EATON VANCE CALIFORNIA MUNICIPAL BOND FUND Form N-CSR November 25, 2014

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Form N-CSR

CERTIFIED SHAREHOLDER REPORT OF REGISTERED

MANAGEMENT INVESTMENT COMPANIES

Investment Company Act File Number: 811-21147

Eaton Vance California Municipal Bond Fund

(Exact Name of Registrant as Specified in Charter)

Two International Place, Boston, Massachusetts 02110

(Address of Principal Executive Offices)

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(617) 482-8260

(Registrant s Telephone Number)

September 30

Date of Fiscal Year End

September 30, 2014

Date of Reporting Period

Item 1. Reports to Stockholders

Municipal Bond Funds

Annual Report

September 30, 2014

Municipal (EIM) California (EVM) New York (ENX)

Commodity Futures Trading Commission Registration. Effective December 31, 2012, the Commodity Futures Trading Commission (CFTC) adopted certain regulatory changes that subject registered investment companies and advisers to regulation by the CFTC if a fund invests more than a prescribed level of its assets in certain CFTC-regulated instruments (including futures, certain options and swap agreements) or markets itself as providing investment exposure to such instruments. Each Fund has claimed an exclusion from the definition of the term—commodity pool operator—under the Commodity Exchange Act. Accordingly, neither the Funds nor the adviser with respect to the operation of the Funds is subject to CFTC regulation. Because of its management of other strategies, each Fund—s adviser is registered with the CFTC as a commodity pool operator and a commodity trading advisor.

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.

Annual Report September 30, 2014

Eaton Vance

Municipal Bond Funds

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Municipal Bond Funds

September 30, 2014

Management s Discussion of Fund Performance

Economic and Market Conditions

As the fiscal year began on October 1, 2013, the municipal market was at the tail end of a significant selloff that started in May 2013, after then-U.S. Federal Reserve Board (the Fed) Chairman Ben Bernanke surprised the markets by indicating that the Fed s \$85 billion in monthly asset purchases could be tapered sooner than most investors had expected. Investors rushed to sell fixed-income assets in anticipation of rising rates, causing nearly every fixed-income asset class to decline in value.

Even after the Fed tried to temper its comments and calm the markets, heavy selling in municipals continued through the summer of 2013. Although selling of municipals abated somewhat in September, the municipal market continued to experience outflows from the beginning of the period on October 1 through December 2013.

But as 2014 began, municipals turned a corner. From January 1 through September 30, 2014, municipals rallied back from 2013 lows. Contrary to what many investors had expected, Treasury rates declined and municipal rates followed. A principal driver was a global flight to quality, as investors sought the relative safety of Treasurys in the face of increased geopolitical and economic risks overseas. In addition, strong demand for municipals, coupled with tight supply, created a favorable supply-demand imbalance that helped drive prices up and yields down. As investors searched for yield in a low-interest-rate environment, longer dated and lower credit quality bonds were the best performers. For the one-year period as a whole, long-term municipal rates declined while short-term rates were essentially flat.

Fund Performance

For the fiscal year ended September 30, 2014, Municipal Bond Fund, California Municipal Bond Fund and New York Municipal Bond Fund shares at net asset value (NAV) all outperformed the 12.88% return of the Funds benchmark, the Barclays Long (22+) Year Municipal Bond Index² (the Index).

The Funds overall strategy is to invest primarily in higher quality bonds (rated A7 or higher) with maturities of 10 years or more, in order to capture their typically higher yields and a greater income stream than shorter-maturity issues. In managing the Funds, management employs leverage through Residual Interest Bond (RIB) financing⁶ to seek to enhance the Funds tax-exempt income. The use of leverage has the effect of achieving additional exposure to the municipal market, and thus magnifying a fund s exposure to its underlying investments in both up and down market environments. During this period of falling rates and strong performance by municipal bonds, the use of leverage was the largest single contributor to performance versus the Index which does not employ leverage for all three Funds.

Management hedges to various degrees against the greater potential risk of volatility caused by the use of leverage and investing in bonds at the long end of the yield curve, by using Treasury futures and/or interest-rate swaps. As a risk management tactic within the Funds overall strategy, interest rate hedging is intended to moderate performance on both the upside and the downside of the market. During this period of strong performance by municipal bonds, the Funds Treasury futures hedge mitigated some of the upside and thus detracted modestly from the Funds performance relative to the unhedged Index.

Fund-specific Results

Eaton Vance Municipal Bond Fund shares at NAV returned 21.00%, outperforming the 12.88% return of the Index. The main contributors to performance versus the Index included leverage, as mentioned earlier, and an overweight in zero coupon bonds, which were the best-performing coupon structure during the period. In addition, relative performance was aided by a positive credit development regarding the Fund s position in

Ambac-insured bonds issued by the Las Vegas Monorail Company, an issuer that filed for bankruptcy protection in 2010. The chief detractors from performance relative to the Index were the Fund s hedging strategy, an underweight and security selection in BBB-rated bonds, and an underweight and security selection in bonds with maturities of 30 years or more.

Eaton Vance California Municipal Bond Fund shares at NAV returned 18.96%, surpassing the 12.88% return of the Index. In addition to leverage, contributors to results versus the Index included security selection in Puerto Rico bonds and an overweight in zero coupon bonds. Detractors from performance relative to the Index included the Fund shedging strategy, as well as security selection and an underweight in the health care and transportation sectors.

Eaton Vance New York Municipal Bond Fund shares at NAV returned 16.72%, outperforming the 12.88% return of the Index. Significant contributors to performance versus the Index included leverage and an overweight and security selection in the education sector. Key detractors from performance versus the Index included the Fund shedging strategy, security selection in bonds rated BBB and below, and security selection in zero coupon bonds.

See Endnotes and Additional Disclosures in this report.

Past performance is no guarantee of future results. Returns are historical and are calculated by determining the percentage change in net asset value (NAV) or market price (as applicable) with all distributions reinvested and includes management fees and other expenses. Fund performance at market price will differ from its results at NAV due to factors such as changing perceptions about the Fund, market conditions, fluctuations in supply and demand for Fund shares, or changes in Fund distributions. Investment return and principal value will fluctuate so that shares, when sold, may be worth more or less than their original cost. Performance less than one year is cumulative. Performance is for the stated time period only; due to market volatility, current Fund performance may be lower or higher than the quoted return. For performance as of the most recent month-end, please refer to eatonvance.com.

Municipal Bond Fund

September 30, 2014

Performance^{2,3}

Fund Profile

Portfolio Manager Cynthia J. Clemson

| % Average Annual Total Returns | Inception Date | One Year | Five Years | Ter | 1 Years |
|--|----------------|----------|------------|-----|---------|
| Fund at NAV | 08/30/2002 | 21.00% | 8.15% | | 6.38% |
| Fund at Market Price | | 15.44 | 5.87 | | 5.84 |
| Barclays Long (22+) Year Municipal Bond Index | | 12.88% | 5.97% | | 5.42% |
| 6/ Proming Discount to NAVA | | | | | |
| % Premium/Discount to NAV ⁴ | | | | | 10.100/ |
| | | | | | 10.19% |
| Distributions ⁵ | | | | | |
| Total Distributions per share for the period | | | | \$ | 0.766 |
| Distribution Rate at NAV | | | | Ψ | 5.49% |
| Taxable-Equivalent Distribution Rate at NAV | | | | | 9.70% |
| Distribution Rate at Market Price | | | | | 6.12% |
| Taxable-Equivalent Distribution Rate at Market Price | | | | | 10.81% |
| Taxable Equivalent Distribution Rate at Market Free | | | | | 10.01 / |
| % Total Leverage ⁶ | | | | | |
| Residual Interest Bond (RIB) Financing | | | | | 38.82% |

Credit Quality (% of total investments)^{7,8}

See Endnotes and Additional Disclosures in this report.

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California Municipal Bond Fund

September 30, 2014

Performance^{2,3}

Portfolio Manager Craig R. Brandon, CFA

| % Average Annual Total Returns | Inception Date | One Year | Five Years | Ten Years |
|---|----------------|----------|------------|-----------|
| Fund at NAV | 08/30/2002 | 18.96% | 6.58% | 5.44% |
| Fund at Market Price | | 16.62 | 3.84 | 4.49 |
| Barclays Long (22+) Year Municipal Bond Index | | 12.88% | 5.97% | 5.42% |

% Premium/Discount to NA^{V4}

12.02%