PUTNAM MANAGED MUNICIPAL INCOME TRUST
Form N-CSRS
June 26, 2015

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:	(811-05740)
Exact name of registrant as specified in charter:	Putnam Managed Municipal Income Trust
Address of principal executive offices:	One Post Office Square, Boston, Massachusetts 02109
Name and address of agent for service:	Robert T. Burns, Vice President One Post Office Square Boston, Massachusetts 02109
Copy to:	Bryan Chegwidden, Esq. Ropes & Gray LLP 1211 Avenue of the Americas New York, New York 10036
Registrant's telephone number, including area code:	(617) 292-1000
Date of fiscal year end:	October 31, 2015
Date of reporting period:	November 1, 2014 – April 30, 2015

Item 1. Report to Stockholders:

The following is a copy of the report transmitted to stockholders pursuant to Rule 30e-1 under the Investment Company Act of 1940:

Putnam
Managed Municipal
Income Trust

Semiannual report
4 | 30 | 15

Consider these risks before investing: Lower-rated bonds may offer higher yields in return for more risk. Bond investments are subject to interest-rate risk (the risk of bond prices falling if interest rates rise) and credit risk (the risk of an issuer defaulting on interest or principal payments). Interest-rate risk is greater for longer-term bonds, and credit risk is greater for below-investment-grade bonds. Unlike bonds, funds that invest in bonds have fees and expenses. The value of bonds in the fund's portfolio may fall or fail to rise over extended periods of time for a variety of reasons, including general financial market conditions, changing market perceptions of the risk of default, changes in government intervention, and factors related to a specific issuer or industry. These factors may also lead to periods of high volatility and reduced liquidity in the bond markets. You can lose money by investing in the fund. The fund's shares trade on a stock exchange at market prices, which may be lower than the fund's net asset value.

Message from the Trustees

Dear Fellow Shareholder:

With the midway point of 2015 at hand, we note the sixth anniversary of the beginning of the U.S. economic expansion as dated by the National Bureau of Economic Research, which tracks the ups and downs of U.S. business cycles. It has also been six years since the beginning of the current bull market in U.S. stocks.

Both the expansion and the bull market are longer than average, and both appear to owe their longevity, to some degree, to the extraordinary policy measures undertaken by the Federal Reserve. Recently, however, the Fed has been preparing markets for a shift toward tighter monetary policy. Short-term interest rates could increase for the first time since 2006.

While higher interest rates can be a reflection of solid economic conditions, they can also pose a risk to fixed-income investments, and can have a less direct impact on stocks. International markets, which have performed well in early 2015, would also feel the effects of higher rates in the world's largest economy. In the following pages, your fund's portfolio manager provides a market outlook in addition to an update on your fund's performance.

With the possibility that markets could begin to move in different directions, it might be a prudent time to consult your financial advisor to determine whether any adjustments or additions to your portfolio are warranted.

As the owner of a Putnam fund, you have put your investment in the hands of professional managers who pursue a consistent strategy and have experience in navigating changing market conditions. They, and we, share a deep conviction that an active approach based on fundamental research can play a valuable role in your portfolio.

As always, thank you for investing with Putnam.

Respectfully yours,

Robert L. Reynolds
President and Chief Executive Officer
Putnam Investments

Jameson A. Baxter
Chair, Board of Trustees

June 12, 2015

Performance
snapshot

Annualized total return (%) comparison as of 4/30/15

Data are historical. Past performance does not guarantee future results. More recent returns may be less or more than those shown. Investment return and net asset value will fluctuate, and you may have a gain or a loss when you sell your shares. Performance assumes reinvestment of distributions and does not account for taxes. Fund returns in the bar chart are at NAV. See pages 5 and 11–12 for additional performance information, including fund returns at market price. Index and Lipper results should be compared with fund performance at NAV. Fund results reflect the use of leverage, while index results are unleveraged and Lipper results reflect varying use of, and methods for, leverage. Lipper calculates performance differently than the closed-end funds it ranks, due to varying methods for determining a fund's monthly reinvestment NAV.

* *Returns for the six-month period are not annualized, but cumulative.*

Interview with your fund's portfolio manager

Paul M. Drury, CFA

What was the market environment like for municipal bonds during the six-month reporting period ended April 30, 2015?

Uncertainties surrounding the timing of the Federal Reserve's first rate hike since June 2006 contributed to heightened interest-rate volatility during the period, as did growth worries and diverging central bank policies around the globe. Prospects for higher U.S. interest rates contributed to a rally in the U.S. dollar, which appreciated strongly against foreign currencies. Falling energy prices also added another dimension to the debate about growth as lower prices rippled through the economy and helped to ease inflationary pressures. Geopolitical tensions in the Middle East sparked a flight to quality at times during the period, as investors generally became more cautious in their outlook.

Municipal bonds benefited from the Fed's forward guidance during the period, which suggested that the central bank would not rush to raise interest rates. This past December, Fed officials modified their policy statement by adding that they "can be patient" on the timing of their first rate increase. Subsequently, in March, the Fed removed the word "patient" from its statement about plans for raising interest rates — a change in wording that was expected, but the central bank also tempered its outlook for the U.S. economy and inflation. Fed Chair Janet Yellen added that when rates start to increase, they might not approach

Broad market index and fund performance

This comparison shows your fund's performance in the context of broad market indexes for the 12 months ended 4/30/15. See pages 4 and 11–12 for additional fund performance information. Index descriptions can be found on page 13.

long-term "normal" levels for some time. The overall dovish tone of Yellen's statement was well received by investors, as it signaled a more gradual path to the normalization of interest rates than many investors had anticipated. Just before the close of the reporting period, Yellen acknowledged recent weakness in the U.S. economy but left open the possibility of raising rates in the second half of 2015.

How did Putnam Managed Municipal Income Trust perform against this backdrop?

With interest rates low and fundamental credit quality stable, investors continued to seek out the yields offered by relatively riskier municipal bonds further out on the maturity spectrum as well as for those in the lower-rated, higher-yielding sectors. Consequently, credit spreads [the difference in yield between higher- and lower-quality municipal bonds] tightened during the period, resulting in slightly better returns for lower-quality investments than for higher-quality investments.

Municipal bond prices also benefited from favorable supply/demand, as inflows continued throughout the period. While supply is up significantly year over year, it has been dominated by refunding issuance, as municipal issuers replaced their older, higher-coupon bonds with lower-yield debt. The increased supply has generally been met with strong demand.

Credit quality overview

Credit qualities are shown as a percentage of the fund's net assets (common and preferred shares) as of 4/30/15. A bond rated Baa or higher (MIG3/VMIG3 or higher, for short-term debt) is considered investment grade. The chart reflects Moody's ratings; percentages may include bonds or derivatives not rated by Moody's but rated by Standard & Poor's (S&P) or, if unrated by S&P, by Fitch ratings, and then included in the closest equivalent Moody's rating based on analysis of these agencies' respective ratings criteria. Moody's ratings are used in recognition of its prominence among rating agencies and breadth of coverage of rated securities. Ratings may vary over time.

Cash and net other assets, if any, represent the market value weights of cash, derivatives, short-term securities, and other unclassified assets in the portfolio. The fund itself has not been rated by an independent rating agency.

"In our opinion, the general fiscal health and creditworthiness of the municipal bond market are solid."

Paul Drury

The fund was well positioned for this environment, outperforming its benchmark, the Barclays Municipal Bond Index, and the average return of its Lipper peer group for the six months ended April 30, 2015.

Are your key investment themes, with their defensive orientation, still in place?

We maintained our slightly defensive bias in the portfolio because we believed that the municipal bond market's attractive returns in 2014 could be attributed primarily to a combination of lower interest rates and strong market technicals. We kept the fund's duration positioning, or interest-rate sensitivity, below the median of its Lipper peer group. We achieved this by maintaining a slightly higher-than-average cash position in the portfolio to help shelter it from price pressures, given the risk of interest rates moving higher. We also believed that carrying a slightly higher-than-average cash balance gave us greater flexibility to act swiftly in the event that timely investment opportunities presented themselves.

As for portfolio positioning, the fund retained an overweight exposure to municipal bonds rated A and Baa relative to the benchmark during the period. We continued to

Portfolio allocation by state

Top ten state allocations are shown as a percentage of the fund's net assets (common and preferred shares) as of 4/30/15. Investments in Puerto Rico represented 0.9% of the fund's net assets. Summary information may differ from the portfolio schedule included in the financial statements due to the differing treatment of interest accruals, the floating rate portion of tender option bonds, derivative securities, if any, and the use of different classifications of securities for presentation purposes. Holdings and allocations may vary over time.

emphasize essential service revenue bonds, which are typically issued by state and local government entities to finance specific revenue-generating projects, and underweighted local general obligation [G.O.] bonds relative to the benchmark. These securities rely on the taxing power of the issuer and the health of the local economy to make payments from property taxes or sales and income taxes. We maintained our underweight exposure to issuers in Puerto Rico relative to the fund's Lipper peer group, given our negative credit outlook for the Commonwealth. At the sector level, we favored transportation, higher education, continuing care retirement communities, and essential service utilities bonds in the portfolio relative to the fund's Lipper peer group. Overall, this positioning contributed positively to performance.

Our shorter-duration interest-rate positioning was a modest detractor from relative performance versus our Lipper peers, as interest rates moved lower during the period. An underweight position in non-rated bonds versus our Lipper peers also was a headwind for performance, as demand for high-yield municipal bonds helped push prices higher.

How do you think the dramatic decline in oil prices will play out across the municipal bond market?

Lower oil and energy prices should be a net positive for the municipal bond market, in our opinion. We believe certain sectors, such as

Comparison of top sector weightings

This chart shows how the fund's top weightings have changed over the past six months. Allocations are shown as a percentage of the fund's net assets (common and preferred shares). Current period summary information may differ from the information in the portfolio schedule notes included in the financial statements due to the inclusion of derivative securities, any interest accruals, and the use of different classifications of securities for presentation purposes. Holdings and allocations may vary over time.

transportation — notably airlines — and toll roads, could see a positive impact from the decline in prices. However, we also believe that oil-producing states, such as Texas, North Dakota, and Alaska, are likely to see falling revenues as production decreases or ceases for a period of time. In the cases of Alaska and North Dakota, however, these states typically have not issued much municipal bond debt and have set aside healthy reserves to ease budget pressures that typically accompany such a downturn. In the case of Texas, we believe the decline in oil and energy prices could be more widely felt. If oil prices remain low for an extended period of time, affected issuers may come under more pressure, in our opinion. The susceptibility of local G.O. bonds to macroeconomic developments, such as a sharp decline in oil prices, reinforces our predisposition to underweight G.O. bonds in the portfolio relative to the benchmark.

What factors are likely to influence the performance of municipal bonds in the coming months?

Questions about the timing of a Fed interest-rate hike are likely to dominate the public discourse and may fuel market volatility until the central bank acts. Thus, we believe the Fed's actions, along with the direction of longer-term U.S. Treasuries, will highly influence the performance of municipal bonds in 2015.

In our opinion, the general fiscal health and creditworthiness of the municipal bond market are solid. Despite some high-profile outliers, such as Detroit and Puerto Rico that have garnered much media attention, we expect defaults to remain low and that they could even decline further as the U.S. economy recovers. The default rate, which stood at 0.03% for 2014 [according to Bank of America Merrill Lynch], is a tiny fraction of the $3.6 trillion municipal bond market, and we don't believe defaults are likely to increase meaningfully in the foreseeable future. That said, we would expect the State of Illinois, City of Chicago, and Puerto Rico to continue to be in the headlines, as they contend with budget and pension issues.

Prospects for tax reform appear to constitute little risk at this point, in our opinion. However, we are closely monitoring the various proposals and believe any momentum for change will more likely come after the 2016 elections.

With credit spreads the tightest that they have been in five years, we expect performance will be driven less by price appreciation potential and more by the tax-free income opportunities afforded by municipal bonds. In today's low interest-rate environment where investors continue to search for attractive yield opportunities, we believe many will look to tax-exempt investments to help them keep more of what they earn.

Thank you, Paul, for your time and insights today.

The views expressed in this report are exclusively those of Putnam Management and are subject to change. They are not meant as investment advice.

Please note that the holdings discussed in this report may not have been held by the fund for the entire period. Portfolio composition is subject to review in accordance with the fund's investment strategy and may vary in the future. Current and future portfolio holdings are subject to risk. Statements in the Q&A concerning the fund's performance or portfolio composition relative to those of the fund's Lipper peer group may reference information produced by Lipper Inc. or through a third party.

Portfolio Manager Paul M. Drury has a B.A. from Suffolk University. He has been in the investment industry since he joined Putnam in 1989.

In addition to Paul, your fund's portfolio managers are Susan A. McCormack, CFA, and Thalia Meehan, CFA.

IN THE NEWS

There seems to be momentum in the U.S. equities market, which is now in its third-longest bull run since 1928. Inflation, as measured by the Consumer Price Index, was –0.1% before seasonal adjustment for the 12 months ended March 31, 2015, according to the Bureau of Labor Statistics. Low inflation and a resilient U.S. economy generally provide a supportive environment for equities. However, investors appear to be more cautious than celebratory. Uncertainties include the timing of the Federal Reserve's decision to implement the first hike in short-term interest rates since 2006 and whether the strong dollar could continue to worsen the trade balance, which could in turn reduce gross domestic product. In March, exports grew by less than 1%, according to the Bureau of Economic Analysis, compared with a 7.7% jump in imports in the same month. For now, the S&P 500 Index continues to hover around the 2100 mark. Investors should keep in mind that equities tend to perform well when short-term rates are rising from low levels. The reason is, in part, because rising rates typically signal an improving economy.

Your fund's performance

This section shows your fund's performance, price, and distribution information for periods ended April 30, 2015, the end of the first half of its current fiscal year. In accordance with regulatory requirements for mutual funds, we also include performance as of the most recent calendar quarter-end. Performance should always be considered in light of a fund's investment strategy. Data represent past performance. Past performance does not guarantee future results. More recent returns may be less or more than those shown. Investment return, net asset value, and market price will fluctuate, and you may have a gain or a loss when you sell your shares.

Fund performance Total return and comparative index results for periods ended 4/30/15

	NAV	Market price	Barclays Municipal Bond Index	Lipper High Yield Municipal Debt Funds (closed-end) category average*

Annual average				
(life of fund) (2/24/89)	6.70%	6.11%	6.20%	5.94%
10 years	77.87	93.84	57.19	82.51
Annual average	5.93	6.84	4.63	6.18
5 years	49.68	38.96	26.09	52.33
Annual average	8.40	6.80	4.75	8.76
3 years	21.97	14.23	10.78	23.65
Annual average	6.84	4.54	3.47	7.32
1 year	10.97	9.26	4.80	9.85
6 months	3.91	5.45	1.16	2.94

Performance assumes reinvestment of distributions and does not account for taxes.

Index and Lipper results should be compared with fund performance at net asset value. Fund results reflect the use of leverage, while index results are unleveraged and Lipper results reflect varying use of, and methods for, leverage.

Performance includes the deduction of management fees and administrative expenses.

* Over the 6-month, 1-year, 3-year, 5-year, 10-year, and life-of-fund periods ended 4/30/15, there were 11, 11, 11, 11, 11, and 6 funds, respectively, in this Lipper category.

Fund price and distribution information For the six-month period ended 4/30/15

Distributions — common shares	
Number	6
Income 1	$0.2178
Capital gains 2	—
Total	$0.2178
Distributions — preferred shares	

	Series A (245 shares)	Series C (1,980 shares)
Income [1]	$71.24	$33.67
Capital gains [2]	—	—
Total	$71.24	$33.67
Common Share Value	NAV	Market Price
10/31/14	$7.94	$7.17
4/30/15	8.03	7.34
Current rate (end of period)	NAV	Market Price
Current dividend rate [3]	5.42%	5.93%
Taxable equivalent [4]	9.58	10.48

The classification of distributions, if any, is an estimate. Final distribution information will appear on your year-end tax forms.

[1] For some investors, investment income may be subject to the federal alternative minimum tax. Income from federally exempt funds may be subject to state and local taxes.

[2] Capital gains, if any, are taxable for federal and, in most cases, state purposes.

[3] The most recent distribution, including any return of capital and excluding capital gains, annualized and divided by NAV or market price at end of period.

[4] Assumes maximum 43.40% federal tax rate for 2015. Results for investors subject to lower tax rates would not be as advantageous.

Fund performance as of most recent calendar quarter
Total return for periods ended 3/31/15

	NAV	Market price
Annual average		
(life of fund) 2/24/89	6.73%	6.14%
10 years	81.41	97.44
Annual average	6.14	7.04
5 years	52.71	42.38
Annual average	8.84	7.32
3 years	24.69	15.61