COMMONWEALTH OF KENTUCKY

KENTUCKY ASSET/LIABILITY COMMISSION

SEMI-ANNUAL REPORT

For the period ending June 30, 2021

49th Edition

Andy Beshear, Governor of the Commonwealth of Kentucky

Holly M. Johnson, Secretary of the Finance and Administration Cabinet

Ryan Barrow, Executive Director, Office of Financial Management

KENTUCKY ALCo ASSET/LIABILITY COMMISSION

An electronic copy of this report

may be viewed at:

ALCo Semi-Annual Reports - Finance and Administration Cabinet (ky.gov)

The Commonwealth's Annual Comprehensive Financial Report (ACFR)

may be viewed at:

https://finance.ky.gov/office-of-the-controller/office-of-statewide-accounting-services/financial-reporting-branch/Pages/annual-comprehensive-financial-reports.aspx

The Municipal Securities Rulemaking Board (MSRB)

Electronic Municipal Market Access (EMMA)

may be viewed at:

http://emma.msrb.org/

Commonwealth of Kentucky Investor Relations (BONDLINK)

may be viewed at:

https://bonds.ky.gov/commonwealth-of-kentucky-investor-relations-ky/i2091

TEAM KENTUCKY™

Table of Contents

INTRODUCTION

The Kentucky Asset/Liability Commission (ALCo or the Commission) presents its 49th 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, 2021 through June 30, 2021.

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.

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

On the national level

- The Federal Reserve Board of Governors maintained the federal funds rate at 0.00% - 0.25% during the first half of 2021.
- The unemployment rate dropped to 5.9% ending June 2021 from 6.7% in December 2020.
- The annual rate of economic growth as measured by GDP rose over the first two quarters of 2021. The seasonally adjusted rate for the first quarter was 6.4% and second quarter was 6.5%.
- Inflation jumped during the second quarter 2021 with the core rate (ex-energy and food) ending at 3.5% as of June 2021.

On the state level

- Vaccination progress, federal government aid to individuals and businesses, and increasing consumer confidence have all contributed to an improved Kentucky economy which resulted in higher tax receipts.
- General Fund receipts totaled $12.8 billion for Fiscal Year 2021, an increase of 10.9% over Fiscal Year 2020 collections. General Fund revenues exceeded the budgeted estimate by $1.1 billion.
- Road Fund receipts for FY 2021 totaled $1.6 billion, an increase of 10.1% from the previous fiscal year, and $64.6 million more than the budgeted estimate.
- Large unfunded pension liabilities continue to put stress on the Commonwealth's credit rating.
- Implementation of bond authorizations from prior-year sessions of the General Assembly continued. Bond issues for the period are discussed later in the report.

INVESTMENT MANAGEMENT

Market Overview

Over the first half of 2021, progress on vaccinations has led to a reopening of the economy and strong economic growth, supported by accommodative monetary and fiscal policy. However, the effects of the COVID-19 pandemic have continued to weigh on the U.S. economy, and employment has remained well below pre-pandemic levels. Furthermore, shortages of material inputs and difficulties in hiring have held down activity in a number of industries. In part because of these bottlenecks and other largely transitory factors, PCE (personal consumption expenditures) prices rose 3.5% over the 12 months ending in June.

Over the first half of the year, the Federal Open Market Committee (FOMC) held its policy rate near zero and continued to purchase Treasury securities and agency mortgage-backed securities to support the economic recovery. These measures, along with the Committee's guidance on interest rates and the Federal Reserve's balance sheet, will help ensure that monetary policy continues to deliver powerful support to the economy until the recovery is complete.

Employment

The labor market continued to recover over the first six months of 2021. Job gains averaged 563,000 per month, and the unemployment rate moved down from 6.7% in December to 5.9% in June. Although labor market improvement has been rapid, the unemployment rate remained elevated in June, and labor force participation has not moved up from the low rates that have prevailed for much of the past year. A surge in labor demand that has outpaced the recovery in labor supply has resulted in a jump in job vacancies and a step-up in wage gains in recent months.

Inflation

Consumer price inflation, as measured by the 12-month change in the PCE price index, moved up from 1.3% at the end of last year to 4.0% in June. The 12-month measure of inflation that excludes food and energy items (so-called core inflation) was 3.5% in June, up from 1.5% at the end of last year. Some of the strength in recent 12-month inflation readings reflects the comparison of current prices with prices that sank at the onset of the pandemic as households curtailed spending, a transitory result of "base effects." More lasting but likely still temporary upward pressure on inflation has come from prices for goods experiencing supply chain bottlenecks, such as motor vehicles and appliances. In addition, prices for some services, such as airfares and lodging, have moved up sharply in recent months toward more normal levels as some demand has recovered. Both survey based and market based measures of longer-term inflation expectations have risen since the end of last year, largely reversing the downward drift in those measures in recent years, and are in a range that is broadly consistent with the FOMC's longer run inflation objective.

INVESTMENT MANAGEMENT

Economic Growth

In the first and second quarter, real gross domestic product (GDP) increased 6.4% and 6.5% respectively, propelled by a surge in household consumption and a solid increase in business investment but restrained by a substantial drawdown in inventories as firms contended with production bottlenecks. Data for the second quarter suggest a further robust increase in demand. Against a backdrop of elevated household savings, accommodative financial conditions, ongoing fiscal support, and the reopening of the economy, the strength in household spending has persisted, reflecting continued strong spending on durable goods and solid progress toward more normal levels of spending on services.

Interest Rates

Market-based measures of the path that the federal funds rate is expected to take over the next few years remain below 0.25% until the fourth quarter of 2022, about two quarters earlier than in February. The shift in the path followed news of the rapid deployment in the United States of highly effective COVID-19 vaccines, the reopening of contact-intensive sectors of the economy, and expectations that further support for aggregate demand would be coming from fiscal policy.

Yields on nominal Treasury securities at longer maturities were little changed, since mid-February. Concurrently, near-term uncertainty about longer-term interest rates as measured by volatility of near-term swap options on 10-year swap interest rates remained roughly unchanged, since February.

Across different categories of corporate credit, bond yields are little changed since mid-February and have remained near the lowest levels. Spreads of corporate bond yields over comparable maturity Treasury securities have narrowed modestly and stand somewhat below the levels prevailing at the onset of the pandemic, supported in part by signs of improvement in the credit quality of nonfinancial firms.

Since mid-February, yields on 30-year agency mortgage-backed securities an important factor entering into the pricing of home mortgages were little changed, while those on comparable maturity Treasury securities increased a bit, leaving their spread modestly lower. Municipal bond spreads over rates on longer-term Treasury securities have declined moderately across credit categories since mid-February and stand at the lower end of the historical distribution, while municipal bond yields across credit categories are at about their all-time lowest historical levels.

Equities

Broad stock price indexes have continued to rise since start of the year as strong corporate earnings, optimism about the pace of vaccinations, additional fiscal stimulus, and signs of a faster pace of economic recovery outweighed concerns about high valuations, higher inflation, and prospects for the control of the virus abroad. Prices of cyclical stocks, including those associated with companies in

INVESTMENT MANAGEMENT

the basic materials, energy, and industrial sectors, outperformed broad equity price indexes. Banks' stock prices have also risen notably, as the improved economic outlook and banks' reports of strong first-quarter earnings provided a further boost to investor optimism regarding the banking sector.

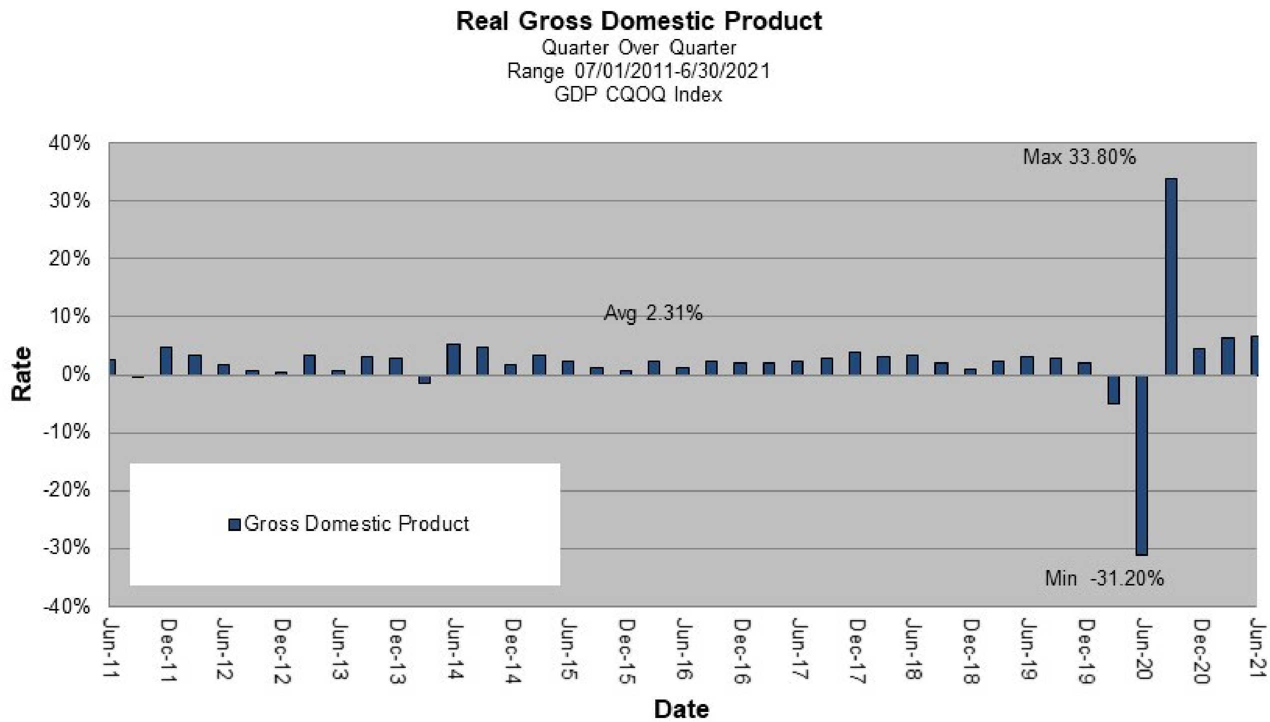
Outlook

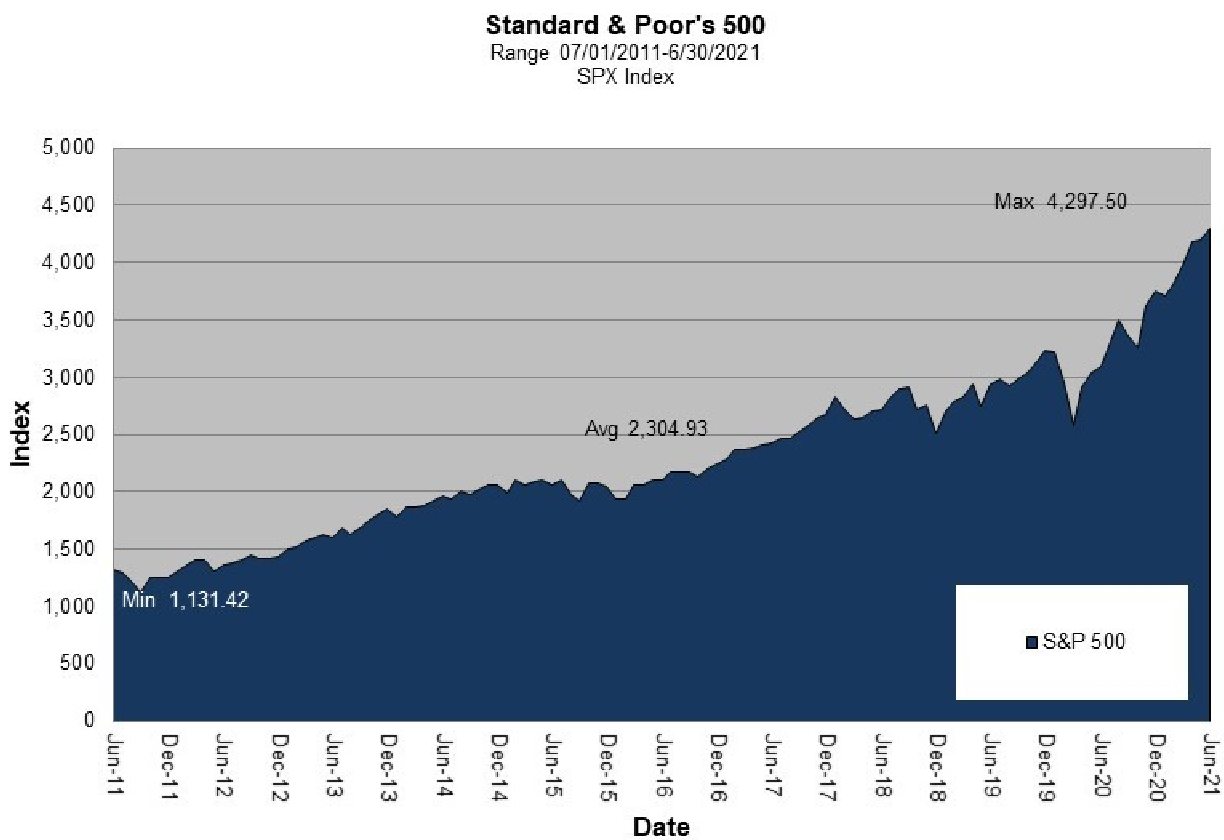
As part of its actions to ensure that monetary policy will continue to deliver powerful support to the economy until the recovery is complete, the Federal Open Market Committee (FOMC) has maintained the target range for the federal funds rate at 0% to .25%. The Committee has indicated that it expects it will be appropriate to maintain the target range for the federal funds rate at 0% to .25% until labor market conditions have reached levels consistent with the Committee's assessments of maximum employment and inflation has risen to 2% and is on track to moderately exceed 2% for some time. The Committee expects to maintain an accommodative stance of monetary policy until these outcomes are achieved.

In addition, the Federal Reserve has continued to expand its holdings of Treasury securities by $80 billion per month and its holdings of agency mortgage-backed securities (MBS) by $40 billion per month. These asset purchases help foster smooth market functioning and accommodative financial conditions, thereby supporting the flow of credit to households and businesses. The Committee's current guidance regarding asset purchases indicates that increases in the holdings of Treasury securities and agency MBS in the System Open Market Account will continue at least at this pace until substantial further progress has been made toward its maximum-employment and price-stability goals since the Committee adopted its asset purchase guidance last December. In addition, the minutes of the June 2021 FOMC meeting noted the importance that policymakers attach to clear communications about the Committee's assessment of progress toward its longer run goals and to providing these communications well in advance of the time when progress can be judged substantial enough to warrant a change in the pace of asset purchases. In coming meetings, the FOMC will continue to assess the economy's progress toward the Committee's goals.

INVESTMENT MANAGEMENT

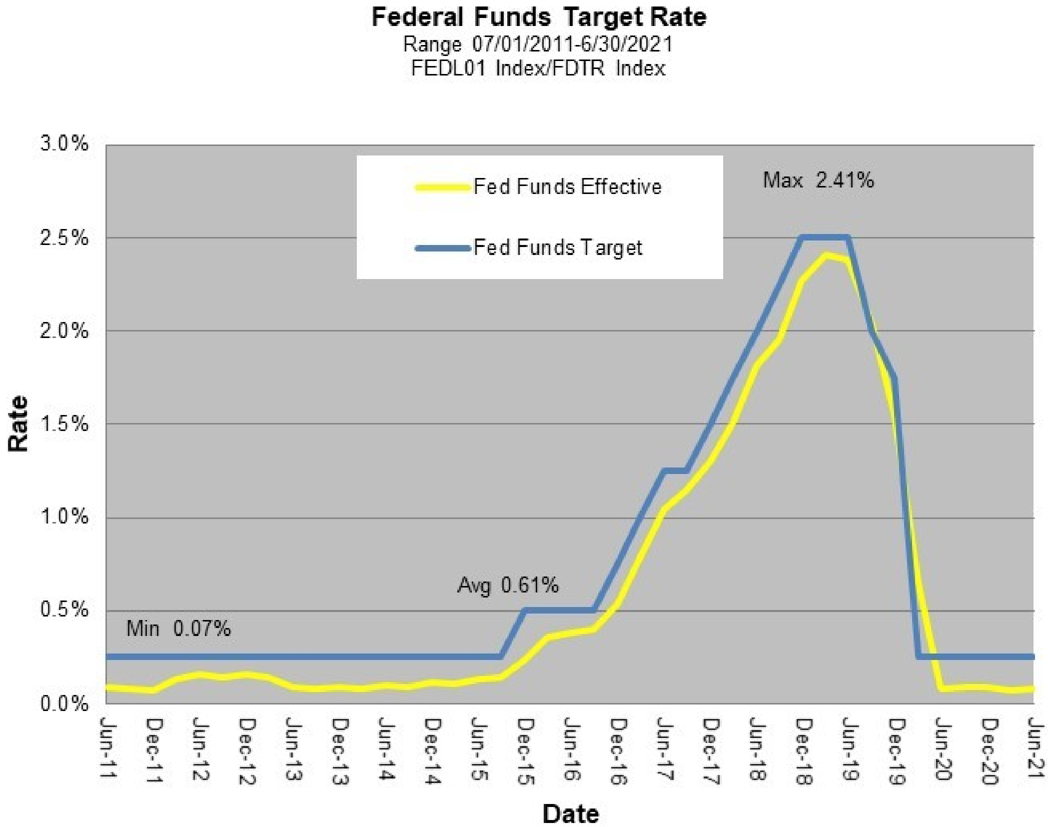
Real Gross Domestic Product & Standard & Poor's 500

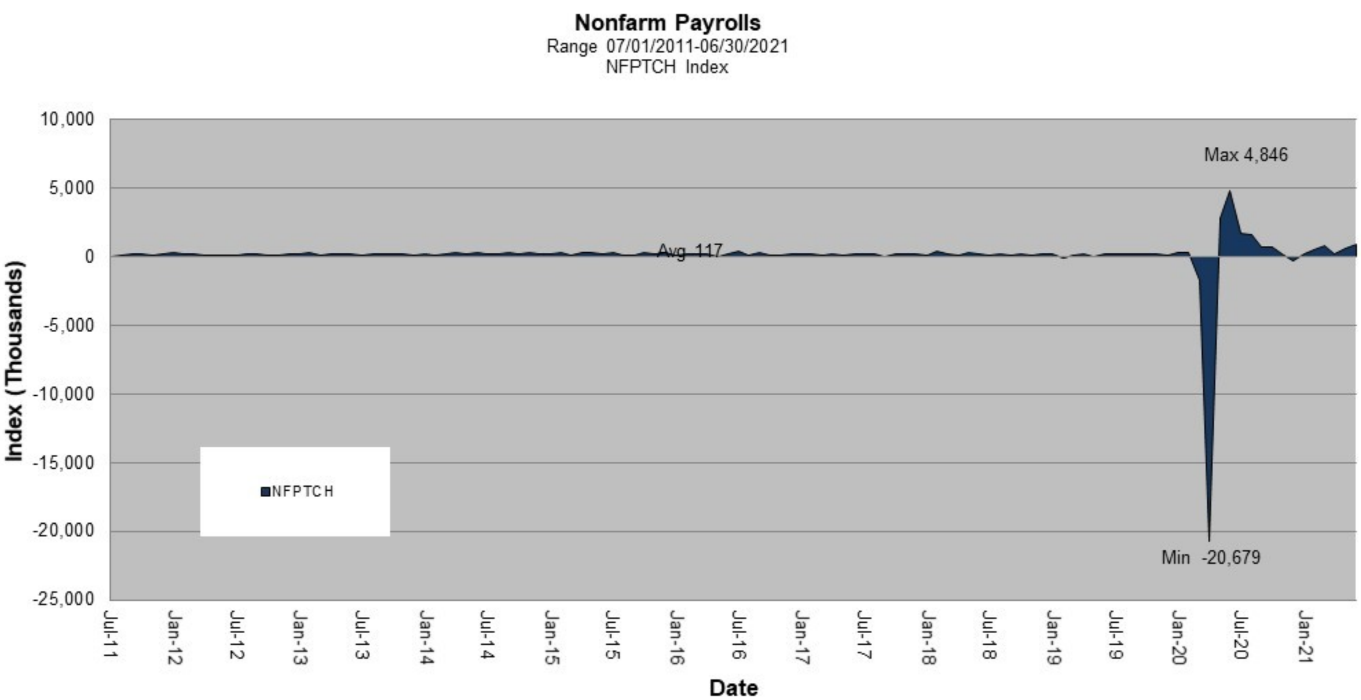




INVESTMENT MANAGEMENT

Federal Funds Target Rate & NonFarm Payrolls





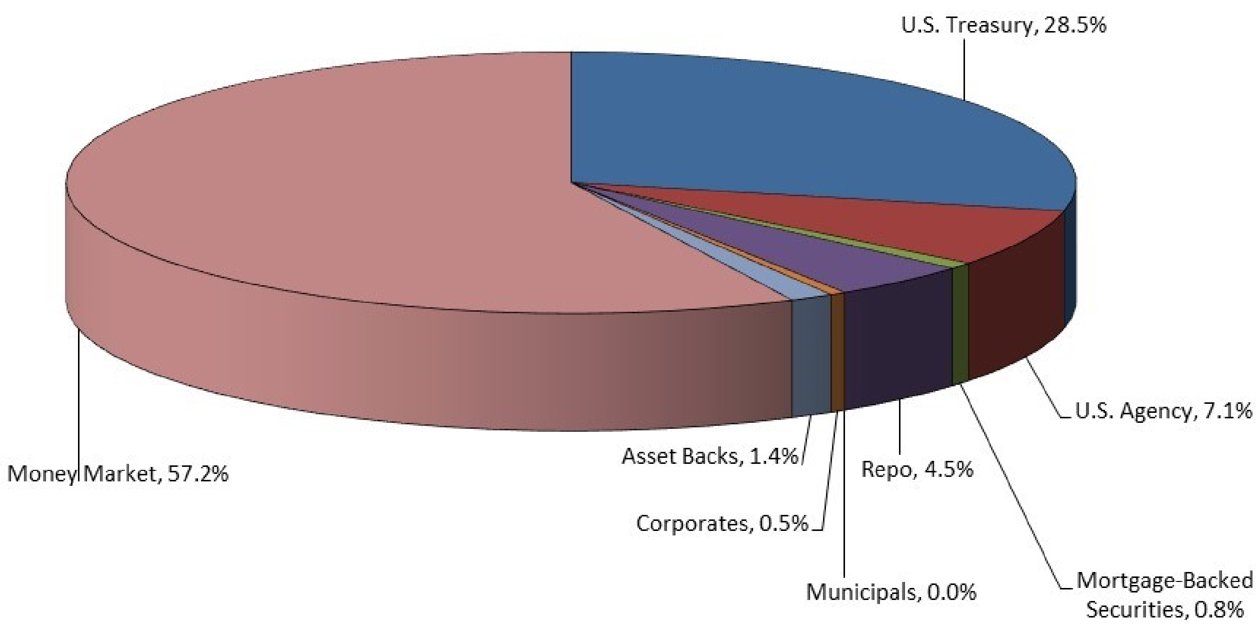
INVESTMENT MANAGEMENT

Portfolio Management

For six months ended June 30, 2021, the Commonwealth's investment portfolio was approximately $9.0 billion. The portfolio was invested in U. S. Treasury Securities 28.5%, U. S. Agency Securities 7.1%, Mortgage-Backed Securities 0.8%, Repurchase Agreements (Repo) 4.5%, Corporate Securities 0.5%, Asset-Backed Securities 1.4%, and Money Market Securities 57.2%. The portfolio had a market yield of 0.09% and an effective duration of 0.50 of a year.

The total portfolio is broken down into three investment pools. The pool balances as of June 30, 2021 was $4.2 billion Short Term Pool, $1.9 billion Limited Term Pool, $2.9 billion Intermediate Term Pool.

Distribution of Investments as of June 30, 2021

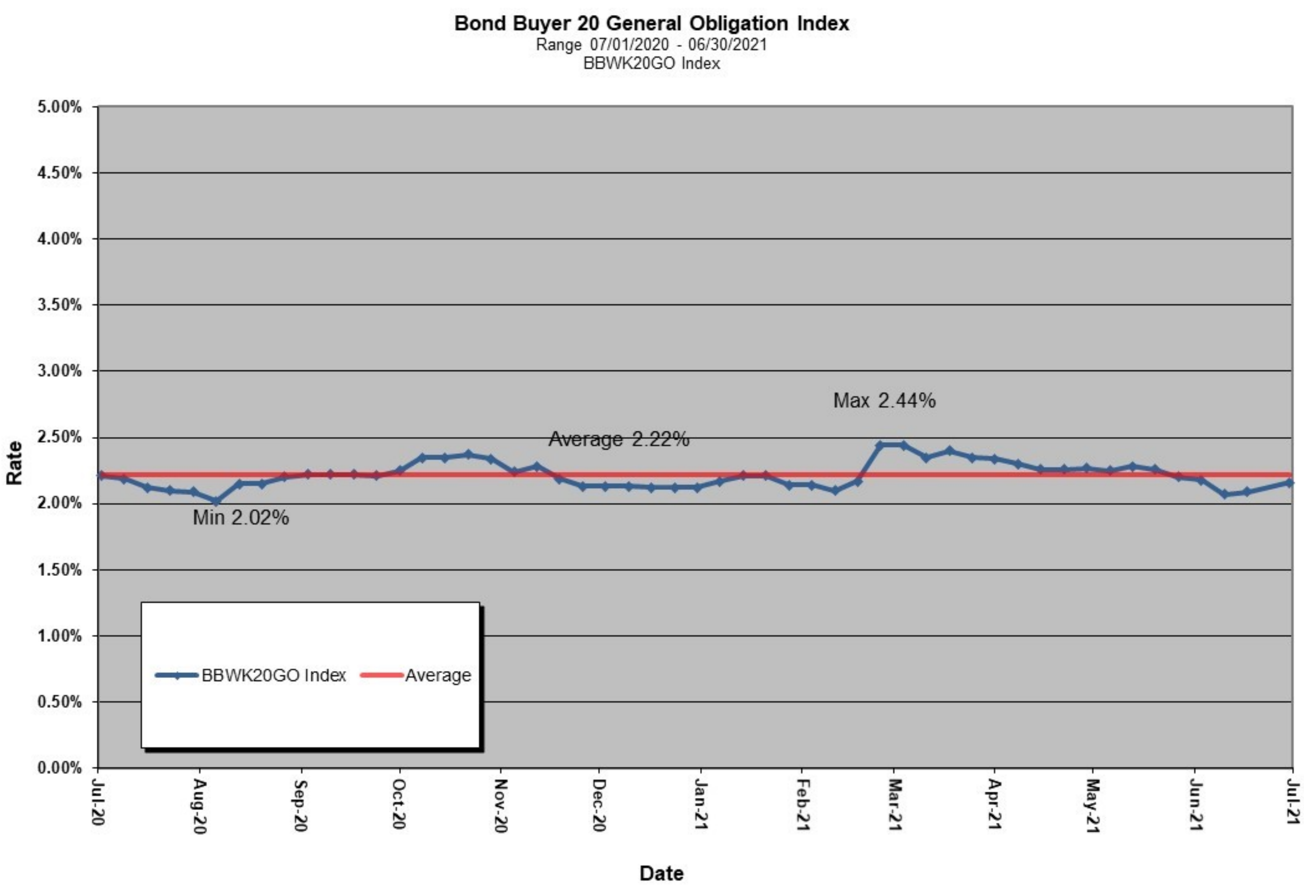


INVESTMENT MANAGEMENT

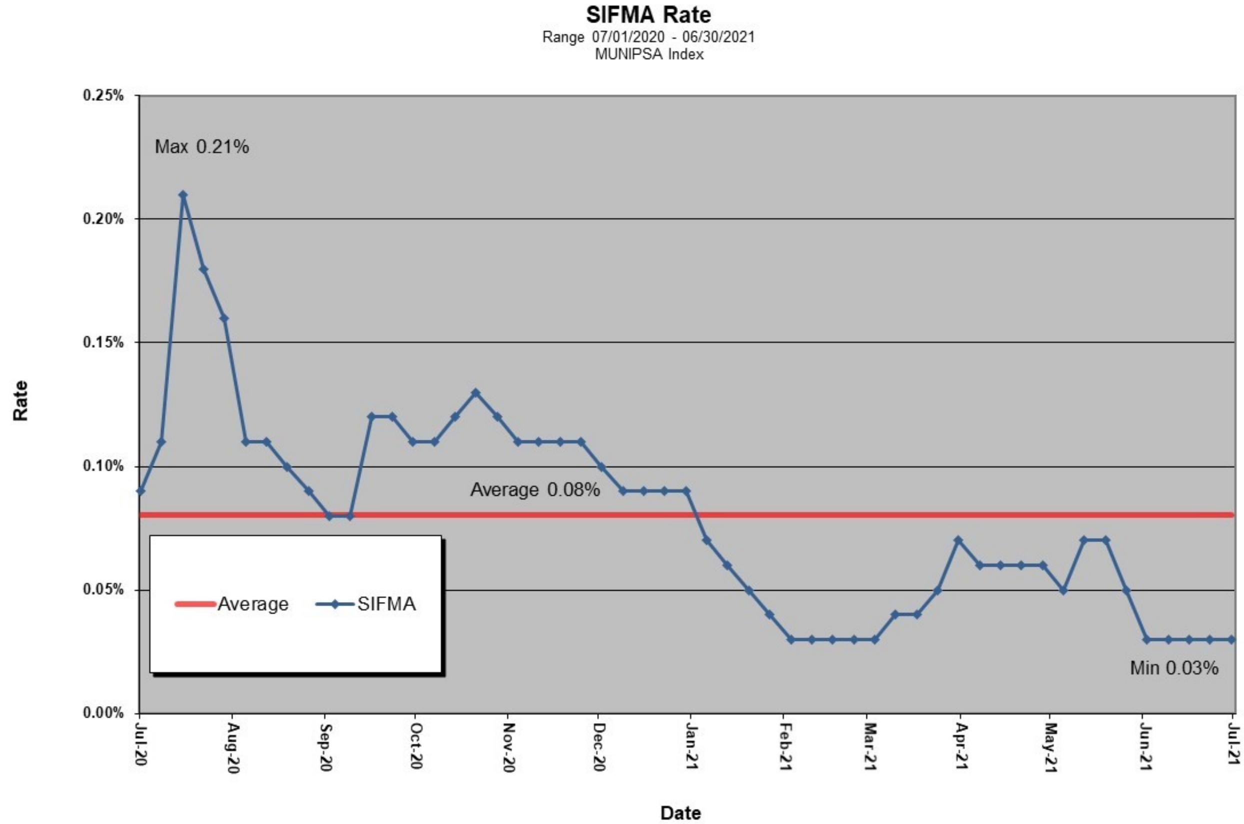
Tax-Exempt Interest Rates and Relationships

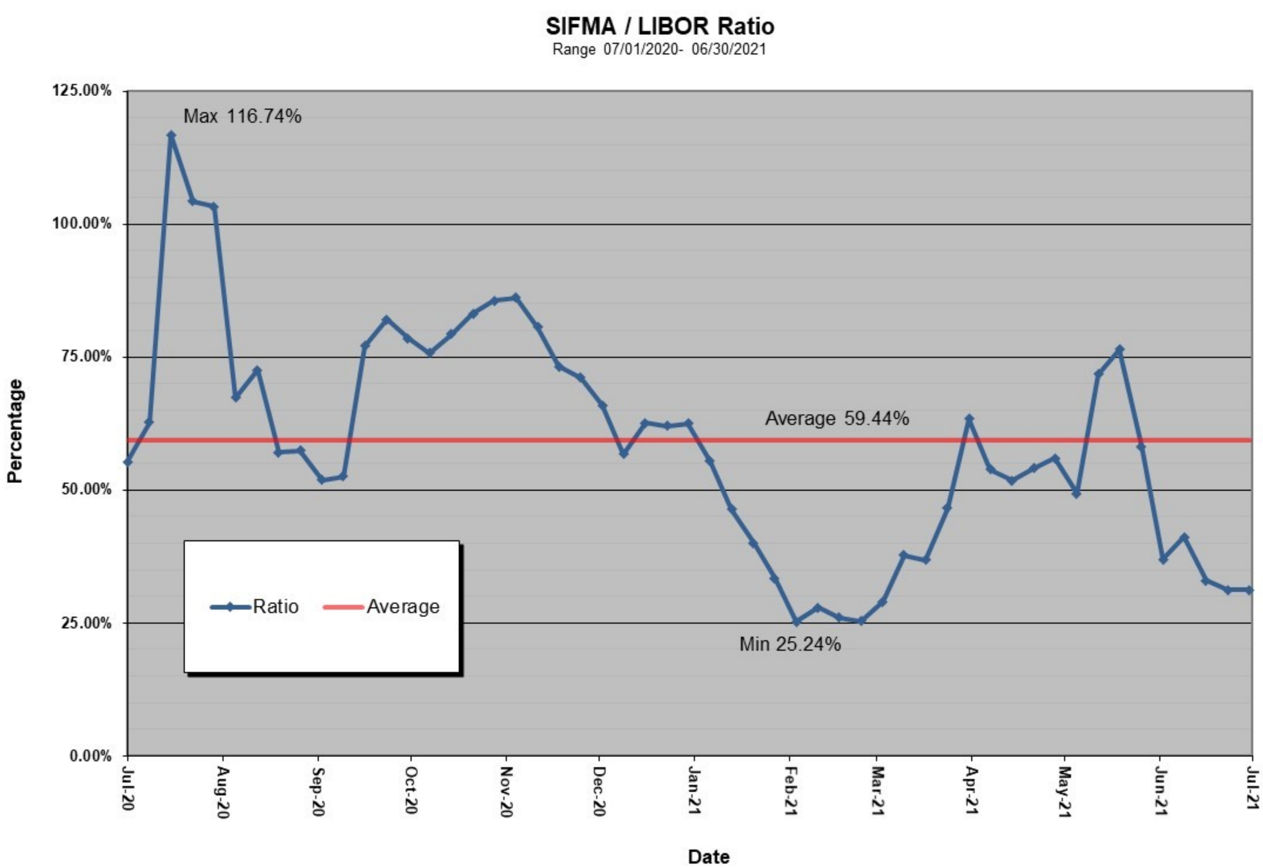
The Bond Buyer 20-year General Obligation Index averaged 2.22% for Fiscal Year 2021. The high was 2.44% at the beginning of March 2021 and the low was 2.02% in August 2020.

The Securities Industry and Financial Markets Association (SIFMA) Municipal Swap Index averaged 0.08% for Fiscal Year 2021. The high was 0.21% in July 2020 and the low was 0.03% in June 2021. The 30-day USD London Interbank Offered Rate (LIBOR) averaged 0.13% for Fiscal Year 2021. The high was 0.18% in July 2020 and the low was 0.07% in June 2021. During the year, SIFMA traded at a high of 116.74% of the 30-day LIBOR in mid July 2020, at a low of 25.24% in February 2021, and at an average of 59.44% for the Fiscal Year.



SIFMA & SIFMA/LIBOR Ratio





CREDIT MANAGEMENT

Mid-Year Reflection

Credit

As COVID-19 vaccines became more widespread in the first half of 2021, economies around the globe began to heat up as they reopened. After appearing to stall out below pre-pandemic levels, U.S. consumer spending skyrocketed to almost $1 trillion above the level set in February 2020 with further increases expected this summer. Personal income fell after direct government stimulus dried up in 2020 but has since rebounded to an all-time high and well above pre-pandemic levels. Household debt continued to rise and now sits just under $15 trillion. Low mortgage rates continued to fuel increased housing debt as outstanding loan balances topped $10 trillion. Bucking the trend of rising debt balances is credit card debt, which declined to under $800 billion, $150 billion lower than it was at the end of 2019. Delinquency rates slipped lower to 3.1% of all debt, a 1.5% drop from a year ago. Interest rates on all types of debt remained low as the Federal Reserve signaled a willingness to keep the benchmark rates at zero throughout 2021 and beyond, dismissing rising inflation rates as transitory.

Continuing the trend of the last few years, corporate debt rose to a new high of more than $11 trillion and has now exceeded 50% of U.S. GDP. As many industries were forced to scale back operations during the pandemic, many stressed companies took advantage of extremely low interest rates to load up on debt. Helping drive this increase is the increased willingness of banks to lend to companies with credit ratings below investment grade in a desperate search for yield. In the first quarter of 2021, a record $67.4 billion of debt was issued to companies with below a B- credit rating. Company bankruptcy filling rates in 2020 and early 2021 are already the highest since the Great Recession in 2009. After spiking dramatically in the first half of 2020, spreads on investment grade corporate debt have trended downward ever since and are currently at historically low levels. Furthering the trend of increased debt issuance, respondents to the Senior Loan Officer Opinion Survey on Bank Lending Practices, reported that lending standards were eased in respect to all commercial and industrial firms in the first quarter of 2021. Standards for all categories of consumer loans were also loosened as demand remained relatively flat, with the exception of residential real estate loans, where demand continued to rise in response to very low mortgage rates.

The first half of 2021 saw one company removed from the Corporate Credit Approved list. IBM was dropped following a downgrade that pushed it below the minimum standard. In addition, several companies saw downgrades but remain on the list for now. Exxon, Total SA, Merck, Natixis, and Royal Bank of Canada were all downgraded during the first half of the year.

Credit Process

Our credit strategy is to invest in creditworthy corporate issuers having a long-term rating of

CREDIT MANAGEMENT

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 deliver longer-term investment performance over U.S. Treasuries.

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 our approved list and 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 approves the list on a quarterly basis. During the first half of 2021, IBM was removed from the Corporate Credits Approved list. The Corporate Credits Approved list as of June 2021 is found in Appendix A.

State Investment Commission

The State Investment Commission (SIC) is responsible for investment oversight with members of the Commission being State Treasurer (Chair), Finance and Administration Cabinet Secretary, State Controller 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

KENTUCKY STATE PROPERTY AND BUILDINGS COMMISSION

KENTUCKY ALCo ASSET/LIABILITY COMMISSION

TURNPIKE AUTHORITY OF KENTUCKY

Authorized But Unissued Debt

As of June 30, 2021, the Commonwealth's 2021-2022 budget includes authorized debt service for over $1.21 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 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

DEBT MANAGEMENT

$43.5 million is Agency Restricted Fund 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 authorized bond financing for projects totaling a net amount of $1,364.05 million to support various capital initiatives of the Commonwealth whereas $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 authorized 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.

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 authorized 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

DEBT MANAGEMENT

previously authorized debt was de-authorized in House Bill 200 and House Bill 201. Of the total authorization, $396.44 million is General Fund supported and $602.89 million is supported by Agency Restricted Fund appropriations. 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 to the Governor on March 14, 2019. House Bill 268 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 is General Fund supported. A portion of the General Fund authorizations have been permanently financed.

2020 Regular Session

The 2020 Regular Session of the General Assembly delivered House Bill 99 to the Governor on March 18, 2020 and delivered House Bill 352 (Executive Branch Budget other than the Transportation Cabinet) and House Bill 353 (Kentucky Transportation Cabinet Budget) to the Governor on April 1, 2020, establishing an Executive Branch Budget for the first year only of the biennium ending June 30, 2022. The Governor signed House Bill 99 on March 25, 2020 and vetoed certain line items in House Bill 352 and House Bill 353 on April 13, 2020. The General Assembly overrode all gubernatorial vetoed line items on April 15, 2020. Together, the bills authorized bond financing for projects totaling a net amount of $351.67 million to support various capital initiatives of the Commonwealth. The total authorization is General Fund supported. Agency Fund projects totaling $429.80 million were listed without debt service appropriation. No additional Road Fund supported authorizations were appropriated. A portion of the General Fund and Agency Restricted Fund authorizations have been permanently financed.

2021 Regular Session

The 2021 Regular Session of the General Assembly delivered House Bill 192 (Executive Branch Budget other than the Transportation Cabinet) to the Governor on March 16, 2021, and House Bill 193 (Kentucky Transportation Cabinet Budget) to the Governor on March 29, 2021, establishing an Executive Branch Budget for the second year of the biennium ending June 30, 2022. The Governor vetoed certain line items in House Bill 192 on March 26, 2021, and the General Assembly overrode certain gubernatorial vetoed line items on March 29, 2021, enacting House Bill 192 as vetoed in part. The Governor took final action on House Bill 193 on April 7, 2021. Together, the bills authorized bond financing for projects totaling a net amount of $455.35 million, to support various capital initiatives of the Commonwealth. Of the total authorization, $98.35 million is General Fund supported and $357 million is supported by Agency Fund appropriations. No additional Road Fund supported authorizations were appropriated.

DEBT MANAGEMENT

Authorized but Unissued Debt Summary

The balance of prior bond authorizations of the General Assembly dating from 2010 through 2021 totals $1,210.93 million. Of these prior authorizations, $450.11 million is General Fund supported, $698.32 million is Agency Restricted Fund supported, $62.50 million is supported by Road Fund appropriations.

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, 2021:

Legislative Session (Year)	General Fund (millions)	Agency Fund (millions)	Road Fund (millions)	TOTAL (millions)
2010	22.35	17.50	50.00	89.85
2012	1.96	-	12.50	14.46
2014	12.63	-	-	12.63
2016	39.60	20.58	-	60.18
2018	189.45	201.10	-	390.55
2019	55.53	.		55.53
2020	111.08	422.14		533.22
2021	98.35	37.00		135.35
Bond Pool Proceeds	(80.84)	-	-	(80.84)
TOTAL	450.11	698.32	62.50	1,210.93

The balance of prior bond authorizations of the General Assembly dating from FY 2010 through FY 2021 totals $1,210.93 million. Of these prior authorizations, $450.11 million is General Fund supported, $698.32 million is Agency Restricted Fund supported, and $62.5 million is supported by Road Fund appropriations.

Looking Forward

The Commission continues to monitor the municipal bond interest rate market and uses this information together with other relevant market data to evaluate whether or not the interim financing program would provide and economic advantage in conjunction with the fixed rate bonds.

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.

With the issuance of State Property and Buildings Commission project No. 122 in October of 2019, the determination was made to add Kroll Bond Rating Agency's evaluation of that issuance. The Kroll ratings were General Obligation Issuer Implied Rating of AA-, and General Fund Appropriation Rating of A+.

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

The Ratings Picture at June 30, 2021:

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

[i]All outstanding bonds do not necessarily receive a rating from every rating agency

DEBT MANAGEMENT

Cash Management Strategies

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

Tax and Revenue Anticipation Notes (TRAN)

Historically, the Commonwealth has not issued TRANs for liquidity but to leverage the difference between taxable and tax-exempt interest rate markets to create economies that provide a financial benefit to the Commonwealth. Market conditions did not provide a beneficial interest rate environment, so no TRANs were issued during the reporting period.

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 short-term fund (General Fund).

As of June 30, 2021 the total available liquid resources available to the General Fund was $8.959 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 bonds that are issued to generate funds for upcoming projects.

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:

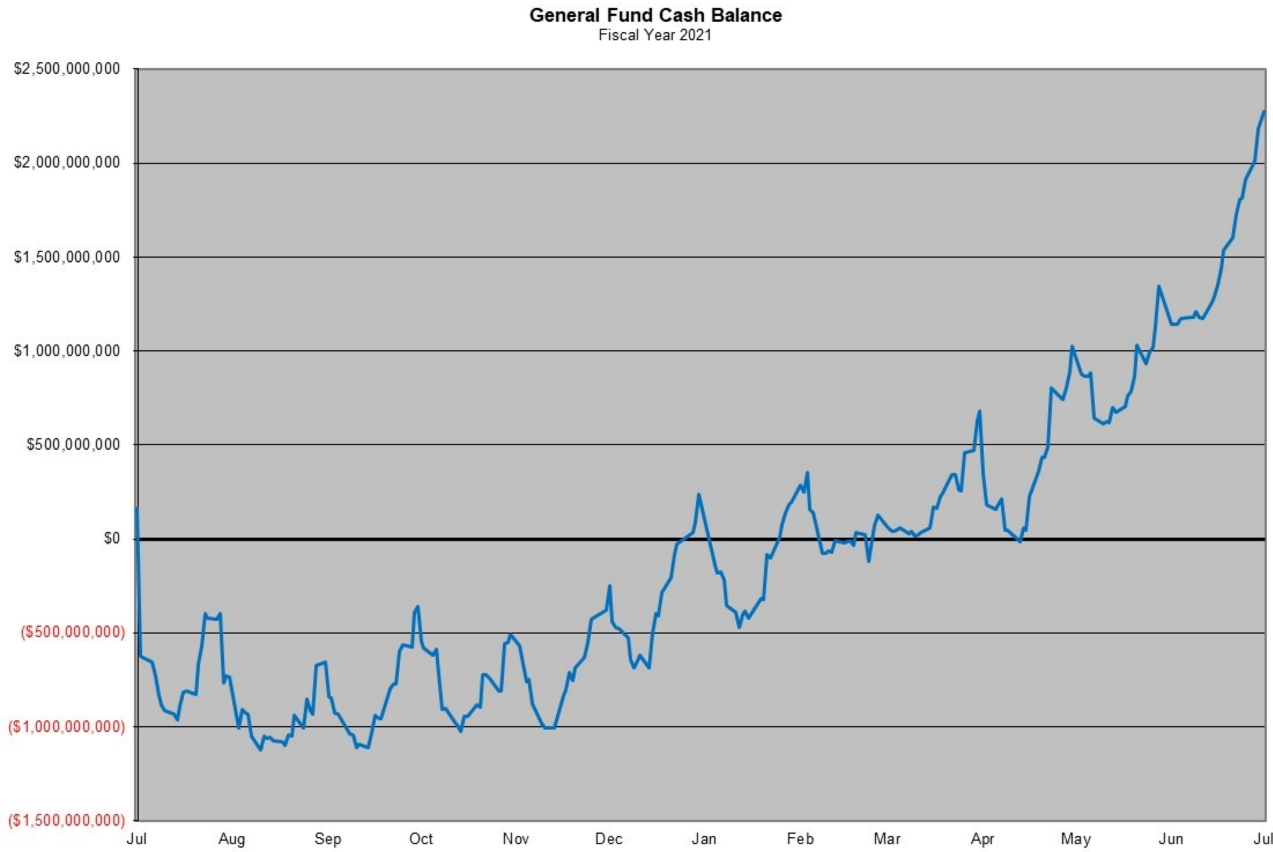
(a) Judgments, with a final maturity of not more than ten (10) years; and

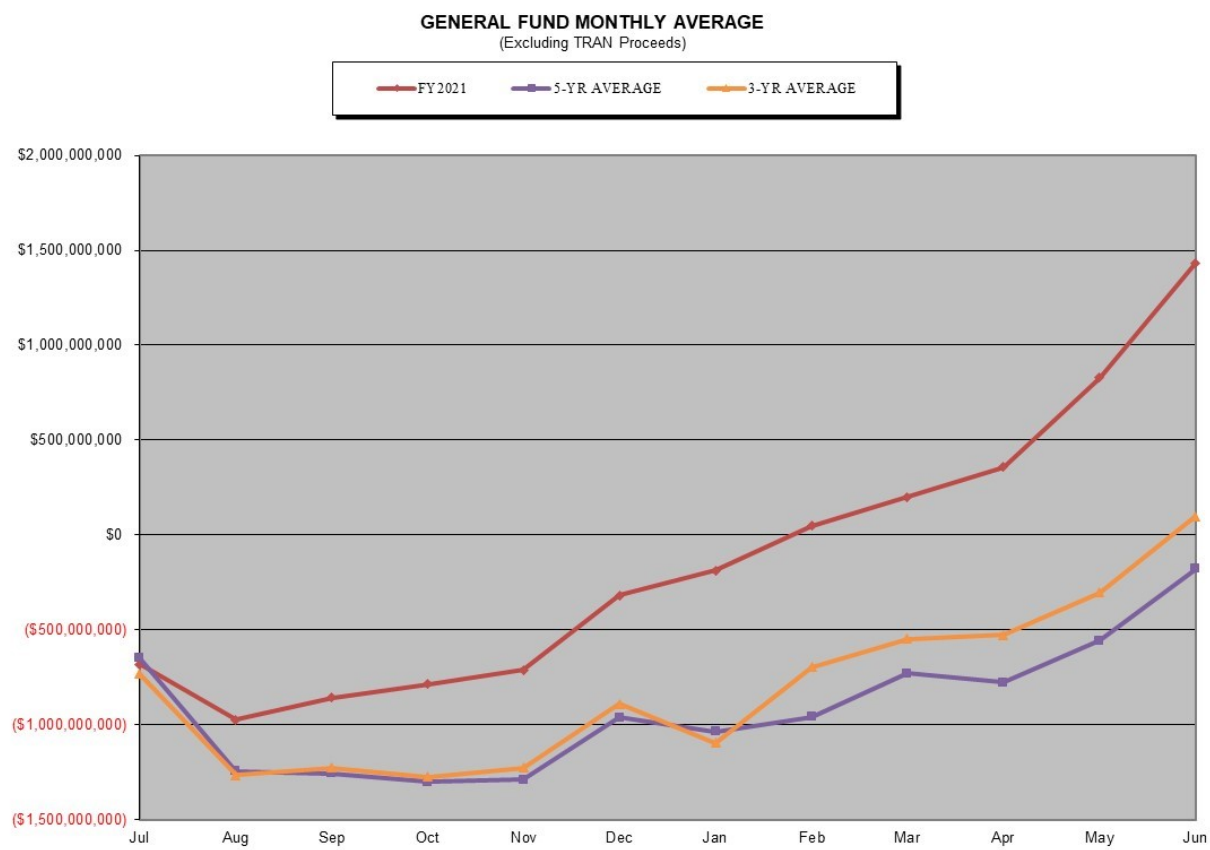
(b) The finance or refinance of obligations owed under KRS 161.550(2) or 161.553(2)

"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 Notes were issued during the reporting period

DEBT MANAGEMENT





DEBT MANAGEMENT

ALCo Financial Agreements

As of June 30, 2021, ALCo had no outstanding financial agreements. The three agreements that were a part of the 48th ALCo Semi-Annual report were priced for refunding on March 31, 2021 and closed on May 3, 2021 with a refunding par of $113,940,000. The original transaction used LIBOR as the underlying benchmark by which the interest on the debt was hedged, but this benchmark was scheduled to be abandoned by the market on December 31, 2021. With capital at risk, in May of 2020, the Commission authorized the refinancing with up to a $1,000 negative savings. Normal refunding transactions are executed to provide economic savings, but a more important factor in this transaction was the desire to eliminate the leveraged risk. The Commonwealth owed Deutsche Bank AG 11.129 million in a mark-to-market on the three swaps. Market conditions were not favorable at that time, so the decision was made to delay the bond transaction. Over the next year, market conditions improved, certain concessions were achieved from the swap provider, and the transaction ultimately achieved a NPV savings of $1.118 million.

The original financial agreements are described in the section below and the terms of these transactions are detailed in Appendix B.

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 hedge the floating rates on the FRNs and lock 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

DEBT MANAGEMENT

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 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, 2021 are presented in Appendix B.

DEBT MANAGEMENT

Asset/Liability Model

General Fund

The total SPBC debt portfolio as of June 30, 2021 had $2.941 billion of bonds outstanding with a weighted average coupon of 4.94% and a weighted average life of 6.14 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 $1.096 billion callable portion had a weighted average coupon of 4.62%.

The SPBC debt structure has 36.95% of principal maturing in 5 years and 70.15% 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 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 $2.275 billion on June 30, 2021, and a low of negative $1.126 billion on August 10, 2020.

The average and median balances were negative $118.318 million and negative $215.971 million, respectively. Since the General Fund continued to have a negative available cash balance for the fiscal year, there is little, if anything, that can be done from an asset management point of view beyond current actions.

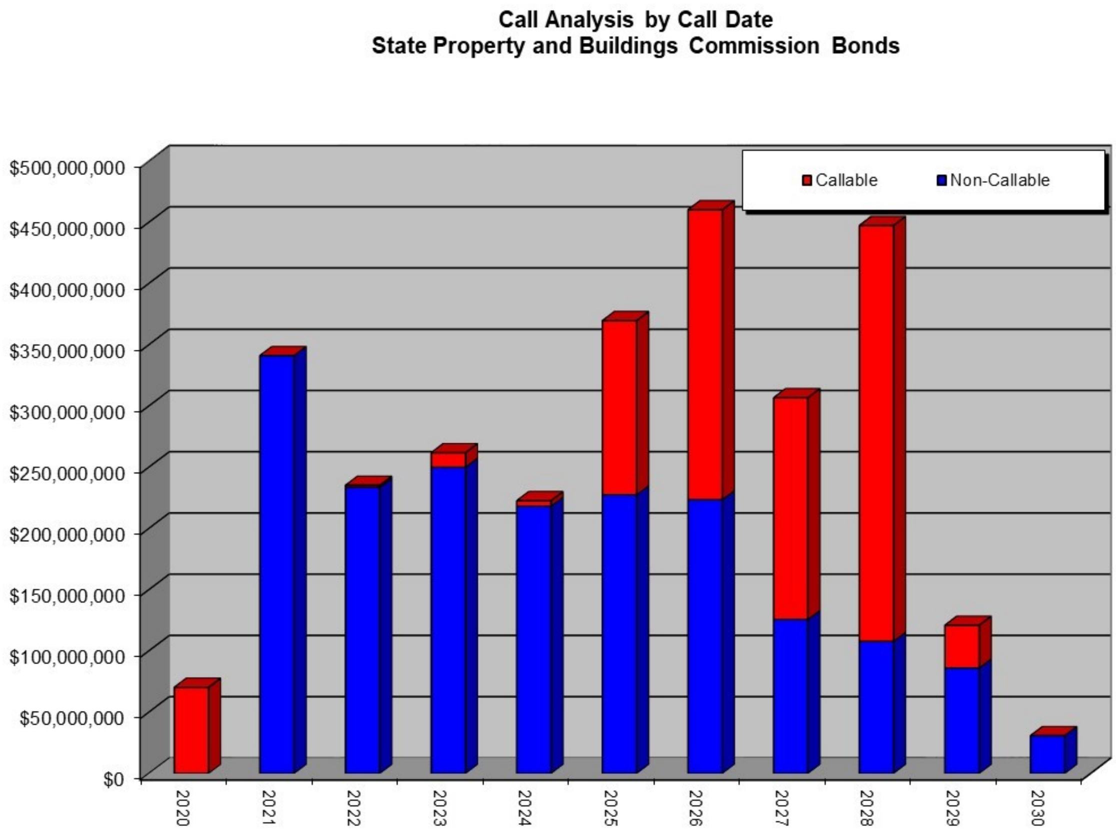
From a liability management perspective, total Commonwealth General Fund debt service, net of credits was $577.530 million for Fiscal Year 2021. In addition to the Commonwealth General Fund debt service, General Fund debt service of $11.256 million was provided for an Eastern State Hospital financing that was issued through the Lexington-Fayette Urban County Government in 2011. Also, General Fund debt service of $15.544 million was provided for the 2015 and 2018 Certificates of Participation (related to the two Commonwealth State office Building projects). 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.

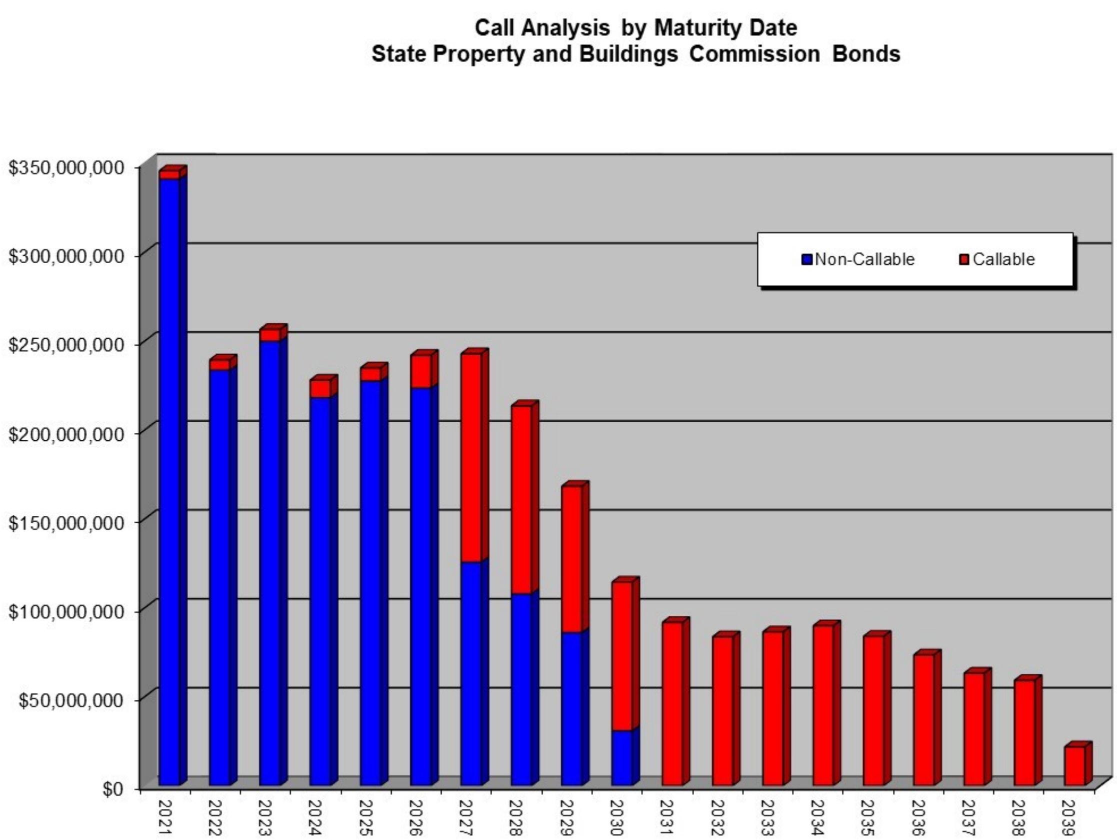
SPBC 125

On June 3, 2021, SPBC priced a $139,550,000 bond transaction which refunded $130,115,000 par of certain outstanding SPBC bonds. SPBC Project No. 125 consisted of $43,800,000 Revenue Refunding Bonds, Series A, and $95,750,000 Revenue Refunding Bonds, Federally Taxable Series B. The transaction achieved an All-In True Interest Cost of 1.899% and a net present value savings of $11.093 million (or 8.5260% savings from the refunded bonds).

The issued bonds contained both a taxable and tax-exempt component and were sold via negotiated sale with Citigroup serving as senior manager and Morgan Stanley serving as Senior Co-Manager. Kutak Rock LLP served as bond counsel and Stites & Harbison, PLLC served as underwriter's counsel. The bonds received ratings of A1 from Moody's and A+ from Fitch. SPBC 125 closed on July 1, 2021.

DEBT MANAGEMENT





DEBT MANAGEMENT

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.

Road Fund

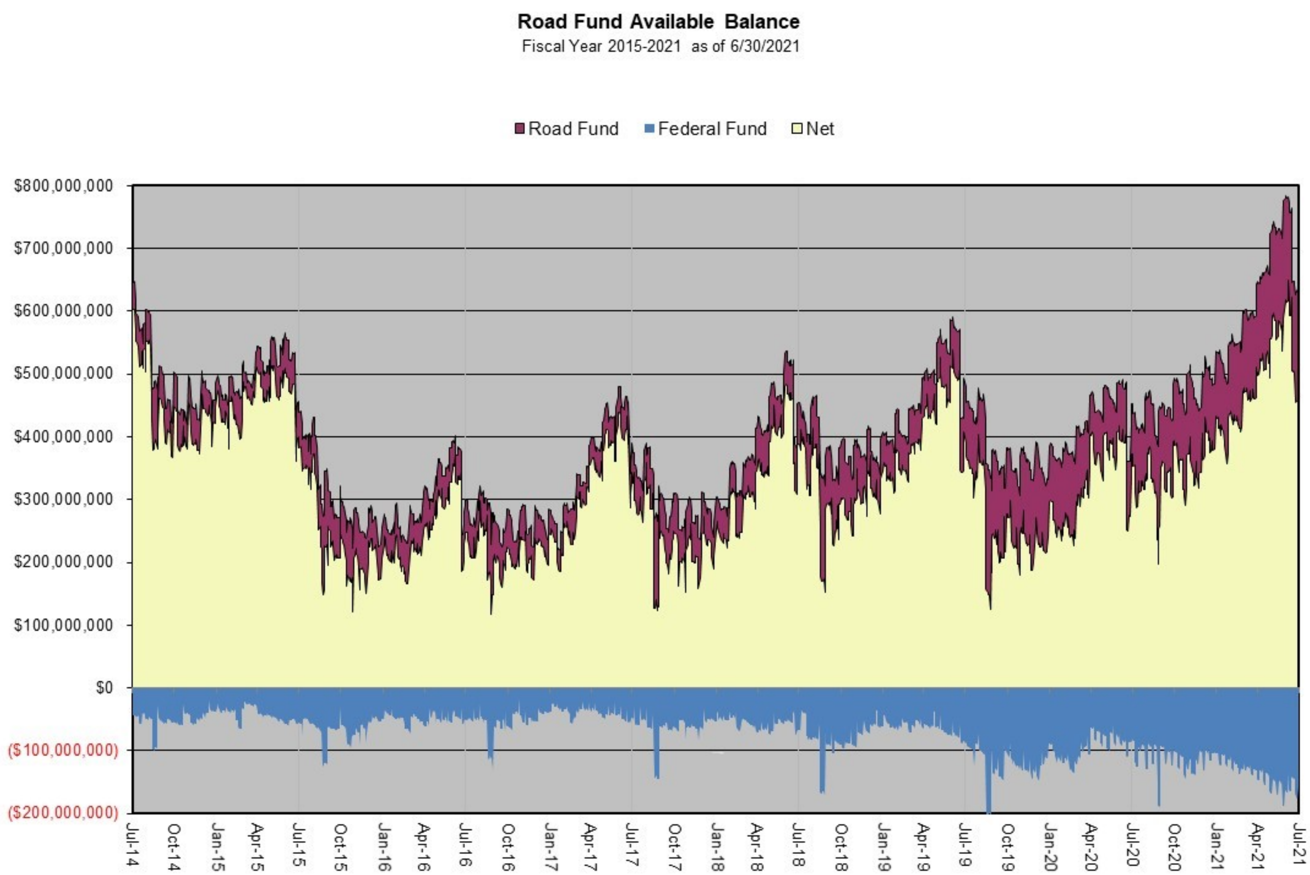
The Road Fund average daily cash balance for Fiscal Year 2021 was $420 million compared to $293 million for Fiscal Year 2020. The Road Fund cash was invested in the Intermediate Term Investment Pool which had a duration of 1.33 years as of June 30, 2021. The Road Fund earned a negative $118 thousand on a cash basis for Fiscal Year 2021 versus a positive $6.688 million for Fiscal Year 2020. The Road Fund earnings declined year over year because of lower short term rates and lower receipts. The continued relatively low level of investable balances at certain times during the fiscal year limits the investment opportunities.

As of June 30, 2021, the Turnpike Authority of Kentucky (TAK) had $915.93 million of bonds outstanding with a weighted average coupon of 4.91% and an average life of 5.75 years.

Road Fund debt service paid in Fiscal Year 2021 was $151.321 million, resulting in a net interest margin (investment income earned year-to-date less debt service paid) of negative $151.439 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.

DEBT MANAGEMENT



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. In fiscal 2021, ALCo was able to eliminate the Floating Rate Note hedge by refunding the remaining debt service into a fixed rate note at historically low rates. Combined with the elimination of interest rate risk, the concessions received from the swap provider and the economic savings, this was a highly beneficial transaction for the Commonwealth.

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

Corporate Credits Approved For Purchase
As of June 30, 2021

Company Name	Repurchase Agreements	Money Market Securities	Notes
Apple Inc		Yes	Yes
Bank of Montreal	Yes	Yes	Yes
Bank of Nova Scotia	Yes	Yes	Yes
Berkshire Hathaway Inc		Yes	Yes
BNP Paribas Securities Corp	Yes	Yes	Yes
BNY Mellon NA		Yes	Yes
Canadian Imperial Bank of Comm		Yes	Yes
Cantor Fitzgerald	Yes	No	No
Chevron Corp		Yes	Yes
Cisco Systems Inc		Yes	Yes
Cooperatieve Rabobank		Yes	Yes
Cornell University		Yes	No
Costco Wholesale Corp		Yes	Yes
Deere & Co		Yes	Yes
Exxon Mobil Corp		Yes	Yes
Home Depot Inc		Yes	Yes
IBRD - World Bank		Yes	Yes
Intel Corp		Yes	Yes
Johnson & Johnson		Yes	Yes
Merck & Co. Inc.		Yes	Yes
Microsoft Corp		Yes	Yes
MUFG Bank LTD/NY		Yes	Yes
MUFG Securities Americas Inc	Yes	No	No
Natixis SA/New York		Yes	Yes
Nestle Finance International		Yes	Yes
PepsiCo Inc		Yes	Yes
Pfizer Inc		Yes	Yes
Linde PLC		Yes	Yes
Procter & Gamble Co/The		Yes	Yes
Royal Bank of Canada	Yes	Yes	Yes
Royal Dutch Shell PLC		Yes	Yes
Salvation Army		Yes	No
State Street Corp		Yes	Yes
Sumitomo Mitsui Trust Bank		Yes	Yes
Swedbank AB		Yes	Yes
Texas Instruments Inc.		Yes	Yes
Toronto-Dominion Bank/The		Yes	Yes
Total SA		Yes	Yes
Toyota Motor Corp		Yes	Yes
US Bank NA		Yes	Yes
Wal-Mart Stores Inc		Yes	Yes

*Addition:

Removed:
IBM

APPENDIX B

As of June 30, 2021

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	32,515,000	14,045,000	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 December 31, 2019 (negative indicates payment owed by ALCo if terminated)	Expired 11/1/17 .	Refunded 5/3/2021	Refunded 5/3/2021	Refunded 5/3/2021
Interest Earnings (not applicable)				
Total	not applicable	not applicable	not applicable	not applicable

Swap Summary

As of June 30, 2021:

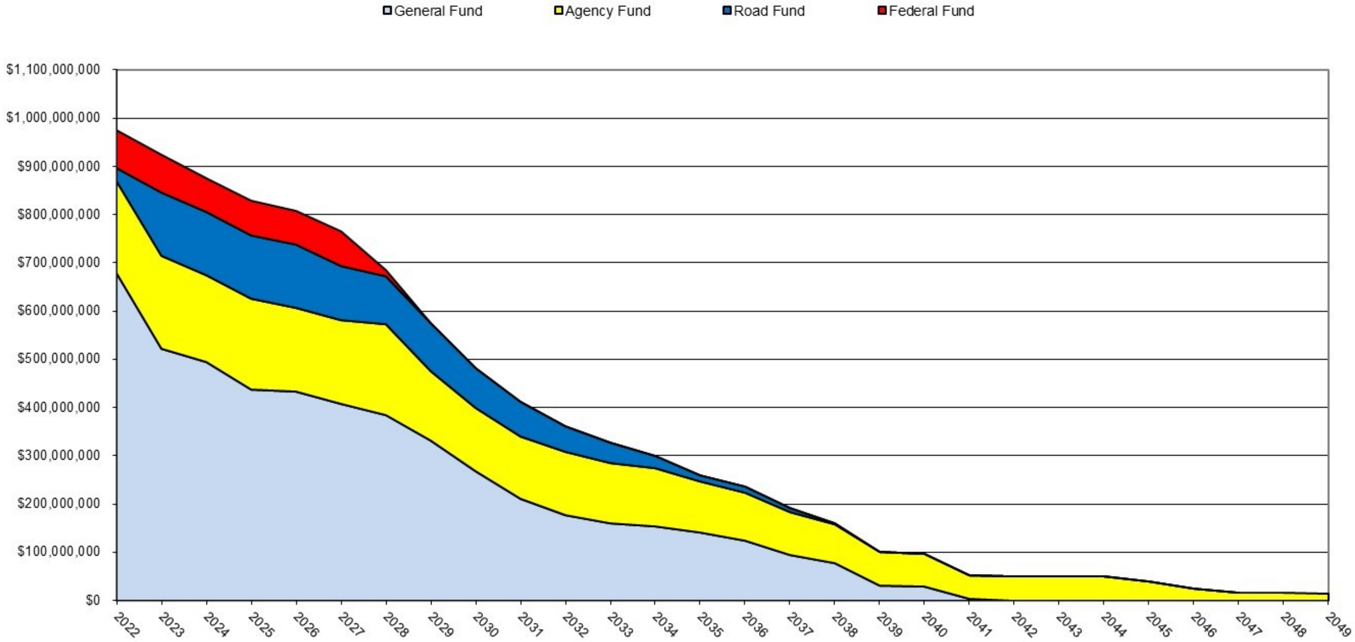
Total Notional Amount Executed		**Net Exposure Notional Amount**	
General Fund	Road Fund	General Fund	Road Fund
243,080,000	0	0	0

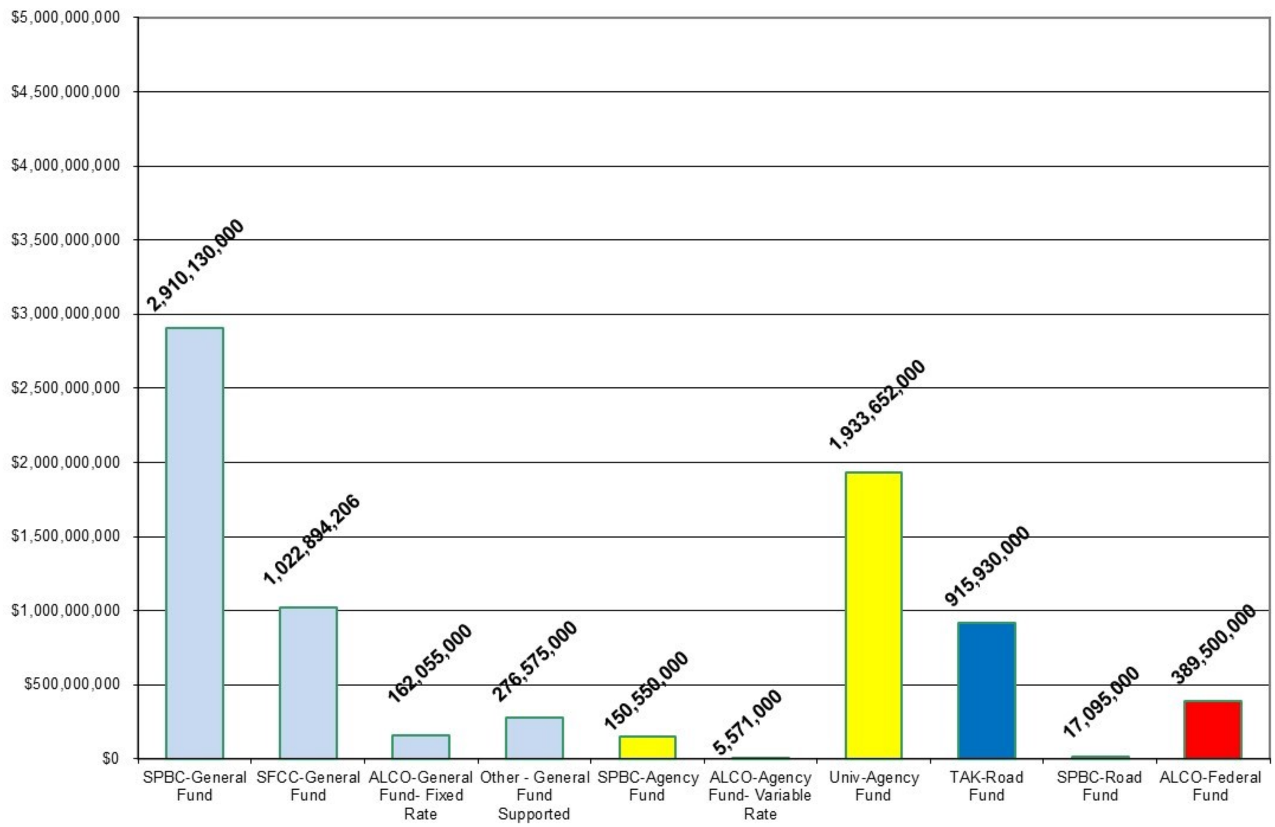
Total Notional Amount Executed by Counter Party

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

243,080,000

APPENDIX C





*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 06/30/2021

FUND TYPE SERIES TITLE		AMOUNT ISSUED	DATE OF ISSUE	MATURITY DATE	PRINCIPAL OUTSTANDING
General Fund Project & Funding Notes					
2011 1st Series-KTRS Funding Notes		$269,815,000	3/2011	4/2022	$14,860,000
2013 1st Series-KTRS Funding Notes		$153,290,000	2/2013	4/2023	$33,255,000
2021 General Fund Refunding Project Notes		$113,940,000	5/2021	11/2027	$113,940,000
	FUND TOTAL	**$537,045,000**			**$162,055,000**
Agency Fund Project Notes					
2018 Agency Fund Project Note (KCTCS)		$27,775,000	6/2018	10/2023	$5,571,000
	FUND TOTAL	**$27,775,000**			**$5,571,000**
Federal Hwy Trust Fund Project Notes					
2013 1st Series		$212,545,000	8/2013	9/2025	$128,980,000
2014 1st Series		$171,940,000	3/2014	9/2026	$132,175,000
2015 1st Series		$106,850,000	10/2015	9/2027	$68,940,000
2020 1st Series		$59,405,000	12/2020	9/2022	$59,405,000
	FUND TOTAL	**$550,740,000**			**$389,500,000**
ALCo NOTES TOTAL		**$1,115,560,000**			**$557,126,000**

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Creating Financial Value for the Commonwealth

TEAM KENTUCKY