COMMONWEALTH OF KENTUCKY

KENTUCKY ASSET/LIABILITY COMMISSION

SEMI-ANNUAL REPORT

For the period ending December 31, 2021

50th 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

A copy of this report:

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

The Commonwealth's Annual Comprehensive Financial Report (ACFR):

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):

http://emma.msrb.org/

Commonwealth of Kentucky Investor Relations (BondLink):

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

TEAM KENTUCKY™

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INTRODUCTION

The Kentucky Asset/Liability Commission ("ALCo" or the "Commission") presents its 50th 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 July 1, 2021 through December 31, 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 state level 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 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 3.9% ending December 2021 from 5.9% in June 2021.
- The annual rate of economic growth as measured by GDP rose over the first two quarters of 2021. The seasonally adjusted rate for the third quarter was 2.3% and the fourth quarter was 7.0%.
- Inflation continued the trend upward during the second half of 2021 with the core rate (ex-energy and food) ending 2021 at 4.9%.

On the state level

- General Fund receipts totaled $7.033 billion for the first six months of Fiscal Year (FY) 2022, representing a 15.9% increase over the same period in 2021. The official revised General Fund revenue estimate for FY22 calls for revenue to grow 7.5% compared to FY21 actual receipts. Based on the first half results, General Fund revenue receipts can remain flat for the remainder of the fiscal year and still meet the official revised estimate of $13.791 billion.
- Road Fund receipts totaled $815.2 million for the first six months of FY22, representing a 3.2% increase over the same period in 2021. The official revised Road Fund revenue estimate for FY22 calls for revenues to grow 2.3% compared to FY21 actual receipts. Based on the first half results, Road Fund revenues must increase 1.5% for the remainder of the FY to meet the official revised estimate of $1.680 billion.
- Kentucky non-farm employment rose by 3.5% in the second quarter of FY22 making it the sixth consecutive quarter of growth on an adjacent-quarter basis.
- Kentucky personal income grew by 3.9% in the second quarter of FY22 compared to the second quarter of FY21.
- Leisure and hospitality services employment was the biggest mover for the second quarter of FY22, with a rise of 14.3% in employment compared to the second quarter of FY21.
- 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.

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Market Overview

U.S. economic activity posted further impressive gains in the second half of 2021, but inflation rose to its highest level since the early 1980s. The labor market tightened substantially further amid high demand for workers and constrained supply, with the unemployment rate reaching the median of Federal Open Market Committee (FOMC) participants' estimates of its longer run normal level and nominal wages rising at their fastest pace in decades. With demand strong, and amid ongoing supply chain bottlenecks and constrained labor supply, inflation increased appreciably during 2021, running well above the FOMC's longer run objective of 2 percent and broadening out to a wider range of items.

Over the last half of 2021, the FOMC held its policy rate near zero to support the continued economic recovery. The Committee began phasing out net asset purchases in November and accelerated the pace of the phase-out in December. With inflation well above the FOMC's longer run objective and a strong labor market, the Committee expects it will soon be appropriate to raise the target range for the federal funds rate.

Employment

Average monthly job gains remained robust at 575,000 in the second half of the year. The unemployment rate has plummeted almost 2 percentage points since June and has reached the median of FOMC participants' estimates of its longer run normal level. Moreover, unemployment declines have been widespread across demographic groups. That said, labor force participation only crept up during the year and remains constrained. The tight labor supply, in conjunction with a continued surge in labor demand, has resulted in strong nominal wage growth, especially for low wage workers.

Job gains in 2021 were driven by an appreciable and steady rise in labor demand as the economy reopened and activity bounced back. By the end of the year, the number of unfilled job openings was about 60 percent above pre-pandemic levels and at an all time high. However, the labor supply struggled to keep up. In particular, the labor force participation rate which measures the share of people either working or actively seeking work moved up only a little over the past year and remains below its February 2020 level. Several pandemic related factors appear to be holding back labor supply, including a pandemic induced surge in retirements, increased caregiving responsibilities, and fears of contracting COVID-19. As a result, the recovery in employment though rapid has been incomplete, with payrolls nearly 3 million below their pre-pandemic level.

Inflation

The personal consumption expenditures (PCE) price index rose 5.8 percent over the 12 months ending in December, and the index that excludes food and energy items (so called core inflation) was up 4.9 percent the highest readings for both measures in roughly 40 years. Upward pressure on inflation from prices of goods experiencing both supply chain bottlenecks and strong demand, such as motor vehicles and furniture, has persisted, and elevated inflation has broadened out to a wider range of items. Services inflation has also stepped up further, reflecting strong wage growth in some service

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sectors and a significant increase in housing rents. While measures of near term inflation expectations moved substantially higher over the course of the year, measures of longer-term inflation expectations have moved up only modestly; they remain in the range observed over the decade before the pandemic and thus appear broadly consistent with the FOMC's longer run inflation objective of 2 percent.

Economic Growth

The level of real gross domestic product (GDP) recovered further in the second half of 2021, but growth was somewhat slower, on average, than in the first half. GDP growth slowed notably to 2.3 percent at an annual rate in the third quarter but rebounded to a brisk 7 percent in the fourth quarter. Despite the solid average growth in the second half, several factors including last summer's Delta wave and waning fiscal stimulus likely weighed on demand growth. Moreover, supply chain bottlenecks, hiring difficulties, and other capacity constraints continued to restrain economic activity significantly. While there have been some signs of these constraints easing, the time frame for further improvement is highly uncertain. All told, at the end of 2021 GDP stood 3 percent above its level in the fourth quarter of 2019, before the pandemic began, but 1.5 percent below its level if growth had continued at its average pace over the five years before the pandemic.

Interest Rates

The market based expected path of the federal funds rate steepened notably amid news about the labor market recovery, rising inflation pressures, and the accompanying prospect of tighter monetary policy. Market based measures suggest that investors anticipate the federal funds rate will soon begin to rise and move above 1 percent in the middle of 2022, about two and a half years earlier than expected in July 2021.

Yields on nominal Treasury securities across maturities have risen notably since early July, with much of the increase having occurred in the last couple of months of the year as the anticipation for an imminent start to the removal of monetary accommodation has firmed. Uncertainty about longer-term interest rates as measured by the implied volatility embedded in the prices of near-term swap options on 10-year swap interest rates also increased markedly, reportedly reflecting an increase in uncertainty about inflation and the policy outlook.

Across credit categories, corporate bond yields have risen substantially, and their spreads over yields on comparable maturity Treasury securities have widened moderately since early July. Still, both yields and spreads remain near the bottom of their historical distributions, and corporate credit quality is generally healthy and stable. News about the spread of new coronavirus variants appeared to have only limited and temporary effects on corporate bond spreads.

Since July, yields on 30-year agency mortgage-backed securities an important pricing factor for home mortgage rates increased, and spreads over comparable-maturity Treasury securities widened moderately but stayed near the low end of their historical range. Municipal bond yields moved higher, and spreads over comparable-maturity Treasury securities widened to levels close to their historical medians.

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Equities

Broad indexes of equity prices decreased a little, on net since mid-year. Declines amid expectations of an earlier beginning to the removal of policy accommodation have offset previous gains, which were supported by strong corporate earnings that had seemed resilient to pandemic developments. Stocks of small-capitalization firms underperformed notably, as the likelihood for a tighter stance of monetary policy has increased. Bank stock prices rose, on net, buoyed by an improved economic outlook and expectations of higher levels of interest rates and net interest margins in the future.

Outlook

The FOMC has been providing forward guidance for the target range for the federal funds rate, indicating that the range would be maintained at 0 to 1/4 percent until specific employment and inflation criteria had been met. Consistent with that guidance, the FOMC has maintained the target range for the federal funds rate at 0 to 1/4 percent. In December, the Committee concluded that the inflation criteria in the forward guidance had been met and the target range would be maintained until labor market conditions had reached levels consistent with the Committee's assessments of maximum employment. The Committee stated that, with inflation well above 2 percent and a strong labor market, it expected it would soon be appropriate to raise the target range for the federal funds rate.

From June 2020 until November 2021, the Federal Reserve had been expanding its holdings of Treasury securities by $80 billion per month and its holdings of agency mortgage-backed securities (MBS) by $40 billion per month. At its November meeting, in light of the substantial further progress the economy had made toward maximum employment and price stability, the Committee decided to reduce the monthly pace of its net asset purchases by $10 billion per month for Treasury securities and by $5 billion per month for agency MBS. At its December meeting, in light of inflation developments and the further improvement in the labor market, the Committee began to reduce the monthly pace of net purchases more rapidly, by $20 billion per month for Treasury securities and by $10 billion per month for agency MBS. The Committee decided to continue to reduce the monthly pace of net purchases and conclude net purchases in early March 2022.

The Committee will continue to monitor incoming economic data and would be prepared to adjust the stance of monetary policy as appropriate to manage risks that could impede the attainment of its goals. The Committee's assessments will take into account a wide range of information, including readings on public health, labor market conditions, inflation pressures and inflation expectations, and financial and international developments. With appropriate policy, inflation is expected to decline over the course of the year as supply constraints ease and demand moderates due to waning effects of fiscal support and the removal of monetary policy accommodation. The FOMC will use its policy tools as appropriate to prevent higher inflation from becoming entrenched while promoting a sustainable expansion and strong labor market.

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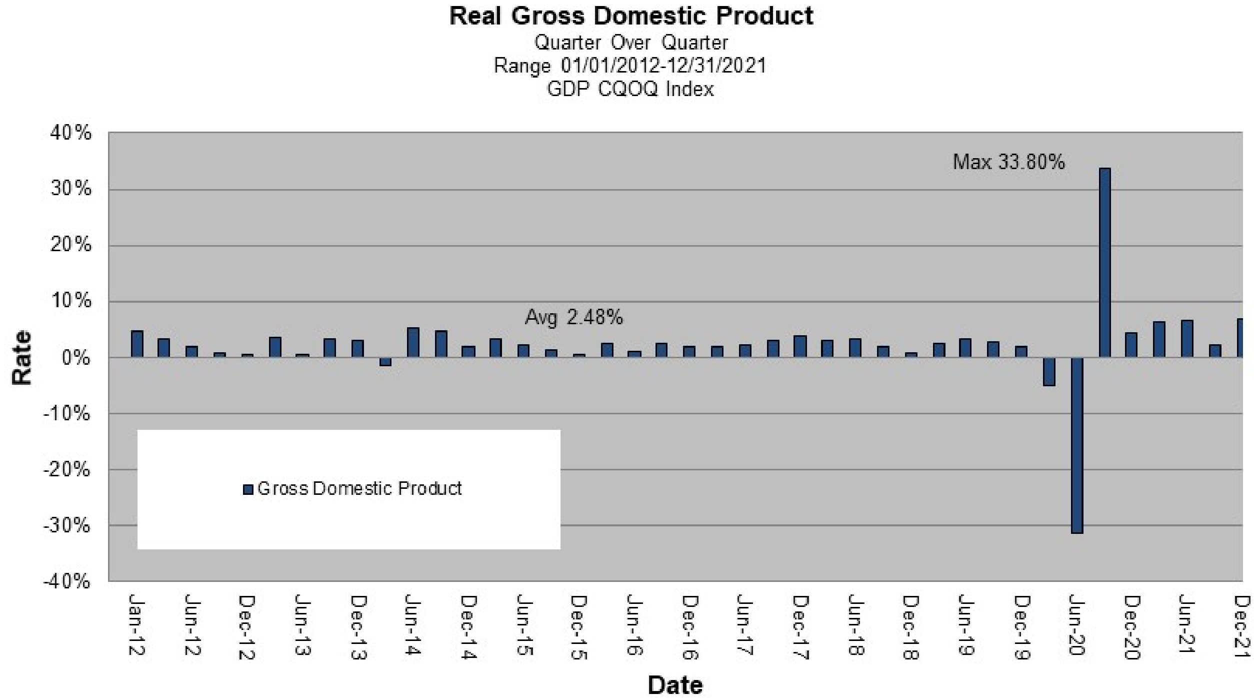
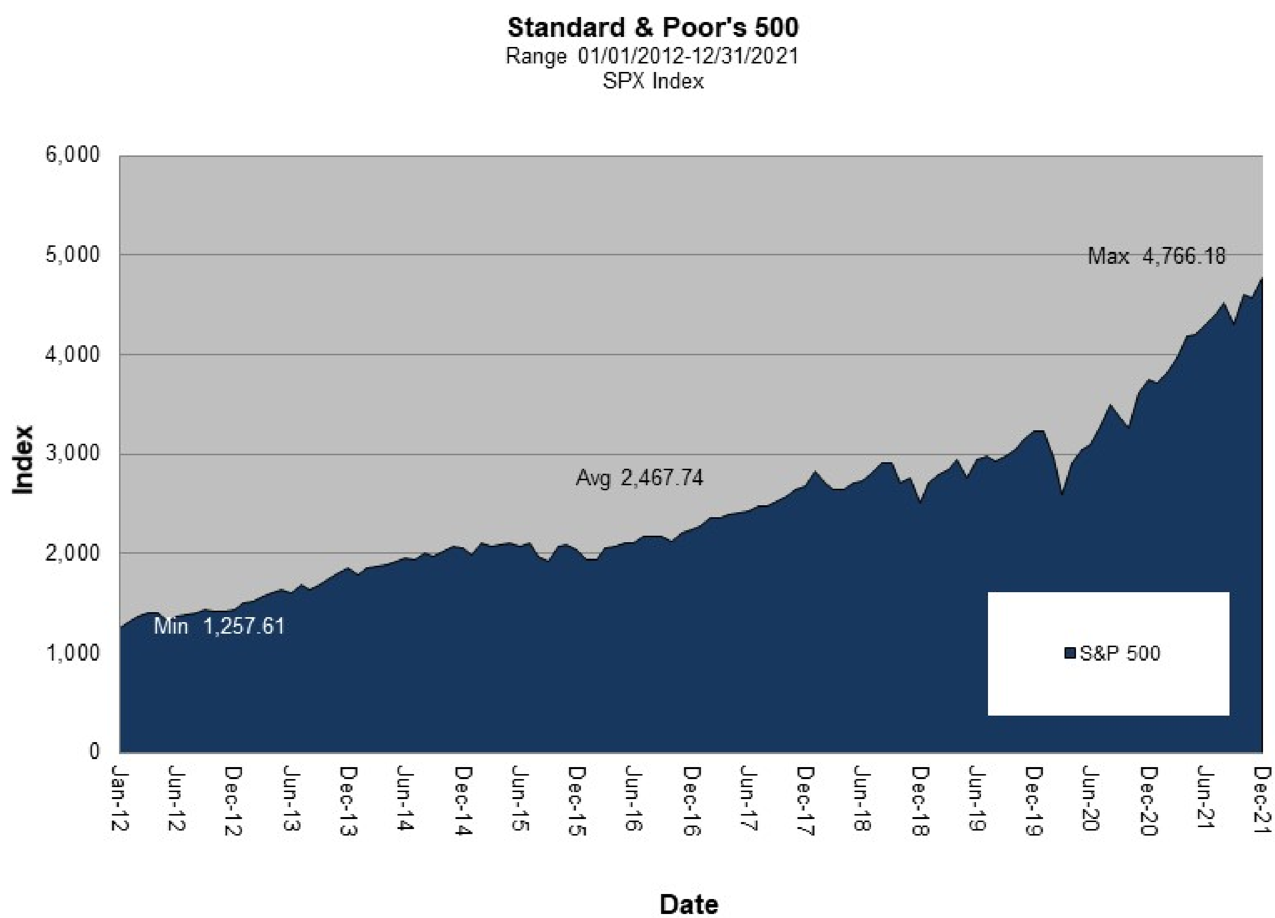
Real Gross Domestic Product & Standard & Poor's 500





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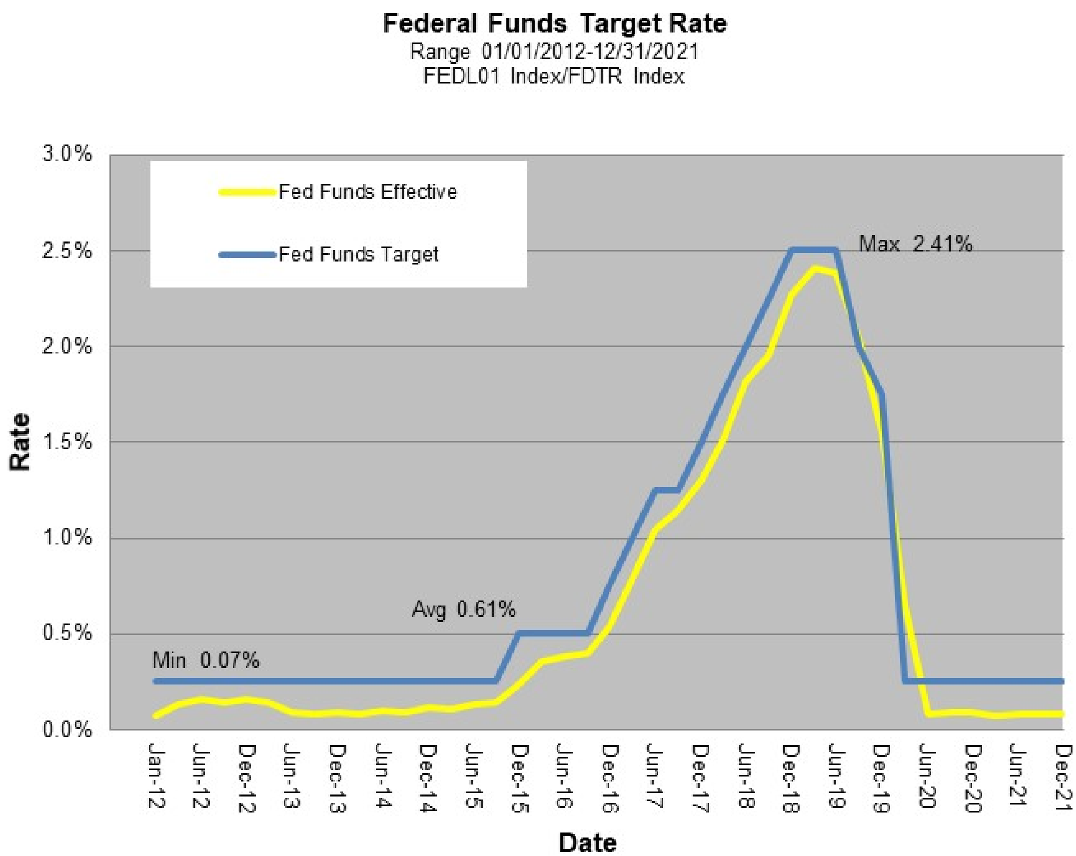
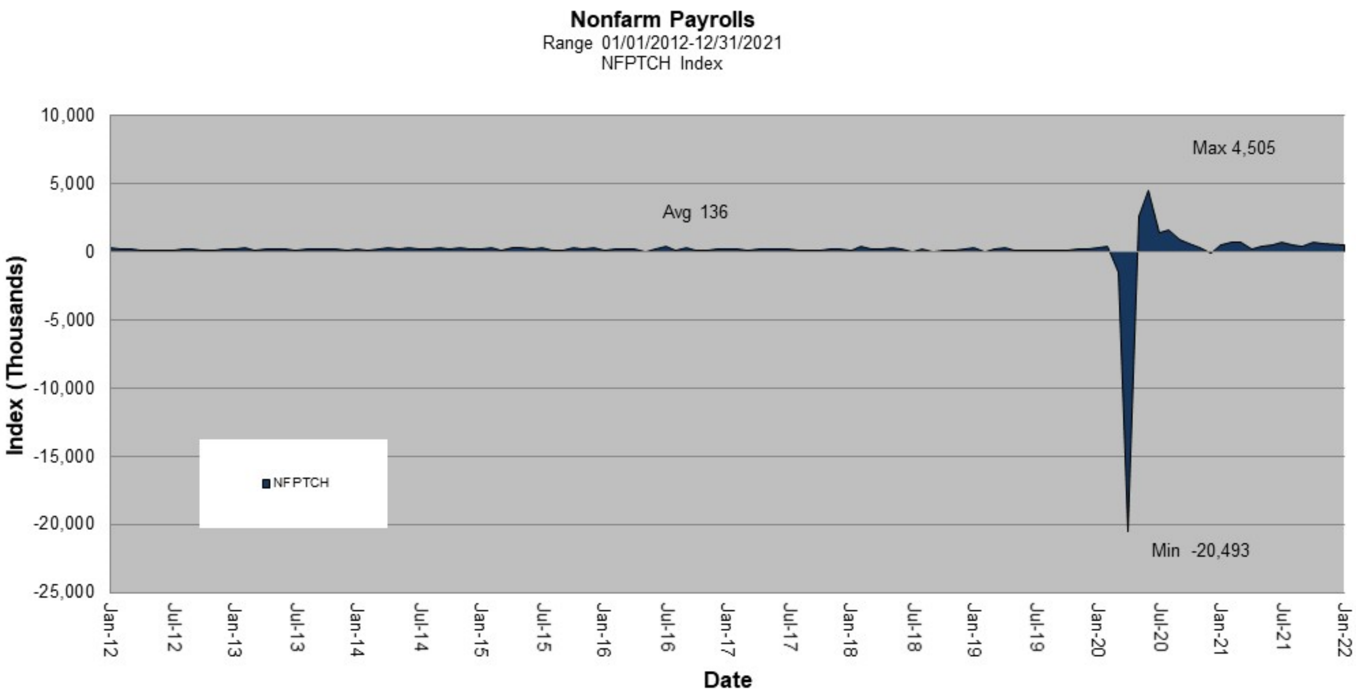
Federal Funds Target Rate & NonFarm Payrolls





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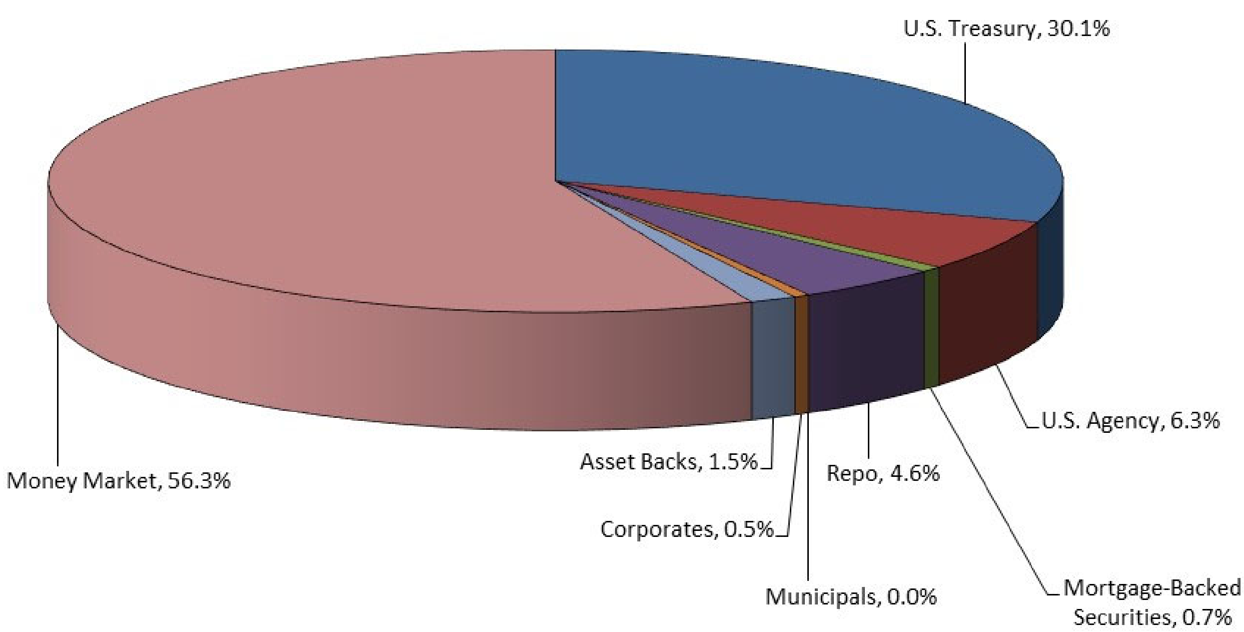
Portfolio Management

For six months ended December 31, 2021, the Commonwealth's investment portfolio was approximately $8.7 billion. The portfolio was invested in U. S. Treasury Securities (30.1%), U. S. Agency Securities (6.3%), Mortgage-Backed Securities (0.7%), Repurchase Agreements (4.6%), Corporate Securities (0.5%), Asset-Backed Securities (1.5%), and Money Market Securities (56.3%). The portfolio had a market yield of 0.18% and an effective duration of 0.47 of a year.

The total portfolio is broken down into three investment pools. The pool balances as of December 31, 2021 was $3.9 billion (Short Term Pool), $1.9 billion (Limited Term Pool), $2.9 billion (Intermediate Term Pool).

Distribution of Investments as of December 31, 2021



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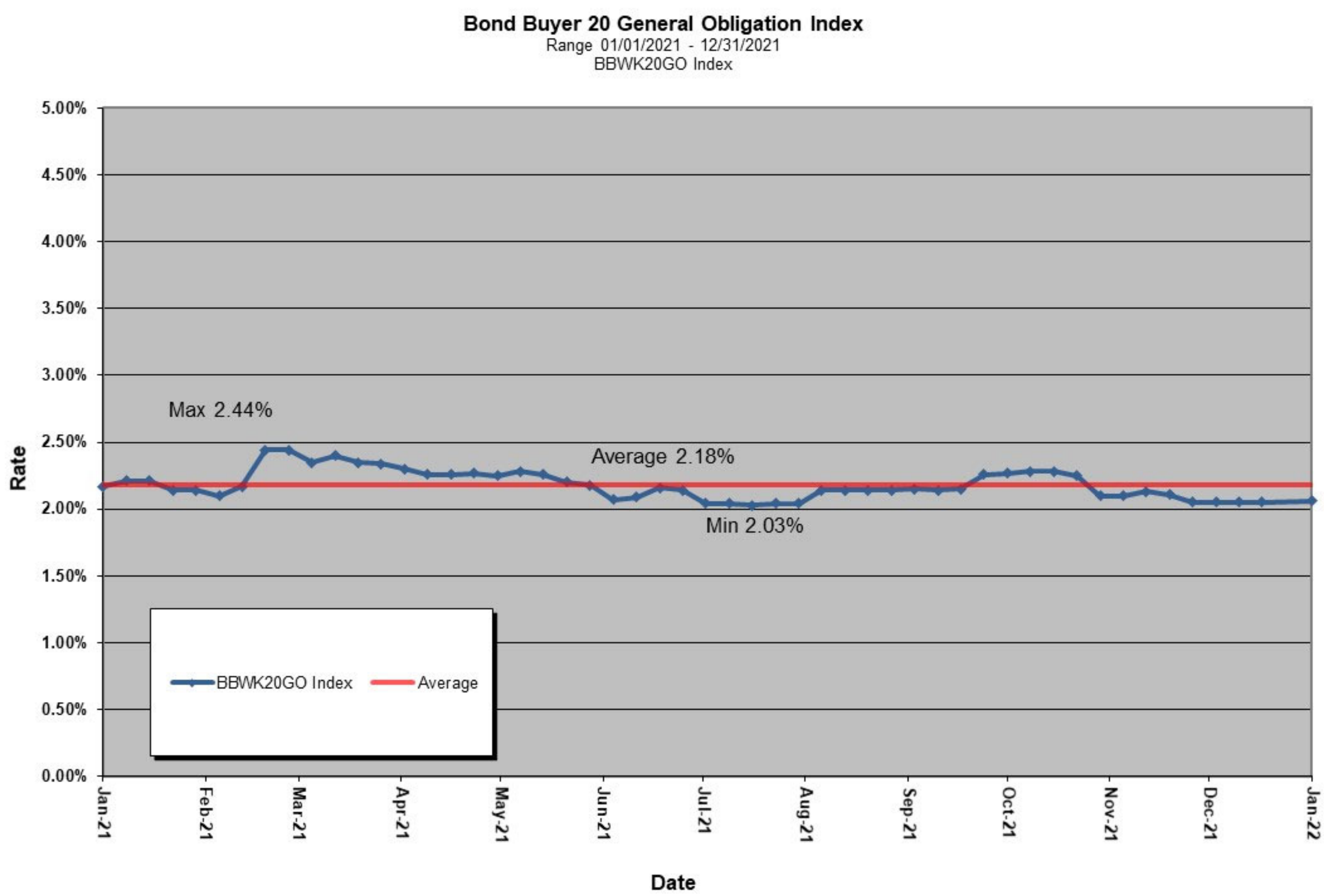
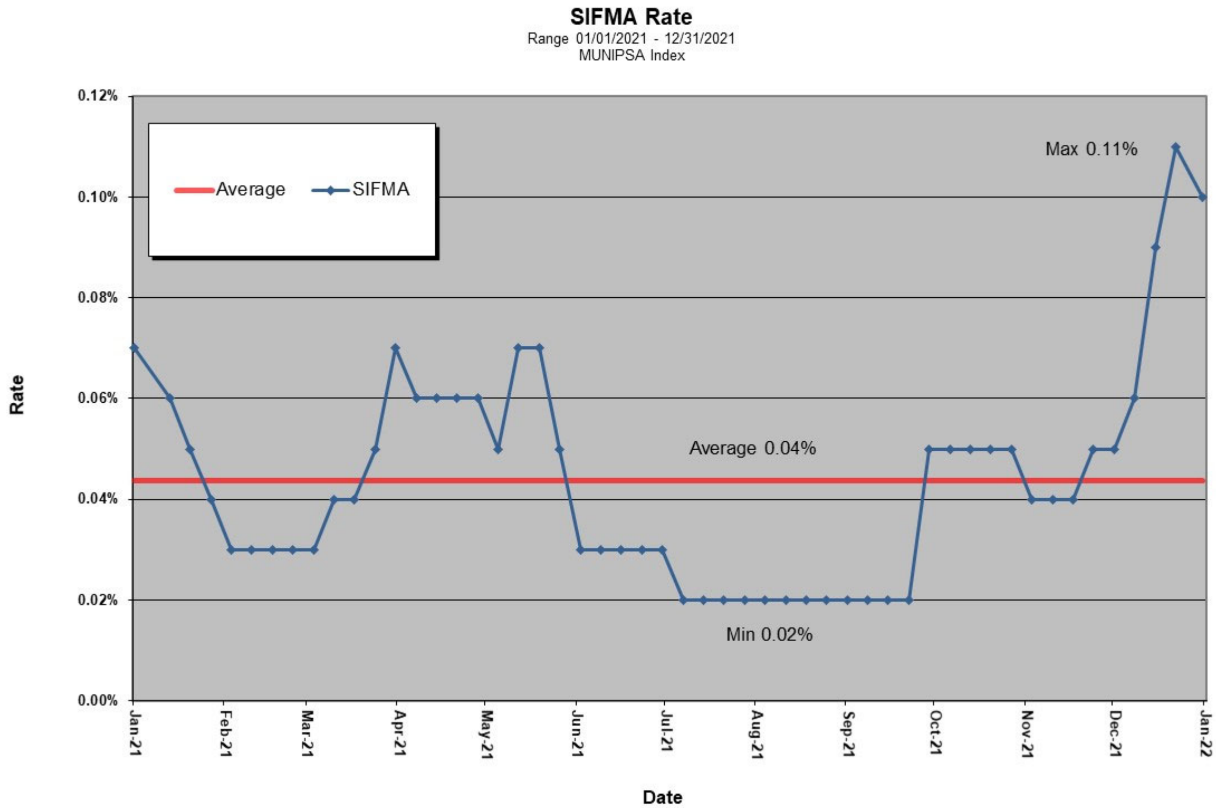
Tax-Exempt Interest Rates and Relationships

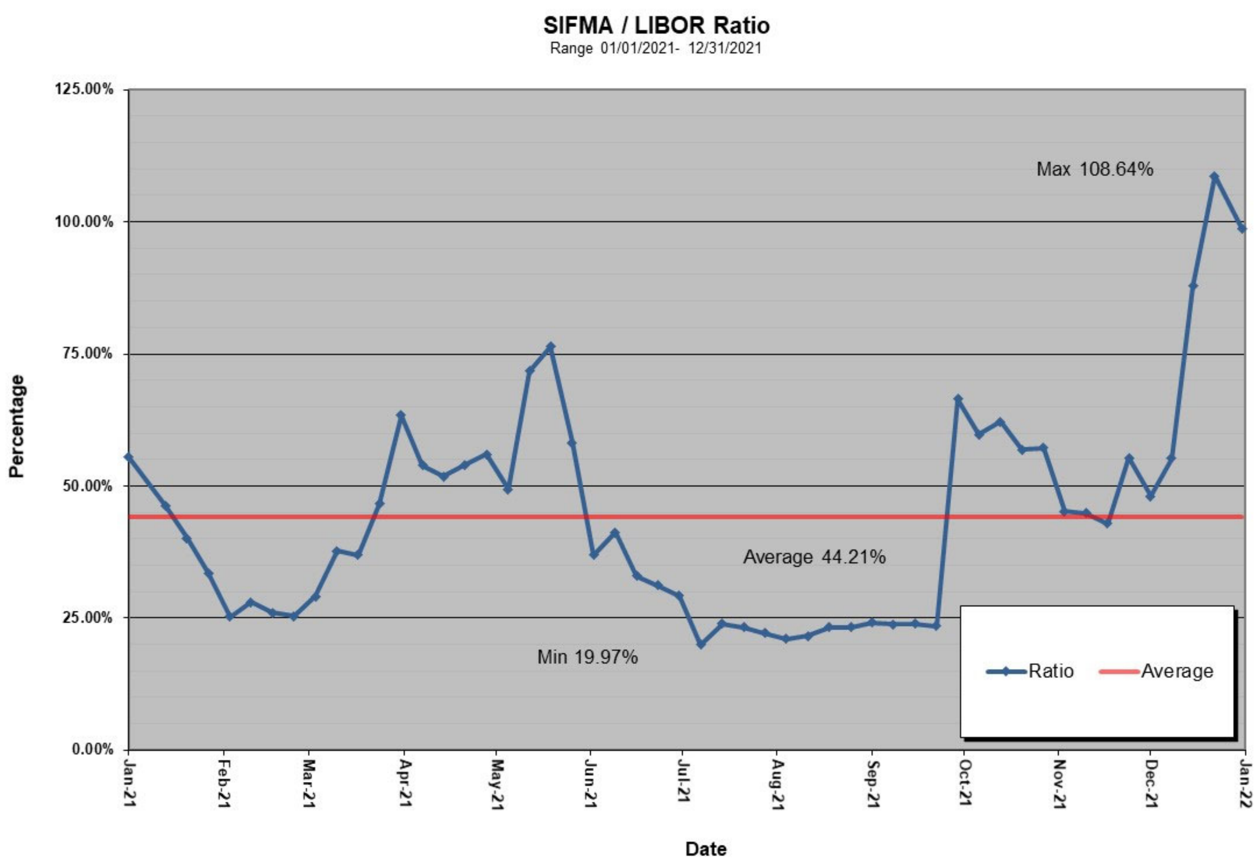
The Bond Buyer 20 General Obligation Index averaged 2.18% for Calendar Year 2021. The high was 2.44% in March 2021 and the low was 2.03% in July 2021.

The Securities Industry and Financial Markets Association (SIFMA) Municipal Swap Index averaged 0.04% for Calendar Year 2021. The high was 0.11% in December 2021 and the low was 0.02% in September 2021. The 30-day USD London Interbank Offered Rate (LIBOR) averaged 0.10% for Calendar Year 2021. The high was 0.14% in January 2021 and the low was 0.07% in June 2021. During the year, SIFMA traded at a high of 108.64% of the 30-day LIBOR in December 2021, at a low of 19.97% in early July 2021, and at an average of 44.21% for the Calendar Year.



SIFMA & SIFMA/LIBOR Ratio





CREDIT MANAGEMENT

Mid-Year Reflection

Credit

The COVID-19 pandemic and its effect on the global economy remained the most important story in the second half of 2021, with the greatest economic effect being seen in spiking inflation rates around the world. The causes of such high inflation are not difficult to see when examining economic indicators and taking into account supply chain disruptions that continued through the end of the year. Although not as high as the first half of the year, retail sales remain at historic highs and well beyond the trend line pre-pandemic, even when adjusted for inflation. Personal income has likewise surged well above the trend line, even after government stimulus to households has been largely removed. The rise in household debt continued unabated as the $15 trillion mark was breached in the third quarter of 2021 and now approaches $16 trillion. Mortgage rates rose slightly from historic lows in the middle of the year to settle around 3.25% by the end of December. After falling from 2020 highs, credit card debt has rebounded slightly to just over $800 billion. Delinquency rates have continued to creep downward and hover around pre-pandemic levels. After dismissing rising inflation rates as transitory in the first half of the year, the Federal Reserve finally acknowledged higher rates were here to stay and in the December meeting signaled a willingness to hike the benchmark rate at least three times in 2022 in an attempt to cool down the economy.

The rise in corporate debt moderated in the second half although companies continued to take advantage of low interest rates to push the total amount borrowed to $11.5 trillion by the end of the year. This keeps the total amount around 50% of GDP, a level not breached until 2020. The willingness to purchase debt below investment grade also dried up a bit and investment grade debt remained the primary driver. After spiking in 2020, corporate bankruptcies plummeted in 2021 to below the 10-year average. While rising slightly in the second half of the year, spreads on investment grade corporate debt remain historically low and have not recovered to pre-pandemic levels. The Senior Loan Officer Opinion Survey on Bank Lending Practices, or SLOOS, reported that lending standards for all types of loans to commercial and industrial firms were eased in the third quarter of 2021, continuing a trend from earlier in the year. Banks reported that standards for all categories of consumer loans were eased as well, even as demand remained relatively flat.

The second half of 2021 saw no changes in the Corporate Credit Approved list. Credit downgrades, which were plentiful in 2020, have dramatically decreased as markets stabilized. The fourth quarter of 2021 saw zero downgrades for companies on the approved list.

Credit Process

Our credit strategy invests in creditworthy corporate issuers having a long-term rating of A3/A-/A- or better as rated by Moody's, S&P,

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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 consistent longer term investment performance over U.S. Treasuries.

Default Monitoring

The Bloomberg credit risk model is the 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 the analysis has been completed, the State Investment Commission (SIC) approves the list on a quarterly basis. During the second half of 2021, there were no changes to the Corporate Credits Approved list. The Corporate Credits Approved list as of December 2021 is found in Appendix A.

State Investment Commission

The State Investment Commission 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; one representing the Kentucky Bankers Association and one representing the Bluegrass Bankers Association. The investment objectives in order of priority are: 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 for investment decisions.

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Authorized But Unissued Debt

As of December 31, 2021, the Commonwealth's 2021-2022 budget includes authorized debt service for over $786.32 million 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 and Road Fund authorizations and all of the Agency Restricted Fund and 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

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supported by Road Fund appropriations, and $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 the total Agency Restricted Fund and 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

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Commonwealth whereas $26.62 million in 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.

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Authorized but Unissued Debt Summary

The balance of prior bond authorizations of the General Assembly dating from 2010 through 2021 totals $786.32 million. Of these prior authorizations, $422.62 million is General Fund supported, $301.20 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 December 31, 2021:

Legislative Session (Year)	General Fund (millions)	Agency Fund (millions)	Road Fund (millions)	TOTAL (millions)
2010	23.10	-	50.00	73.10
2012	2.17	-	12.50	14.67
2014	12.43	-	-	12.43
2016	44.81	-	-	44.81
2018	188.91	6.53	-	195.44
2019	67.46	.		67.46
2020	134.39	269.87		404.26
2021	99.35	24.80		124.15
Bond Pool Proceeds	(150.00)	-	-	(150.00)
TOTAL	422.62	301.20	62.50	786.32

The balance of prior bond authorizations of the General Assembly dating from FY 2010 through FY 2021 totals $786.32 million. Of these prior authorizations, $422.62 million is General Fund supported, $301.20 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.

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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 The Turnpike Authority of Kentucky Economic Development Road Fund Revenue Refunding Bonds (Revitalization Projects) in October of 2021, the determination was made to add Kroll Bond Rating Agency's evaluation of that issuance. Kroll issued a rating of AA-.

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

The Ratings Picture at December 31, 2021:

	Moody's	S & P	Fitch	Kroll
General Obligation Issuer 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+	AA-
Federal Highway Trust Fund Appropriation Rating[i]	A2	AA	A+	-

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

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Cash Management Strategies

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

Tax and Revenue Anticipation Notes (TRAN)

TRANs 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 and during the period, funds were loaned to the General Fund.

As of December 31, 2021 the total available liquid resources available to the General Fund was $8.654 billion.

Bond Anticipation Notes (BAN)

A short-term interest-bearing security issued in advance of a larger, future bond issue. Bond anticipation notes are 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:

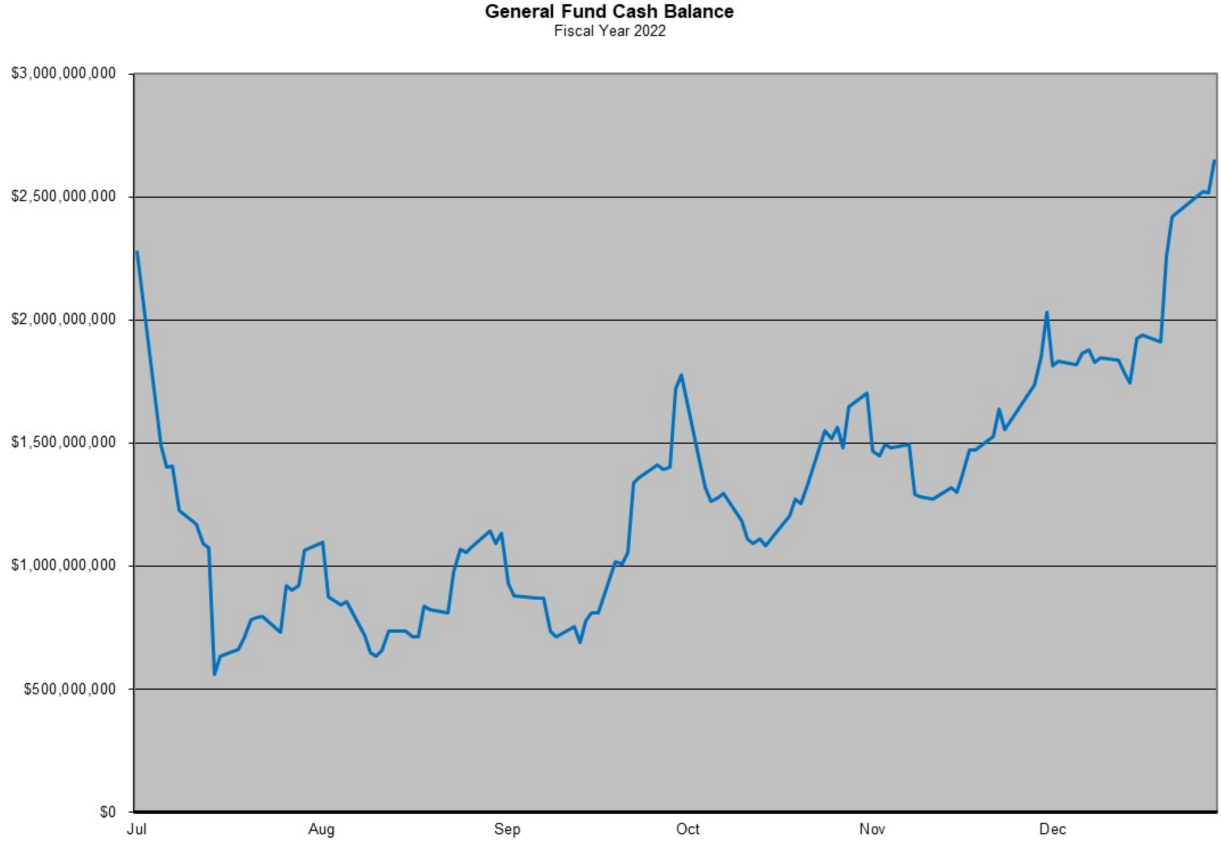
(a) Judgments, with a final maturity of not more than ten (10) years; and

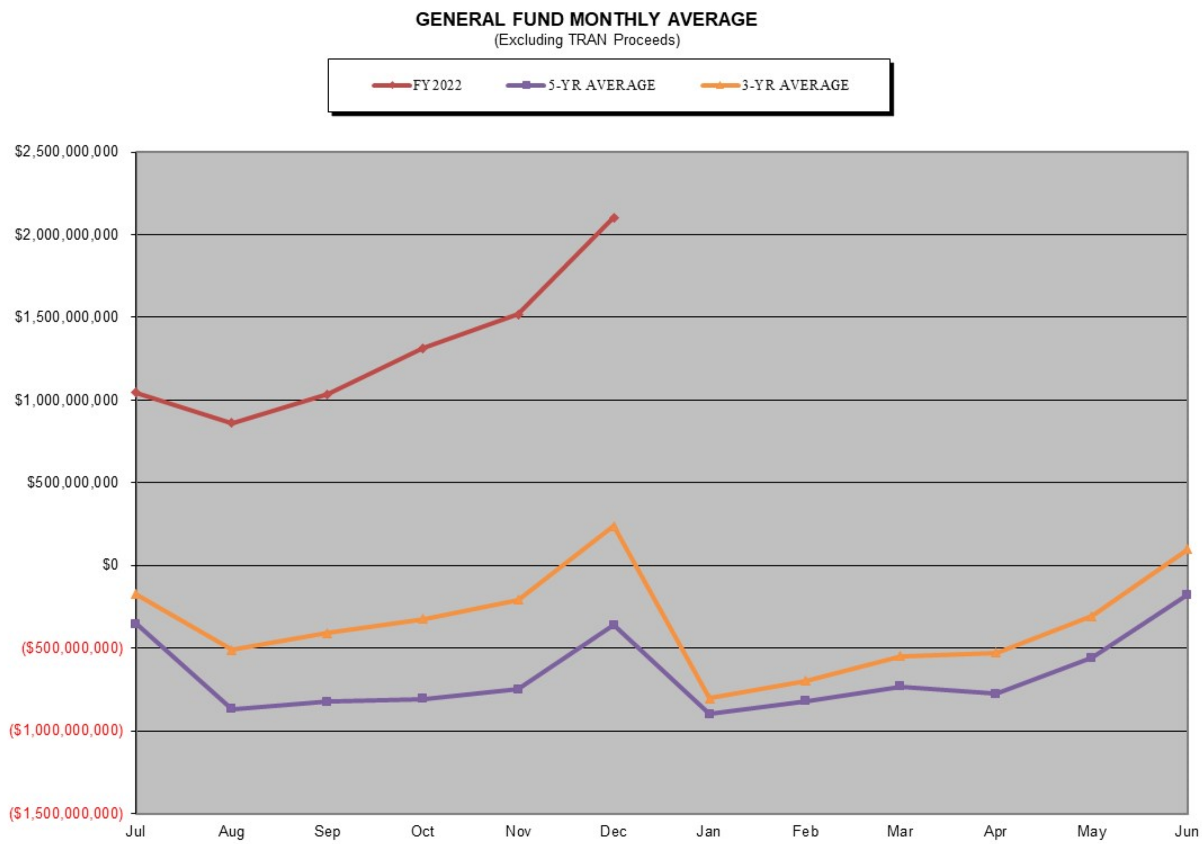
(b) The finance or refinance of obligations owed under KRS 161.550(2) or 161.553(2)

"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 December 31, 2021, ALCo had no outstanding financial agreements.

Asset/Liability Model

General Fund

The total SPBC debt portfolio as of December 31, 2021 had $2.735 billion of bonds outstanding with a weighted average coupon of 4.82% and a weighted average life of 6.34 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 $1.059 billion callable portion had a weighted average coupon of 4.65%. The SPBC debt structure has 46.71% of principal maturing in 5 years and 78.82% of principal maturing in 10 years which is primarily influenced by debt restructuring and the minimal amount of long-term new money permanent financings within the last several years.

For the first six months of Fiscal Year 2022 the General Fund had a maximum balance of $2.771 billion on December 29, 2021, and a low of $558 million on July 14, 2021. The average and median balances were $1.280 billion and $1.259 billion, respectively. December General Fund receipts rose 10.4% compared to December of 2020 and marked the fifth consecutive month of double digit percentage growth. Return on investable balances is impacted by investment earnings, fees and mark-to-market rules on the underlying investments. 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 is expected to be $626.88 million for Fiscal Year 2022. In addition to the Commonwealth General Fund debt service, General Fund debt service of $9.809 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 $10.512 million was provided for the 2015 and 2018 Certificates of Participation (related to the two Commonwealth State office Building projects). These projects are separately identified because they are not obligations of the Commonwealth, but they are General Fund supported. 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.

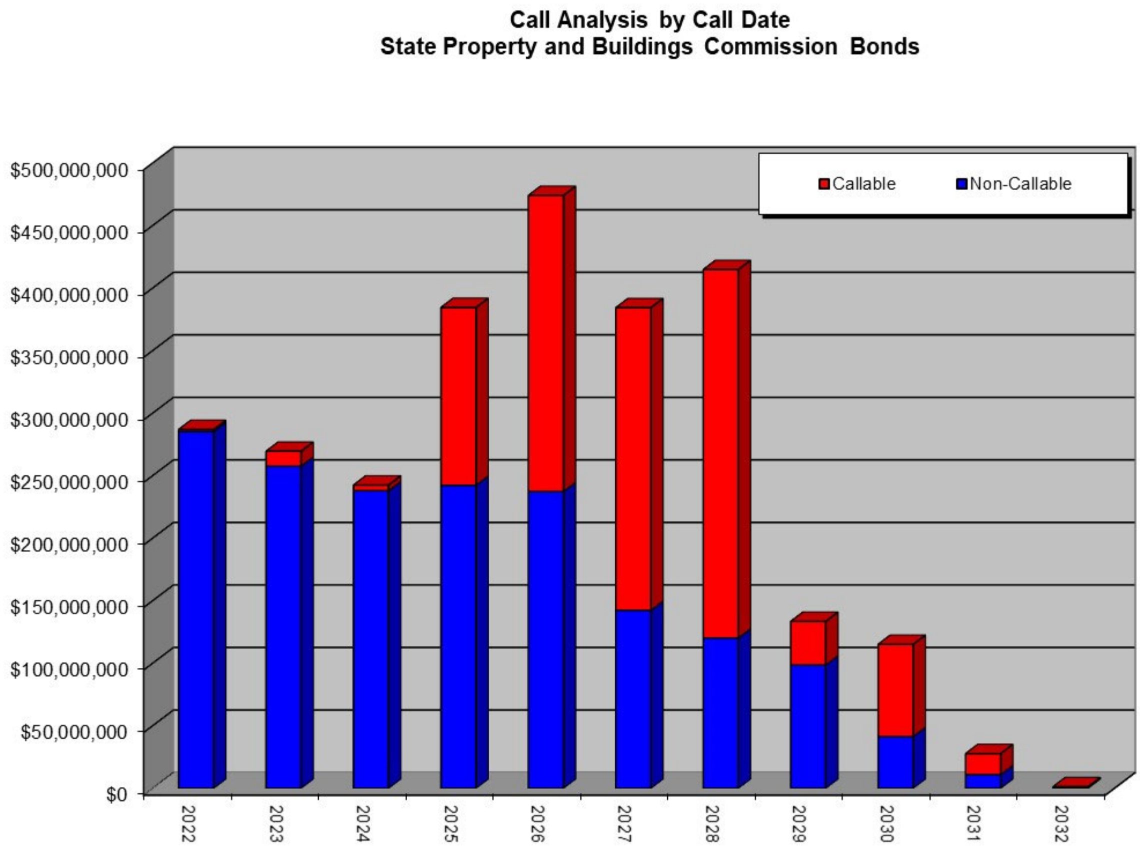
SPBC 125

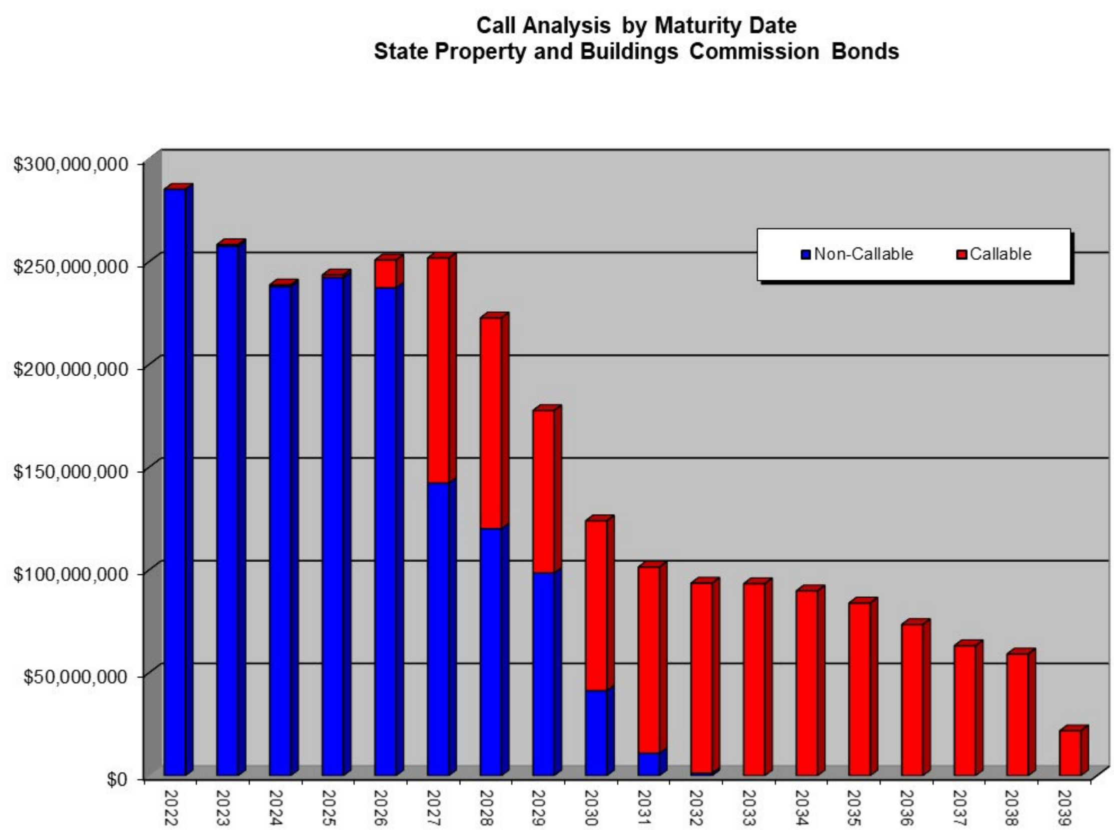
On July 1, 2021, SPBC closed a $139,550,000 bond transaction which refunded $130,115,000 par of certain outstanding SPBC bonds. SPBC Project No. 125 consisted of $43,800,000 Revenue Refunding Bonds, Series A, and $95,750,000 Revenue Refunding Bonds, Federally Taxable Series B. The transaction achieved 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).

DEBT MANAGEMENT

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.

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, through a forward delivery of tax-exempt bonds or through a Tender and Exchange. Additional diligence and financial modeling is necessary to ensure economic savings in these transactions.

Road Fund

The Road Fund average daily cash balance for the first half of Fiscal Year 2022 was $657 million compared to $458 million for the first half of Fiscal Year 2021. The Road Fund cash was invested in the Intermediate Term Investment Pool which had a duration of 1.25 years as of December 31, 2021. The Road Fund earned a negative $1.43 million on a cash basis for Fiscal Year 2022 versus a positive $280 thousand for Fiscal Year 2021. 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 December 31, 2021, the Turnpike Authority of Kentucky (TAK) had $919.56 million of bonds outstanding with a weighted average coupon of 4.62% and an average life of 5.21 years.

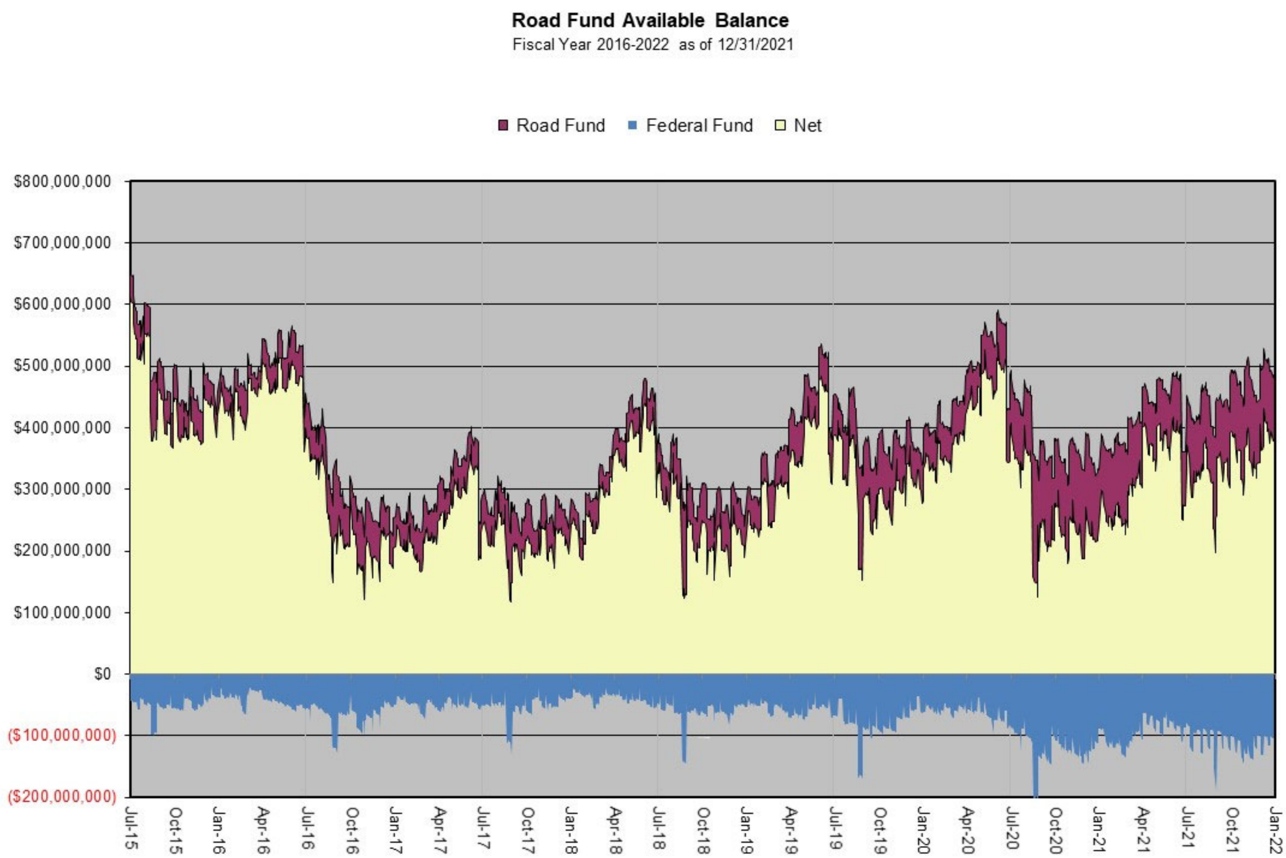
Road Fund debt service expected to be paid in Fiscal Year 2022 is $138.797 million, resulting in a net interest margin (investment income earned year-to-date less debt service paid) of negative $140.227 million. The negative amount stems from the level of investable balances and a general low level of interest rates on the investment side in addition to the limited callability of fixed rate obligations on the liability side.

TAK 2021 Series A & B

On October 12, 2021, TAK closed $99,475,000 par of Economic Development Road Revenue Refunding Bonds (Revitalization Projects) 2021 Series A and Federally Taxable Series B. The Series A Bonds refunded $17,915,000 par of certain outstanding 2011 Series A bonds for net present value savings of $5,519,000 (or 30.807%) and achieved an All-In True Interest Cost of 1.154%. The Federally Taxable Series B Bonds refunded $77,930,000 par of certain outstanding 2013 Series A bonds for net present value savings of $13,502,431 (or 17.326%) and achieved an All-In True Interest Cost of 2.024%. The bonds were issued via negotiated sale with J.P. Morgan serving as senior managing underwriter and Dinsmore & Shohl, LLP as bond counsel. The bonds achieved ratings of Aa3 and AA- from Moody's and Kroll, respectively.

The remaining component of this transaction is the 2022 Series A (Forward Delivery) which is expected to close April 5, 2022. The 2022 Series A bonds priced on September 21, 2021 with 2021 Series A and Federally Taxable Series B to lock in rates and achieved an All-In True Interest Cost of 1.576%. The $56,875,000 par amount of bonds will refund certain outstanding 2012 Series A bonds for net present value savings of

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

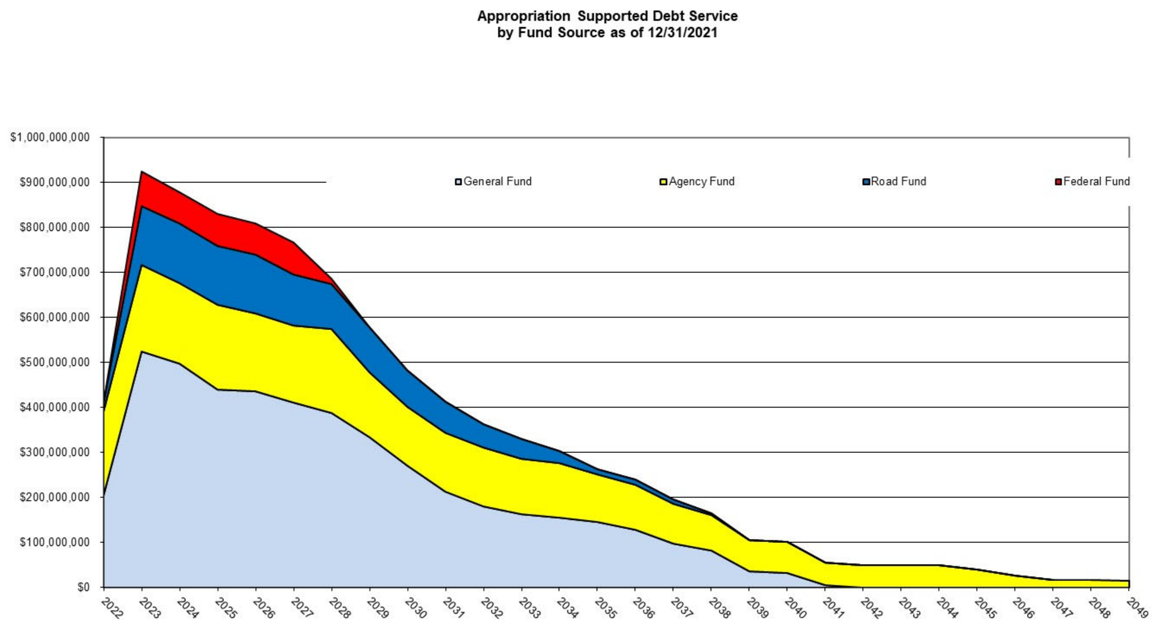
APPENDIX A

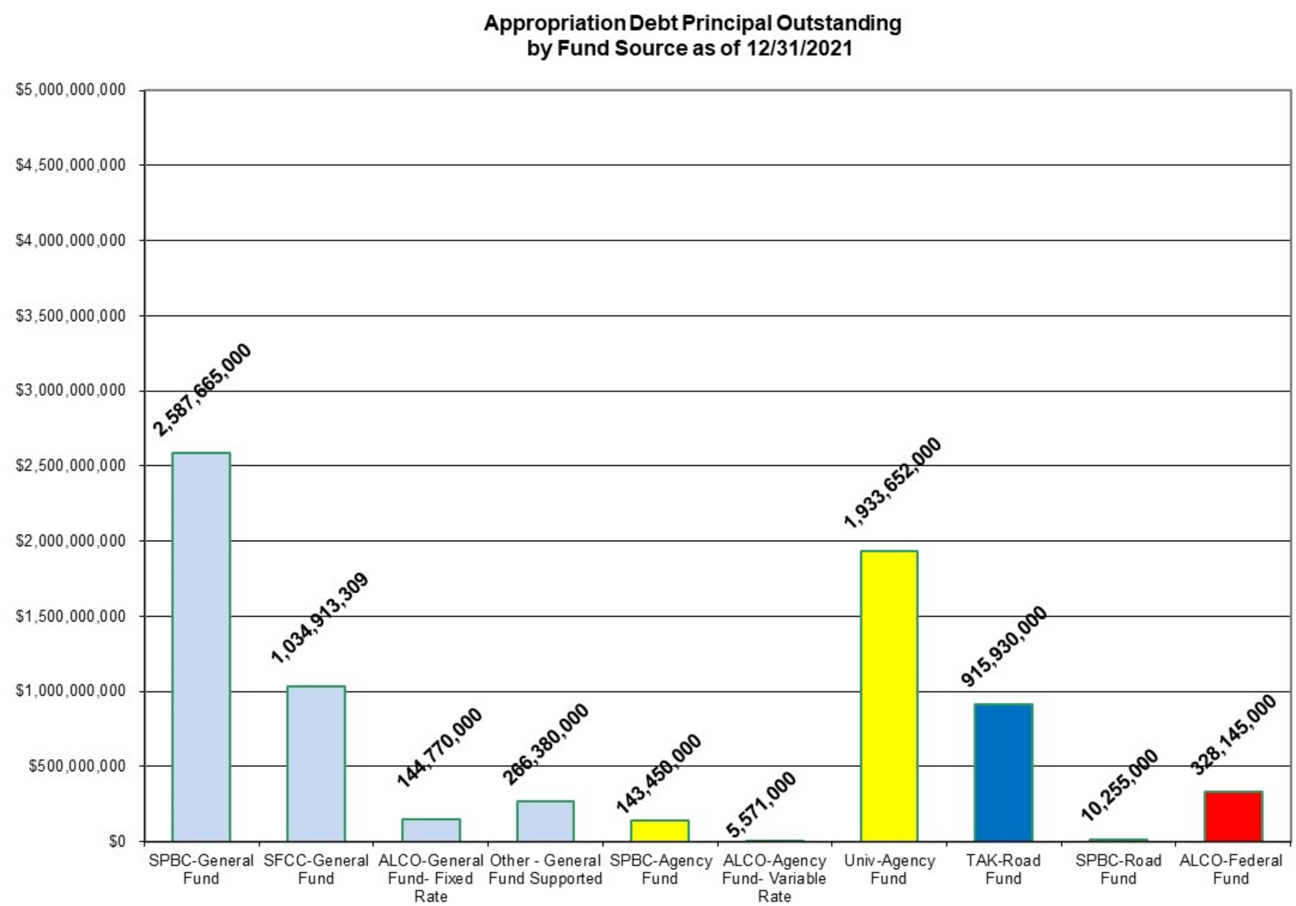
Corporate Credits Approved For Purchase
As of December 31, 2021

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:

APPENDIX B





*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 C

COMMONWEALTH OF KENTUCKY
ASSET/LIABILITY COMMISSION
SCHEDULE OF NOTES OUTSTANDING
AS OF 12/31/2021

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	$96,655,000
	FUND TOTAL	**$537,045,000**			**$144,770,000**
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	$105,585,000
2014 1st Series		$171,940,000	3/2014	9/2026	$132,175,000
2015 1st Series		$106,850,000	10/2015	9/2027	$60,365,000
2020 1st Series		$59,405,000	12/2020	9/2022	$30,020,000
	FUND TOTAL	**$550,740,000**			**$328,145,000**
ALCo NOTES TOTAL		**$1,115,560,000**			**$478,486,000**

REPORT PREPARED BY:

Office of Financial Management

Commonwealth of Kentucky
200 Mero Street, 5th Floor
Frankfort, KY 40622
Phone: 502-564-2924

Creating Financial Value for the Commonwealth