

COMMONWEALTH OF KENTUCKY
KENTUCKY ASSET/LIABILITY COMMISSION
SEMI-ANNUAL REPORT

For the period ending June 30, 2019

45th Edition



Matthew G. Bevin, Governor of the Commonwealth of Kentucky

William M. Landrum III, Secretary of the Finance and Administration Cabinet

Ryan Barrow, Executive Director, Office of Financial Management



**An electronic copy of this report
may be viewed at:**

<http://finance.ky.gov/services/ofm/Pages/semi-annualreports.aspx>

**The Commonwealth's Comprehensive Annual Financial Report (CAFR)
may be viewed at:**

<http://finance.ky.gov/services/statewideacct/Pages/ReportsandPublications.aspx>

**The Municipal Securities Rulemaking Board (MSRB)
Electronic Municipal Market Access (EMMA)**

may be viewed at:

<http://emma.msrb.org/>

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INTRODUCTION

The Kentucky Asset/Liability Commission (“ALCo” or the “Commission”) presents its 45th semi-annual report to the Capital Projects and Bond Oversight Committee and the Interim Joint Committee on Appropriations and Revenue pursuant to KRS 56.863 (11) for the period beginning January 1, 2019 through June 30, 2019.

Provided in the report is the current structure of the Commonwealth’s investment and debt portfolios and the strategy used to reduce both the impact of variable revenue receipts on the budget of the Commonwealth and fluctuating interest rates on the interest-sensitive assets and interest-sensitive liabilities of the Commonwealth. Additionally, an analysis of the Commonwealth’s outstanding debt is provided as well as a description of all financial agreements entered into during the reporting period. And finally, the report makes available a summary of gains and losses associated with outstanding financial agreements.

Several factors on the state, national, and international levels had an impact on activity during the reporting period. The most significant factors were:

On the national level

- The Federal Reserve Board of Governors voted unanimously in each one of their four meetings during the first half of 2019 to not change the target range for the federal funds rate, leaving the rate at 2.25%- 2.50%.
- The unemployment rate continued the trend lower ending June 2019 at 3.7% from 3.9% in December 2018.
- The annual rate of economic growth as measured by GDP began showing signs of slowing during the first half of 2019. The seasonally adjusted rate for the first and second quarter were 3.1% and 2.1%, respectively.
- Inflation remained muted for the first half of the year with the core rate (ex-energy and food) ending at 1.6% as of June.

On the international level

- Partly as a result of the trade war with the United States, economies in China and other Asian countries are weakening.
- European economic markets are also experiencing instabilities, partially due to Britain’s upcoming exit of the European Union.

On the state level

- General Fund receipts totaled \$11.393 billion for Fiscal Year (FY) 2019. General Fund receipts increased 5.1% over FY 2018 collections. General Fund receipts for FY 2019 were \$194.5 million, or 1.7%, more than the official revised revenue estimate which projected 3.3% growth.
- Road Fund receipts for FY 2019 totaled \$1,566.1 million which represented a 3.6% increase over the previous fiscal year. Road Fund collections for FY 2019 exceeded the official consensus estimate by \$59.6 million, or 4.0%.
- Personal income growth rates for the four quarters of FY 2019 were 3.2%, 3.2%, 4.3% and 4.1%.
- Large unfunded pension liabilities continue to put stress on the Commonwealth’s credit rating.
- Implementation of bond authorizations from prior-year and current sessions of the General Assembly continued. Bond issues for the period are discussed later in the report.

INVESTMENT MANAGEMENT

Market Overview

Economic activity increased at a solid pace in the early part of 2019, and the labor market continued to strengthen. However, inflation ran below the Federal Open Market Committee's (FOMC) longer-run objective of 2%. At its meeting in June, the FOMC judged that current and prospective economic conditions called for maintaining the target range for the federal funds rate at 2.25% - 2.50%. Nonetheless, in light of increased uncertainties around the economic outlook and muted inflation pressures, the Committee indicated that it will closely monitor the implications of incoming information for the economic outlook and will act as appropriate to sustain the expansion, with a strong labor market and inflation near the Committee's symmetric 2% objective.

Employment

The labor market continued to strengthen. Over the first six months of 2019, payrolls increased an average of 172,000 per month. This rate is down from the average pace of 223,000 in 2018, but it is faster than what is needed to provide jobs for new entrants into the labor force. The unemployment rate moved down from 3.9% in December 2018 to 3.7% in June. In addition, the unemployment rate is 0.05% point below the median of FOMC participants' estimates of its longer-run normal level of 4.2%.

Inflation

Consumer price inflation, as measured by the 12-month change in the price index for personal consumption expenditures, moved down from a little above the FOMC's objective of 2% in the middle of last year to a rate of 1.4% in June. The 12-month measure of inflation that excludes food and energy items (so-called core inflation), which historically has been a better indicator than the overall figure of where inflation will be in the future, was 1.6% in June, down from a rate of 1.9% from a year ago. However, these year-over-year declines mainly reflect soft readings in the monthly price data earlier this year, which appear to reflect transitory influences. Survey-based measures of longer-run inflation expectations are little changed, while market-based measures of inflation compensation have declined recently to levels close to or below the low levels seen late last year.

Economic Growth

In the first quarter, real gross domestic product (GDP) is reported to have increased at an annual rate of 3.1%, bolstered by a sizable contribution from net exports and business inventories. By contrast, consumer spending in the first quarter was lackluster but appears to have picked up in recent months. Meanwhile, following robust gains last year, business fixed investment slowed in the second quarter amid downbeat business sentiment and profit expectations from industry analysts, reflecting trade tensions and concerns

INVESTMENT MANAGEMENT

about global growth. As a result, second quarter GDP was in fact lower at 2.1%.

Interest Rates

Since the end of 2018, the nominal Treasury yield curve shifted down and flattened further, with the 2-, 5-, and 10-year nominal Treasury yields all declining about 70 basis points. The decrease in Treasury yields, which is consistent with the revision in market participants' expectations for the path of policy rates, largely reflects FOMC communications as well as investors' concerns about the global economic outlook and the escalation of trade disputes.

Yields on 30-year agency mortgage-backed securities (MBS)—an important factor influencing mortgage interest rates—decreased in line with the decline in the 10-year nominal Treasury yield and remained low by historical standards. Likewise, yields on both investment-grade and high-yield corporate debt declined significantly from the levels in late 2018 and stayed very low. Despite widening in May, the spreads on corporate bond yields over comparable-maturity Treasury yields have narrowed, over the first half of 2019 and are close to their historical medians.

Rates across money markets were little changed in the first half of 2019. Conditions in domestic short-term funding markets continued to be broadly stable since the end of 2018. Overnight secured and unsecured rates declined in line with the technical adjustment announced after the May FOMC meeting, which lowered the interests paid on required and excess reserve balances by 5 basis points. Other short-term interest rates, including those on commercial paper and negotiable certificates of deposit, were also little changed since the beginning of the year.

Equities

After declining sharply at the end of 2018, broad U.S. stock market indexes have recovered over the first half of 2019. The broad rebound in stock prices—which included all major economic sectors—was reportedly supported by Federal Reserve communications that were perceived as more accommodative than previously anticipated. Stocks fluctuated in May and June as downside risks and trade tensions were offset by further expectations of easier monetary policy.

INVESTMENT MANAGEMENT

Outlook

Since the beginning of the year, the FOMC stated that it continued to view a sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2% objective as the most likely outcomes.

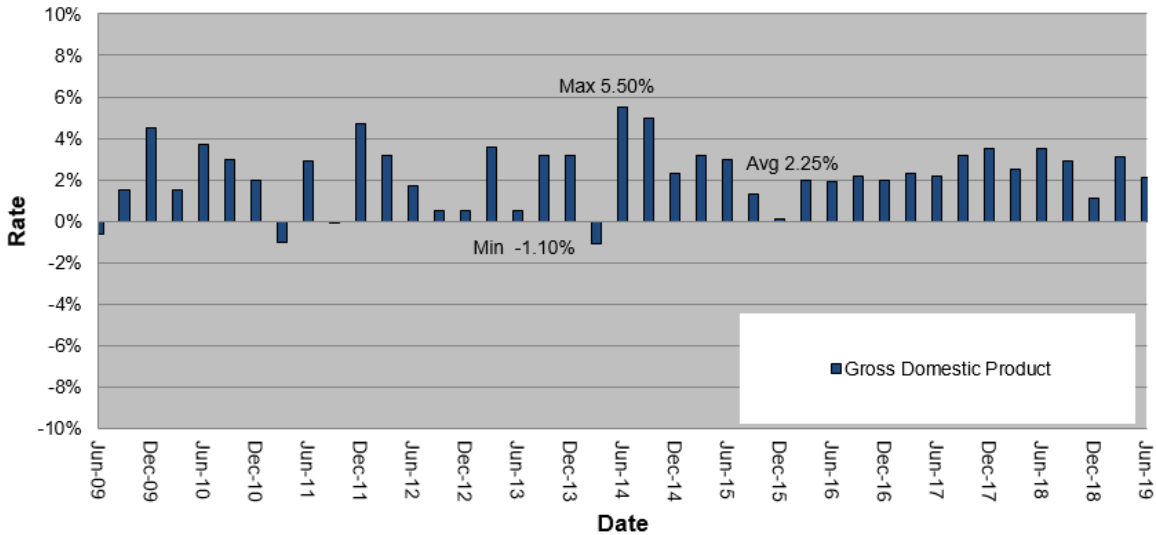
At the June meeting, however, the FOMC noted that uncertainties about the outlook had increased. Since the beginning of May, the tenor of incoming information on economic activity has become somewhat more downbeat, and uncertainties about the economic outlook have increased. Growth indicators from around the

world have disappointed raising concerns about the strength of the global economy. Meanwhile, contacts in business and agriculture have reported heightened concerns over trade developments. In light of these uncertainties and muted inflation pressures, the FOMC indicated that it will act as appropriate to sustain the expansion, with a strong labor market and inflation near its objective of 2%. In the FOMC economic projections released after the June meeting, participants generally revised down their individual assessments of the appropriate path for the policy rate from their assessments at the time of the March meeting.

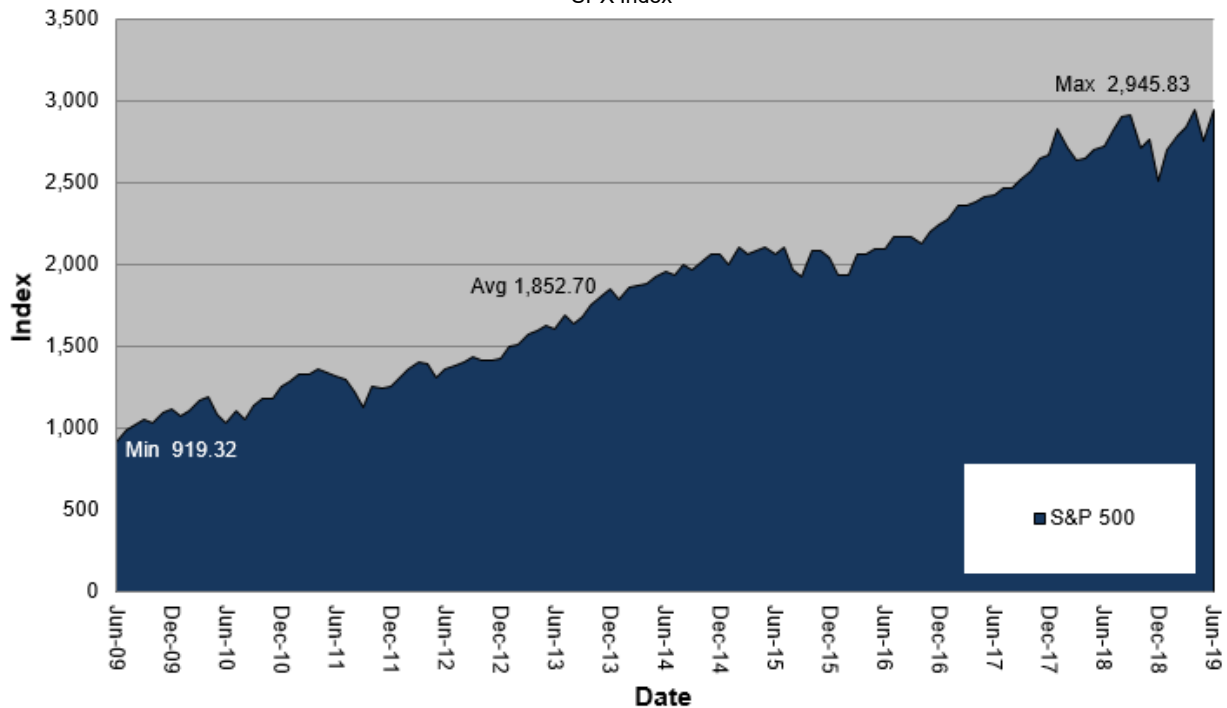
INVESTMENT MANAGEMENT

Real Gross Domestic Product & Standard & Poor's 500

Real Gross Domestic Product
 Quarter Over Quarter
 Range 06/30/2009-6/30/2019
 GDP CQOQ Index



Standard & Poor's 500
 Range 06/30/2009-6/30/2019
 SPX Index

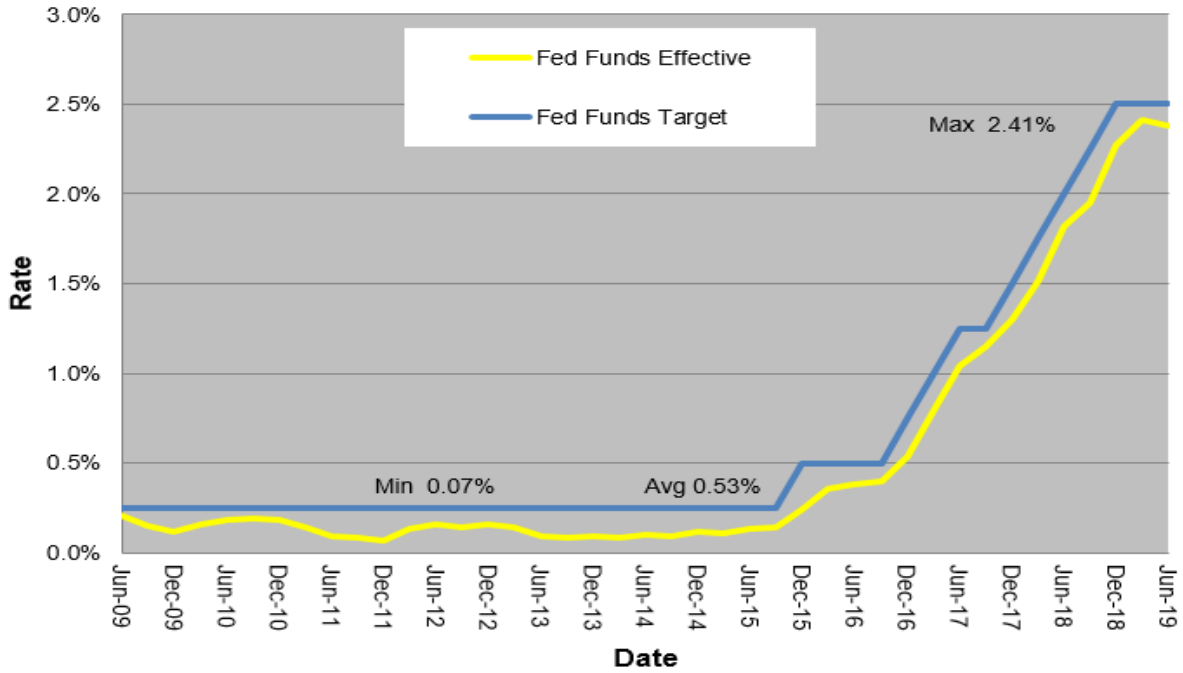


INVESTMENT MANAGEMENT

Federal Funds Target Rate & NonFarm Payrolls

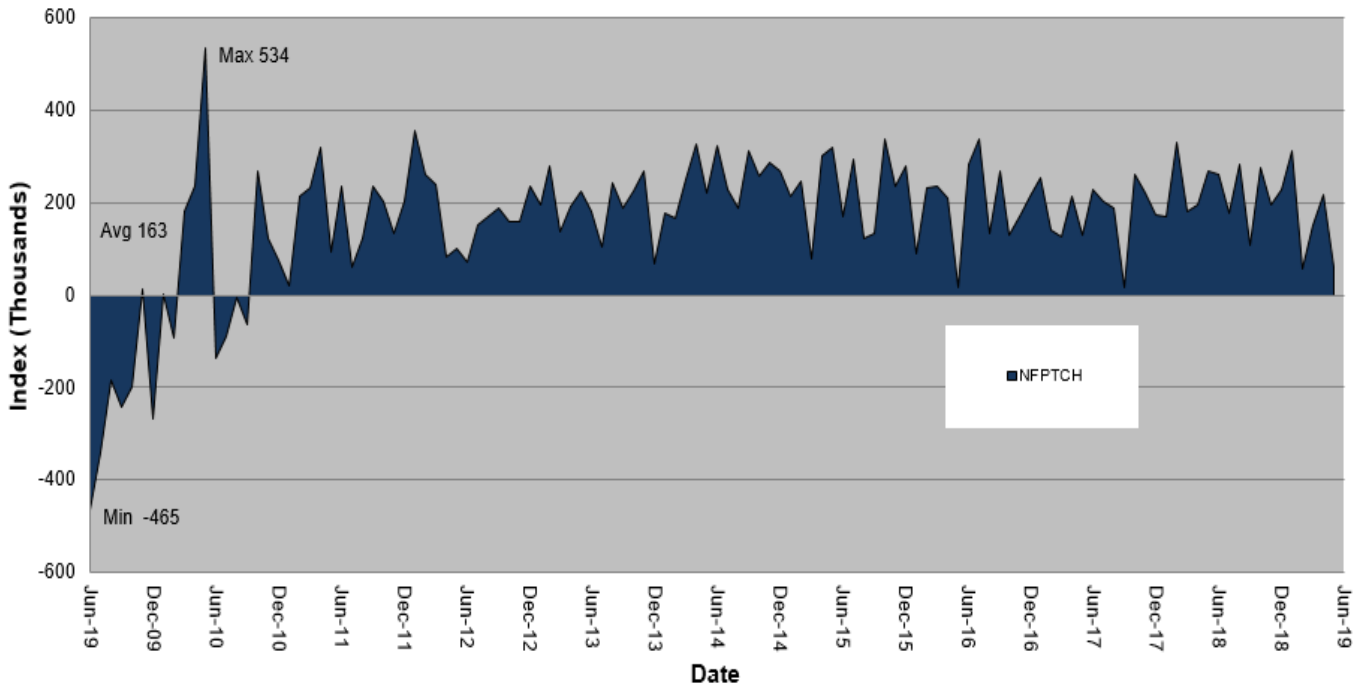
Federal Funds Target Rate

Range 06/30/2009-06/30/2019
FEDL01 Index/FDTR Index



Nonfarm Payrolls

Range 06/30/2009-6/30/2019
NFPTCH Index



INVESTMENT MANAGEMENT

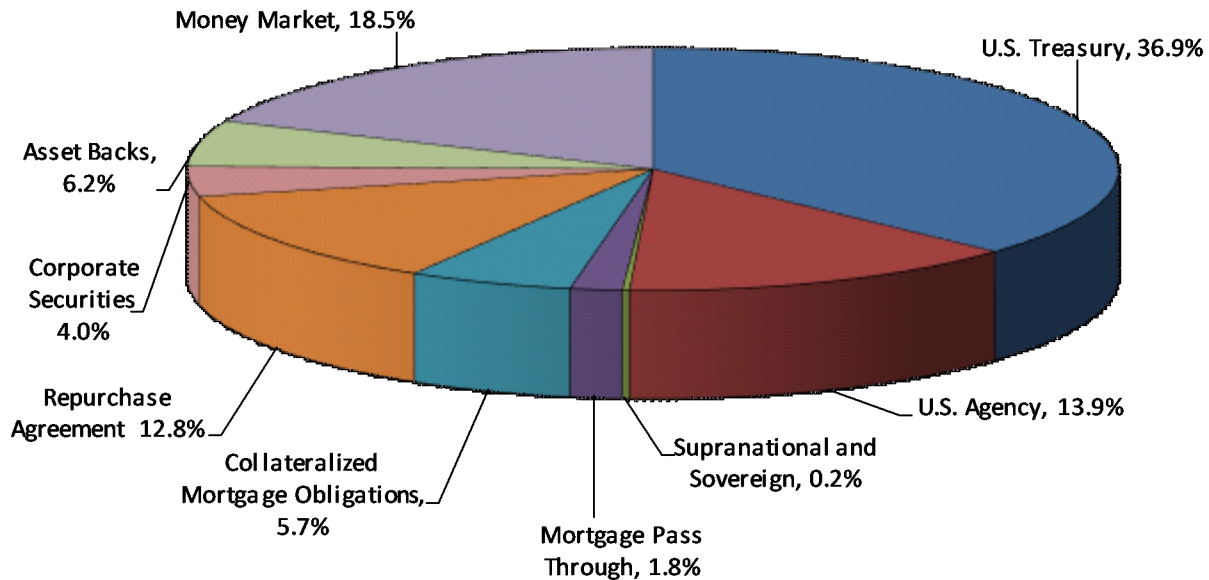
Portfolio Management

For six months ended June 30, 2019, the Commonwealth’s investment portfolio was approximately \$4.2 billion. The portfolio was invested in U. S. Treasury Securities (36.9%), U. S. Agency Securities (13.9%), Supranational and Sovereign (0.2%), Mortgage Pass Through (1.8%), Collateralized Mortgage Obligations (5.7%), Repurchase Agreements (12.8%), Corporate Securities (4.0%), Asset-Backed

Securities (6.2%), and Money Market Securities (18.5%). The portfolio had a market yield of 2.01% and an effective duration of 0.54 of a year.

The total portfolio is broken down into three investment pools. The pool balances as of June 30, 2019 were \$464.8 million (Short Term Pool), \$1.4 billion (Limited Term Pool) and \$2.3 billion (Intermediate Term Pool).

Distribution of Investments as of June 30, 2019



INVESTMENT MANAGEMENT

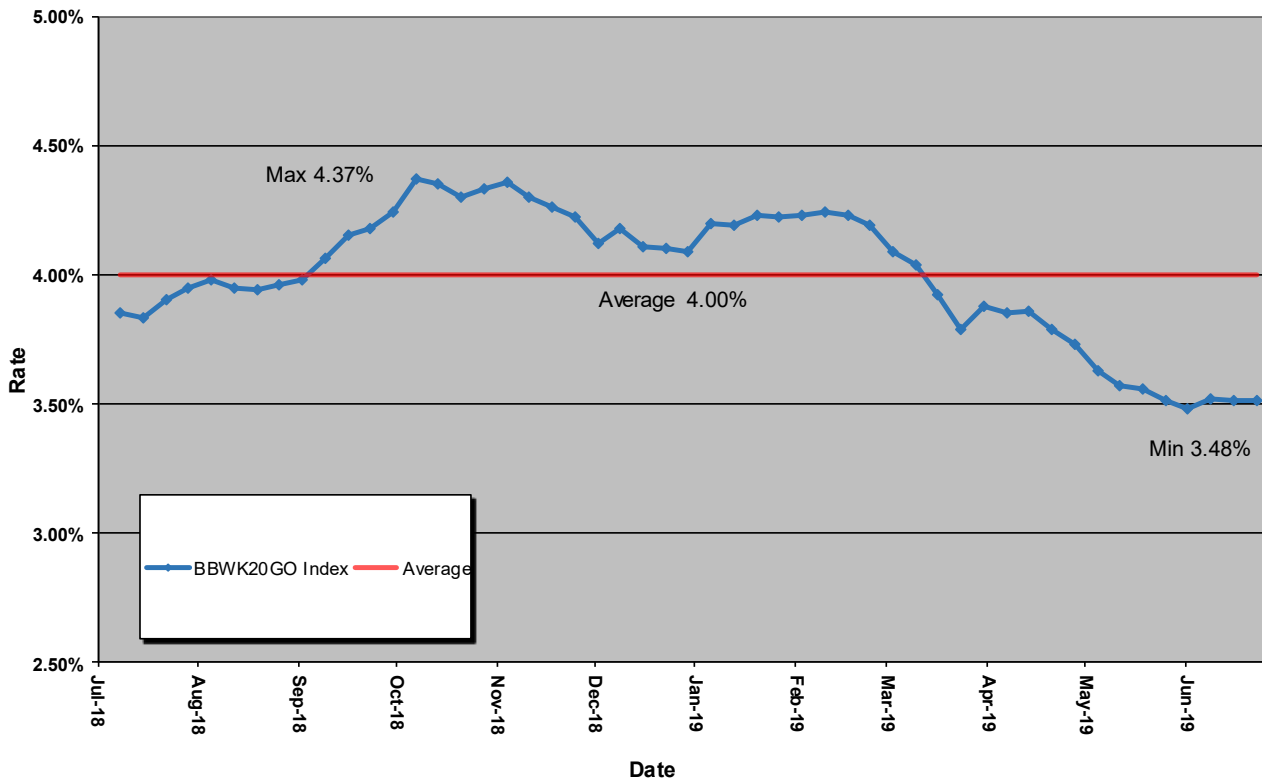
Tax-Exempt Interest Rates and Relationships

The Bond Buyer 20-year General Obligation Index averaged 4.00% for Fiscal Year 2019. The high was 4.37% in October 2018 and the low was 3.48% in June 2019.

The Securities Industry and Financial Markets Association (SIFMA) Municipal Swap Index averaged 1.55% for Fiscal Year 2019. The high

was 2.30% in April 2019 and the low was 0.94% in July 2018. The 30-day USD London Interbank Offered Rate (LIBOR) averaged 2.35% for Fiscal Year 2019. The high was 2.52% in December 2018 and the low was 2.07% in July 2018. During the year, SIFMA traded at a high of 92.63% of the 30-day LIBOR in late April 2019, at a low of 45.26% in early July 2018, and at an average of 66.07% for the Fiscal Year.

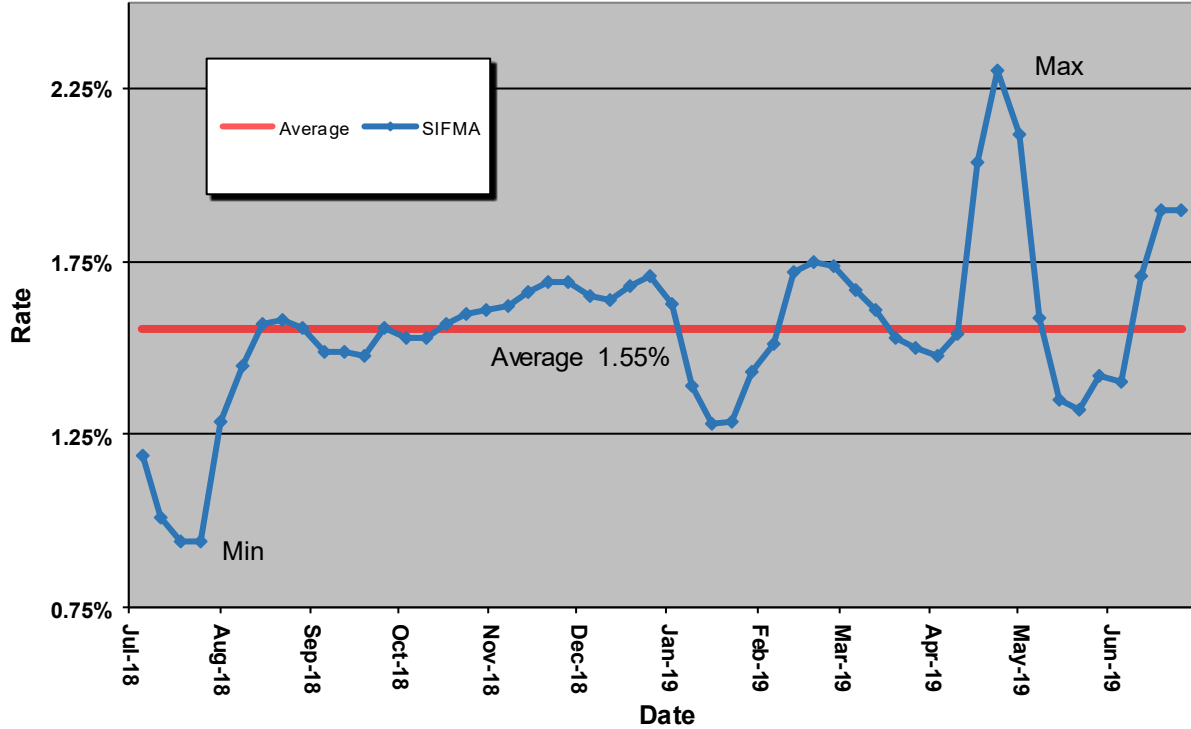
Bond Buyer 20 General Obligation Index
Range 07/01/2018 - 6/30/2019
BBWK20GO Index



SIFMA & SIFMA/LIBOR Ratio

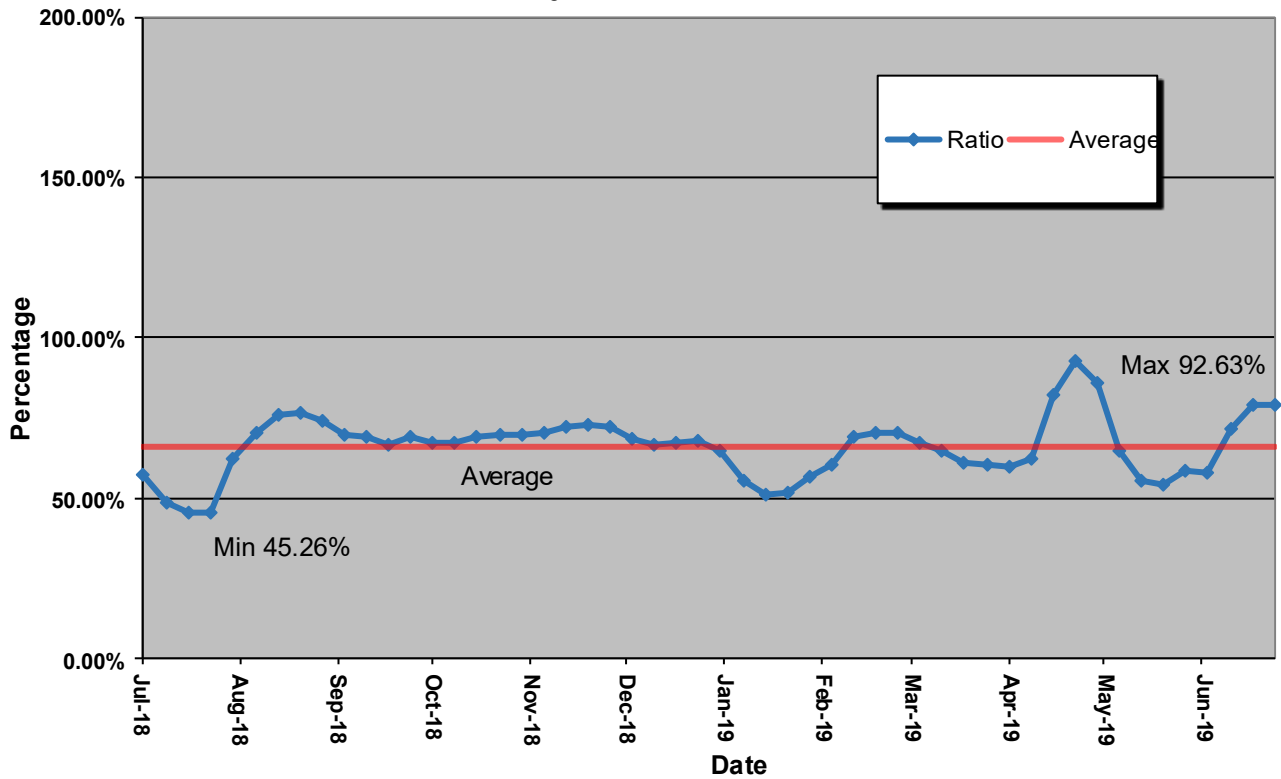
SIFMA Rate

Range 07/01/2018 - 06/30/2019
MUNIPSA Index



SIFMA / LIBOR Ratio

Range 07/01/2018 - 06/30/2019



CREDIT MANAGEMENT

Mid-Year Reflection

Despite increases in interest rates for consumer loans and some reported further tightening in credit card lending standards, financing conditions for consumers largely remain supportive of growth in household spending. Consumer credit expanded at a moderate pace, rising faster than disposable income. Mortgage credit has continued to be readily available for households with solid credit profiles but remains noticeably tighter than before the most recent recession for borrowers with low credit scores. Standards for automotive loans have been generally stable, and overall delinquency rates for these loans were little changed at a moderate level. Financing conditions in the student loan market remain firm, with over 90% of such credit being extended by the federal government. After peaking in 2013, delinquencies on such loans have been gradually declining, reflecting in part the continued improvements in the labor market.

Aggregate flows of credit to large nonfinancial firms remained strong, supported in part by relatively low interest rates and accommodative financing conditions. The gross issuance of corporate bonds, which had fallen substantially, rebounded as market volatility receded. After increasing notably in late 2018, spreads on both investment and speculative grade corporate bonds over comparable maturity. Treasury securities have both declined this year as investors' risk appetite seems to have recovered. In April, respondents to the Senior Loan Officer Opinion Survey on Bank

Lending Practices, reported demand for commercial and industrial loans weakened even as lending standards remained unchanged and terms for such loans eased. However, banks reported tightening lending standards on all categories of commercial real estate loans. Meanwhile, financing conditions for small businesses have remained generally accommodative, but credit growth has been subdued.

While there were no additions or removals to the OFM Corporate Credit Approved list in the first half of 2019, the most significant credit event was the struggle of Boeing to bounce back following two crashes of the popular 737 Max aircraft, leading to a global grounding and Boeing being assigned a negative outlook by Moody's and Fitch. While Boeing remains on the approved list for now, OFM has halted all purchases of Boeing securities until the outcome of the 737 Max situation is certain and Boeing's credit rating stabilizes.

Credit Process

Our credit strategy is to invest in creditworthy corporate issuers having a long-term rating of A3/A-/A- or better as rated by Moody's, S&P, or Fitch. The strategy focuses on adding value through a disciplined approach in the credit selection process. With independent research and prudent diversification with respect to industries and issuers, our goal is to preserve principal, provide adequate liquidity, and deliver consistent longer-term investment performance over U.S. Treasuries.

CREDIT MANGEMENT

Default Monitoring

The Bloomberg credit risk model is our main tool for default monitoring. The default likelihood model is based on the Merton distance-to-default (DD) measure, along with additional economically and statistically relevant factors. Firms are assigned a default risk measure as a high-level summary of their credit health using an explicit mapping from default likelihood to default risk.

A daily report is generated using the approved list related to their peers enabling us to track market activity in selected names including Credit Default Swaps (CDS).

Industry/Company Analysis

We use a combination top-down and bottom-up approach for investing. The top-down approach refers to understanding the current (and future) business cycle or the “big picture” of the economy and financial world in order to identify attractive industries. Once industries are identified, a bottom-up approach is utilized where we focus on specific company fundamentals, picking the strongest companies within a sector.

Fundamental analysis is then performed looking at competitive position, market share, operating history/trends, management strategy/execution, and financial statement ratio analysis.

Approved List

Once analysis has been completed, the State Investment Commission (SIC) approves the list on a quarterly basis. During the first half of 2019, there were no changes to the Corporate Credits Approved list. The Corporate Credits Approved list as of June 2019 is found in Appendix A.

State Investment Commission

The SIC is responsible for investment oversight with members of the Commission being Governor (Chair), State Treasurer (Vice Chair), Finance and Administration Cabinet Secretary and two Gubernatorial Appointees. The investment objectives are three-fold: preservation of principal, maintain liquidity to meet cash needs and maximization of returns. The Office of Financial Management is staff to the SIC and follows KRS 42.500, 200 KAR 14.011, 14.081, and 14.091 when making investment decisions.

DEBT MANAGEMENT

Authorized But Unissued Debt

As of June 30, 2019, the Commonwealth's 2018-2020 budget includes authorized debt service for over \$1.23 billion of projects supported by the General Fund, Agency Funds, and the Road Fund, which were approved during prior sessions of the General Assembly. This pipeline of projects is anticipated to be financed over a number of future biennia bond transactions. The speed at which this financing takes place is dependent upon factors managed by and between the project sponsors, the Office of the State Budget Director and the Office of Financial Management.

2010 Extraordinary (Special) Session

The 2010 Extraordinary (Special) Session of the General Assembly delivered House Bill 1 (Executive Branch Budget other than Transportation Cabinet) and House Bill 3 (Kentucky Transportation Cabinet Budget) to the Governor on May 29, 2010, establishing an Executive Branch Budget for the biennium ending June 30, 2012. The Governor took final action on the bills on June 4, 2010. Together, the bills authorized bond financing for projects totaling \$1,980.2 million to support various capital initiatives of the Commonwealth. Of the total authorization, \$507.4 million is General Fund supported, \$515.3 million is Agency Restricted Fund supported, \$522.5 million is supported by Road Fund appropriations and \$435 million is Federal Highway Trust Fund supported through Grant

Anticipation Revenue Vehicle Bonds designated for the US-68/KY-80 Lake Barkley and Kentucky Lake Bridges Project and the Louisville-Southern Indiana Ohio River Bridges Project. A portion of the General Fund, Agency Restricted Fund and Road Fund authorizations and all of the Federal Highway Trust Fund authorizations have been permanently financed.

House Bill 201 from the 2018 Regular Session of the General Assembly deauthorized \$59.5 million of Grant Anticipation Revenue Vehicle (GARVEE) Bonds, which were not needed to complete the US-68/KY-80 Lake Barkley and Kentucky Lake Bridges Project.

2012 Regular Session

The 2012 Regular Session of the General Assembly delivered House Bill 265 (Executive Branch Budget other than Transportation Cabinet) to the Governor on March 30, 2012 and House Bill 2 (Kentucky Transportation Cabinet Budget) to the Governor on April 20, 2012, establishing an Executive Branch Budget for the biennium ending June 30, 2014. The Governor took final action on House Bill 265 on April 13, 2012 and took final action on House Bill 2 on May 2, 2012. Together, the bills authorized bond financing for projects totaling \$238.86 million to support various capital initiatives of the Commonwealth. Of the total authorization, \$182.86 million is General Fund supported, \$12.5 million is supported by Road Fund appropriations, and \$43.5 million is Agency Restricted Fund

DEBT MANAGEMENT

supported. A portion of the General Fund authorization and the total Agency Restricted Fund authorizations listed above have been permanently financed.

2014 Regular Session

The 2014 Regular Session of the General Assembly delivered House Bill 235 (Executive Branch Budget other than Transportation Cabinet) to the Governor on March 31, 2014 and House Bill 236 (Kentucky Transportation Cabinet Budget) to the Governor on April 15, 2014, establishing an Executive Branch Budget for the biennium ending June 30, 2016. The Governor took final action on House Bill 235 on April 11, 2014 and took final action on House Bill 236 on April 25, 2014. Together, the bills authorize bond financing for projects totaling a net amount of \$1,364.05 million to support various capital initiatives of the Commonwealth due to \$105 million in previously authorized debt that was de-authorized in House Bill 235. Of the total authorization, \$742.77 million is General Fund supported, \$721.28 million is supported by Agency Restricted Fund appropriations, and \$5.0 million is Road Fund supported. A portion of the General Fund and Agency Restricted Fund, and all of the Road Fund authorizations listed above have been permanently financed.

2016 Regular Session

The 2016 Regular Session of the General Assembly delivered House Bill 303 (Executive Branch Budget other than the Transportation

Cabinet) and House Bill 304 (Kentucky Transportation Cabinet Budget) to the Governor on April 15, 2016, establishing an Executive Branch Budget for the biennium ending June 30, 2018. The Governor took final action on House Bill 303 and House Bill 304 on April 27, 2016. Together, the bills authorize bond financing for projects totaling a net amount of \$1,251.24 million to support various capital initiatives of the Commonwealth with \$9.0 million of previously authorized debt de-authorized in House Bill 303. Of the total authorization, \$582.99 million is General Fund supported and \$677.25 million is supported by Agency Restricted Fund appropriations. No additional Road Fund supported authorizations were appropriated. A portion of the General Fund and Agency Restricted Fund authorizations listed have been permanently financed.

2017 Regular Session

The 2017 Regular Session of the General Assembly delivered House Bill 13 and House Bill 482 to the Governor on March 30, 2017. House Bill 13 authorized a general fund bond supported project for the Kentucky Department of Veterans' Affairs for the financing of the Bowling Green Veterans Center totaling \$10.5 million. House Bill 482 authorized a general fund bond supported project totaling \$15 million for the Kentucky Economic Development Finance Authority Loan Pool to support programs administered by the Kentucky Economic Development Finance Authority for the sole purpose of

DEBT MANAGEMENT

facilitating a private sector investment of not less than \$1 billion in one or more locations in the Commonwealth. The Governor took final action on House Bill 13 and House Bill 482 on April 11, 2017. The total authorization under House Bill 482 has been permanently financed.

2018 Regular Session

The 2018 Regular Session of the General Assembly delivered House Bill 200 (Executive Branch Budget other than Transportation Cabinet) to the Governor on April 2, 2018 and House Bill 201 (Kentucky Transportation Cabinet Budget) to the Governor on April 14, 2018, establishing an Executive Branch Budget for the biennium ending June 30, 2020. The Governor vetoed House Bill 200 on April 9, 2018 and on April 13, 2018 the General Assembly enacted House Bill 200 over the Governor's veto. On April 14, 2018, the General Assembly delivered House Bill 265 (amending the 2018-2020 Executive Branch Budget Bill) to the Governor. The Governor took final action on House Bill 201 on April 26, 2018. House Bill 265 became law without the Governor's signature on April 27, 2018. Together, the bills authorize bond financing for projects totaling a net amount of \$972.7 million

to support various capital initiatives of the Commonwealth whereas \$26.62 million in previously authorized debt was de-authorized in House Bill 200 and House Bill 201. Of the total authorization, \$377.69 million is General Fund supported, \$602.89 million is supported by Agency Fund appropriations, and \$18.75 million is Road Fund supported. A portion of the General Fund and Agency Restricted Fund authorizations have been permanently financed.

2019 Regular Session

The 2019 Regular Session of the General Assembly delivered House Bill 268 (Executive Branch Budget Amendment) to the Governor on March 14, 2019. The Bill authorized general fund bond supported projects totaling \$75 million to support various capital initiatives of the Commonwealth. The Governor took final veto action on House Bill 268 on March 26, 2019. The Legislature partially overrode the Governor's vetoes on March 28, 2019. The total authorization under House Bill 268 was appropriated for Fiscal Year 2020.

DEBT MANAGEMENT

Authorized but Unissued Debt

The balance of prior bond authorizations of the General Assembly dating from 2006 through 2019 totals \$1,238.40 million. Of these prior authorizations, \$513.18 million is General Fund supported, \$662.72 million is Agency Restricted Fund supported, and \$62.50 million is supported by Road Fund appropriations. HB 201 from the

2018 Regular Session de-authorized the remaining \$59.50 million which was authorized for the Federal Highway Trust Fund.

The following table summarizes, in aggregate, the information in connection with authorized but unissued debt of the Commission as described in this section.

Summary of Authorized but Unissued Debt by Fund Type As of June 30, 2019

Legislative Session (Year)	Agency Fund (millions)	Road Fund (millions)	TOTAL (millions)
2010 and prior	17.50	50.00	108.38
2012	-	12.50	25.45
2014	9.00	-	150.99
2016	93.34	-	328.57
2017	-	-	10.50
2018	542.88	-	914.51
Bond Pool Proceeds	-	-	(300.00)
TOTAL	662.72	62.50	1,238.40

The balance of prior bond authorizations of the General Assembly dating from 2006 through FYE 2019 totals \$1,238.40 million. Of these prior authorizations, \$513.18 million is General Fund supported, \$662.72 million is Agency Restricted Fund supported, and \$62.5 million is supported by Road Fund appropriations.

DEBT MANAGEMENT

Ratings Update

The rating agencies continually monitor the Commonwealth's budgetary policies and actual performance in areas such as revenue, the economy, pensions, and debt management. Pension unfunded liabilities have continued to put downward pressure on the Commonwealth's credit ratings.

During the reporting period, the remaining ratings below were either affirmed or remained unchanged from the previous reporting period.

While Kroll has entered the municipal market with a number of states having ratings issued, the Commonwealth has no debt rated by them currently. The value of working with a newer agency will be evaluated going forward.

The Ratings Picture at June 30, 2019:

	Moody's	S & P	Fitch
General Obligation Issuer Rating (GO Implied)	Aa3	A	AA-
General Fund Appropriation Rating (GF)	A1	A-	A+
Road Fund Appropriation Rating (RF)	Aa3	A-	A+
Federal Highway Trust Fund Appropriation Rating	A2	AA	A+

DEBT MANAGEMENT

Cash Management Strategies

All cash management strategies are market and interest rate dependent. Alternatives are listed below:

Tax and Revenue Anticipation Notes (TRAN)

On June 25, 2019 the ALCo issued \$400,000,000 Tax and Revenue Anticipation Notes (TRAN) to provide additional liquidity to the General Fund. The transaction closed on July 10, 2019. Due to the added liquidity to the General Fund and market opportunities at the time, a portion of the state investment portfolios were able to be restructured for a longer duration. The cumulative net benefit to the Commonwealth was estimated at approximately \$1.2 million with the exact amount to be calculated on June 30, 2020.

Inter-Fund Borrowing

Cash in one fund is loaned to another fund which is experiencing a short-term cash flow shortfall. Historically, funds are loaned to the General Fund.

As of June 30, 2019 the total liquid resources available to the General Fund was \$4.199 billion.

Bond Anticipation Notes (BAN)

A short-term interest-bearing security issued in advance of a larger, future bond issue. Bond anticipation notes are smaller short-term notes that are issued to generate funds for upcoming projects and traditionally paid off by long term bond issuances or loans.

No BANs were issued during the reporting period.

Notes (Direct Loans)

"Funding notes" means notes issued under the provisions of KRS 56.860 to 56.869 by the commission for the purpose of funding:

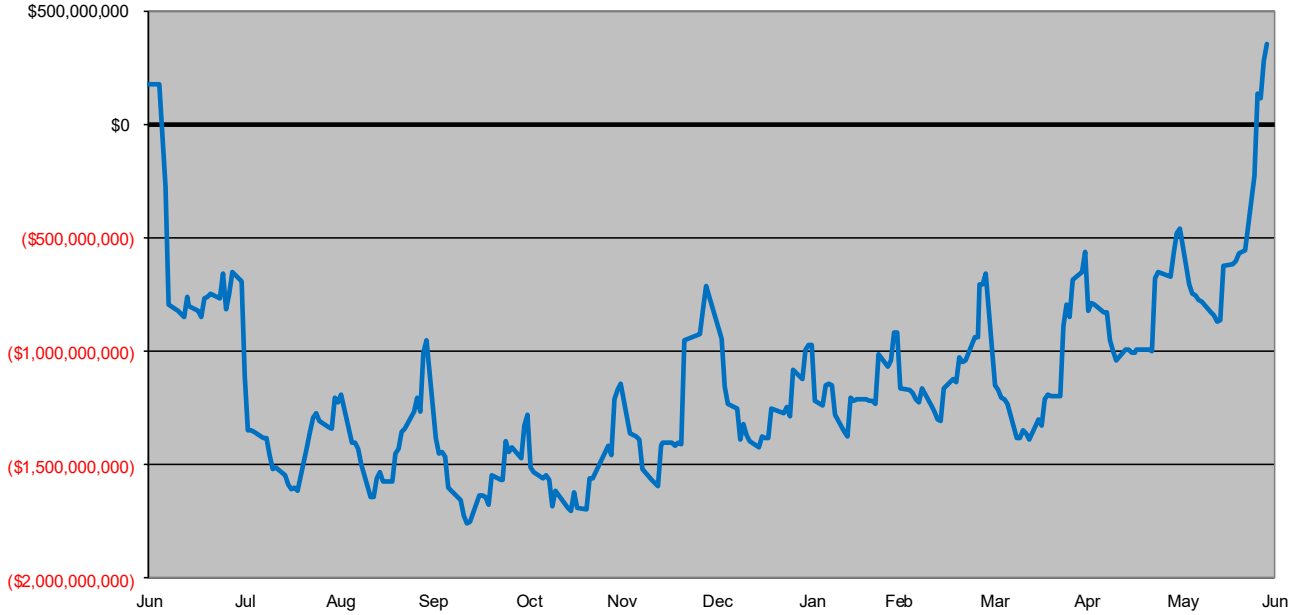
- (a) Judgments, with a final maturity of not more than ten (10) years; and
- (b) The finance or refinance of obligations owed under KRS 161.550(2) or 161.553(2)

"Project notes" means notes issued under the provisions of KRS 56.860 to 56.869 by the commission with a final maturity of not more than twenty (20) years for the purpose of funding authorized projects, which may include bond anticipation notes.

No Funding or Project Notes were issued during the reporting period.

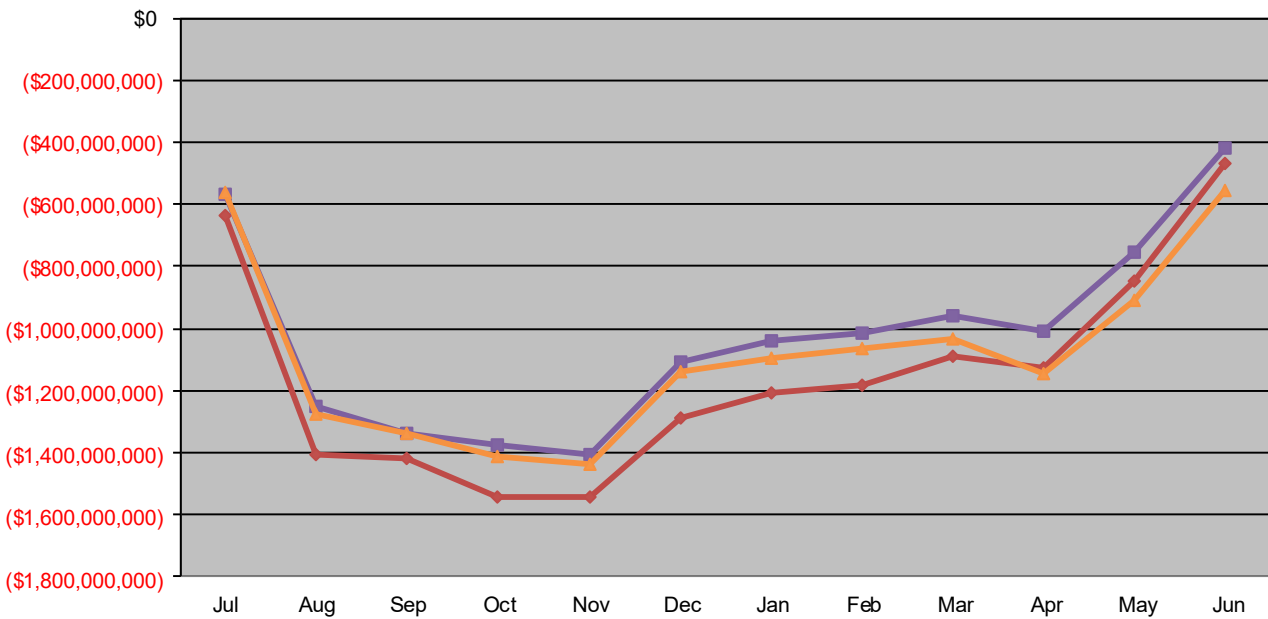
DEBT MANAGEMENT

General Fund Cash Balance
Fiscal Year 2019



General Fund Monthly Average
(Excluding TRAN Proceeds)

—◆— FY2019
 —■— 5-YR AVERAGE
 —▲— 3-YR AVERAGE



DEBT MANAGEMENT

ALCo Financial Agreements

As of June 30, 2019, ALCo had three financial agreements outstanding, with a net notional exposure amount of \$151,555,000. These financial agreements are described in the section below and the terms of these transactions are detailed in Appendix B. No additional financial agreements were executed during the reporting period.

General Fund – Floating Rate Note Hedges

In May, 2007, ALCo issued \$243.08 million of Floating Rate Notes (FRNs) to permanently finance \$100 million of General Fund bond supported projects and to advance refund certain outstanding State Property and Buildings Commission (SPBC) bonds for present value savings. The transaction entailed ALCo issuing four FRNs, each paying a rate of interest indexed to 3-Month LIBOR plus a fixed spread. Integrated into the transaction were four separate interest rate swaps which perfectly hedged the floating rates on the FRNs and locked in a fixed rate payable by ALCo on the transaction. The terms of the four interest rate swaps exactly match the notional amount, interest rate, and amortization schedule of the four FRNs and allowed ALCo to elect “super-integrated” tax status on the transaction, whereby it receives similar tax treatment as a fixed rate bond issue under IRS rules.

Under the FRN transaction, the Notes and interest rate swaps were each insured under

separate policies by FGIC, which maintained an Aaa/AAA credit rating at the time from Moody’s and S&P. Under the terms of the original interest rate swaps, the counterparty (Citibank) could optionally terminate the agreements if the insurer’s claims paying rating fell below an A3/A- level. Subsequent to the transaction, FGIC was downgraded multiple times by the credit rating agencies and currently are no longer rated. In December 2008, MBIA (rated A2 by Moody’s at the time) reinsured FGIC’s municipal insurance portfolio providing additional coverage on the transaction. However, MBIA Insurance Corporation’s credit rating was also subsequently downgraded on multiple occasions and is currently rated Caa1 by Moody’s and is no longer rated by S&P. In February of 2009, MBIA established a new U.S. public finance financial guaranty insurance company known as National Guaranty Public Finance Corporation (National). National, at no additional charge, provided reinsurance on the FRNs and related swaps. However, on December 22, 2010, S&P downgraded National from A to BBB leaving both of National’s claims paying ratings below the required A3/A- level.

In early 2011, ALCo spent considerable time working with Citibank and other parties analyzing a variety of remedies that would prevent the potential early termination of the interest rate swaps. After much consideration, ALCo determined the preferred remedy was

DEBT MANAGEMENT

one offered by Citibank whereby the remaining notional amount of each interest rate swap would be assigned to a new counterparty under the existing financial terms and at no cost to ALCo or the Commonwealth. On February 14, 2011, ALCo, Citibank and the new counterparty, Deutsche Bank AG, executed the assignment of the remaining notional balances of each swap to Deutsche Bank. The terms of the new interest rate swaps with Deutsche Bank were identical to the original swaps, with two exceptions; 1) the new swaps were not insured and there were no insurer provisions contained in the new agreements, and 2) the credit rating triggers under the automatic termination provisions were now symmetrical for both counterparties (ALCo and Deutsche Bank) at A3/A-. Under the original swaps, ALCo's credit rating triggers were Baa2/BBB, but rating recalibrations by the rating agencies caused municipal issuers to be rated on the same scale as corporations and other debt issuing entities, which facilitated the need for equal credit rating triggers for both parties. On July 10, 2014, the credit rating triggers were lowered to Baa3/BBB- for both counterparties. On January 25 2016, Moody's downgraded Deutsche Bank from A3 to Baa1 reflecting changes in Germany's insolvency legislation which took effect in January 2017. The changes resulted in protection from the subordination of certain senior unsecured debt obligations relative to other senior liabilities, including deposits. Moody's downgraded Deutsche Bank once again on May 23, 2016 from Baa1

to Baa2 reflecting "the increased execution challenges Deutsche Bank faces in achieving its strategic plan." Even with two downgrades, Deutsche Bank continues to be in compliance with the swap agreement credit rating threshold of not falling below Baa3. ALCo continues to monitor the credit of our counterparty for compliance with terms of the agreement. Fitch downgraded Deutsche Bank on June 7, 2019 from BBB+ to BBB, but the ratings termination triggers are only related to Moody's and S&P.

Details related to the interest rate swaps as of June 30, 2019 are presented in Appendix B.

Asset/Liability Model

General Fund

The total SPBC debt portfolio as of June 30, 2019, were \$3.504 billion of bonds outstanding with a weighted average coupon of 5.00% and a weighted average life of 6.24 years. The average coupon reflects an amount of taxable bonds issued under the Build America Bond Program during 2009 and 2010 as well as continued investor preference for tax-exempt callable premium bonds in the current market at a yield lower than par or discount coupon bonds. The \$1.189 billion callable portion had a weighted average coupon of 4.75%.

The SPBC debt structure has 45% of principal maturing in 5-years and 72% of principal maturing in 10-years. The ratios are above the rating agencies' proposed target of 27-30% due in 5-years and 55-60% maturing within 10-

DEBT MANAGEMENT

years, primarily influenced by debt restructuring and the minimal amount of long-term new money permanent financings within the last several years. The General Fund had a maximum balance of \$352.643 million for Fiscal Year 2019 and a low of negative \$1.761 billion on October 11, 2018.

The average and median balances were a negative \$1.144 billion and a negative \$1.217 billion, respectively. Since the General Fund continued to have a negative available cash balance for the fiscal year, there is little, based on investment objections, that can be done from an asset management point of view beyond current actions.

From a liability management perspective, total General Fund debt service, net of credits was \$708.375 million for Fiscal Year 2019. In addition, General Fund debt service of \$11.257 million was provided for the Eastern State Hospital financing that was issued through the Lexington-Fayette Urban County Government in 2011. Net interest margin will continue to be negative due to low cash balances versus outstanding fixed rate debt, low level of interest rates, and the callability of the debt portfolio.

SPBC 121

On April 25, 2019, SPBC closed \$13,195,000 of General Fund Revenue Refunding Bonds, Project No. 121. The Project No. 121 bond

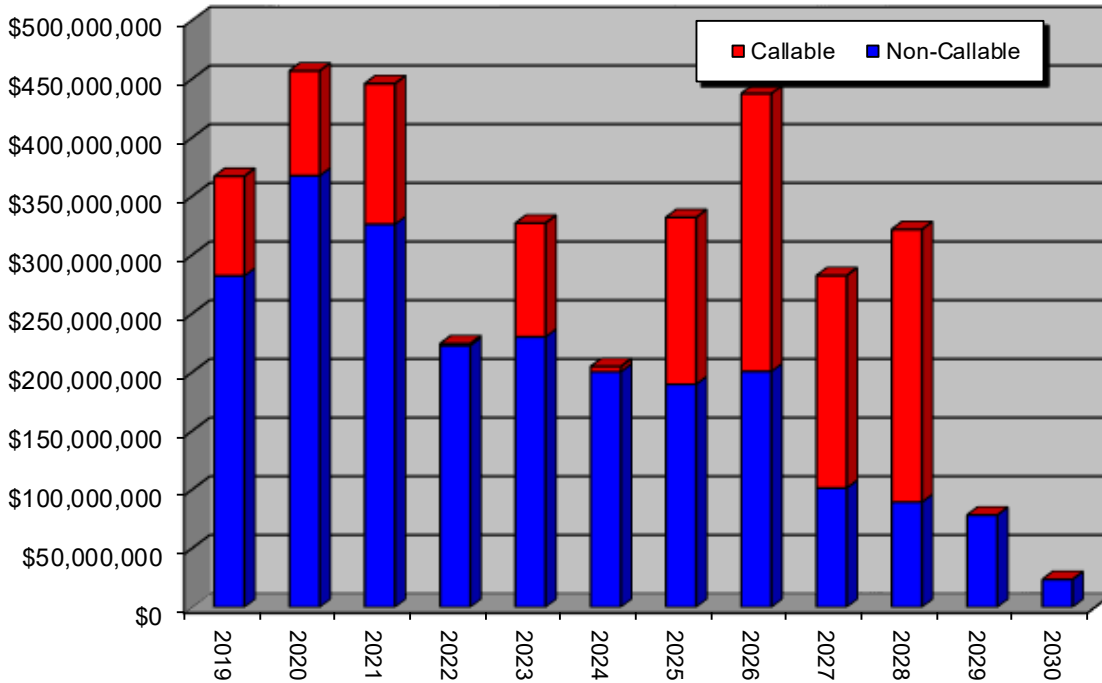
proceeds refunded certain outstanding tax-exempt SPBC Bonds for present value savings. The transaction achieve an All-In-True Interest Cost of 2.719% and a net present value savings of \$2,076,830.23 (or 14.08% savings from the refunded bonds). The Project 121 Bonds were issued via negotiated sale with Hilliard Lyons serving as senior managing underwriter and Dinsmore and Shohl LLP as bond counsel. The bonds achieved ratings of A1/A+ from Moody's and Fitch, respectively.

Looking Forward

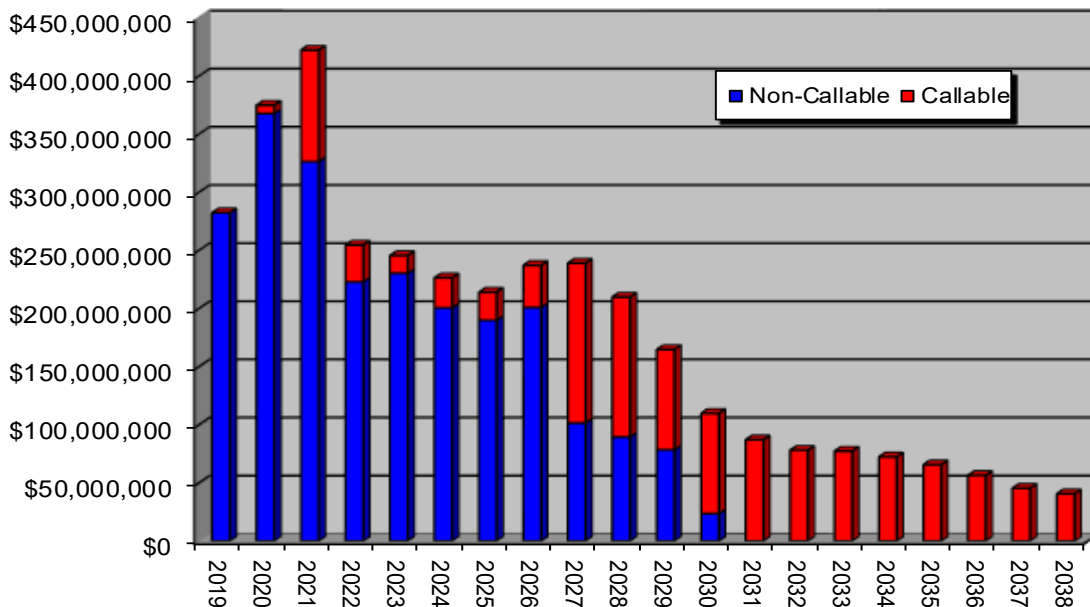
In light of the January 1, 2018 federal tax law change that tightened the parameters by which tax-exempt municipal bonds could be advanced refunded, the Commonwealth has added to the methods of evaluation for examining potential refunding candidates. Since tax advantaged bonds are no longer eligible to be advance refunded on a tax-exempt basis, the Commonwealth now gives consideration to advance refunding its municipal bonds on a taxable basis or through a forward delivery of tax-exempt bonds. Additional diligence and financial modeling is necessary to ensure economic savings in these transactions.

DEBT MANAGEMENT

Call Analysis by Call Date State Property and Buildings Commission Bonds



Call Analysis by Maturity Date State Property and Buildings Commission Bonds



DEBT MANAGEMENT

Road Fund

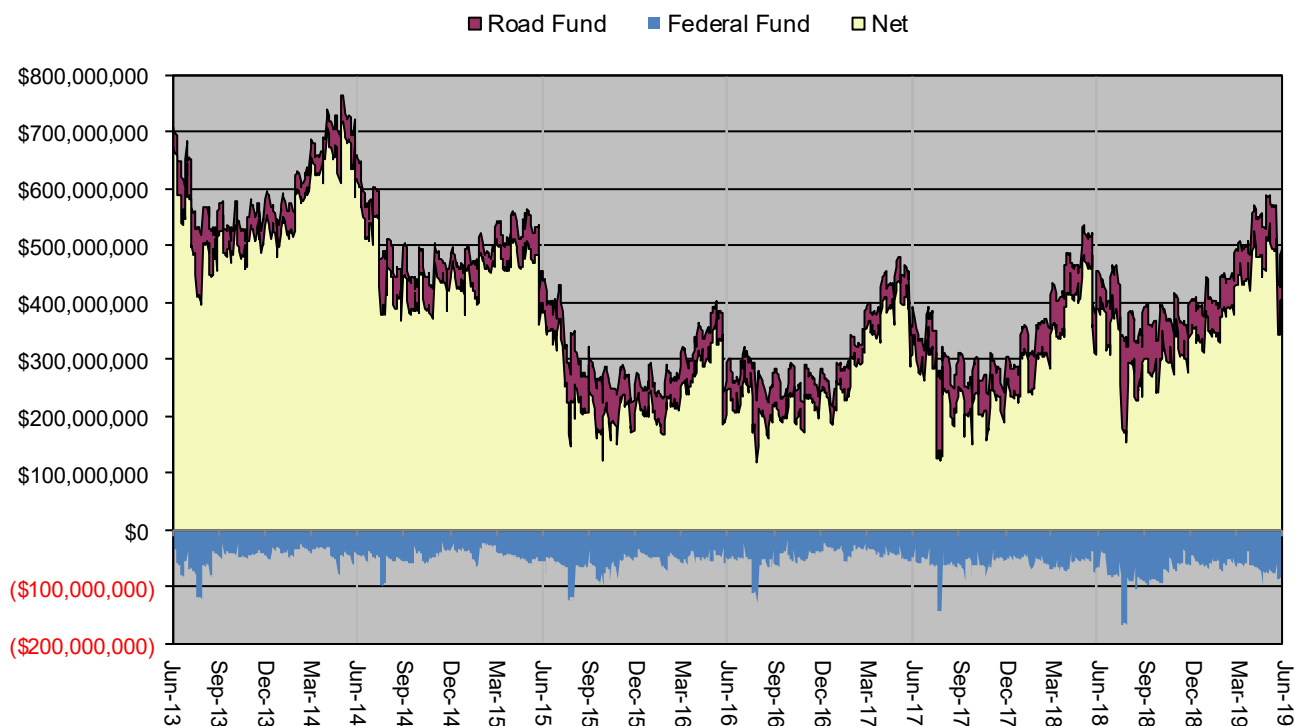
The Road Fund average daily cash balance for Fiscal Year 2019 was \$358 million compared to \$288 million for Fiscal Year 2018. The Road Fund cash was invested in the Intermediate Term Investment Pool which had a duration of 0.95 years as of June 30, 2019. The Road Fund earned a positive \$11.924 million on a cash basis for Fiscal Year 2019 versus a positive \$2.837 million for Fiscal Year 2018. While the Road Fund earnings improved year over year because of higher short term rate and a higher road fund balance, the continued relatively low level of investable balances at certain times during the fiscal year limits the investment opportunities.

As of June 30, 2019, the Turnpike Authority of Kentucky (TAK) had \$1.204 billion of bonds outstanding with a weighted average coupon of 4.85% and an average life of 6.14 years.


Road Fund debt service paid in Fiscal Year 2019 was \$166.496 million, resulting in a net interest margin (investment income earned year-to-date less debt service paid) of negative \$154.572 million. The negative amount stems from the level of investable balances and a general low level of interest rates on the investment side in addition to the limited callability of fixed rate obligations on the liability side.

No debt related to the road fund was issued or refunded during the reporting period.

Road Fund Available Balance
Fiscal Year 2014-2019 as of 06/30/2019



SUMMARY



ALCo's approach to managing the Commonwealth's interest-sensitive assets and interest-sensitive liabilities has provided tremendous flexibility and savings in financing the Commonwealth's capital construction program.

Since its inception, ALCo has been instrumental in adding incremental returns on investment income to the Commonwealth's investment portfolio. ALCo has continued to manage General Fund intra-year cashflow deficits through its TRAN program when cost effective. Until Fiscal Year 2010, ALCo had issued a General Fund TRAN each fiscal year since 1998 (with the exception of FY 2004), providing millions of dollars of incremental gains for the General Fund over this time.

In fiscal 2019 market conditions again created an opportunity to utilize the TRAN program. ALCo's management approach to project funding has also allowed the Commonwealth to take advantage of short-term yields and achieve millions of dollars in budgetary savings through debt service lapses.

As always, ALCo continues to analyze potential opportunities for savings and to evaluate new financing structures which offer the Commonwealth the ability to diversify risk within its portfolio while taking advantage of market demand for various new or unique products.

APPENDIX

APPENDIX A

STATE INVESTMENT COMMISSION Corporate Credits Approved For Purchase as of June 30, 2019

Company Name	Repurchase			Company Name	Repurchase		
	<u>Agreements</u>	<u>Debt</u>	<u>Notes</u>		<u>Agreements</u>	<u>Debt</u>	<u>Notes</u>
Apple Inc		Yes	Yes	Microsoft Corp		Yes	Yes
Bank of Montreal	Yes	Yes	Yes	MUFG Bank LTD/NY		Yes	Yes
Bank of Nova Scotia	Yes	Yes	Yes	MUFG Securities Americas Inc	Yes	No	No
Berkshire Hathaway Inc		Yes	Yes	Natixis SA/New York		Yes	Yes
BNP Paribas Securities Corp	Yes	Yes	Yes	Nestle Finance International		Yes	Yes
BNY Mellon NA		Yes	Yes	Oracle Corp		Yes	Yes
Boeing Co/The		Yes	Yes	PepsiCo Inc		Yes	Yes
Canadian Imperial Bank of Comm		Yes	Yes	Pfizer Inc		Yes	Yes
Chevron Corp		Yes	Yes	PNC Bank NA		Yes	Yes
Cisco Systems Inc		Yes	Yes	Praxair Inc		Yes	Yes
Cooperatieve Rabobank		Yes	Yes	Procter & Gamble Co/The		Yes	Yes
Cornell University		Yes	No	Royal Bank of Canada	Yes	Yes	Yes
Costco Wholesale Corp		Yes	Yes	Royal Dutch Shell PLC		Yes	Yes
Deere & Co		Yes	Yes	Salvation Army		Yes	No
Exxon Mobil Corp		Yes	Yes	State Street Corp		Yes	Yes
Guggenheim Securities, LLC	Yes	No	No	Swedbank AB		Yes	Yes
Home Depot Inc		Yes	Yes	Texas Instruments Inc.		Yes	Yes
Honda Motor Co Ltd		Yes	Yes	Toronto-Dominion Bank/The		Yes	Yes
HSBC Bank USA NA		Yes	Yes	Total SA		Yes	Yes
IBRD - World Bank		Yes	Yes	Toyota Motor Corp		Yes	Yes
Intel Corp		Yes	Yes	UBS AG (U.S.)		Yes	Yes
Intl Business Machines Corp		Yes	Yes	US Bank NA		Yes	Yes
Johnson & Johnson		Yes	Yes	Wal-Mart Stores Inc		Yes	Yes
Lloyds Bank PLC		Yes	Yes	Walt Disney Co/The		Yes	Yes
Merck & Co. Inc.		Yes	Yes	Wells Fargo & Co		Yes	Yes

*Addition:

APPENDIX A

STATE INVESTMENT COMMISSION
Securities Lending Agent Approved Counterparties
as of June 30, 2019

<u>Company Name</u>	<u>Securities Lending</u>	<u>REPO</u>
Alaska USA Federal Credit Union	Yes	Yes
Alaska USA Trust Company	Yes	Yes
BMO Capital Markets Corp	Yes	No
Bank of Nova Scotia	Yes	No
Barclays Capital, Inc	Yes	Yes
BNP Paribas Prime Brokerage, Inc.	Yes	No
BNP Paribas Securities Corp.	Yes	No
Cantor Fitzgerald & Co.	Yes	Yes
Citigroup Global Markets Inc	Yes	Yes
Credit Suisse Securities (USA) LLC	Yes	Yes
CYS Investments, Inc.	Yes	Yes
Daiwa Capital Markets America Inc	Yes	Yes
Deutsche Bank Securities Inc.	Yes	Yes
Dynex Capital Inc.	Yes	Yes
Goldman Sachs and Company	Yes	Yes
Hatteras Financial Corp	Yes	Yes
HSBC Securities (USA) Inc	Yes	Yes
ING Financial Markets LLC	Yes	Yes
Jefferies LLC	Yes	Yes
JP Morgan Securities LLC	Yes	No
Merrill Lynch Pierce Fenner & Smith Inc	Yes	Yes
Mizuho Securities USA, Inc	Yes	Yes
Morgan Stanley & Co. LLC	Yes	Yes
NatWest Markets Securities Inc.*	Yes	Yes
Nomura Securities International Inc	Yes	Yes
Pershing LLC	Yes	Yes
Redwood Trust	Yes	Yes
RBC Capital Markets LLC	Yes	No
SG Americas Securities LLC	Yes	Yes
Societe Generale	Yes	Yes
TD Securities (USA), Inc	Yes	Yes
Two Harbors Investment Corp	Yes	Yes
UBS Securities LLC	Yes	Yes
Wells Fargo Securities LLC	Yes	Yes

APPENDIX B

ALCo Financial Agreements	ALCo FRN Series A Hedge	ALCo FRN Series A Hedge	ALCo FRN Series B Hedge	ALCo FRN Series B Hedge
Fund Source	General Fund	General Fund	General Fund	General Fund
Hedge	2017 FRN	2027 FRN	2021 FRN	2025 FRN
Counter-Party	Deutsche Bank AG	Deutsche Bank AG	Deutsche Bank AG	Deutsche Bank AG
Long-Term Senior Debt Ratings (Moody's / S&P / Fitch)		A3/BBB+/BBB+	A3/BBB+/BBB+	A3/BBB+/BBB+
Termination Trigger (Moody's / S&P)	Baa3/BBB-	Baa3/BBB-	Baa3/BBB-	Baa3/BBB-
Swap Type	Fixed Pay	Fixed Pay	Fixed Pay	Fixed Pay
Benchmark	67% 3M LIBOR + 40	67% 3M LIBOR + 53	67% 3M LIBOR + 52	67% 3M LIBOR + 55
Reset	Quarterly	Quarterly	Quarterly	Quarterly
Notional Amount	Expired 11/1/17	40,230,000	40,390,000	70,935,000
Amortize (yes/no)	yes	yes	yes	yes
Original Execution Date	5/16/2007	5/16/2007	5/16/2007	5/16/2007
Start Date	5/31/2007	5/31/2007	5/31/2007	5/31/2007
Assignment Date	2/14/2011	2/14/2011	2/14/2011	2/14/2011
Mandatory Early Termination				
End Date	11/1/2017	11/1/2027	11/1/2021	11/1/2025
Fixed Rate pay-(rec)	3.839%	4.066%	4.042%	4.125%
Day Count	30/360	30/360	30/360	30/360
Payment Dates		February 1, May 1, August 1, November 1		
Security Provisions		General Fund Debt Service Appropriations		
Current Market Valuation June 30, 2019 (negative indicates payment owed by ALCo if terminated)	Expired 11/1/17	(4,161,219)	(1,336,411)	(7,877,288)
Interest Earnings (not applicable)				
Total	not applicable	not applicable	not applicable	not applicable

Swap Summary

As of June 30, 2019:

Total Notional Amount Executed

<u>General Fund</u>	<u>Road Fund</u>
243,080,000	0

Net Exposure Notional Amount

<u>General Fund</u>	<u>Road Fund</u>
151,555,000	0

Total Notional Amount Executed by Counter Party

Deutsche Bank (assigned from Citibank on 2/14/2011)

243,080,000

Debt

	<u>General Fund</u>	<u>Road Fund</u>	<u>General Fund</u>	<u>Road Fund</u>
Bonds Outstanding	3,595,600,000	1,167,585,000	359,560,000	116,758,500
Authorized but Unissued	513,180,000	62,500,000	51,318,000	6,250,000
Total	4,199,313,285	1,230,085,000	413,221,000	123,008,500

10 Percent Net ExposureInvestment Pool Balance

<u>Other Funds</u>	<u>Net Road Fund</u>
4,199,313,285	407,457,947

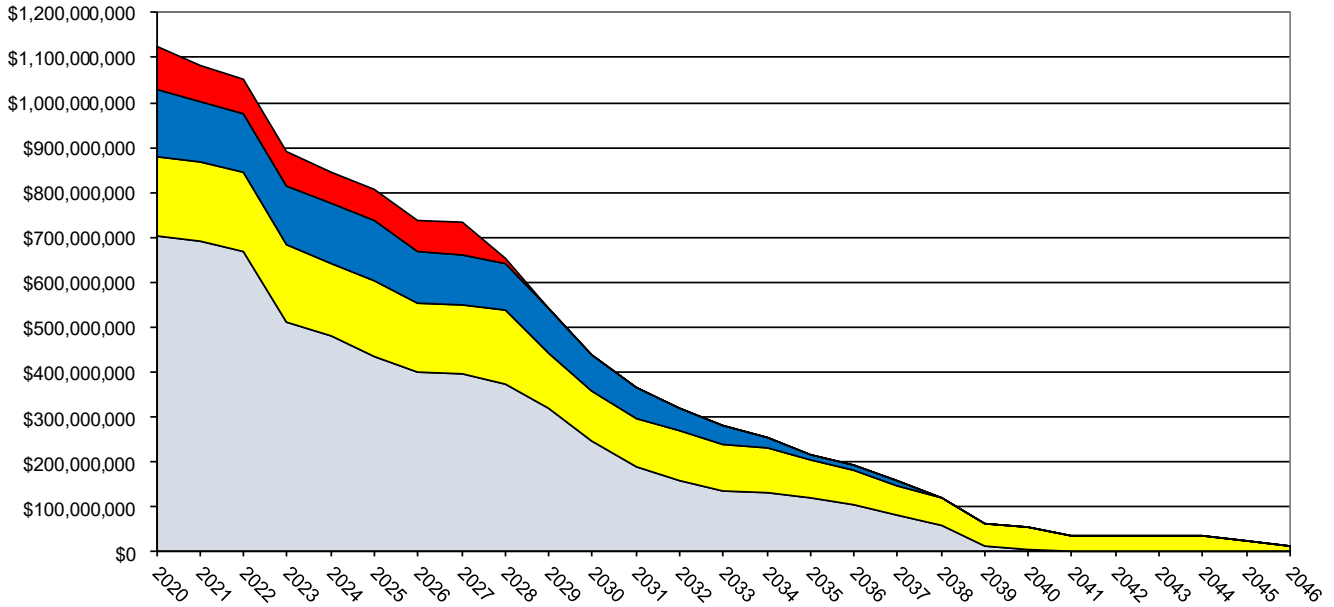
10 Percent Investment Portfolio

<u>Other Funds</u>	<u>Net Road Fund</u>
419,931,329	40,745,795

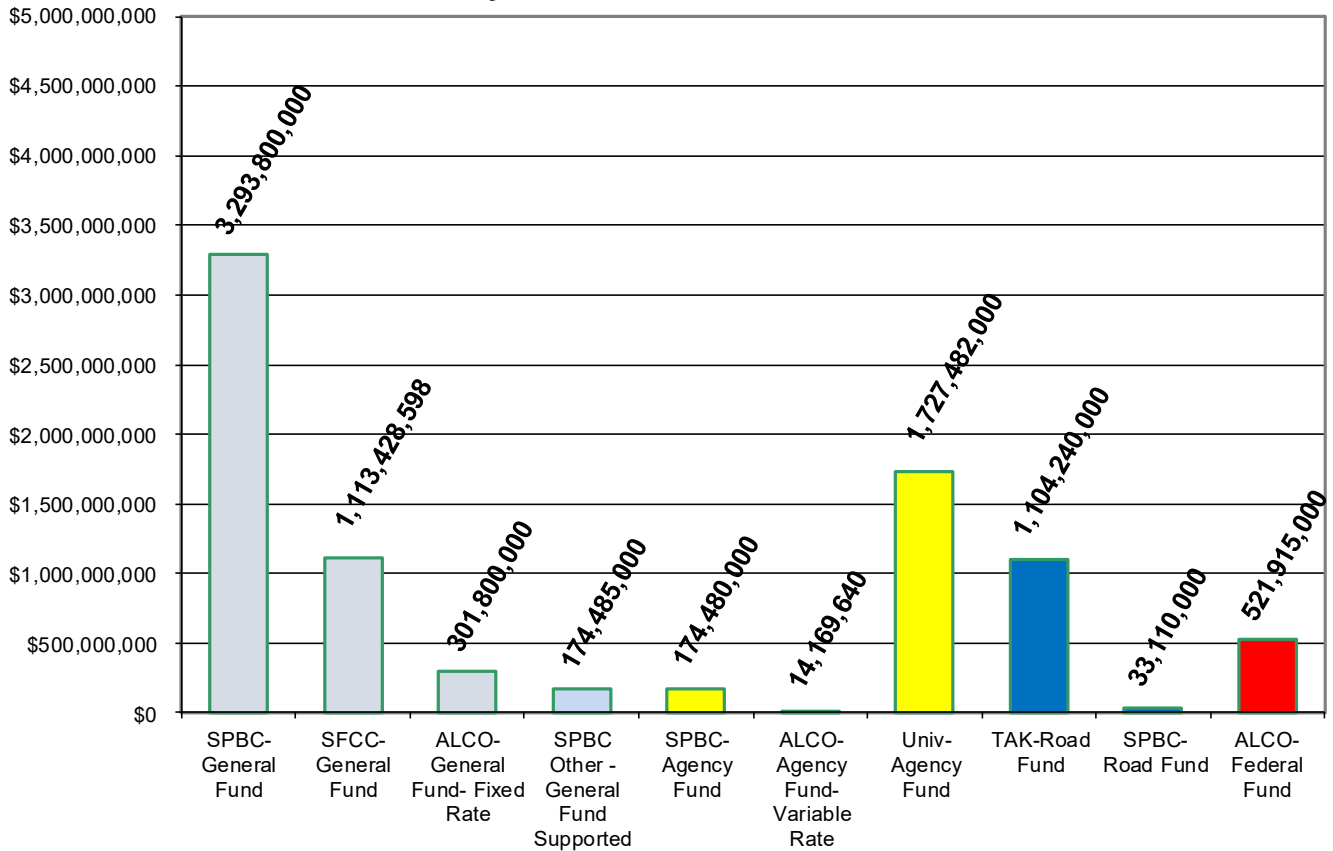
APPENDIX C

Appropriation Supported Debt Service by Fund Source as of 6/30/2019

□ General Fund ■ Agency Fund ■ Road Fund ■ Federal Fund



Appropriation Debt Principal Outstanding by Fund Source as of 6/30/2019



*This data does not include debt issued for judicial center projects and paid for by the Administrative Office of the Courts in the Court of Justice or debt issued by the Lexington -Fayette Urban County Government for the Eastern State Hospital.

APPENDIX D

**COMMONWEALTH OF KENTUCKY
ASSET/LIABILITY COMMISSION
SCHEDULE OF NOTES OUTSTANDING
AS OF 06/30/2018**

FUND TYPE SERIES TITLE	AMOUNT ISSUED	DATE OF ISSUE	MATURITY DATE	PRINCIPAL OUTSTANDING
General Fund Project & Funding Notes				
2007 A, B Series	\$243,080,000	5/2007	11/2027	\$151,555,000
2010 1st Series-KTRS Funding Notes	\$467,555,000	8/2010	4/2020	\$8,560,000
2011 1st Series-KTRS Funding Notes	\$269,815,000	3/2011	4/2022	\$76,860,000
2013 1st Series-KTRS Funding Notes	\$153,290,000	2/2013	4/2023	\$64,825,000
FUND TOTAL	\$1,133,740,000			\$301,800,000
Agency Fund Project Notes				
2018 Agency Fund Project Note (KCTCS)	\$27,775,000	6/2018	10/2023	\$14,169,640
FUND TOTAL	\$27,775,000			\$14,169,640
Federal Hwy Trust Fund Project Notes				
2007 1st Series	\$277,910,000	9/2007	9/2019	\$42,395,000
2010 1st Series	\$89,710,000	3/2010	9/2022	\$89,710,000
2013 1st Series	\$212,545,000	8/2013	9/2025	\$172,640,000
2014 1st Series	\$171,940,000	3/2014	9/2026	\$132,175,000
2015 1st Series	\$106,850,000	10/2015	9/2027	\$84,995,000
FUND TOTAL	\$858,955,000			\$521,915,000
ALCo NOTES TOTAL	\$2,020,470,000			\$837,884,640

REPORT PREPARED BY:



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