COMMONWEALTH OF KENTUCKY

KENTUCKY ASSET/LIABILITY COMMISSION

SEMI-ANNUAL REPORT

For the period ending December 31, 2022

52nd Edition

KENTUCKY ALCo ASSET/LIABILITY COMMISSION

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

Prior copies 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/

Office of Financial Management (OFM):

https://ofm.ky.gov

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INTRODUCTION

The Kentucky Asset/Liability Commission ("ALCo" or the "Commission") presents its 52nd 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, 2022 through December 31, 2022.

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 all financial agreements entered into during the reporting period.

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 raised the federal funds rate to a target range of 4.25 percent to 4.50 percent during the second half of 2022.
- The unemployment rate fell to 3.5 percent in December 2022, down from 3.6 percent in June 2022.
- The annual rate of economic growth as measured by the gross domestic product ("GDP") recovered after falling in the first half of 2022. The seasonally adjusted rate for the third quarter was 3.2 percent and for the fourth quarter was 2.9 percent.
- Inflation rate remained below highs seen earlier in the year but still ended the fourth quarter with the core rate (ex-energy and food) at an elevated 4.7 percent.

On the state level

- General Fund receipts totaled $7.437 billion for the first six months of Fiscal Year ("FY") 2023, representing a 5.8 percent increase over the same period in FY 2022. The official revised General Fund revenue estimate for FY 2023 calls for revenue to grow 3.4 percent compared to FY 2022 actual receipts. Based on the first half results, General Fund revenue receipts need to grow 1.2 percent for the remainder of the fiscal year to meet the official revised estimate of $15,201.9 billion.
- Road Fund receipts totaled $842.5 million for the first six months of FY 2023, representing a 3.4 percent increase over the same period in FY 2022. Unlike the General Fund estimates, the Road Fund was not revised at the December 2022 Consensus Forecasting Group ("CFG") meeting. The Road Fund unofficial interim estimate for FY 2023 receipts is $1,757.4 million, or $36.4 million over the official enacted estimate.
- Kentucky non-farm employment rose by 2.8 percent in the second quarter of FY 2023 compared to the second quarter of FY 2022.
- Kentucky personal income grew by 5.0 percent in the second quarter of FY 2023 compared to the second quarter of FY 2022.
- Business services employment grew the fastest for the second quarter of FY 2023, with a rise of 6.0 percent in employment compared to the second quarter of FY 2022.
- Large unfunded pension liabilities continue to put stress on the Commonwealth's credit rating.

INVESTMENT MANAGEMENT

Market Overview

During the second part of 2022, the rate of inflation began to decline from earlier highs but remained stubbornly elevated above the Federal Open Market Committee's ("FOMC" or the "Committee") longer-run objective of 2 percent. Labor demand remained high with supply failing to keep up. While the labor market remains extremely tight with unemployment near historic lows, the easing of supply chain constraints and lower consumer demand have helped slow the explosive price growth seen previously. Concerns around a potential recession began to grow as consumer demand fell off and private fixed investment slipped in the fourth quarter, despite GDP growth returning to positive territory in the latter half of FY 2022.

After failing to prevent the initial inflation surge, the FOMC has been committed to bringing down the rate of inflation. After ending June with a federal funds rate of 1.5 to 1.75 percent, the FOMC began a series of dramatic rate hikes that resulted in rates reaching a range of 4.25 to 4.50 percent after the December meeting. Although the speed at which federal funds rate increases will likely diminish, FOMC members continue to publicly state their willingness to continue hiking until inflation is under control. Traders are watching carefully for any sign that rates have peaked but FOMC members have been hesitant to proclaim an end to the hiking cycle. After ceasing net asset purchases in March, the Committee now is shrinking its balance sheet to reduce security holdings.

Employment

Despite rising interest rates designed to depress economic activity, demand for labor remains robust and many companies continue to struggle to find available workers. After a brief respite in the first half of the year as job openings finally declined, the second half of 2022 saw demand continue to outpace supply as the economy added an average of 357,000 jobs per month and the unemployment rate declined from 3.6 percent in June to 3.5 percent putting unemployment rate at a 50-year low.

At the end of December, there were 11 million job openings, more than 60 percent higher than the end of 2019 before the pandemic began. The number of job openings peaked in March and began to decline until a spike at the end of the year. The supply of labor did not keep up with demand as the Labor Force Participation Rate ("LFPR"), which measures the share of people either working or actively seeking work, remained flat at 62.3 percent and nearly a full percentage point below pre-pandemic levels.

A stubbornly low LFPR remains a tricky long-term economic problem that began in 2009 and was only exacerbated by the pandemic. Millions of workers that would otherwise be productively employed had the rate remained near levels seen in the 80s, 90s, and early 2000s are now out of the work force. Many factors are to blame, including increased retirements from the baby boomer generation and more time spent pursuing education before entering the labor force. Population growth, hampered by the pandemic in 2020 and 2021, has recovered slightly but still remains well below historical levels. Low birth rates presents a problem going forward as more workers age out of the work force and not enough young workers are available to replace them.

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Inflation

After peaking in the first half of 2022, aggressive rate hikes finally managed to slow the rise of price increases. Consumer price inflation, as measured by the 12-month change in the price index for personal consumption expenditures ("PCE"), spiked to 7 percent in June before falling back to 5 percent at the end of the year. Core inflation, measured by stripping out volatile food and energy prices, fell to 4.4 percent in December. This remains well above the FOMC's objective of 2 percent for long-range inflation. Expectation for longer-term inflation have begun to decline as peak inflation appears to have been reached and the Federal Reserve seems to be succeeding in driving down price increases.

Economic Growth

Real GDP began 2022 with declines in the first two quarters, a marker for a recession. Growth bounced back in the third quarter with a 3.2 percent gain followed by a 2.9 percent increase in the fourth quarter. For the third quarter, growth was primarily caused by an increase in net exports, a measure that in recent years has rarely contributed meaningfully to GDP growth. Large inventory builds were mostly responsible for the gain in the fourth quarter as business fixed investment and residential investment both remained weak. The underlying shadow in the data for the second half of 2022 is that consumer spending underperformed, foreshadowing pain ahead in 2023.

Interest Rates

The FOMC ended the first half of 2022 with the top end of the federal funds rate set at 1.75 percent and inflation still raging. At the end of June, rate expectations for the end of the year sat around 3.6 percent, but it quickly became apparent that path would not be hawkish enough to tame price increases. This led to a series of substantial 75 basis point hikes in July, September, and November, along with a 50 basis point hike in December that left the upper range at 4.5 percent, well beyond what was expected six months earlier. Market-based measures now suggest rates will peak around 5.2 percent in 2023 and stay above 5 percent for the entirety of 2023. The Fed dot plot shows rates staying well above 3 percent until the end of 2025 and falling to 2.5 percent in the long-term.

As rate expectations were continually revised upward in the second half of the year, yields on Treasury securities and corporate bonds, as well as mortgage rates, all rose accordingly. The speed of the rate increases has been historic. Beginning in March 2022, interest rates have risen the fastest since the early 1980s, a time when inflation topped 14%. This rapid rate increase was felt primarily on the shorter end, as the yield curve between 2-year and 10-year remained sharply inverted. As rate expectations around a terminal rate solidified near the end of the year, yields across asset classes began to steady. As mortgage rates reached two-decade highs, yields on mortgage-backed securities ("MBS") continued to rise and spreads widened as the Federal Reserve continued to reduce its own holdings. After spiking in October, spreads declined towards the end of the year but still finished around 20 basis points higher than they were at the beginning of 2022.

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Equities

Equity price indices continued to experience volatility and failed to recover from losses suffered in the first half of the year, ending the second half of the year little changed from the end of June. For the year, the S&P 500 lost over 19 percent, the worst annual performance since 2008. One-month option-implied volatility on the S&P 500 index ("VIX") settled down after a wild first half and ended the year more stable and near the bottom of the 1-year range in response to a lack of diplomatic crises abroad and a clearer outlook of where FOMC policy would end up.

Outlook

The Committee is strongly committed to returning inflation to its 2 percent objective. In assessing the appropriate stance of monetary policy, they will continue to monitor the implications of incoming information for the economic outlook. The Committee's assessments will take into account a wide range of information, including readings on inflation and inflation expectations, wages, other measures of labor market conditions and financial and international developments.

In conjunction with the FOMC meeting held on December 14, meeting participants submitted their projections of the most likely outcomes for real GDP growth, the unemployment rate, and inflation for each year from 2023 to 2025 and over the longer run.

For 2023 the median forecast for GDP, unemployment rate and inflation is 0.5 percent, 4.6 percent and 3.1 percent, respectively. The expected federal funds rate at the end of 2023 is 5.1 percent.

For 2024 the median forecast for GDP, unemployment rate and inflation is 1.6 percent, 4.6 percent and 2.5 percent, respectively. The expected federal funds rate at the end of 2024 is 4.1 percent.

For 2025 the median forecast for GDP, unemployment rate and inflation is 1.8 percent, 4.5 percent and 2.1 percent, respectively. The expected federal funds rate at the end of 2025 is 3.1 percent.

Additionally, longer run projections are 1.8 percent for GDP, 4.0 percent for unemployment and 2.1 percent inflation with an expected federal funds rate of 2.5 percent.

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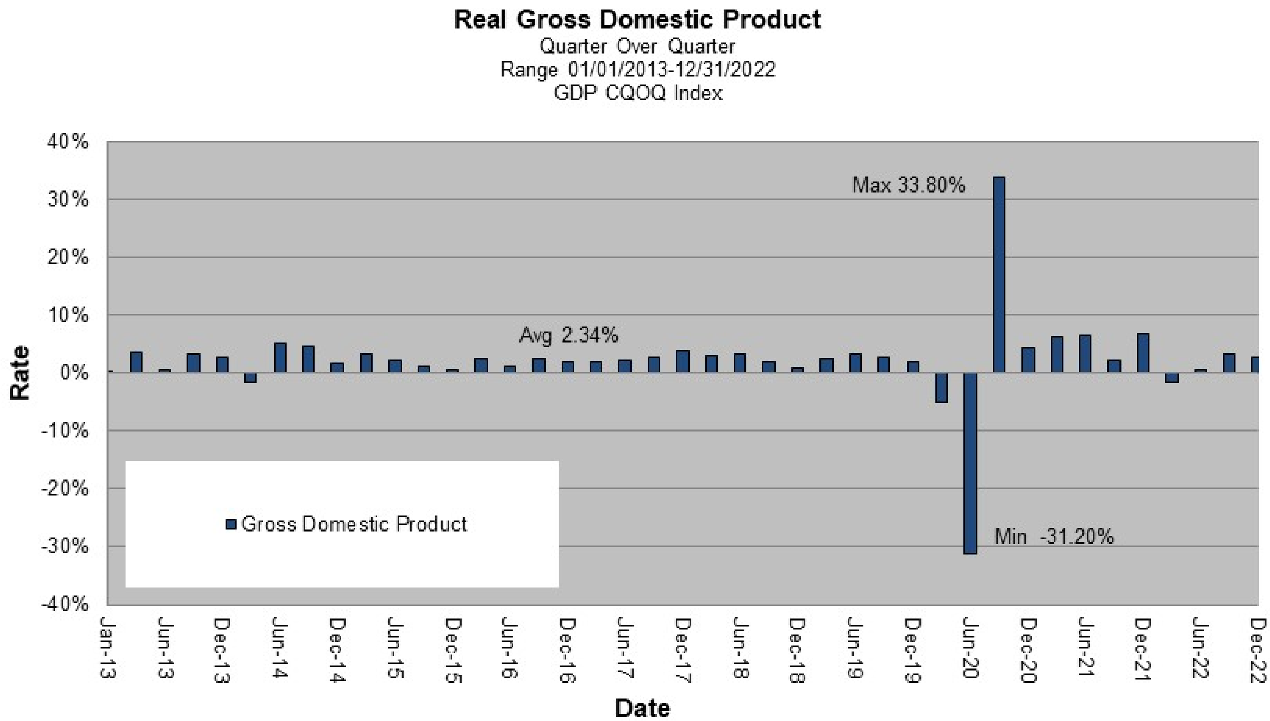
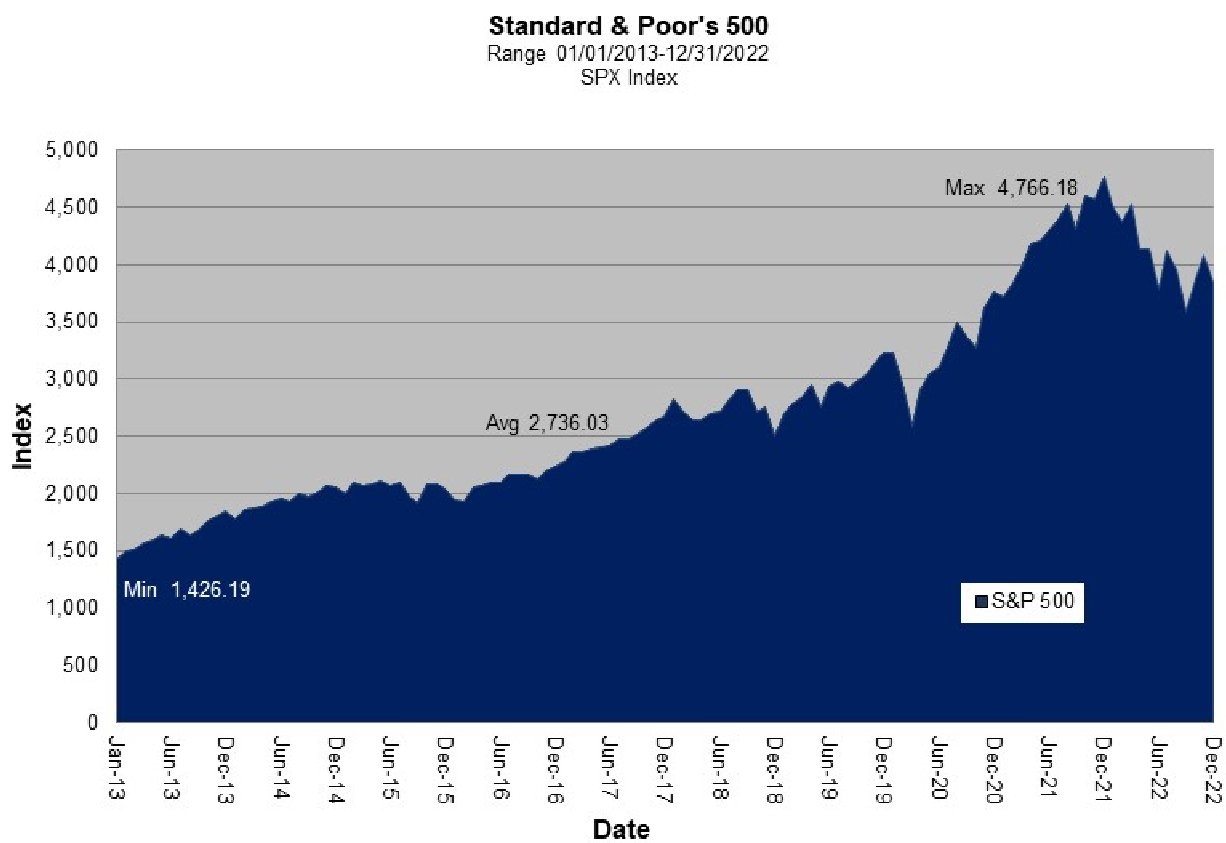
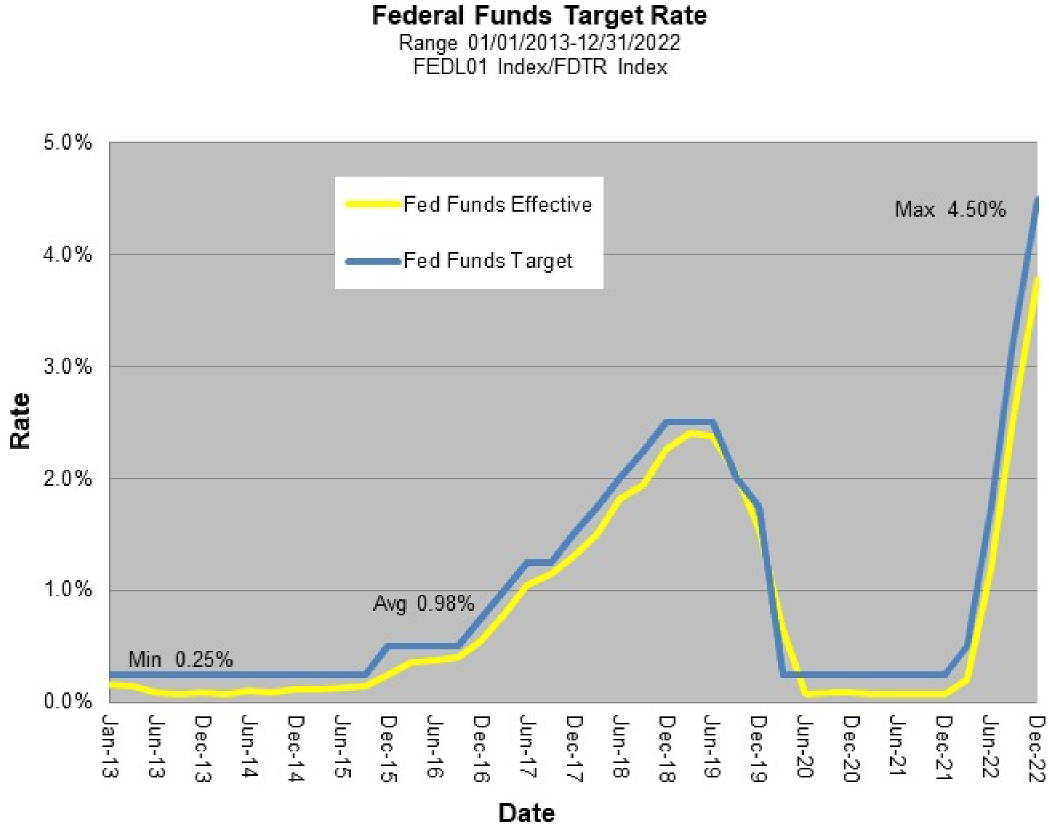
Real Gross Domestic Product & Standard & Poor's 500

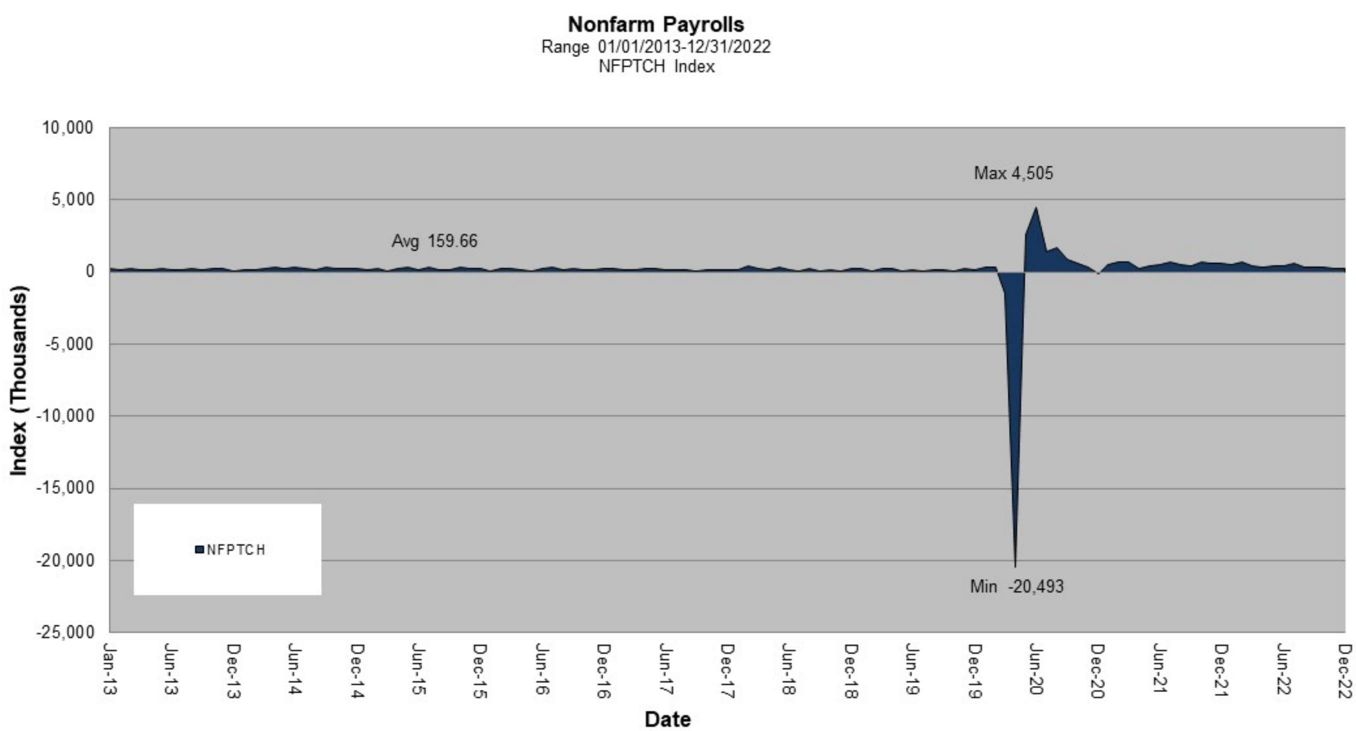




INVESTMENT MANAGEMENT

Federal funds Target Rate & NonFarm Payrolls





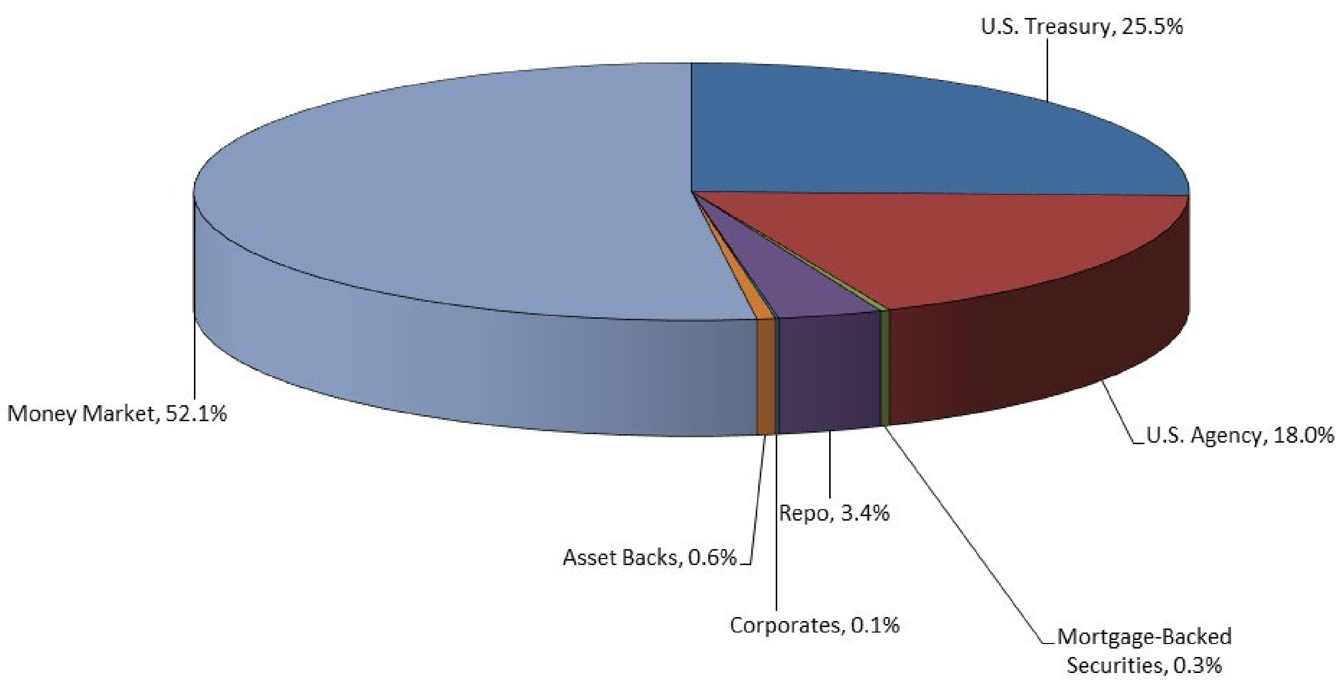
INVESTMENT MANAGEMENT

Portfolio Management

For the six months ending December 31, 2022, the Commonwealth's combined investment portfolio was approximately $11.8 billion. The portfolio was invested in U.S. Treasury Securities (25.5%), U.S. Agency Securities (18.0%), Mortgage-Backed Securities (0.3%), Repurchase Agreements (3.4%), Corporate Securities (0.1%), Asset-Backed Securities (0.6%), and Money Market Securities (52.1%). The portfolio had a market yield of 4.29 percent and an effective duration of 0.39 years.

The total portfolio is substantially larger than historical amounts due to receipt of federal funds, higher revenues than projected and historically large Budget Reserve Trust Fund balance. It is broken down into three investment pools. The pool balances as of December 31, 2022 were $5.0 billion (Short Term Pool), $2.7 billion (Limited Term Pool), $4.0 billion (Intermediate Term Pool).

Distribution of Investments as of December 31, 2022

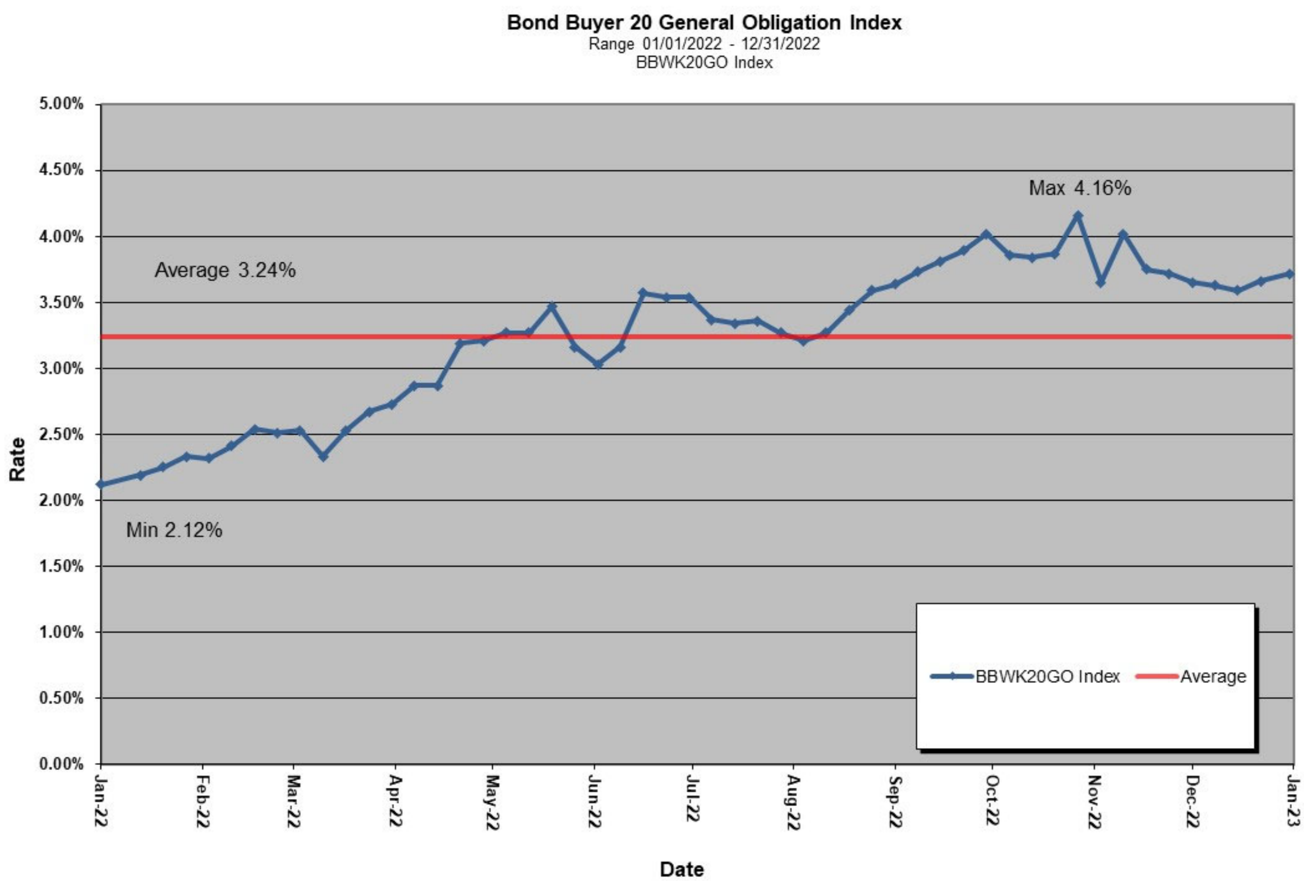


INVESTMENT MANAGEMENT

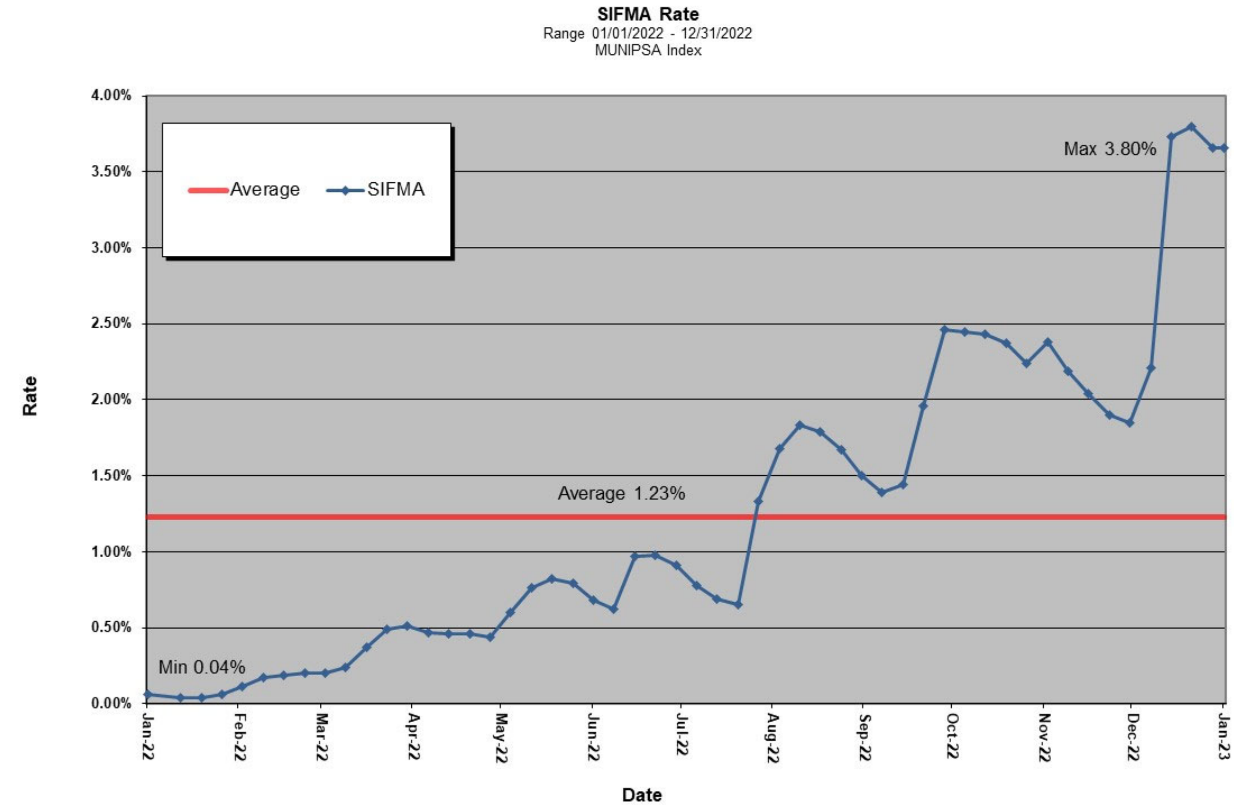
Tax-Exempt Interest Rates and Relationships

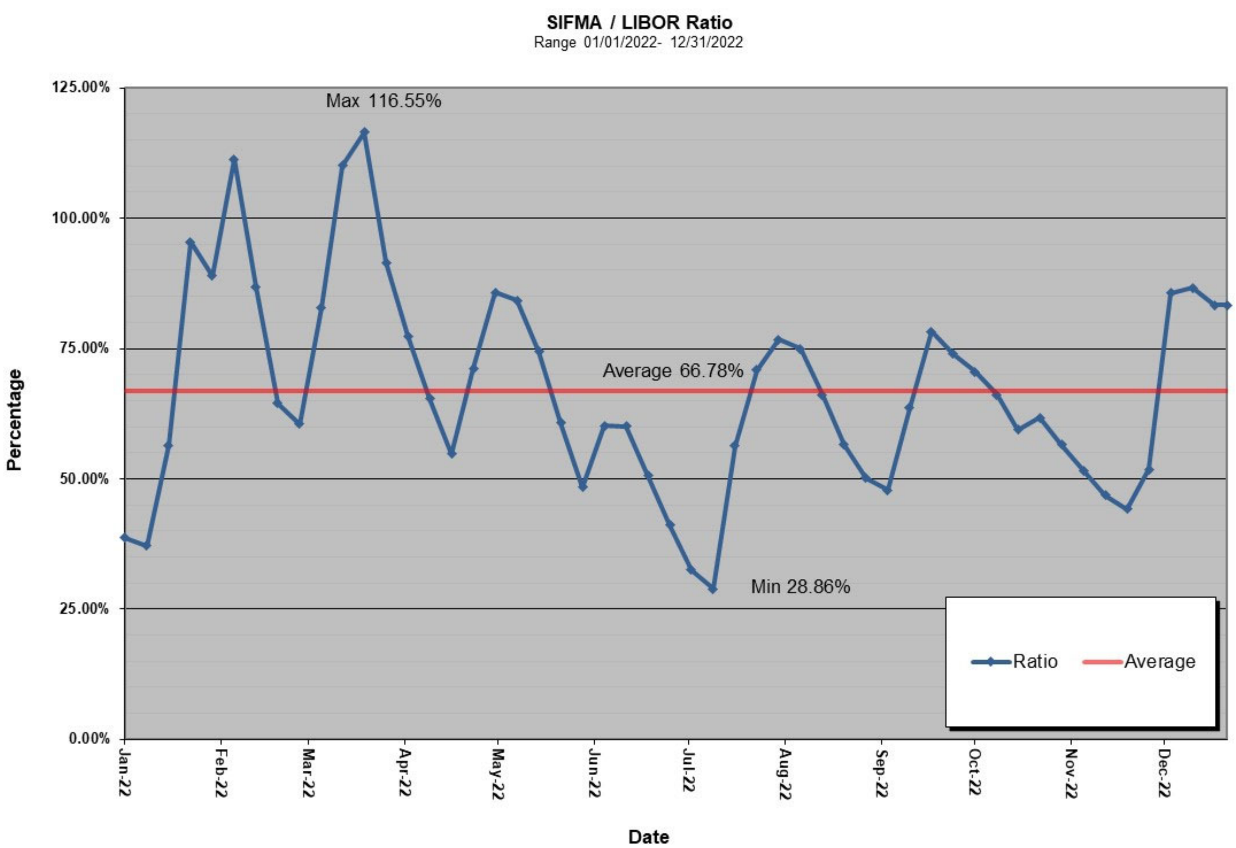
The Bond Buyer 20 General Obligation Index averaged 3.24 percent for Calendar Year ("CY") 2022. The high was 4.16 percent in October 2022 and the low was 2.12 percent in January 2022.

The Securities Industry and Financial Markets Association ("SIFMA") Municipal Swap Index averaged 1.23 percent for CY 2022. The high was 3.80 percent in December 2022 and the low was 0.04 percent in January 2022. The 30-day USD London Interbank Offered Rate ("LIBOR") averaged 1.95 percent for CY 2022. The high was 4.39 percent in December 2022 and the low was 0.10 percent in January 2022. During the year, SIFMA traded at a high of 116.55 percent of the 30-day LIBOR in April 2022, at a low of 28.86 percent in July 2022, and at an average of 66.78 percent for the CY.



SIFMA & SIFMA/LIBOR Ratio





CREDIT MANAGEMENT

Mid-Year Reflection

Credit

After an accelerated period of rate tightening by the Federal Reserve, inflation finally began to moderate in the second half of 2022. This required a fed funds rate of 4.25 percent to 4.50 percent by the end of the year, but headline inflation dropped from a high of over 9 percent to 6.5 percent at the end of December. Supply chain constraints eased and helped to slow the growth of prices paid by both producers and consumers. Consumer spending finally slowed after seeing explosive growth during the pandemic and even turned negative for the final two months of 2022, further easing price pressures. Personal income growth has continued to follow the pre-pandemic trend line, which combined with high inflation means real income levels have dropped since the beginning of 2022. Household debt exceeded the $16 trillion level for the first time as delinquency rates finally began to increase after being historically low the past 2-years. Mortgage balances approached $12 trillion and credit card debt had the largest jump in over two decades, a 15 percent increase since the previous year.

Higher borrowing rates did not dissuade corporations as they continued to load up on debt to a total of nearly $13 trillion. The ratio of corporate debt to GDP continued to grow as GDP growth experienced two consecutive quarters of negative growth early in 2022. Investment grade securities continued to make up the majority of new issuance as investors enjoyed higher rates without having to sacrifice safety. Corporate bankruptcies continued to fall and reached new lows in the second half of 2022, although December saw the highest single month total in 18 months, perhaps providing a preview of 2023. After rising in the first half of the year, spreads on investment grade debt began to decline again and slipped below the 10-year average. The Senior Loan Officer Opinion Survey on Bank Lending Practices, or SLOOS, reported that standards for all type of loans tightened during the fourth quarter of 2022 while demand for all types of loans decreased. This breaks a two-year trend of easing standards and rising demand for all types of consumer and commercial loans.

Credit Process

OFM's 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, 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 the approved list and their peers enabling us to

CREDIT MANAGEMENT

track market activity in selected names including Credit Default Swaps ("CDS").

Industry/Company Analysis

OFM uses 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 with focus on specific company fundamentals, picking the strongest companies within a sector.

Fundamental analysis is then performed by 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 second half of 2022, there were no changes to the Corporate Credits Approved list. The Corporate Credits Approved list as of December 2022 is 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 then maximization of returns. The Office of Financial Management is staff to the SIC and follows KRS 42.500, 200 KAR 14.011, 14.081, and 14.091 when making investment decisions.

DEBT MANAGEMENT

Authorized But Unissued Debt

As of December 31, 2022, the Commonwealth's 2023-2024 budget includes authorized debt service for over $3.9 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 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

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to support various capital initiatives of the Commonwealth whereas $26.62 million in previously authorized debt was de-authorized in House Bill 200 and House Bill 201. Of the total authorization, $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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2022 Regular Session

The 2022 Regular Session of the General Assembly delivered House Bill 1 (Executive Branch Budget other than the Transportation Cabinet) and House Bill 241 (Kentucky Transportation Cabinet Budget) to the Governor on March 30, 2022, establishing an Executive Branch Budget for the biennium ending June 30, 2024. The Governor vetoed certain line items in House Bill 1 and House Bill 241 on April 11, 2022. The General Assembly overrode certain gubernatorial vetoed line items in House Bill 1 and overrode all gubernatorial vetoed line items in House Bill 241 on April 13, 2022. Together, the bills authorize bond financing for projects totaling a net amount of $3,767.21 million to support various capital initiatives of the Commonwealth. Of the total authorization, $2,834.13 million is General Fund supported, and $933.08 million is supported by Agency Fund appropriations. No additional Road Fund authorizations were appropriated.

DEBT MANAGEMENT

Authorized but Unissued Debt Summary

The balance of prior bond authorizations of the General Assembly dating from 2010 through 2022 totals $3,910.78 million. Of these prior authorizations, $2,860.74 million is General Fund supported, $1,037.54 million is Agency Fund supported, and $12.50 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, 2022:

Legislative Session (Year)	General Fund (millions)	Agency Fund (millions)	Road Fund (millions)	TOTAL (millions)
2010	$ 22.05	$ 17.50	-	$ 39.55
2012	1.85	-	$ 12.50	14.35
2014	7.26	-	-	7.26
2016	20.26	-	-	20.26
2018	189.07	6.53	-	195.60
2019	44.67	-	-	44.67
2020-2021	395.36	80.43	-	475.79
2022-2024	2,395.22	933.08	-	3,328.30
Bond Pool Proceeds	(215.00)			(215.00)
TOTAL	$ 2,860.74	$ 1,037.54	$ 12.50	$ 3,910.78

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 or variable rate 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.

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, 2022:

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

*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 ("TRANs")

TRANs can provide liquidity or leverage the difference between taxable and tax-exempt interest rate markets to create economies that provide a financial benefit to the Commonwealth. 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 December 31, 2022 the total available liquid resources available to the General Fund was $11.759 billion.

Bond Anticipation Notes ("BANs")

A short-term interest-bearing security issued in advance of a larger, future bond issue. BANs are smaller short-term bonds that are issued to generate funds for upcoming projects.

No BANs were issued during the reporting period

Notes or 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.

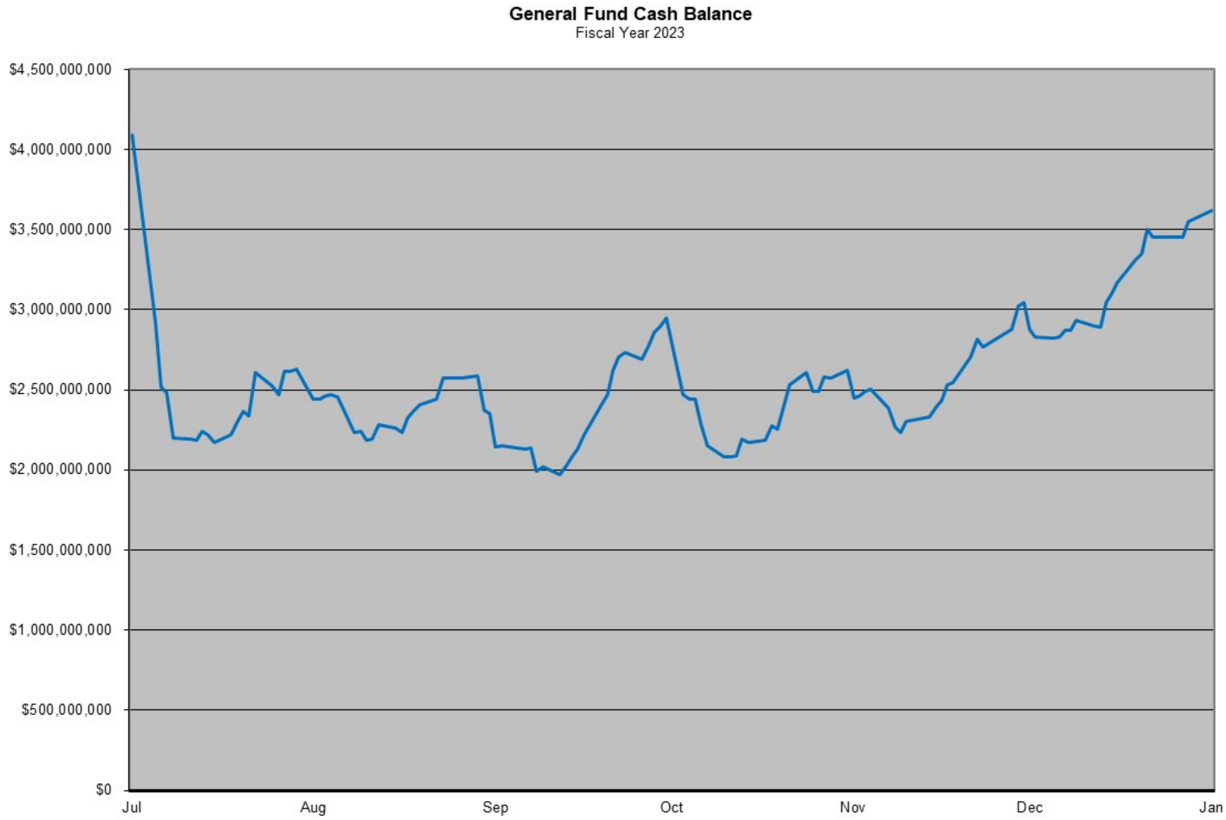
No notes were issued during the reporting period

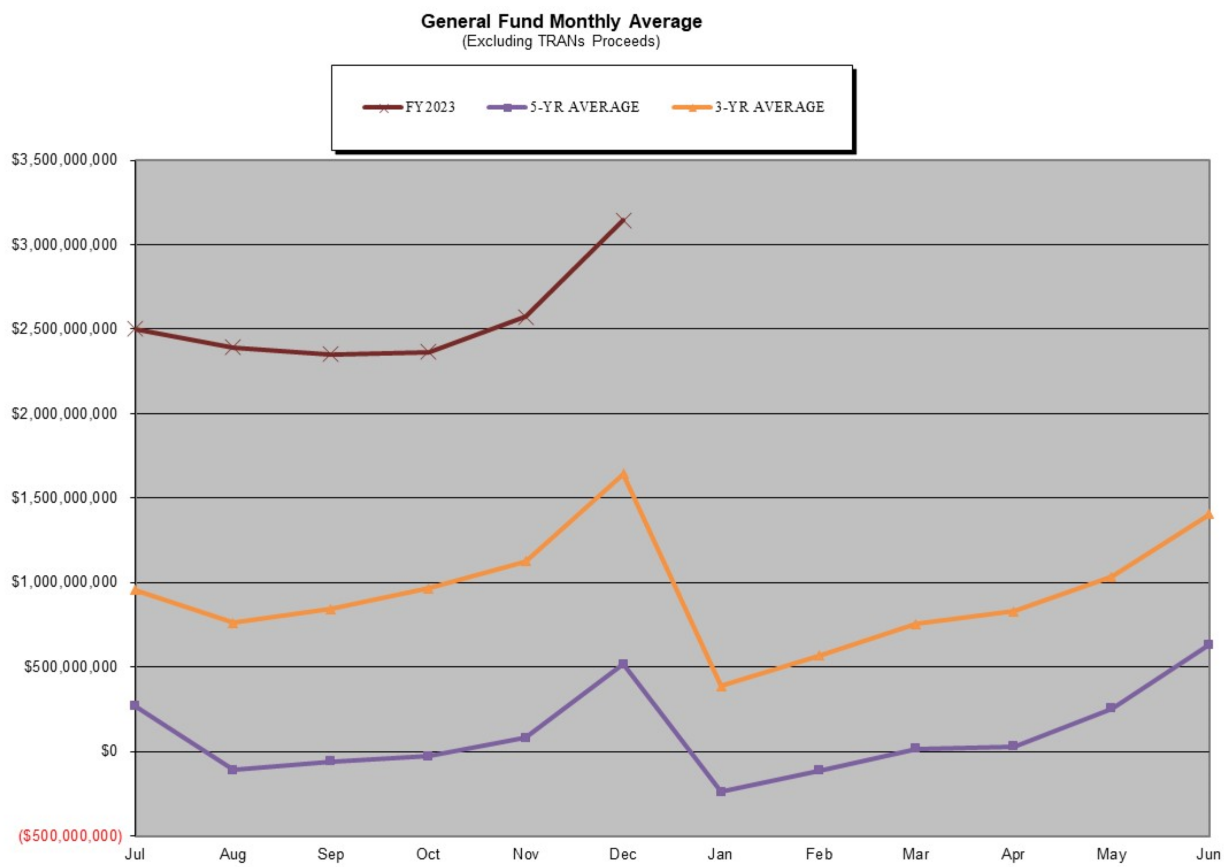
Synthetic Fixed Rate

Synthetic Fixed Rate is an alternative to traditional fixed rate borrowing in which funds are borrowed on a variable rate basis then an interest rate swap is used to fix the interest rate.

No Synthetic Fixed Rate bonds were issued during the reporting period.

DEBT MANAGEMENT





DEBT MANAGEMENT

ALCo Financial Agreements

As of May 3, 2021, ALCo retired all remaining outstanding financial agreements.

Asset/Liability Model

General Fund

The total State Property and Buildings Commission ("SPBC") debt portfolio as of December 31, 2022 had $2.777 billion of bonds outstanding with a weighted average coupon of 4.83 percent and a weighted average life of 6.67 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 $1.264 billion callable portion had a weighted average coupon of 4.71 percent. The SPBC debt structure has 46.72 percent of principal maturing in 5-years and 75.12 percent of principal maturing in 10-years which is primarily influenced by the reduced amount of long-term new money permanent financings within the last several years.

The General Fund had a maximum balance of $4.089 billion on July 1, 2022, and a low of $1.971 billion on September 12, 2022. The average and median balances were $2.539 billion and $2.467 billion, respectively. Return on investable balances is impacted by investment earnings, fees and mark-to-market rules on the underlying investments.

From a liability management perspective, total Commonwealth General Fund debt service, net of credits is expected to be $494.37 million for FY 2023. In addition to the Commonwealth General Fund debt service, General Fund debt service of $9.811 million will be provided for an Eastern State Hospital financing that was first issued through the Lexington-Fayette Urban County Government in 2011. Also, General Fund debt service of $10.476 million will be 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 direct obligations of the Commonwealth, but they are General Fund supported.

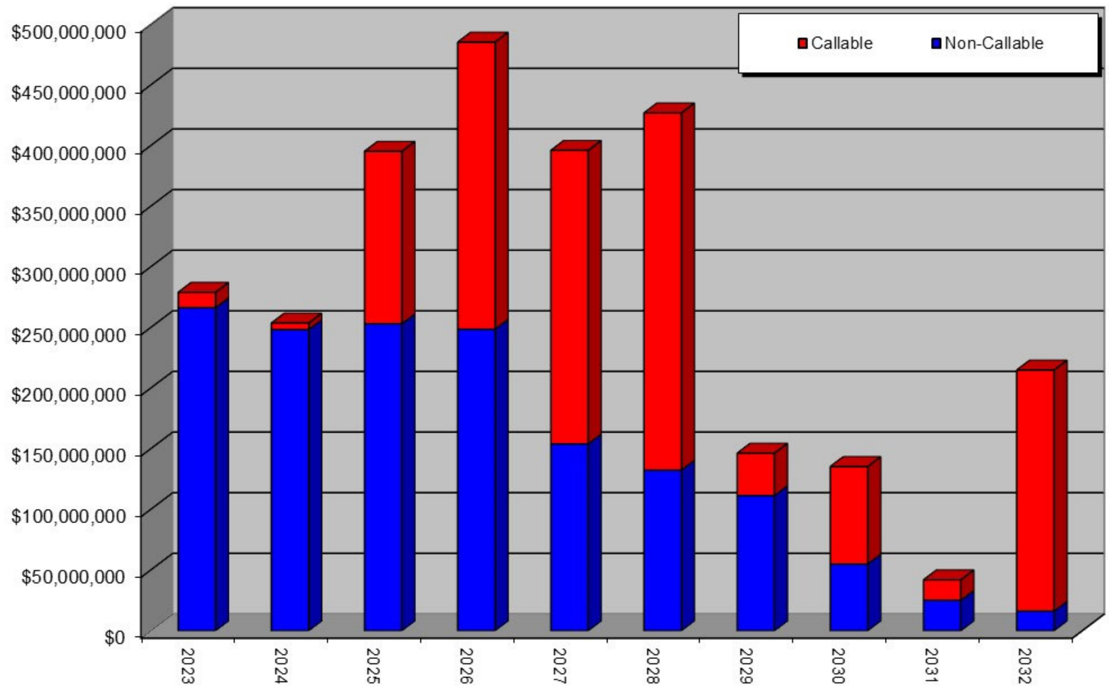
SPBC Project No. 127

On October 5, SPBC closed $235,485,000 par of General Fund Revenue Bonds, 127, consisting of Series A Revenue Bonds and Series B Federally Taxable Revenue Bonds. The Series A bond proceeds provided permanent financing for $215 million of General Fund supported capital projects authorized over multiple sessions of the General Assembly and the Series B bond proceeds provided $40 million for the Bucks for Brains project approved in House Bill 1 of the 2022 Regular Session of the General Assembly.

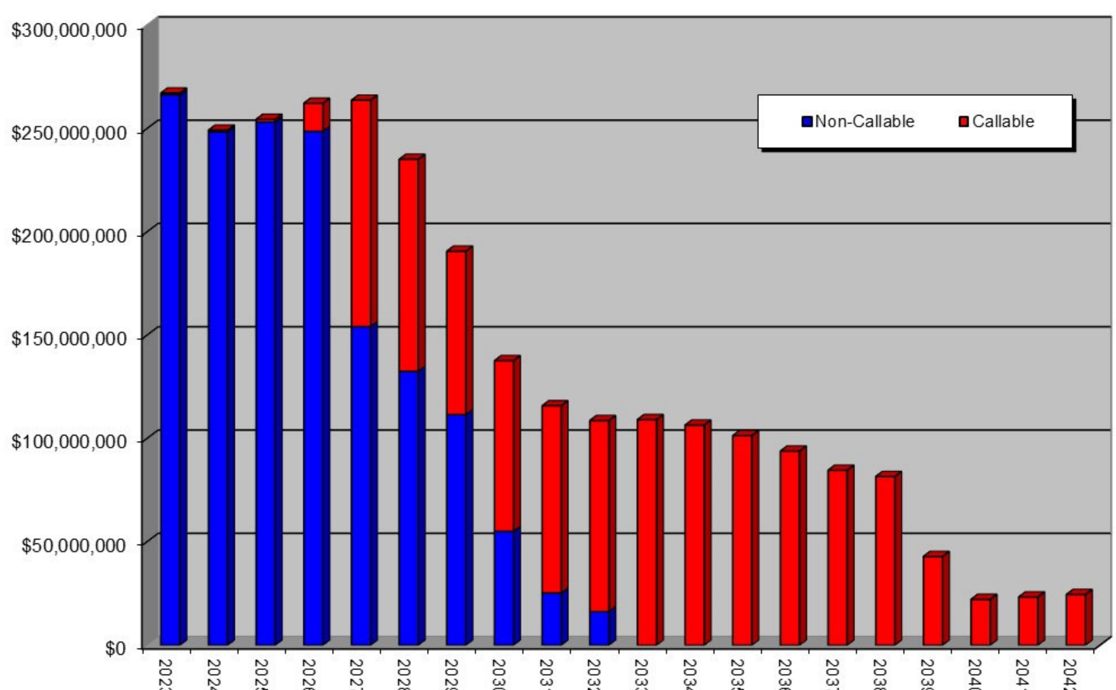
The SPBC 127 transaction achieved an All-In True Interest Cost of 4.1475 percent. The bonds were issued via negotiated sale with Citigroup serving as senior managing underwriter and Kutak Rock as bond counsel. The bonds received ratings of A1 from Moody's Investors Service, Inc. ("Moody's") and A+ from Fitch Ratings.

DEBT MANAGEMENT

Call Analysis by Call Date
State Property and Buildings Commission Bonds



Call Analysis by Maturity Date
State Property and Buildings Commission Bonds



DEBT MANAGEMENT

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, convertible taxable to 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 net Road Fund average daily cash balance for the first half of FY 2023 was $426 million compared to $448 million for the first half of FY 2022. The Road Fund cash was invested in the Intermediate Term Investment Pool which had a duration of 1.05 years as of December 31. The Road Fund earned a negative $325 thousand on a cash basis for the first half of FY 2023 versus a negative $1.43 million for the first half of FY 2022.

As of December 31, the Turnpike Authority of Kentucky ("TAK") had $860.51 million of bonds outstanding with a weighted average coupon of 4.64% and an average life of 5.09 years.

Road Fund debt service expected to be paid in FY 2023 is $132.76 million, resulting in a net interest margin (investment income earned year-to-date less debt service paid) of negative $133 million. The negative amount stems from the level of investable balances in addition to the limited callability of fixed rate obligations on the liability side.

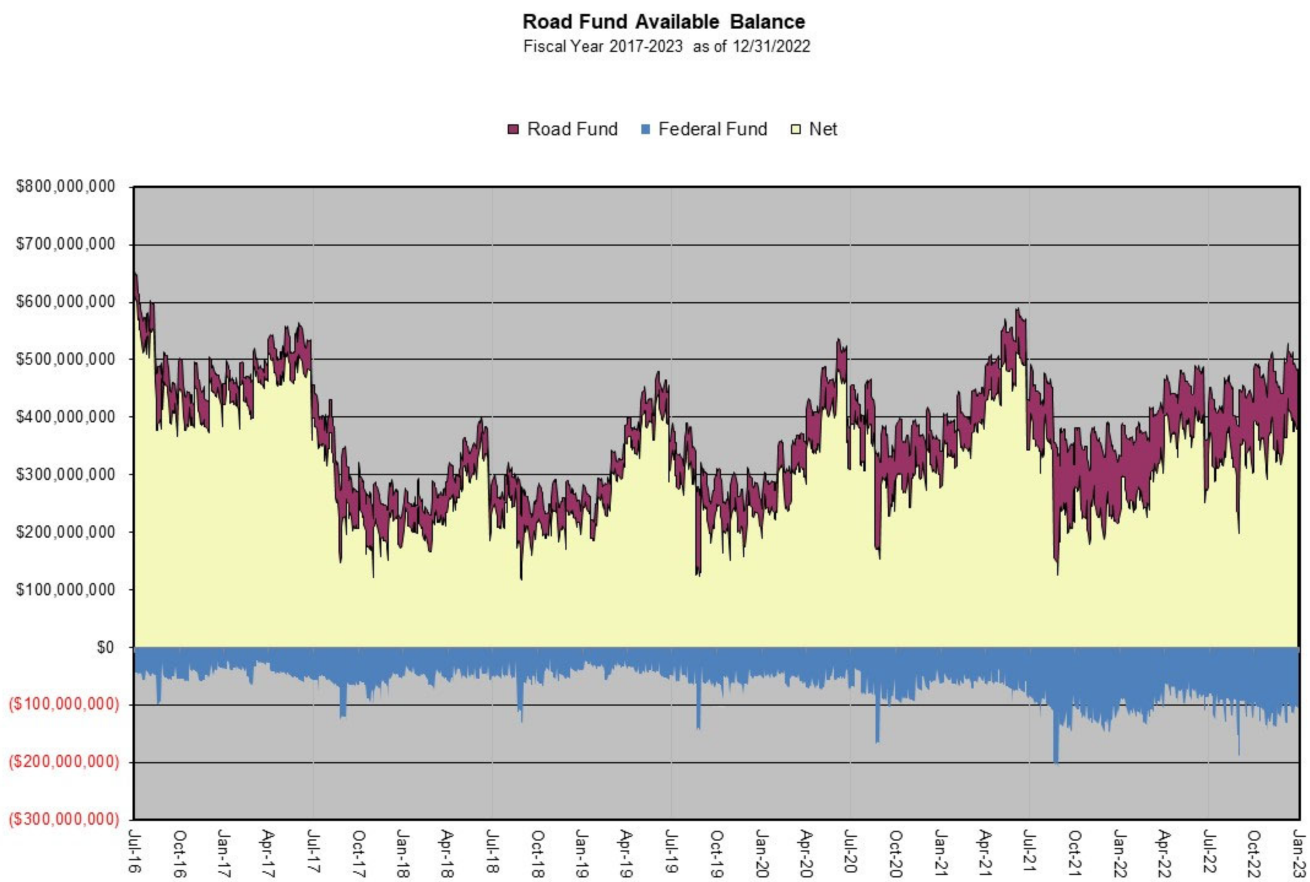
TAK 2022 Series B

On September 28, TAK priced $47.48 million par of Economic Development Road Revenue Bonds (Revitalization Projects) 2022 Series B. The proceeds of the Series B bonds were used to pay the costs of certain additions and improvements to the Kentucky Economic Development Road system (Revitalization Projects) and to pay for costs of issuance. The bond proceeds represent the final $50 million of $400 million authorization by the 2010 Extraordinary Session of the General Assembly. The projects were highway projects approved within the Transportation Cabinet's Six-Year Highway Plan. The 2022 Series B debt service was 20-year, level debt, tax exempt financing with an All-In TIC of 4.377%, an average life of 12.215 years, a 10-year par call, and a final maturity of July 1, 2042.

The transaction, which sold on a negotiated basis, closed on October 20 with J.P. Morgan Chase acting as senior manager and Dinsmore & Shohl serving as bond counsel. Stites & Harbison was underwriter's counsel.

The bonds received ratings of Aa3 from Moody's and AA– from Kroll.

DEBT MANAGEMENT



SUMMARY

During the reporting period for the 52nd semi-annual report, the rate of inflation began to decline from earlier highs but remained stubbornly elevated above the FOMC long-run objective and the speed of the federal funds rate increases was historic. Interest rates rose the fastest since the early 1980s and the 2-year and 10-year treasury curve was inverted. This contributed to a higher cost of capital across the Commonwealth, but provided numerous opportunities for investment income from banking deposits.

ALCo's approach to managing the Common-wealth's interest-sensitive assets and interest-sensitive liabilities has provided flexibility and savings in financing the Commonwealth's capital construction program. 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. 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 an economic advantage in conjunction with the fixed-rate bonds.

The balance of prior bond authorizations of the General Assembly from 2010 – 2022 totals over $3.9 billion with existing debt for SPBC of $2.6 billion, SFCC $977 million, ALCo GARVEEs $265 million, ALCo bonds $93.4 million and Turnpike bonds $860.5 million. The bonds are monitored for potential refunding savings for a variety of structures

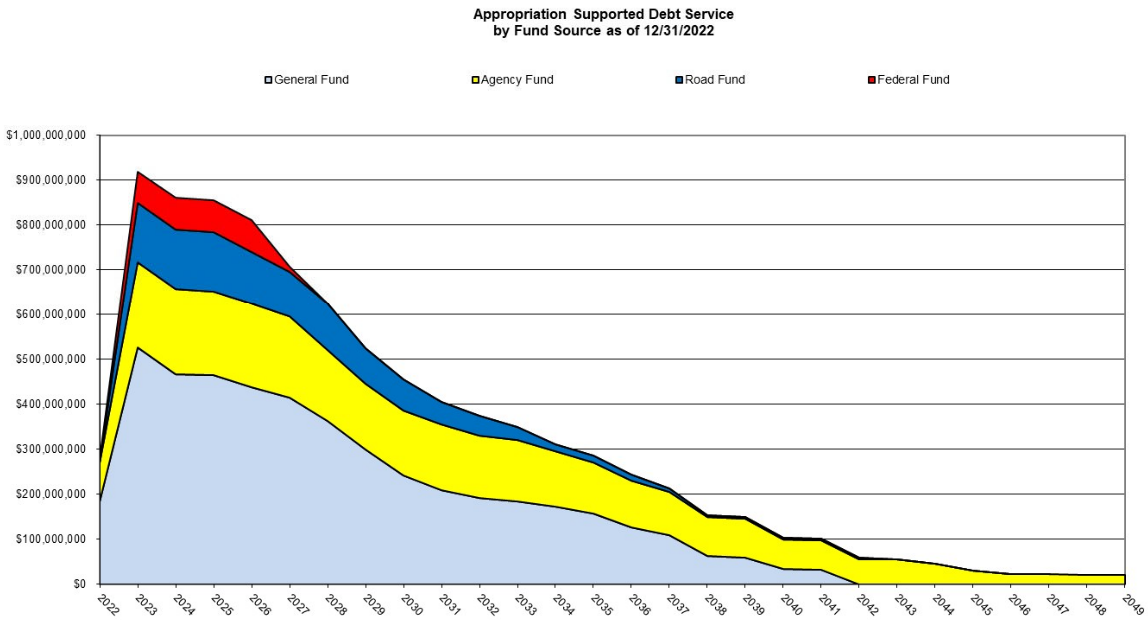
APPENDIX

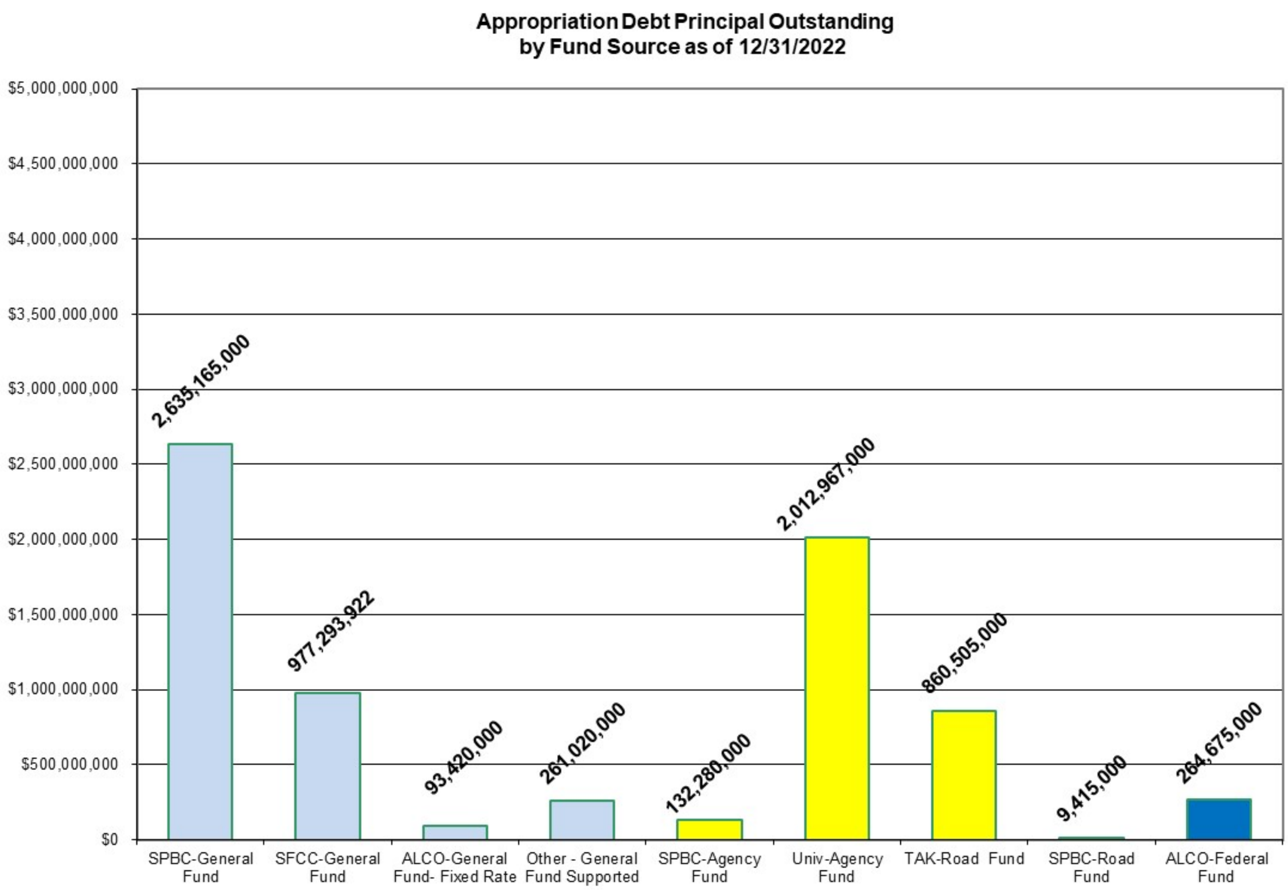
APPENDIX A

Corporate Credits Approved For Purchase

Company Name	Repurchase Agreements	Commercial Paper	Bonds
Apple Inc		Yes	Yes
Bank of Montreal	Yes	Yes	Yes
Bank of Nova Scotia	Yes	Yes	Yes
Bank of Tokyo-Mitsubishi UFJ		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
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
Guggenheim Securities, LLC	Yes	No	No
Home Depot Inc		Yes	Yes
IBRD - World Bank		Yes	Yes
Johnson & Johnson		Yes	Yes
Linde PLC		Yes	Yes
Merck and Co Inc		Yes	Yes
Microsoft Corp		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
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 Energies		Yes	Yes
Toyota Motor Corp		Yes	Yes
US Bank NA		Yes	Yes
Wal-Mart Stores Inc		Yes	Yes

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 12/31/2022

FUND TYPE SERIES TITLE		AMOUNT ISSUED	DATE OF ISSUE	MATURITY DATE	PRINCIPAL OUTSTANDING
General Fund Project & Funding Notes					
2013 1st Series-KTRS Funding Notes		$153,290,000	2/2013	4/2023	$16,860,000
2021 General Fund Refunding Project Notes		$113,940,000	5/2021	11/2027	$76,560,000
	FUND TOTAL	**$267,230,000**			**$93,420,000**
Federal Hwy Trust Fund Project Notes					
2013 1st Series		$212,545,000	8/2013	9/2025	$81,100,000
2014 1st Series		$171,940,000	3/2014	9/2026	$132,175,000
2015 1st Series		$106,850,000	10/2015	9/2027	$51,400,000
	FUND TOTAL	**$491,335,000**			**$264,675,000**
ALCo NOTES TOTAL		**$758,565,000**			**$358,095,000**

REPORT PREPARED BY:

Office of Financial
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Creating Financial Value for the Commonwealth