Vance Enhanced Equity Income Fund II as of December 31, 2010

MANAGEMENT'S DISCUSSION OF FUND PERFORMANCE

Among the Fund's common stock holdings, its largest sector weightings on December 31, 2010, were in information technology (IT), consumer discretionary and industrials. The performance of some of the Fund's holdings in the speciality retail, metals and mining, and machinery industries detracted from its relative results, as did an underweighting of the materials sector and an overweight in the Internet software and sales segment of the IT sector. On the upside, security selection in health care equipment/supplies, Internet software/services and household durables industries contributed positively to the Fund's performance.

As of December 31, 2010, the Fund had written call options on approximately 50% of its equity holdings. The Fund seeks current earnings in part from option premiums, which can vary with investors' expectations of the future volatility (implied volatility) of the Fund's underlying assets. During the first and fourth calendar quarters of 2010, there were relatively low levels of implied volatility, with correspondingly low levels of actual volatility in the equity markets. However, the second and early third calendar quarters of the year experienced increases in volatility levels.

On December 14, 2010, the Fund announced a change in its monthly distribution rate, effective with its December 31, 2010, distribution payment. The Fund's portfolio management team reviews the level and sustainability of the Fund's distributions periodically. Before deciding to decrease the amount of the Fund's distribution to \$0.0922 per share, the team considered several factors including the current market outlook and volatility environment, the dividend yield of the underlying equity portfolio and the level of other income yielding assets in the marketplace. The portfolio management team believes a reduction in the Fund's distributions will help strike a greater balance in the delivery of total return, including both distributions and the opportunity for capital appreciation. As portfolio and market conditions change, the rate of distributions paid by the Fund could be further changed.

The views expressed throughout this report are those of the portfolio managers and are current only through the end of the period of the report as stated on the cover. These views are subject to change at any time based upon market or other conditions, and the investment adviser disclaims any responsibility to update such views. These views may not be relied on as investment advice and, because investment decisions for a fund are based on many factors, may not be relied on as an indication of trading intent on behalf of any Eaton Vance fund. Portfolio information provided in the report may not be representative of the Fund's current or future investments and may change due to active management.

Eaton Vance Enhanced Equity Income Fund II as of December 31, 2010

FUND PERFORMANCE

Fund Performance

NYSE Symbol	EOS
Average Annual Total Returns (at market price, NYSE)	
One Year	-4.51%
Five Years	3.59
Life of Fund (1/31/05)	3.18
Average Annual Total Returns (at net asset value)	
One Year	10.19%
Five Years	3.00
Life of Fund (1/31/05)	4.05

Fund Composition

Top 10 Holdings¹

By total investments

Apple, Inc.	5.5%
Google, Inc., Class A	4.1
International Business Machines Corp.	3.6
Exxon Mobil Corp.	3.6
Coca-Cola Co. (The)	2.3
Microsoft Corp.	2.2
Goldcorp, Inc.	2.2
Freeport-McMoRan Copper & Gold, Inc.	2.2
Akamai Technologies, Inc.	2.1
Oracle Corp.	2.0

¹ Top 10 Holdings represented 29.8% of the Fund's total investments as of 12/31/10. The Top 10 Holdings do not reflect the Fund's written option positions at 12/31/10.

Sector Weightings²

By total investments

² As a percentage of the Fund's total investments as of 12/31/10. Sector Weightings do not reflect the Fund's written option positions at 12/31/10.

Past performance is no guarantee of future results. Returns are historical and are calculated by determining the percentage change in net asset value or market price (as applicable) with all distributions reinvested. The Fund's performance at market price will differ from its results at NAV. Although market price performance generally reflects investment results over time, during shorter periods, returns at market price can also be affected by factors such as changing perceptions about the Fund, market conditions, fluctuations in supply and demand for the Fund's shares, or changes in Fund distributions. The Fund has no current intention to utilize leverage, but may do so in the future through borrowings and/or other permitted methods. Investment return and principal value will fluctuate so that shares, when sold, may be worth more or less than their original cost. Performance is for the stated time period only; due to market volatility, the Fund's current performance may be lower or higher than the quoted return. For performance as of the most recent month end, please refer to www.eatonvance.com.

Eaton Vance Enhanced Equity Income Fund II as of December 31, 2010

PORTFOLIO OF INVESTMENTS

Common Stocks 102.3%¹⁾

Security	Shares	Value
Aerospace & Defense 2.1%		
Boeing Co. (The)	48,700	\$ 3,178,162
United Technologies Corp.	125,959	9,915,492
		\$ 13,093,654
Air Freight & Logistics 0.4%		
United Parcel Service, Inc., Class B	35,043	\$ 2,543,421
		\$ 2,543,421
Auto Components 1.0%		
Johnson Controls, Inc.	169,887	\$ 6,489,683
		\$ 6,489,683
Automobiles 1.3%		
Ford Motor Co. ⁽²⁾	496,112	\$ 8,329,720
		\$ 8,329,720

Beverages 3.9%

Coca-Cola Co. (The)	219,763	\$ 14,453,812
PepsiCo, Inc.	146,157	9,548,437
		\$ 24,002,249

Biotechnology 1.5%

Amgen, Inc. ⁽²⁾	83,107	\$ 4,562,574
Celgene Corp. ⁽²⁾	77,790	4,600,501
		\$ 9,163,075

Capital Markets 0.5%

Goldman Sachs Group, Inc. (The)	19,629	\$ 3,300,813
		\$ 3,300,813

Chemicals 0.8%

Air Products and Chemicals, Inc.	54,595	\$ 4,965,415
		\$ 4,965,415

Commercial Banks 1.7%

KeyCorp	376,543	\$ 3,332,405
PNC Financial Services Group, Inc.	49,540	3,008,069
Wells Fargo & Co.	145,818	4,518,900

\$ 10,859,374

Communications Equipment 4.3%

Cisco Systems, Inc. ⁽²⁾	562,256	\$ 11,374,439
Juniper Networks, Inc. ⁽²⁾	185,026	6,831,160
QUALCOMM, Inc.	175,477	8,684,357

\$ 26,889,956

Computers & Peripherals 5.7%

Apple, Inc. ⁽²⁾	108,908	\$ 35,129,365
----------------------------	---------	---------------

\$ 35,129,365

Construction & Engineering 0.4%

Shaw Group, Inc. (The) ⁽²⁾	76,905	\$ 2,632,458
---------------------------------------	--------	--------------

\$ 2,632,458

Consumer Finance 0.8%

American Express Co.	111,832	\$ 4,799,829
----------------------	---------	--------------

\$ 4,799,829

Electrical Equipment 1.6%

Emerson Electric Co.	168,639	\$ 9,641,092
----------------------	---------	--------------

\$ 9,641,092

Electronic Equipment, Instruments & Components 1.0%

Corning, Inc. 311,079 \$ 6,010,046

\$ 6,010,046

Energy Equipment & Services 3.2%

Rowan Cos., Inc.⁽²⁾ 243,006 \$ 8,483,339

Schlumberger, Ltd. 139,915 11,682,903

\$ 20,166,242

Food & Staples Retailing 0.4%

Wal-Mart Stores, Inc. 47,649 \$ 2,569,711

\$ 2,569,711

Food Products 2.5%

Flowers Foods, Inc. 179,914 \$ 4,841,486

Green Mountain Coffee Roasters, Inc.⁽²⁾ 126,289 4,149,856

Nestle SA 109,007 6,386,030

\$ 15,377,372

See notes to financial statements

Eaton Vance Enhanced Equity Income Fund II as of December 31, 2010

PORTFOLIO OF INVESTMENTS CONT D

Security	Shares	Value
Health Care Equipment & Supplies 1.0%		
Covidien PLC	68,671	\$ 3,135,518
Varian Medical Systems, Inc. ⁽²⁾	43,992	3,047,766
		\$ 6,183,284
Health Care Providers & Services 2.6%		
AmerisourceBergen Corp.	100,190	\$ 3,418,483
Cardinal Health, Inc.	84,954	3,254,588
Fresenius Medical Care AG & Co. KGaA ADR	51,174	2,952,228
UnitedHealth Group, Inc.	177,656	6,415,158
		\$ 16,040,457
Hotels, Restaurants & Leisure 2.7%		
Carnival Corp.	135,176	\$ 6,232,965
McDonald's Corp.	133,596	10,254,829
		\$ 16,487,794
Household Durables 1.1%		
Tempur-Pedic International, Inc. ⁽²⁾	166,408	\$ 6,666,304

\$ 6,666,304

Industrial Conglomerates 1.7%

3M Co.	74,108	\$ 6,395,520
General Electric Co.	235,079	4,299,595

\$ 10,695,115

Insurance 1.1%

Lincoln National Corp.	100,119	\$ 2,784,310
Prudential Financial, Inc.	74,096	4,350,176

\$ 7,134,486

Internet & Catalog Retail 1.9%

Amazon.com, Inc. ⁽²⁾	64,262	\$ 11,567,160
---------------------------------	--------	---------------

\$ 11,567,160

Internet Software & Services 7.7%

Akamai Technologies, Inc. ⁽²⁾	286,897	\$ 13,498,504
Google, Inc., Class A ⁽²⁾	43,645	25,923,821
VeriSign, Inc.	255,772	8,356,071

\$ 47,778,396

IT Services 4.9%

Edgar Filing: Eaton Vance Enhanced Equity Income Fund II - Form N-CSR

Accenture PLC, Class A	151,646	\$ 7,353,315
International Business Machines Corp.	156,986	23,039,265

\$ 30,392,580

Leisure Equipment & Products 0.7%

Hasbro, Inc.	97,416	\$ 4,596,087
--------------	--------	--------------

\$ 4,596,087

Life Sciences Tools & Services 0.7%

Thermo Fisher Scientific, Inc. ⁽²⁾	80,434	\$ 4,452,826
---	--------	--------------

\$ 4,452,826

Machinery 4.8%

Caterpillar, Inc.	111,814	\$ 10,472,500
Danaher Corp.	215,913	10,184,616
Deere & Co.	111,041	9,221,955

\$ 29,879,071

Media 0.6%

McGraw-Hill Cos., Inc. (The)	108,638	\$ 3,955,510
------------------------------	---------	--------------

\$ 3,955,510

Edgar Filing: Eaton Vance Enhanced Equity Income Fund II - Form N-CSR

Metals & Mining 4.5%

Freeport-McMoRan Copper & Gold, Inc.	117,094	\$ 14,061,818
Goldcorp, Inc.	307,118	14,121,286
		\$ 28,183,104

Multiline Retail 2.4%

Kohl's Corp. ⁽²⁾	82,647	\$ 4,491,038
Macy's, Inc.	202,373	5,120,037
Target Corp.	93,232	5,606,040
		\$ 15,217,115

Oil, Gas & Consumable Fuels 9.4%

Apache Corp.	41,831	\$ 4,987,510
ConocoPhillips	113,679	7,741,540
Exxon Mobil Corp.	310,899	22,732,935
Hess Corp.	95,646	7,320,745
Occidental Petroleum Corp.	49,560	4,861,836
Peabody Energy Corp.	101,714	6,507,662
Southwestern Energy Co. ⁽²⁾	114,490	4,285,360
		\$ 58,437,588

See notes to financial statements

Eaton Vance Enhanced Equity Income Fund II as of December 31, 2010

PORTFOLIO OF INVESTMENTS CONT D

Security	Shares	Value
Pharmaceuticals 2.5%		
Bristol-Myers Squibb Co.	178,283	\$ 4,720,934
Johnson & Johnson	78,959	4,883,614
Shire PLC ADR	83,351	6,032,945
		\$ 15,637,493
Road & Rail 2.3%		
CSX Corp.	151,433	\$ 9,784,086
Kansas City Southern ⁽²⁾	97,453	4,664,101
		\$ 14,448,187
Semiconductors & Semiconductor Equipment 3.8%		
Atheros Communications, Inc. ⁽²⁾	193,236	\$ 6,941,037
Broadcom Corp., Class A	57,015	2,483,003
Cypress Semiconductor Corp. ⁽²⁾	401,143	7,453,237
Intel Corp.	333,428	7,011,991
		\$ 23,889,268
Software 5.9%		
Microsoft Corp.	510,533	\$ 14,254,081

Edgar Filing: Eaton Vance Enhanced Equity Income Fund II - Form N-CSR

Oracle Corp.	406,475	12,722,668
salesforce.com, inc. ⁽²⁾	72,390	9,555,480

\$ 36,532,229

Specialty Retail 2.4%

Advance Auto Parts, Inc.	81,279	\$ 5,376,606
Best Buy Co., Inc.	146,547	5,025,097
TJX Companies, Inc. (The)	97,327	4,320,345

\$ 14,722,048

Textiles, Apparel & Luxury Goods 2.0%

NIKE, Inc., Class B	68,403	\$ 5,842,984
Warnaco Group, Inc. (The) ⁽²⁾	118,424	6,521,610

\$ 12,364,594

Tobacco 1.5%

Philip Morris International, Inc.	158,307	\$ 9,265,709
-----------------------------------	---------	--------------

\$ 9,265,709

Wireless Telecommunication Services 1.0%

American Tower Corp., Class A ⁽²⁾	122,126	\$ 6,306,587
--	---------	--------------

\$ 6,306,587

Total Common Stocks

Edgar Filing: Eaton Vance Enhanced Equity Income Fund II - Form N-CSR

(identified cost \$511,316,151)

\$ 636,796,467

Short-Term Investments 0.2%

Description	Interest (000 s omitted)	Value
Eaton Vance Cash Reserves Fund, LLC, 0.22% ⁽³⁾⁽⁴⁾	\$ 1,040	\$ 1,040,303
Total Short-Term Investments (identified cost \$1,040,303)		\$ 1,040,303
Total Investments 102.5% (identified cost \$512,356,454)		\$ 637,836,770

Covered Call Options Written (2.5)%

Security	Number of Contracts	Strike Price	Expiration Date	Value
3M Co.	445	\$ 90.00	2/19/11	\$ (42,275)
Accenture PLC, Class A	685	47.50	1/22/11	(102,750)
Advance Auto Parts, Inc.	245	70.00	1/22/11	(3,675)
Advance Auto Parts, Inc.	245	70.00	2/19/11	(26,337)
Air Products and Chemicals, Inc.	260	90.00	3/19/11	(109,200)
Akamai Technologies, Inc.	1,555	55.00	2/19/11	(137,617)
Amazon.com, Inc.	260	155.00	1/22/11	(657,150)
American Express Co.	675	47.00	1/22/11	(4,387)
American Tower Corp., Class A	400	52.50	1/22/11	(22,000)
American Tower Corp., Class A	335	52.50	2/19/11	(37,687)
AmerisourceBergen Corp.	380	32.00	2/19/11	(100,700)
Amgen, Inc.	420	57.50	1/22/11	(11,340)
Apache Corp.	210	105.00	1/22/11	(303,450)

Edgar Filing: Eaton Vance Enhanced Equity Income Fund II - Form N-CSR

Apple, Inc.	550	290.00	1/22/11	(1,890,625)
Atheros Communications, Inc.	1,160	36.00	3/19/11	(292,900)
Best Buy Co., Inc.	645	41.00	1/22/11	(1,290)
Boeing Co. (The)	160	70.00	1/22/11	(1,760)
Bristol-Myers Squibb Co.	1,070	27.00	2/19/11	(37,985)
Broadcom Corp., Class A	285	42.00	2/19/11	(91,200)
Cardinal Health, Inc.	510	39.00	3/19/11	(80,325)
Carnival Corp.	595	42.00	1/22/11	(255,850)
Caterpillar, Inc.	240	85.00	2/19/11	(230,400)
Caterpillar, Inc.	435	100.00	2/19/11	(55,245)
Celgene Corp.	295	60.00	1/22/11	(35,400)
Cisco Systems, Inc.	4,650	22.50	1/22/11	(16,275)

See notes to financial statements

Eaton Vance Enhanced Equity Income Fund II as of December 31, 2010

PORTFOLIO OF INVESTMENTS CONT D

Security	Number of Contracts	Strike Price	Expiration Date	Value
Coca-Cola Co. (The)	870	\$ 62.50	2/19/11	