



Revenue Forecast

JCA Presentation
February 13, 2024

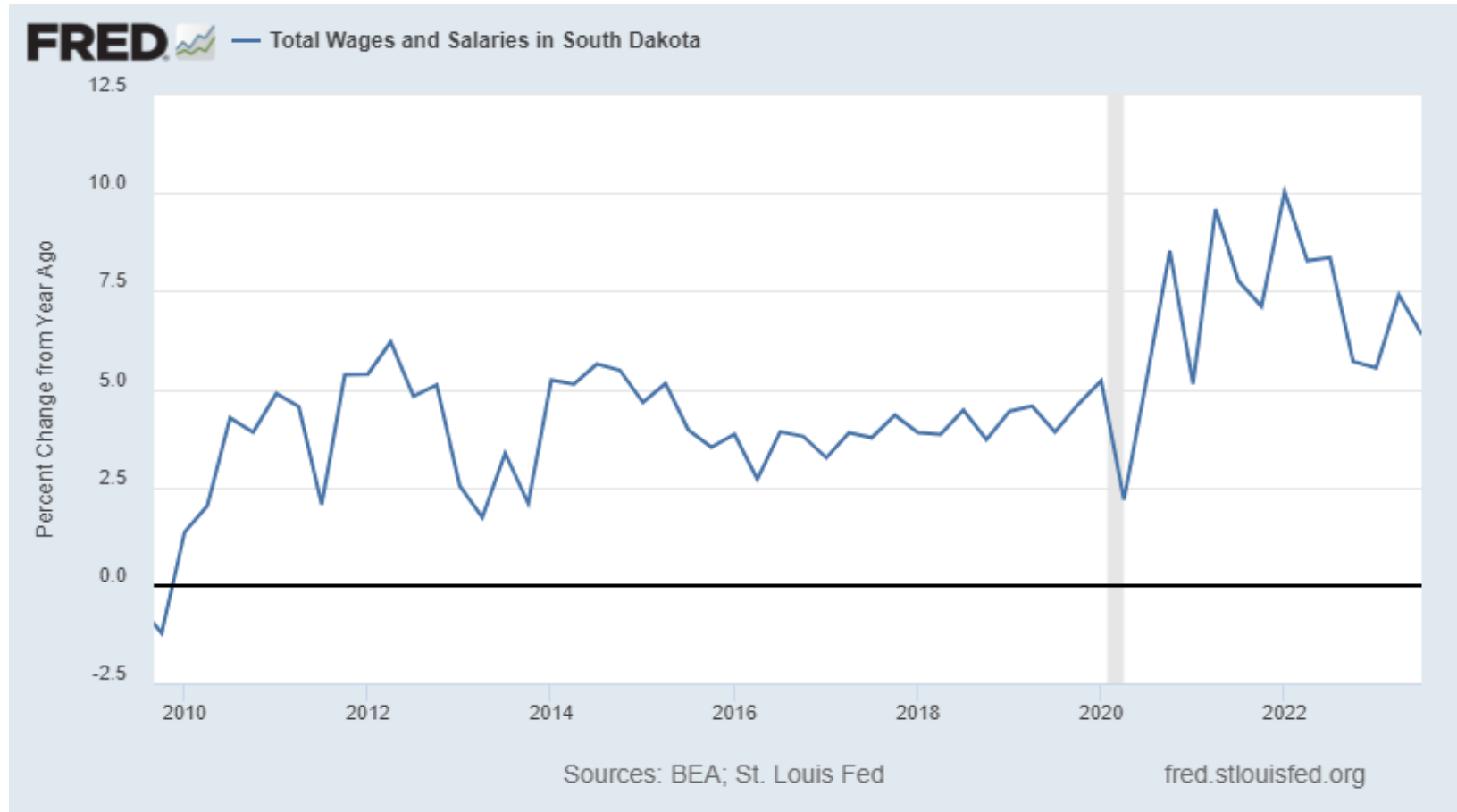


Economic Conditions

INCOME AND WAGES



- The growth in wages and salaries in South Dakota is above the long-term trend.
- The recent growth in wages and salaries is a result of inflation, population, and economic growth.
- Higher wages and higher inflation, results in more sales tax revenue collected by the State.
- 2010-2015: peaks of 5% and troughs of 2.5%
- Pre-COVID: 2016-2020: peaks of 3-4% and troughs of 3%
- Post-COVID: 2020-current: peaks of 8-10% and troughs of 5%.

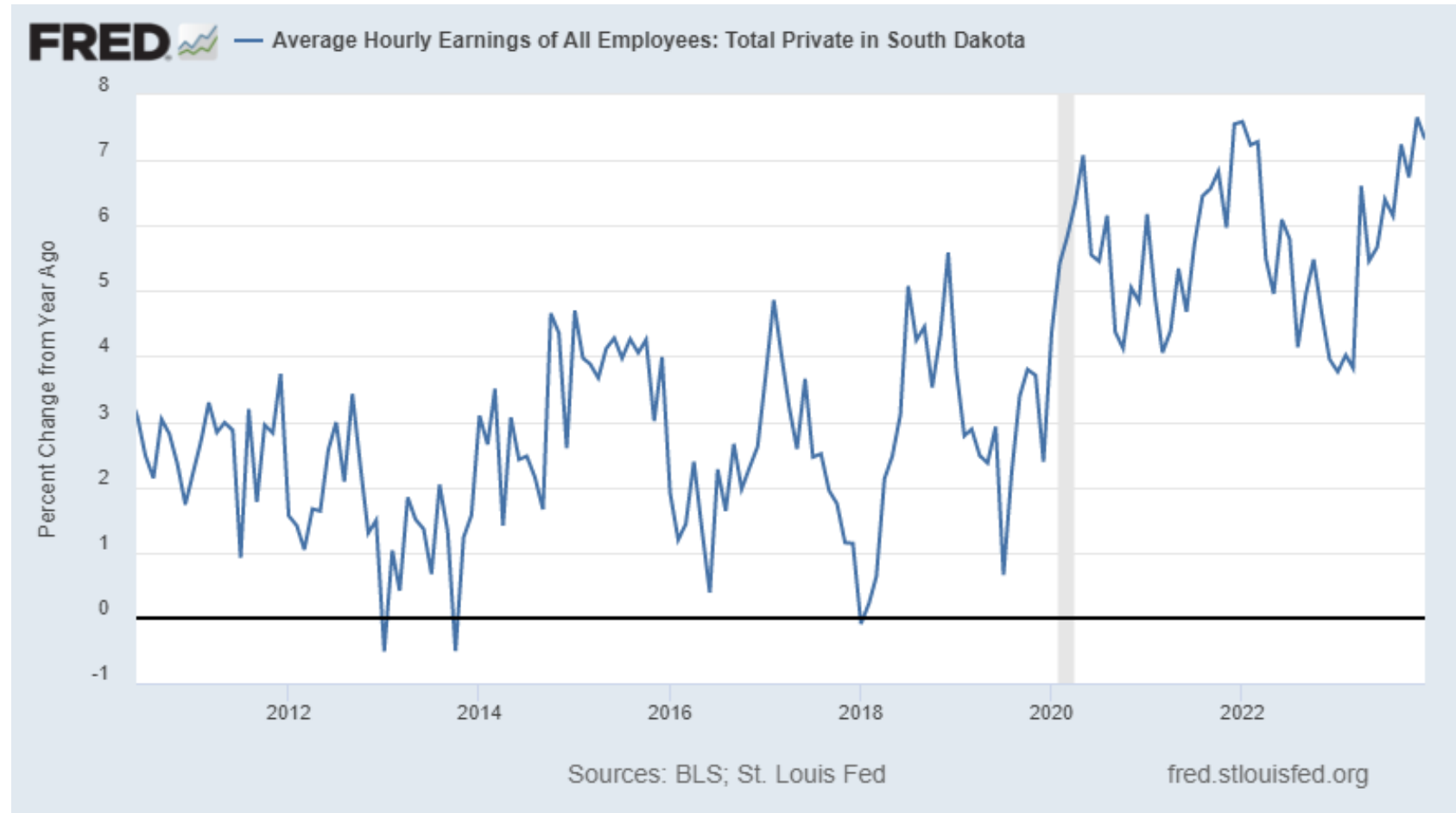


Economic Conditions

INCOME AND WAGES



- National survey data suggests employers will provide 3.5% to 4% increases in wages in 2024.
- Average hourly earnings in South Dakota are above long-term averages.
 - Partially related to inflation
 - Partially related to openings
- Higher average hourly earnings will lead to more sales tax revenue generated.

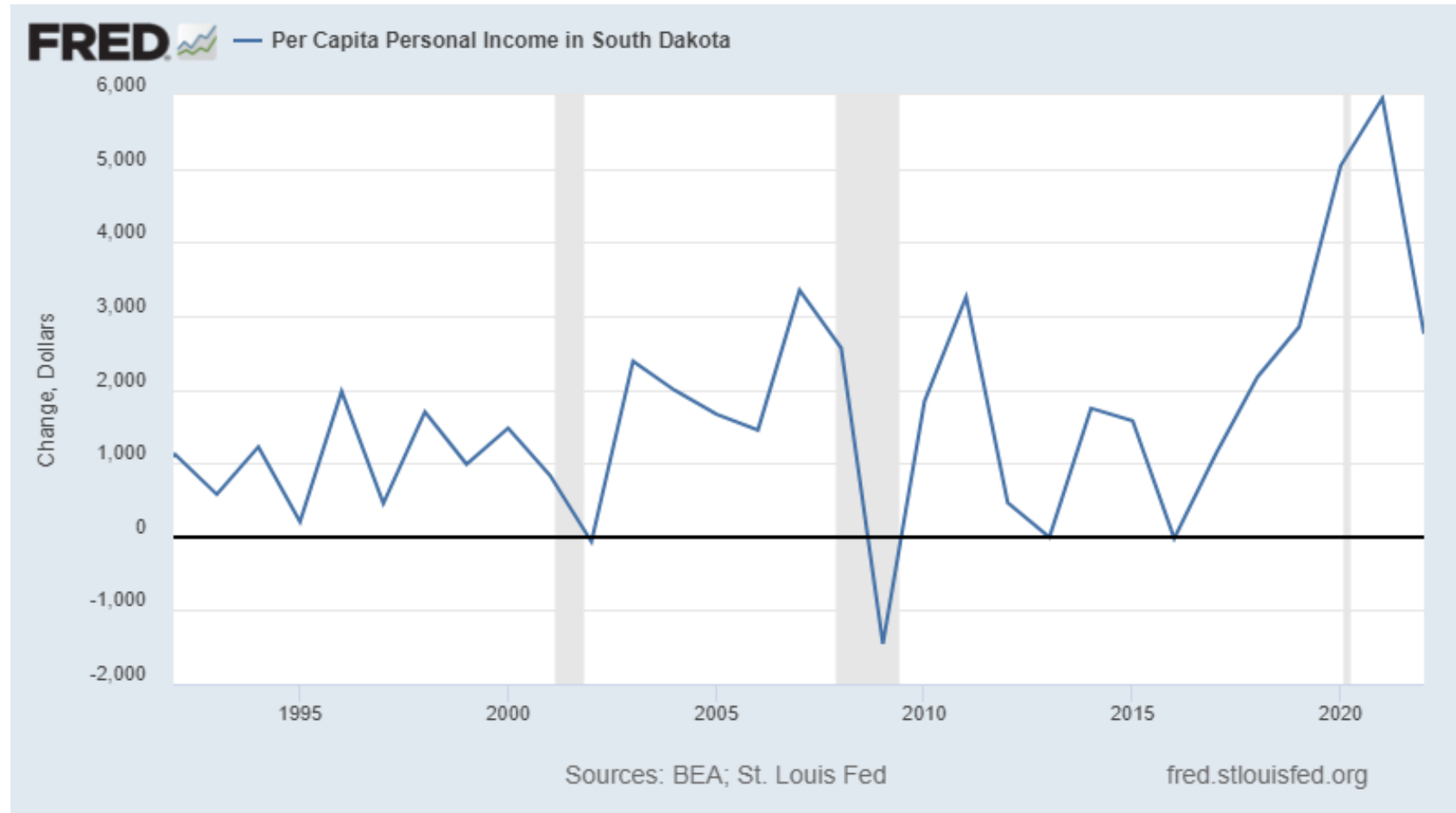


Economic Conditions

INCOME AND WAGES



- Looking at growth in wages and income differently, the per capita growth takes population growth out of the equation.
- With wage growth likely to outpace inflation in 2024, households are likely to see increased disposable income.
- Higher than normal growth in per capital personal income leads to more sales tax revenue collected than normal.

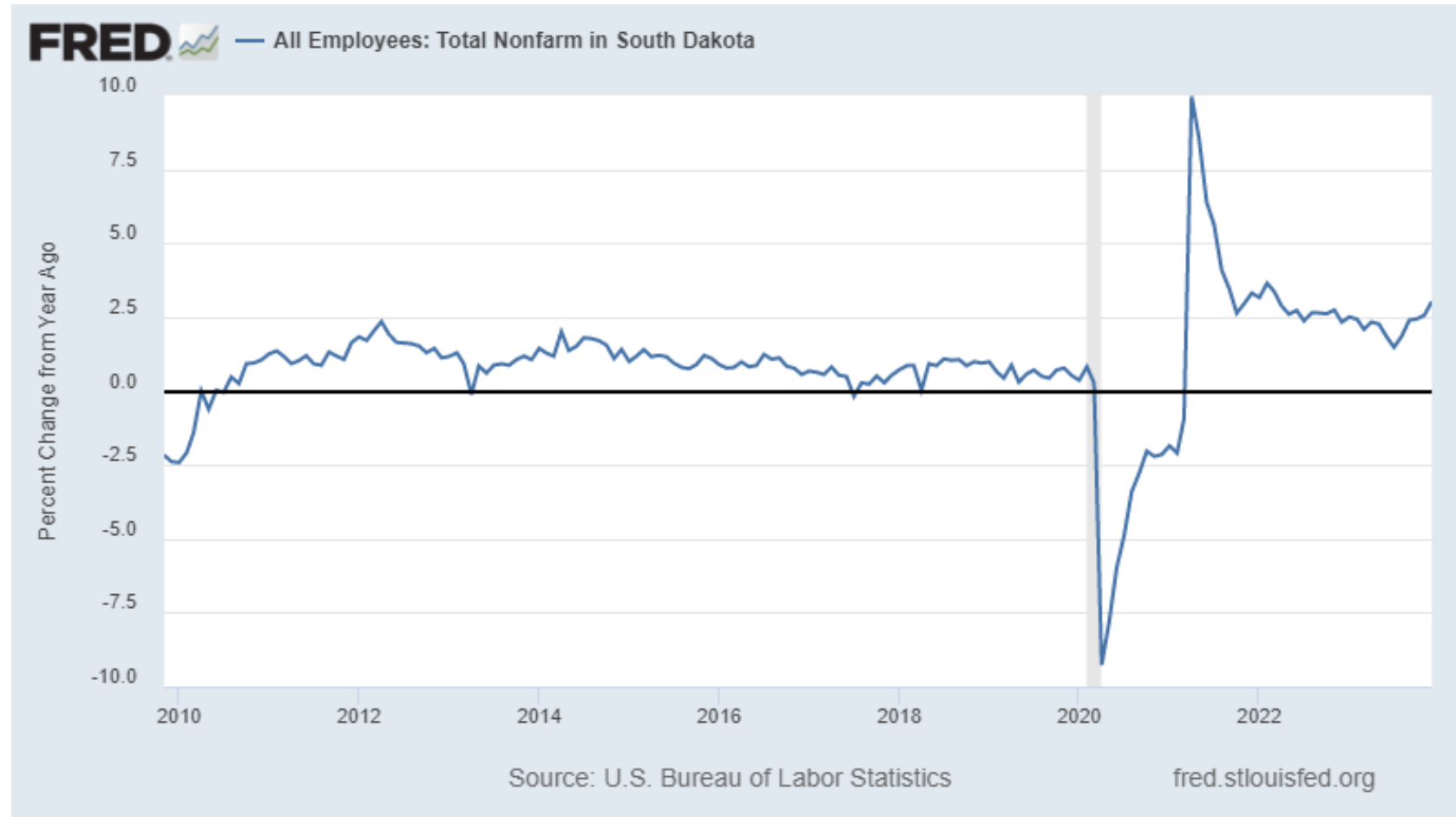


Economic Conditions

LABOR



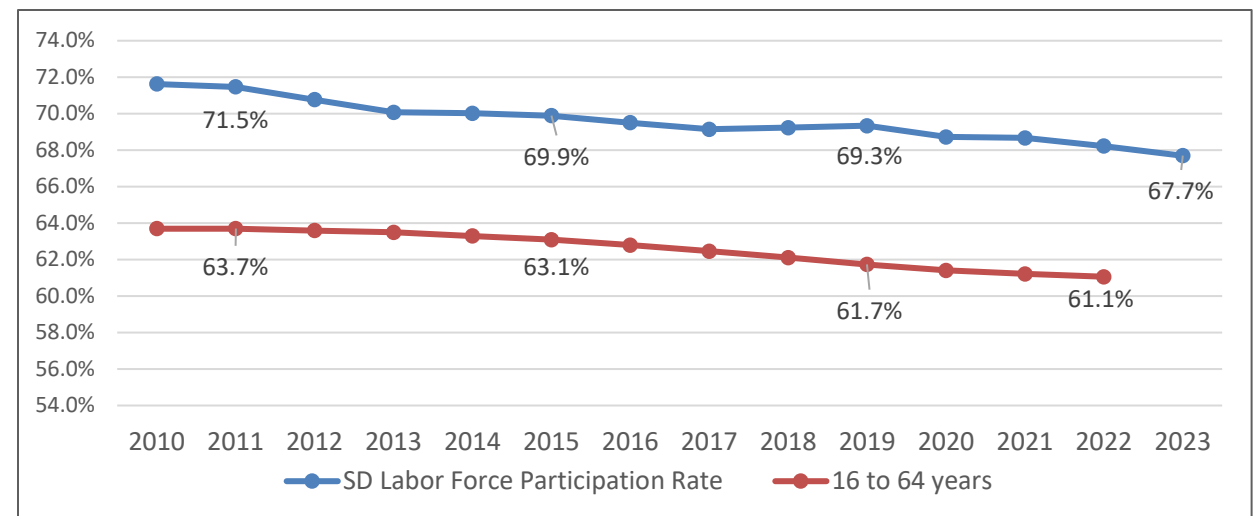
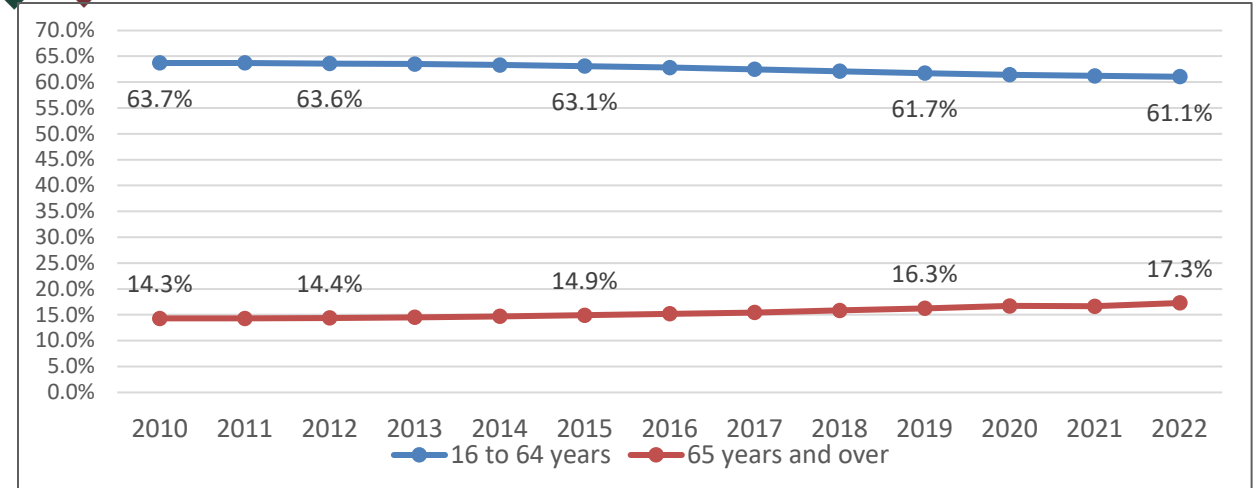
- Growth in nonfarm employment continues to grow about the long-term trend.
- Growth in nonfarm employment has been strong Post-COVID.
- Population growth and job openings is likely the reason for above average growth in nonfarm employees in South Dakota.



Economic Conditions

LABOR

- **Labor Force Participation Rate** = (Labor Force/Civilian Noninstitutional Population) x 100
- **Labor Force** includes all people aged 16 and older who are classified as either employed and unemployed. The labor force level is the number of people who are either working or actively looking for work.
- **Civilian Noninstitutional Population:** All people who are ages 16 and older who are not active-duty members of the U.S. Armed Force, confined to, or living in, institutions or facilities such as prisons, jails, nursing homes or residential care facilities.
- A declining labor force participation rate is primarily due to an aging population and other structural factors.
- Source: Census and BLS data and definitions.



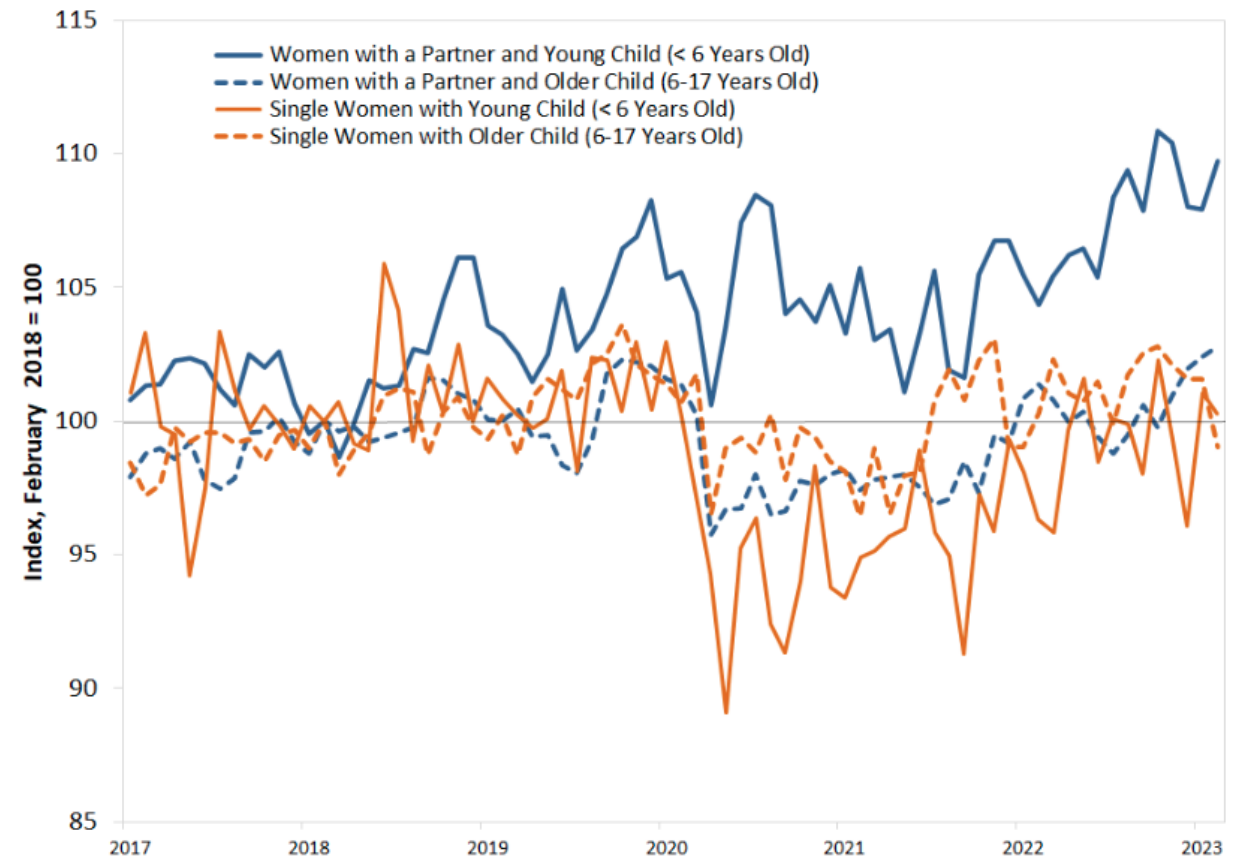
Economic Conditions

LABOR



- The St. Louis Fed concludes the shortage of childcare workers and rising childcare prices have been deemed partly responsible for the lackluster rebound of labor force participation (LFP) rates, but there is not clear evidence childcare is the sole factor.
- The graph uses February 2018 as the baseline.
- Rising childcare wages appears to have affected the recovery in partnered women's LFP.
- Childcare costs do not explain the LFP sluggishness seen among the other demographic groups.
- Source: St. Louis Fed: [https://www.stlouisfed.org/on-the-economy/2023/jul/how-child-care-impacts-parents-labor-force-participation#:~:text=The%20shortage%20of%20child%20care,force%20participation%20\(LFP\)%20rates](https://www.stlouisfed.org/on-the-economy/2023/jul/how-child-care-impacts-parents-labor-force-participation#:~:text=The%20shortage%20of%20child%20care,force%20participation%20(LFP)%20rates).
- Source: St. Louis Fed: <https://www.stlouisfed.org/on-the-economy/2023/jul/are-higher-child-care-wages-affecting-labor-supply>

Labor Force Participation Index for Women with Children



■ FEDERAL RESERVE BANK OF ST. LOUIS

SOURCES: Current Population Survey and authors' calculation.

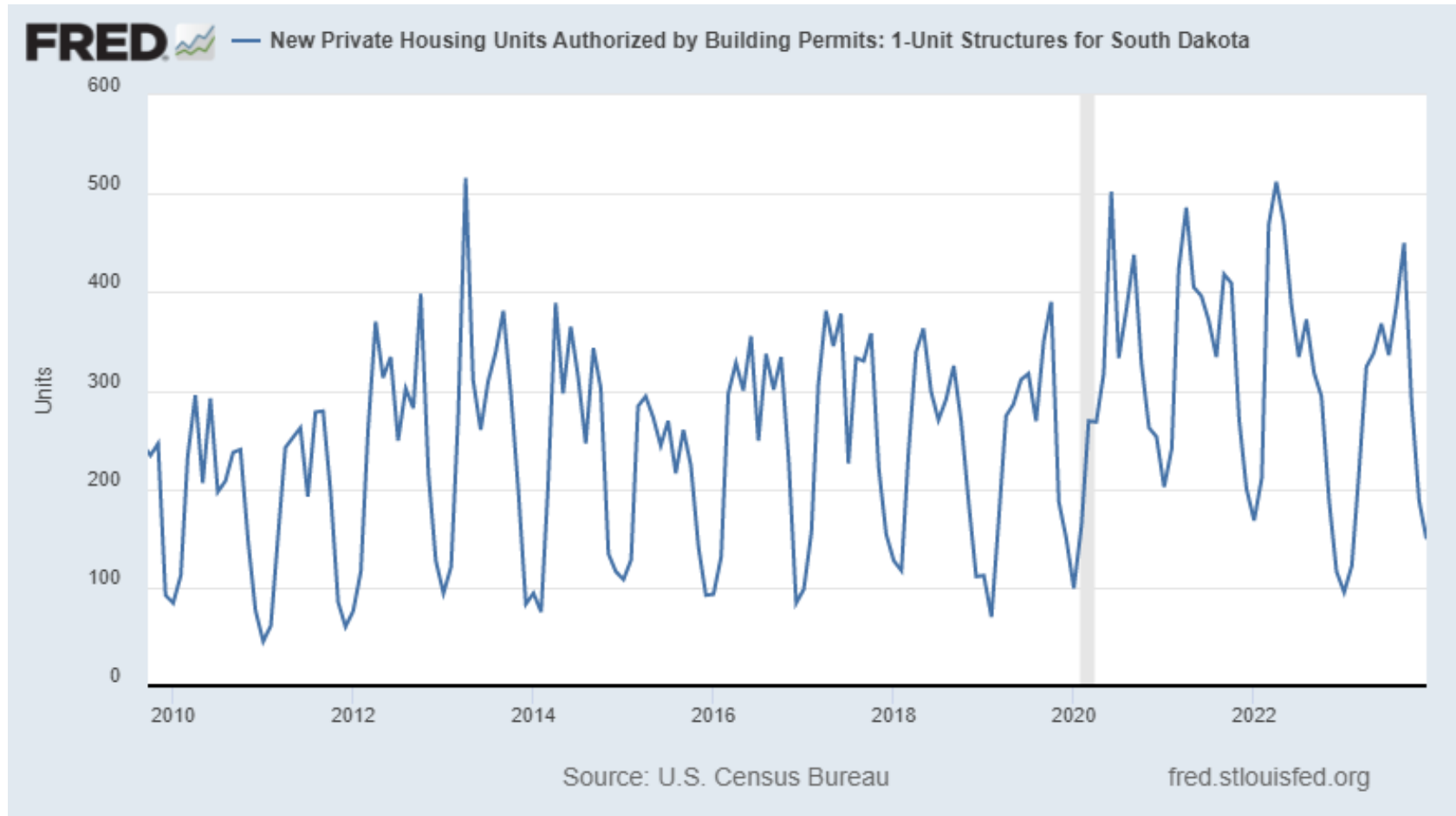
NOTE: Groups are defined by the presence of a partner and age of the youngest child in the household.

Economic Conditions

HOUSING



- New private housing units, 1-unit structure type is a single-family home or house.
- Post-COVID growth in new private housing units above decade trend and near the peak seen from 2004-2006.
- Higher interest rates for longer could reduce the growth to the average seen pre-COVID.
- Recent population growth likely a contributing factor to the growth in new housing.



Economic Conditions

HOUSING



- The rental vacancy rate is the proportion of the rental inventory that is available for rent.
- Vacancy rate at long-term low meaning the supply of rental units is low.
- Population growth and a focus on single-family construction could explain the low supply of rental units available.

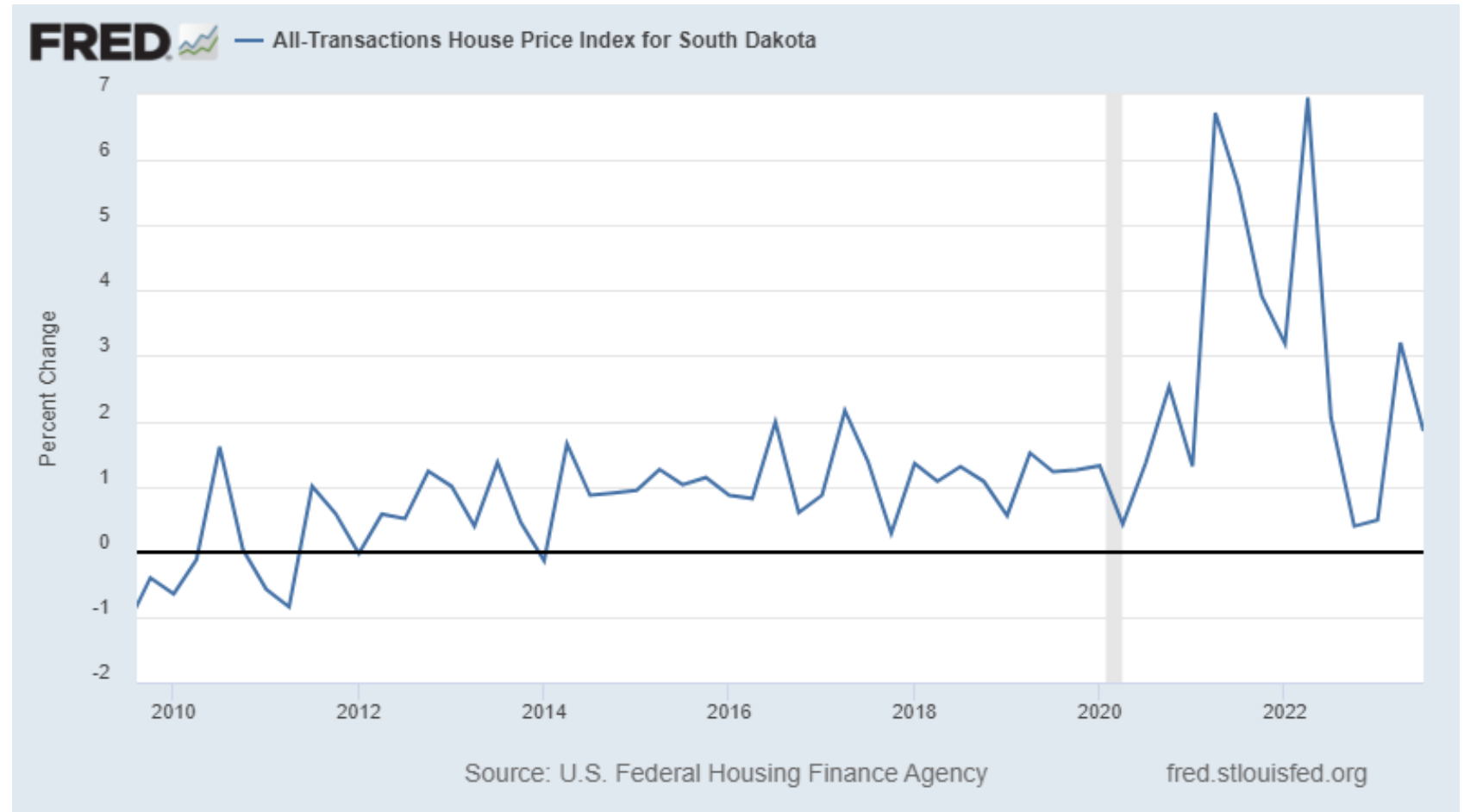


Economic Conditions

HOUSING



- The house price index measures the movement of single-family house prices.
- Pre-COVID prices fluctuate between 1 to 2% growth.
- Post-COVID growth in prices is significantly higher.
- Post-COVID population growth and the influx of out of state people buying up properties in the state likely explains the growth seen in recent years.



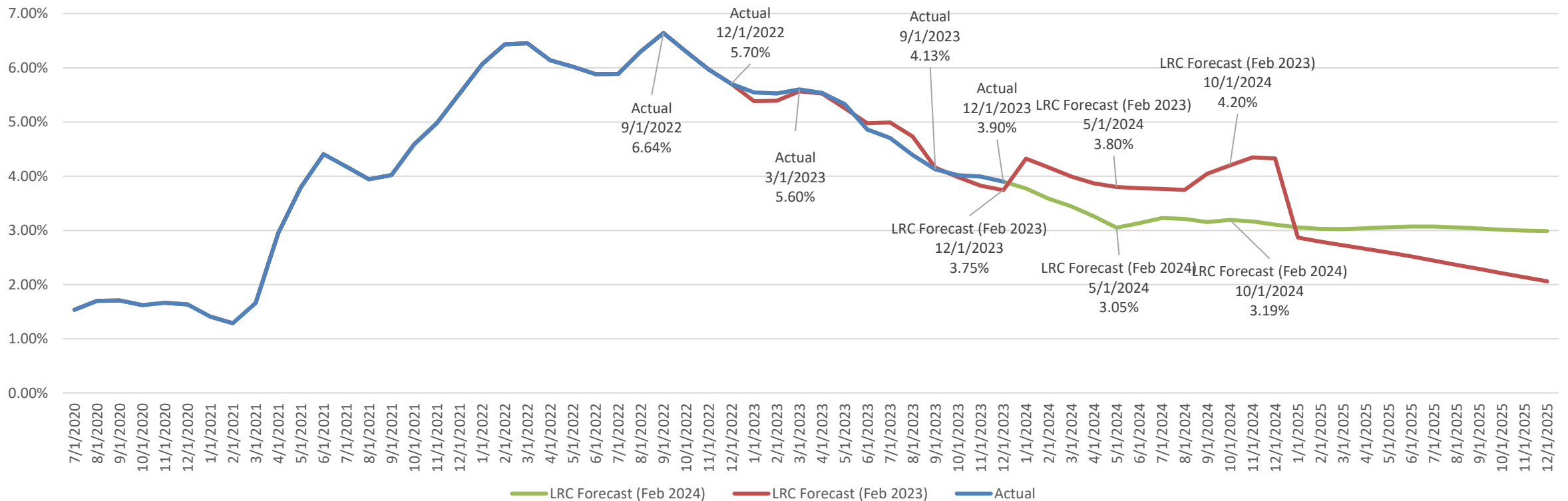
Economic Conditions

INFLATION



- Core inflation is the rise in all goods, excluding food and energy goods.
- Core inflation remaining elevated (4%+) or a rising inflation environment could give rise to stagflation.
- Expect inflation to be higher for longer compared to the Fed's 2% target.

Core Inflation (Inflation Less Food and Energy)

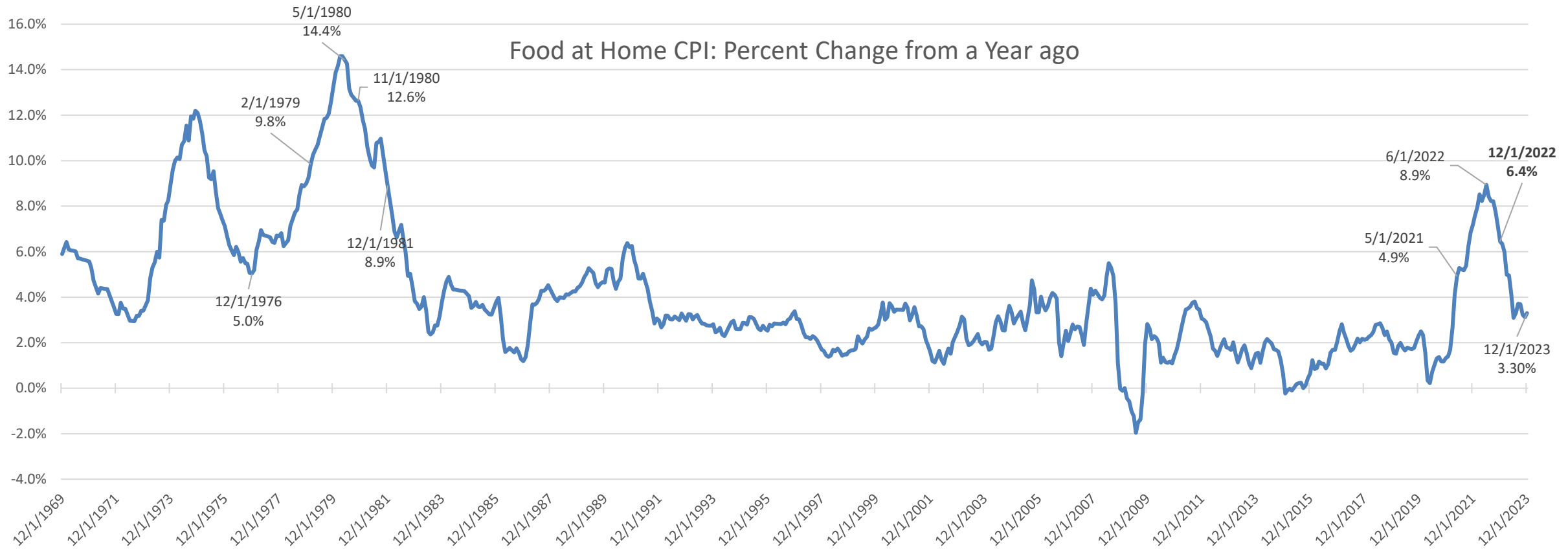


Economic Conditions

INFLATION



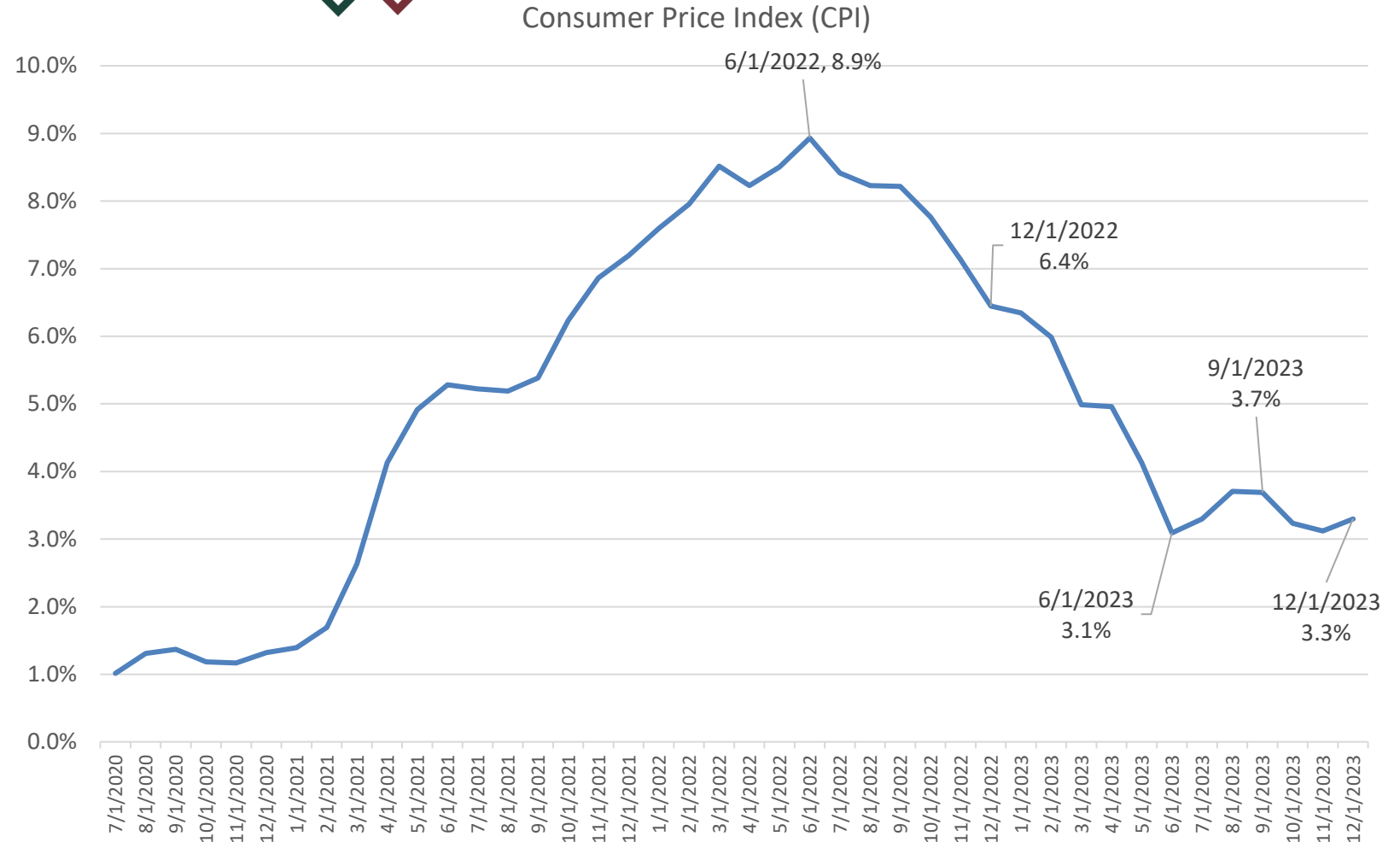
- While the increases in food at home have eased, the amount of inflation moving forward in the short-term (12 months) could be a floor of around 3%.



Economic Conditions

INFLATION

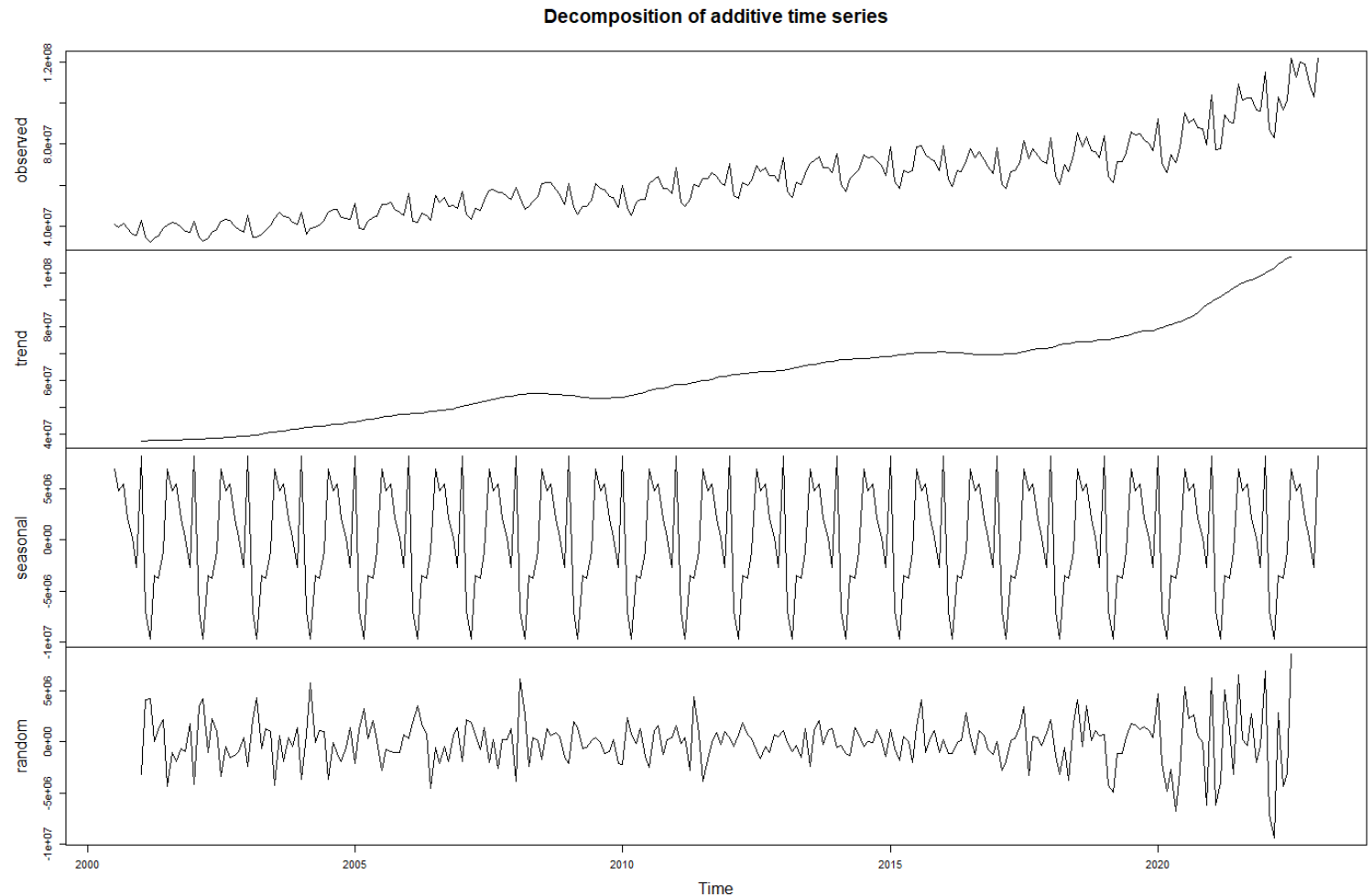
- Some inflation is good for sales tax revenues, however, too high of inflation will reduce or produce meager growth in sales tax revenues.
- Headline inflation (CPI) remains around 3%, about the same as 6 months ago.
- A higher inflation amount of 3% compared to 2% will likely produce more sales tax revenue for the state than the long-term average.
- Core inflation will likely cause 3% CPI to be the floor with a good probability to increase.



Methodology: Holt-Winters



A triple exponential smoothing model, known as the Holt-Winters model, is a statistical forecasting model the Legislative Research Council (LRC) utilizes for estimating revenues. The model utilizes historical revenue data and smooths the data with three parameters - value, trend, and seasonality and creates a model fitted to actuals based on historical data. The fitted model is then used to forecast future revenues. More recent values contribute to the forecast more than earlier values, meaning revenues in 2022 will be weighted more than revenues in 1999.



Methodology: ARIMA



Auto-Regressive Integrated Moving Average (ARIMA) Model

- The statistical forecasting model of ARIMA is one of the most used approaches to analyzing time series data. The LRC also utilizes this model to estimate revenues. ARIMA uses historical data to create a fitted model by adjusting the correlation, differential, and moving average components within the data. The fitted model is then used to forecast future revenues.

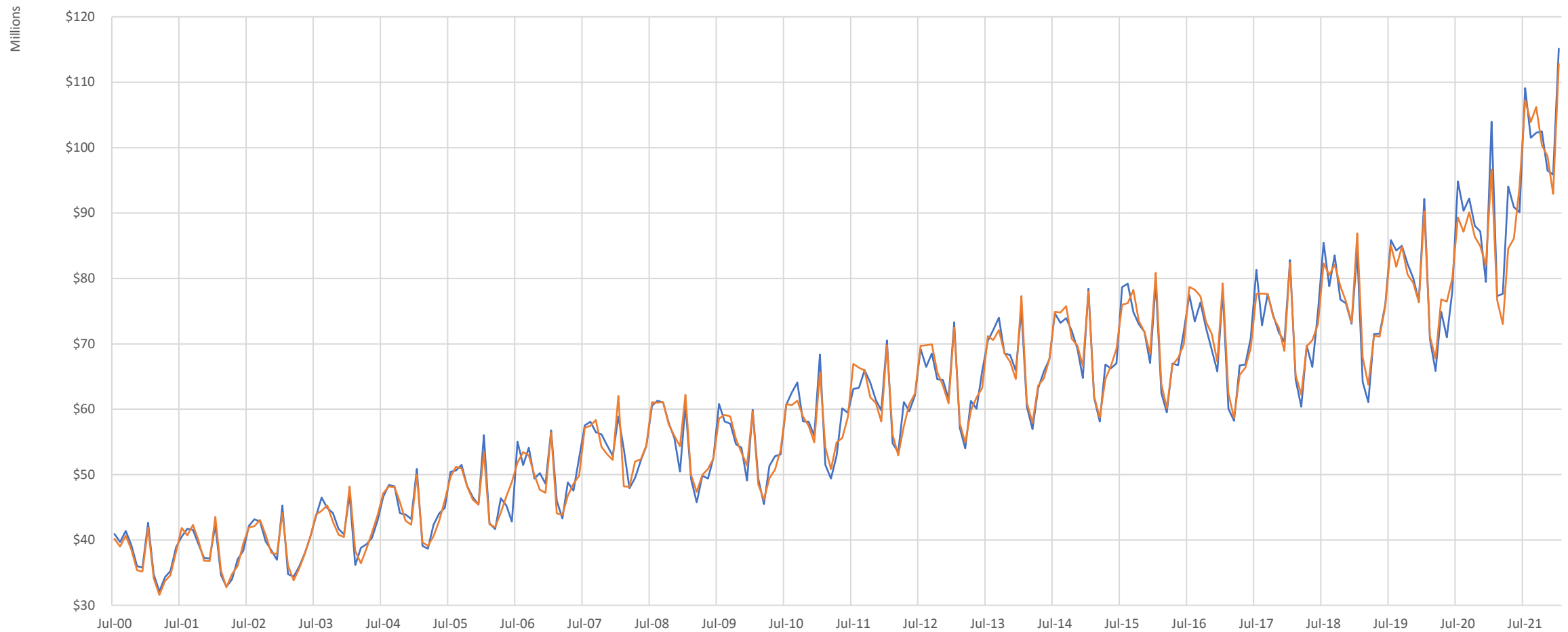
```
ARIMA(2,0,3)(0,1,0)[12] with drift : -854.9843
ARIMA(3,0,0)(0,1,0)[12] : -827.8151
ARIMA(3,0,0)(0,1,0)[12] with drift : -836.7859
ARIMA(3,0,0)(0,1,1)[12] : Inf
ARIMA(3,0,0)(0,1,1)[12] with drift : -907.5532
ARIMA(3,0,0)(0,1,2)[12] : Inf
ARIMA(3,0,0)(0,1,2)[12] with drift : -907.9285
ARIMA(3,0,0)(1,1,0)[12] : -866.9335
ARIMA(3,0,0)(1,1,0)[12] with drift : -874.0039
ARIMA(3,0,0)(1,1,1)[12] : Inf
ARIMA(3,0,0)(1,1,1)[12] with drift : -908.2121
ARIMA(3,0,0)(2,1,0)[12] : -875.8735
ARIMA(3,0,0)(2,1,0)[12] with drift : -883.3629
ARIMA(3,0,1)(0,1,0)[12] : -838.7751
ARIMA(3,0,1)(0,1,0)[12] with drift : -843.0533
ARIMA(3,0,1)(0,1,1)[12] : Inf
ARIMA(3,0,1)(0,1,1)[12] with drift : -917.9009
ARIMA(3,0,1)(1,1,0)[12] : -877.8036
ARIMA(3,0,1)(1,1,0)[12] with drift : -881.2287
ARIMA(3,0,2)(0,1,0)[12] : -845.4328
ARIMA(3,0,2)(0,1,0)[12] with drift : -854.9843
ARIMA(4,0,0)(0,1,0)[12] : -840.9134
ARIMA(4,0,0)(0,1,0)[12] with drift : -845.9829
ARIMA(4,0,0)(0,1,1)[12] : Inf
ARIMA(4,0,0)(0,1,1)[12] with drift : -918.4785
ARIMA(4,0,0)(1,1,0)[12] : -879.6952
ARIMA(4,0,0)(1,1,0)[12] with drift : -883.6873
ARIMA(4,0,1)(0,1,0)[12] : -839.7665
ARIMA(4,0,1)(0,1,0)[12] with drift : -844.1512
ARIMA(5,0,0)(0,1,0)[12] : -839.6912
ARIMA(5,0,0)(0,1,0)[12] with drift : -844.1628
```

Best model: ARIMA(1,0,3)(0,1,1)[12] with drift

Methodology: GOAL



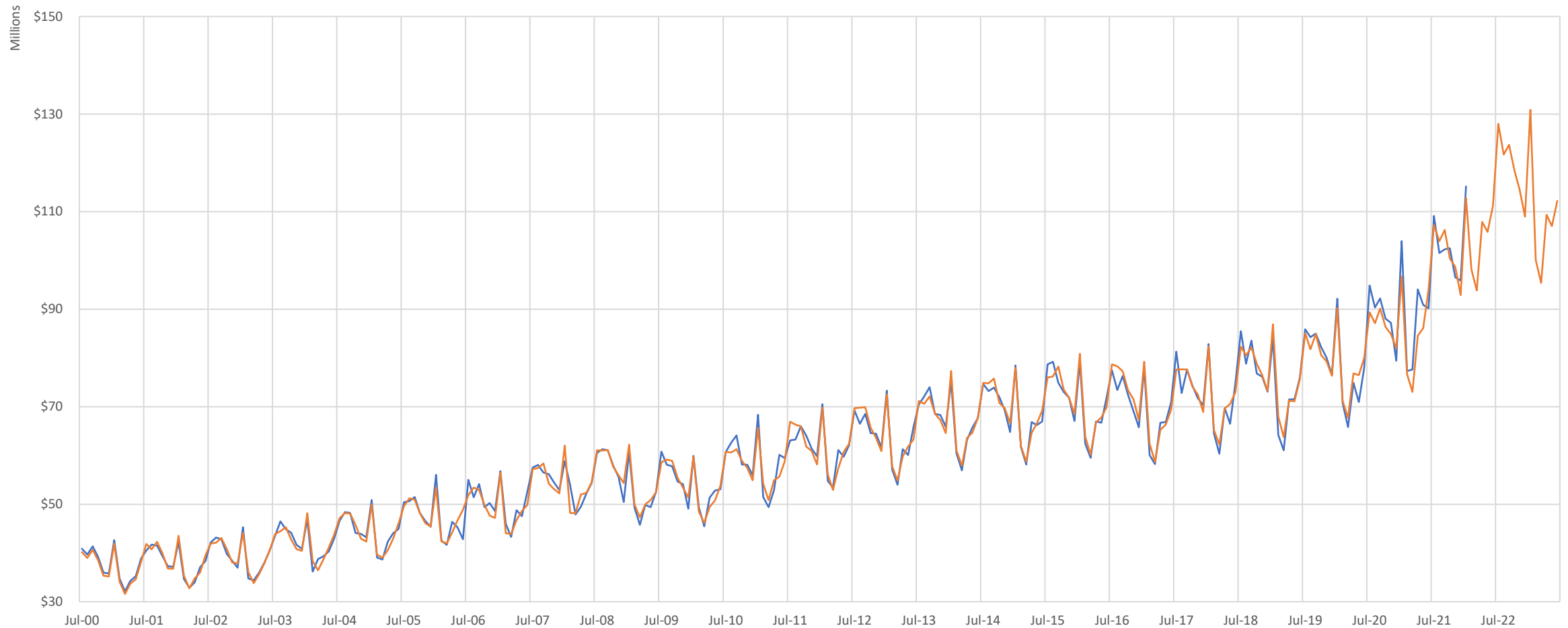
ARIMA Model Fitted to Base Sales & Use Tax



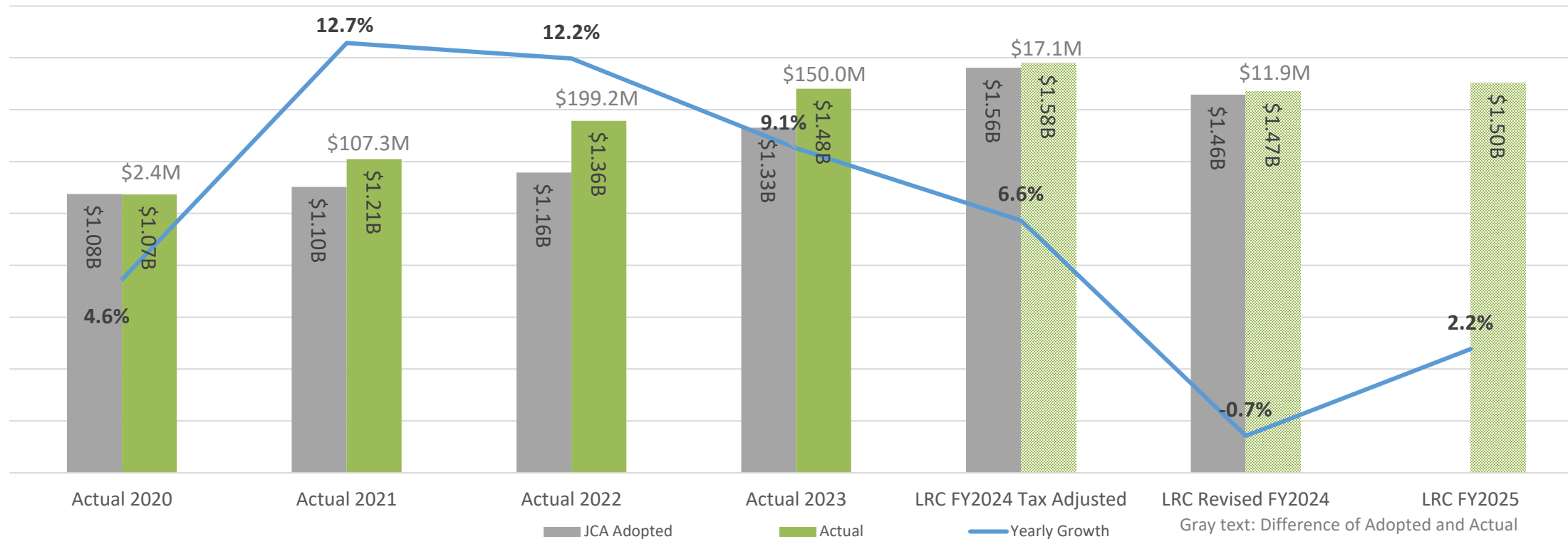
Methodology: OUTCOME



ARIMA Model Fitted to Base Sales & Use Tax with forecast



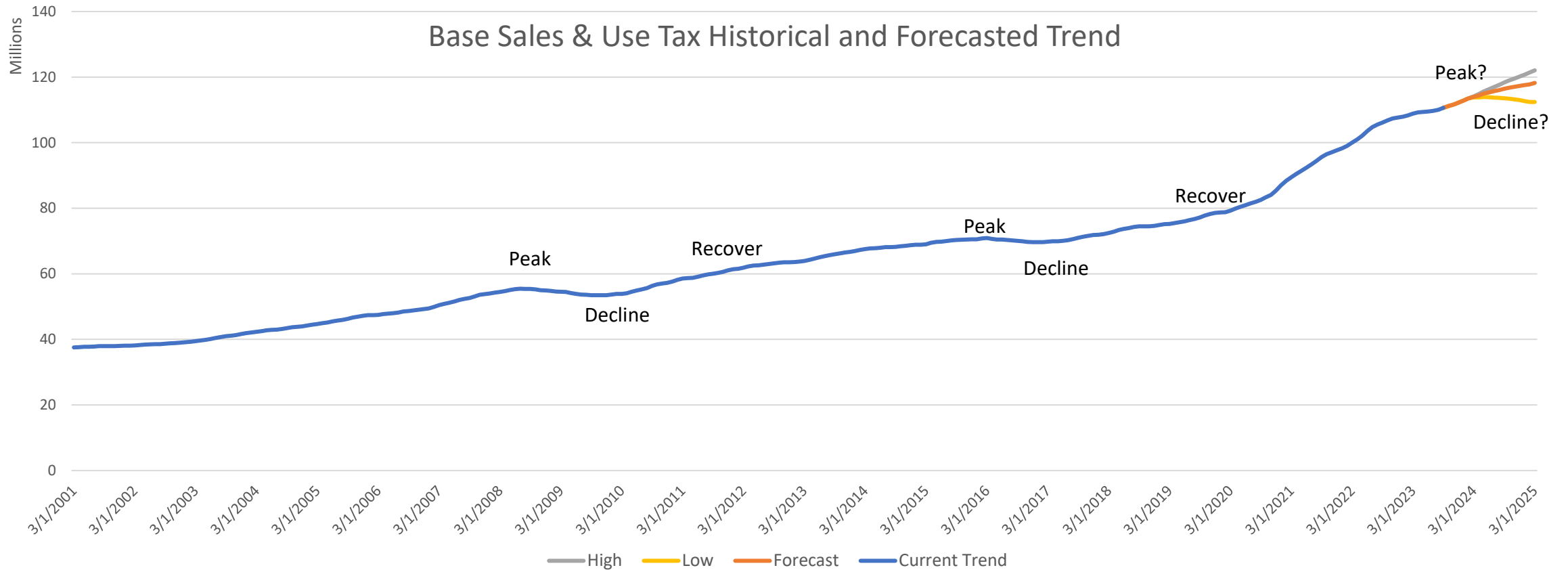
Sales and Use Tax



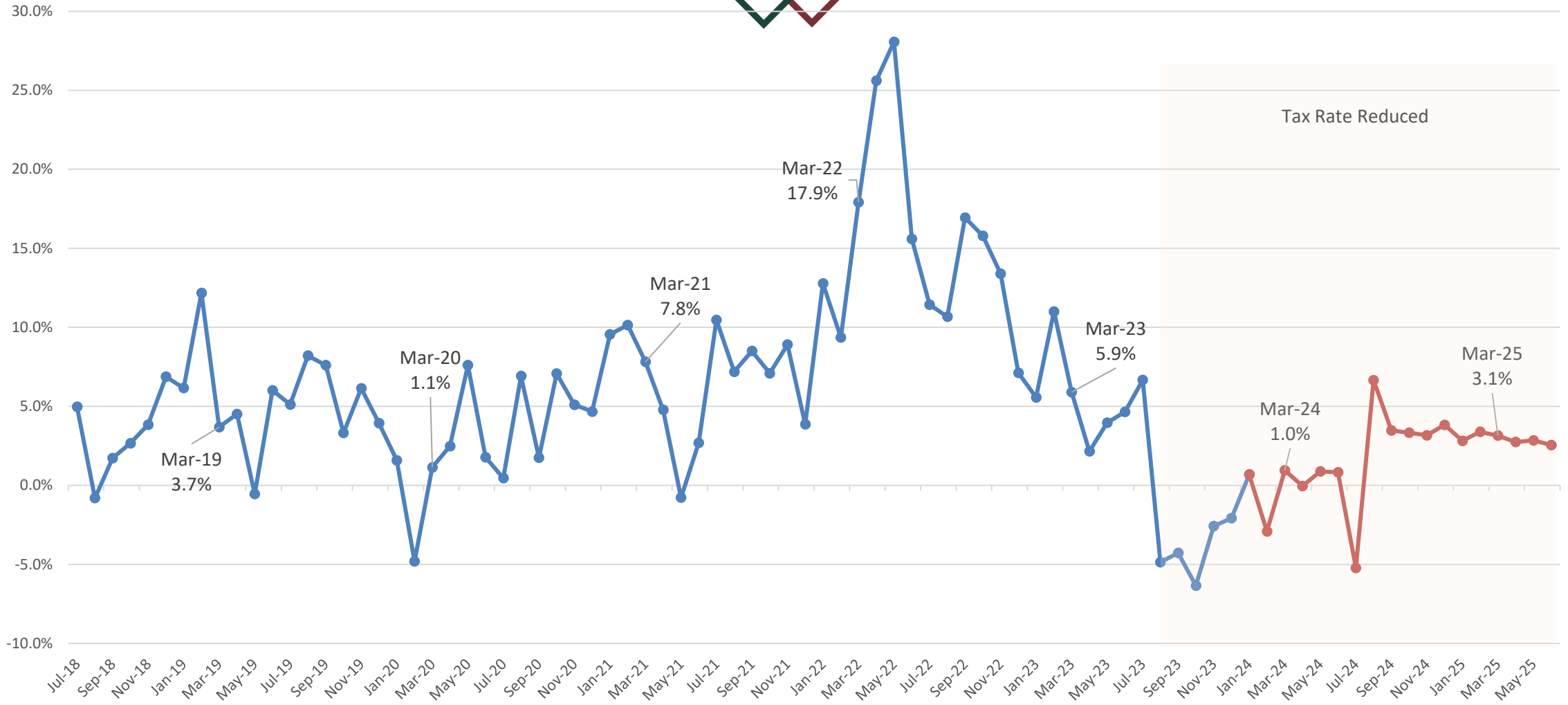
	Actual FY2020	Actual FY2021	Actual FY2022	Actual FY2023	JCA Adopted FY2024	LRC Revised FY2024	LRC FY2025
Sales Tax							
Total Revenues	1,072,830,649	1,209,342,342	1,356,844,793	1,480,572,850	1,457,750,000	1,469,664,809	1,502,578,812
Dollar Change	47,429,440	136,511,693	147,502,451	123,728,057	(22,822,850)	(10,908,041)	32,914,002
Percent Change	4.6%	12.7%	12.2%	9.1%	-1.5%	-0.7%	2.2%

Sales and Use Tax

- Low Trend: FY25 sales tax revenue of \$1.414 billion, a (2.4%) decrease in revenue from FY24 revised.
- **Forecast: FY25 sales tax revenue of \$1.485 billion, a 2.7% increase from FY24 revised.**
- High Trend: FY25 sales tax revenue of \$1.533 billion, a 5.9% increase from FY24 revised.
- The low trend is (\$71.5) million less than forecast and the high trend is \$47.6 million more than forecast.

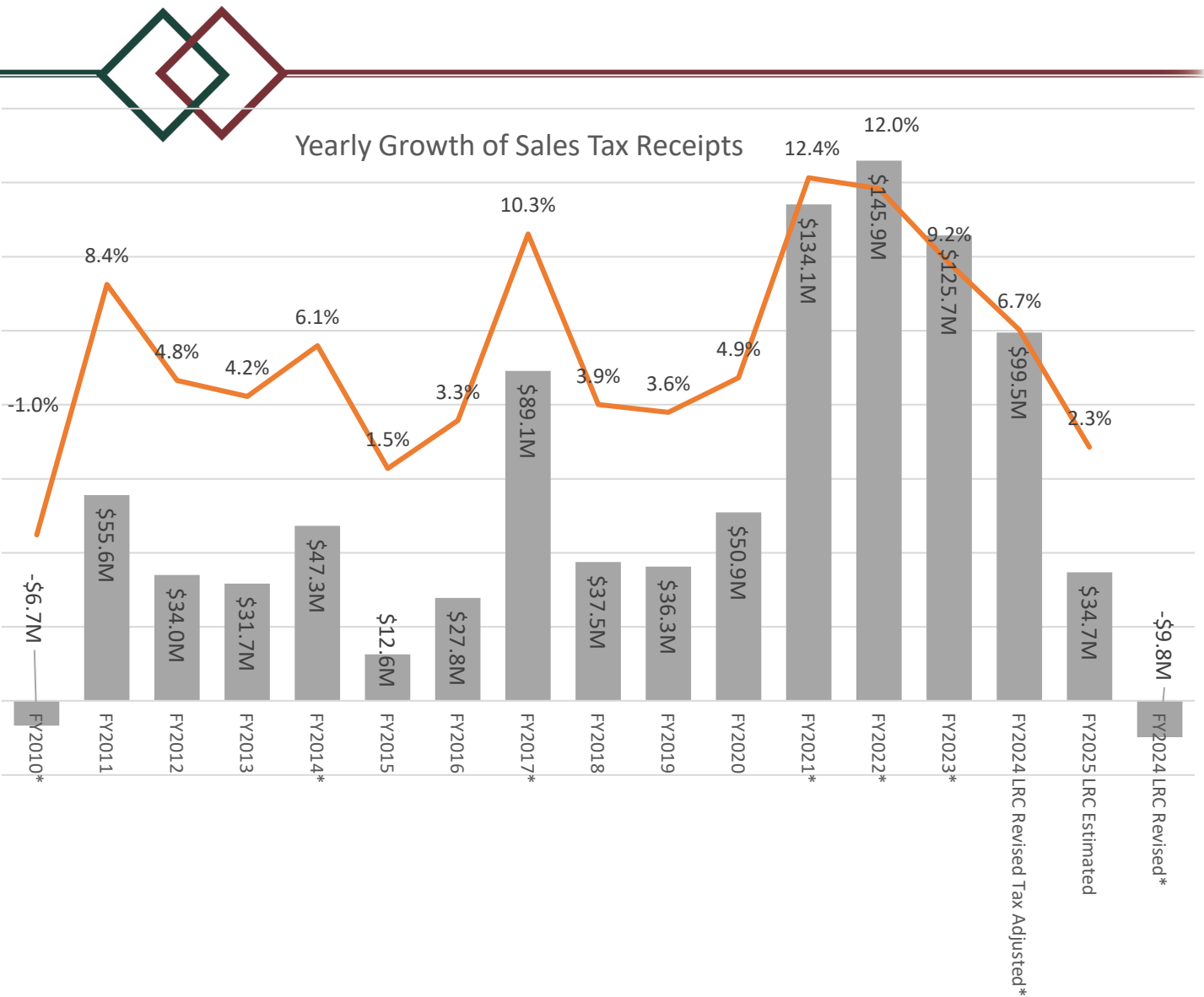


Base Sales Tax Growth Year-over-Year



Total Sales Tax Revenue

History of Actual Sales Tax Receipts by Fiscal Year	\$ Y/Y Growth	% Y/Y Growth
FY2010*	(6.7)	-1.0%
FY2011	55.6	8.4%
FY2012	34.0	4.8%
FY2013	31.7	4.2%
FY2014*	47.3	6.1%
FY2015	12.6	1.5%
FY2016	27.8	3.3%
FY2017*	89.1	10.3%
FY2018	37.5	3.9%
FY2019	36.3	3.6%
FY2020	50.9	4.9%
FY2021*	134.1	12.4%
FY2022*	145.9	12.0%
FY2023*	125.7	9.2%
10-year avg.	70.7	6.7%
Average w/o Outliers	35.8	4.3%
FY2024 LRC Revised*	(9.8)	-0.7%
FY2024 LRC Revised Tax Adjusted*	99.5	6.7%
FY2025 LRC Estimated	34.7	2.3%



*Outlier year
 Amounts not adjusted for inflation
 Does not include cost of administration

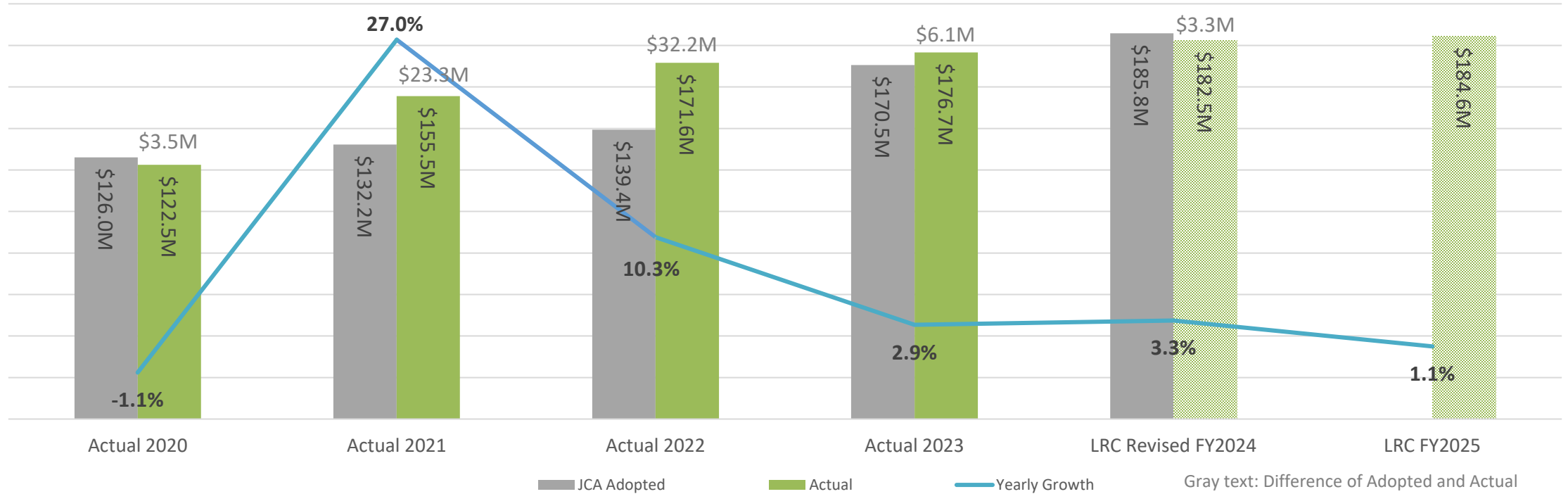
Sales Tax Forecasts



LRC History of Sales Tax Forecasts

Fiscal Year	Actual	Original	Revised	Original % Diff	Revised % Diff	Original Over/Under	Revised Over/Under
2017	951,223,081	N/A	951,000,000		0.02%		Under
2018	988,823,603	989,040,000	991,587,967	-0.02%	-0.28%	Over	Over
2019	1,025,401,209	1,027,794,058	1,037,885,891	-0.2%	-1.2%	Over	Over
2020	1,072,830,649	1,085,218,900	1,087,729,168	-1.1%	-1.4%	Over	Over
2021	1,209,342,342	1,112,541,909	1,169,599,762	8.7%	3.4%	Under	Under
2022	1,356,844,793	1,195,848,512	1,342,307,262	13.5%	1.1%	Under	Under
2023	1,480,572,850	1,381,932,829	1,495,308,460	7.1%	-1.0%	Under	Over
2024		1,494,282,725	1,469,664,809			Over	
			Average	4.7%	0.10%		

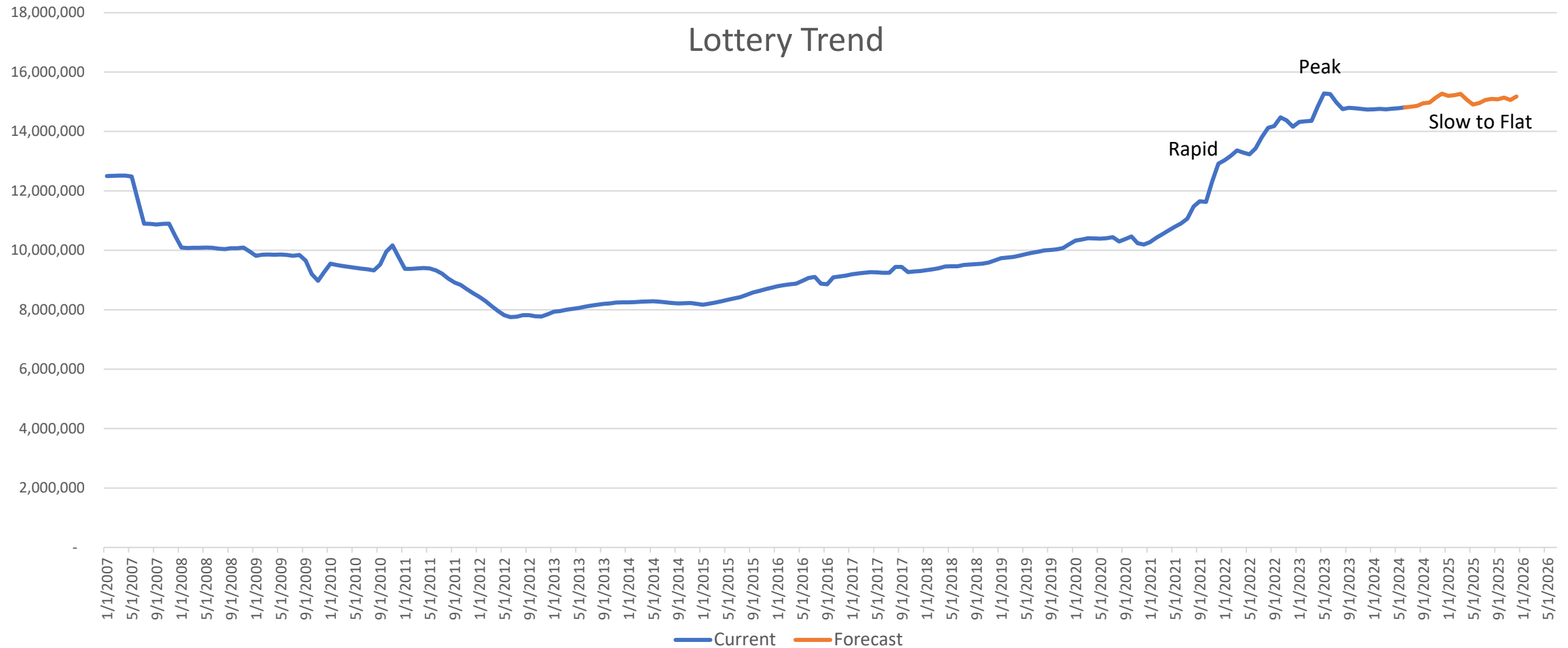
Lottery



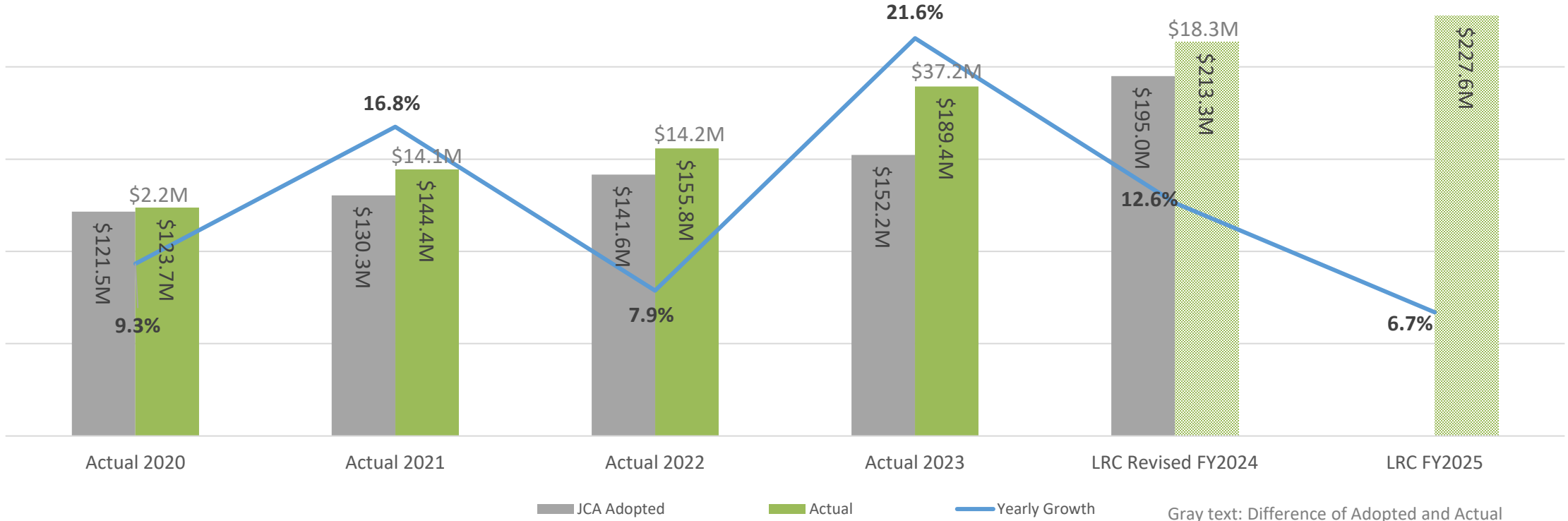
Lottery	Actual FY2020	Actual FY2021	Actual FY2022	Actual FY2023	JCA Adopted FY2024	LRC Revised FY2024	LRC FY2025
Total Revenues	122,489,001	155,527,049	171,609,682	176,663,767	185,788,211	182,514,217	184,563,334
Dollar Change	(1,326,500)	33,038,048	16,082,633	5,054,085	9,124,444	5,850,450	2,049,117
Percent Change	-1.1%	27.0%	10.3%	2.9%	5.2%	3.3%	1.1%

Lottery

- Steady growth from 2013 to 2019
- Post-COVID growth from late 2020 to 2023 driven by stimulus payments and wage growth.
- Slope of the trend has flattened but hasn't started to decline.



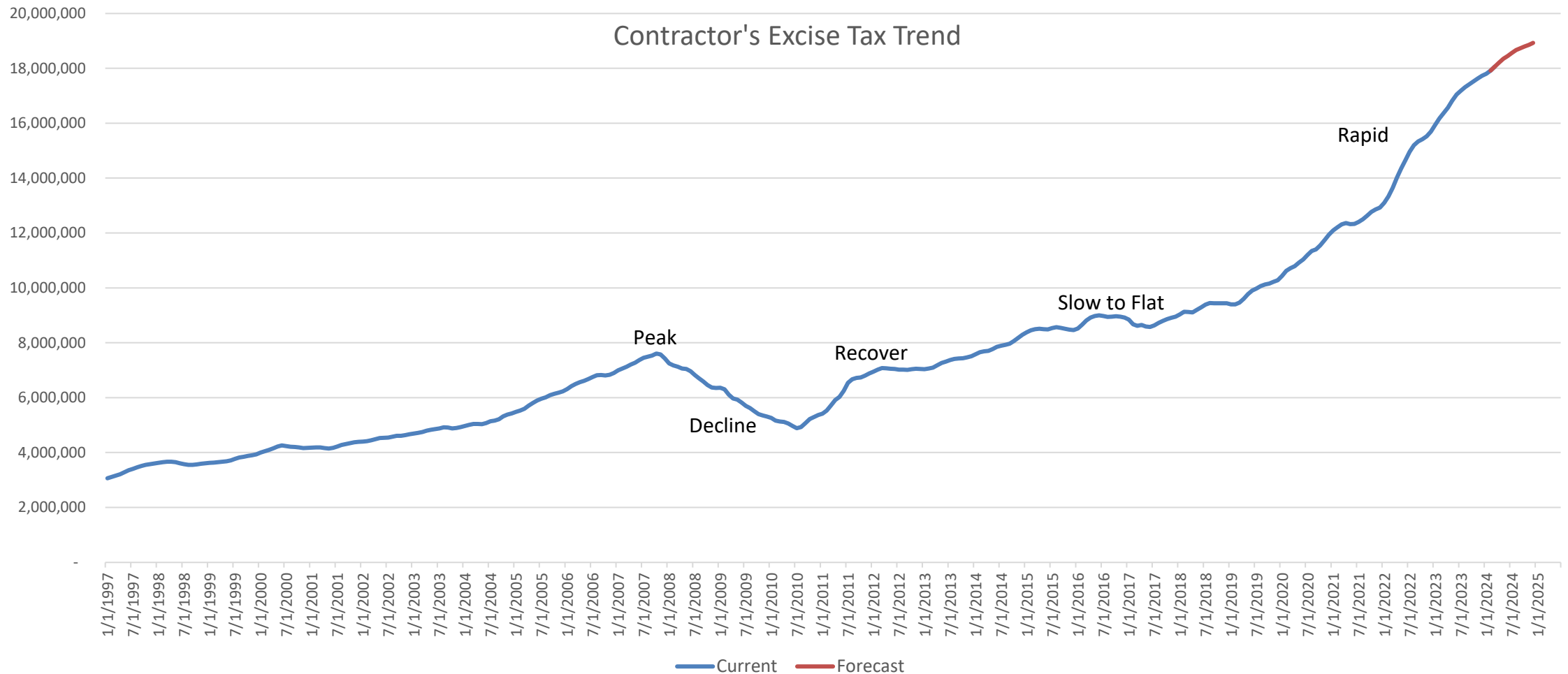
Contractor's Excise Tax



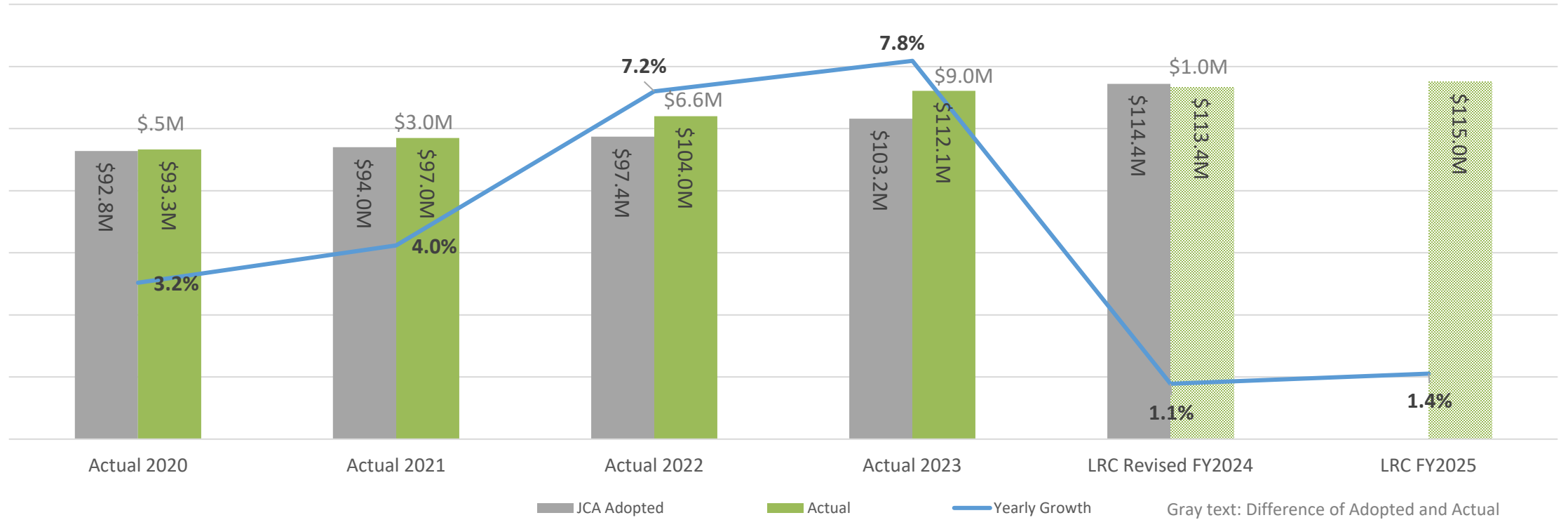
Contractor's Excise Tax	Actual FY2020	Actual FY2021	Actual FY2022	Actual FY2023	JCA Adopted FY2024	LRC Revised FY2024	LRC FY2025
Total Revenues	123,723,519	144,448,267	155,823,772	189,407,586	195,000,000	213,317,856	227,602,205
Dollar Change	10,559,902	20,724,748	11,375,505	33,583,814	5,592,414	23,910,270	14,284,349
Percent Change	9.3%	16.8%	7.9%	21.6%	3.0%	12.6%	6.7%

Contractor's Excise Tax

- No peak or flat growth in the trend of contractor's excise tax
- Slope of the trend is starting to flatten
- Post-COVID growth explains the steep curve from 2021 through 2023.

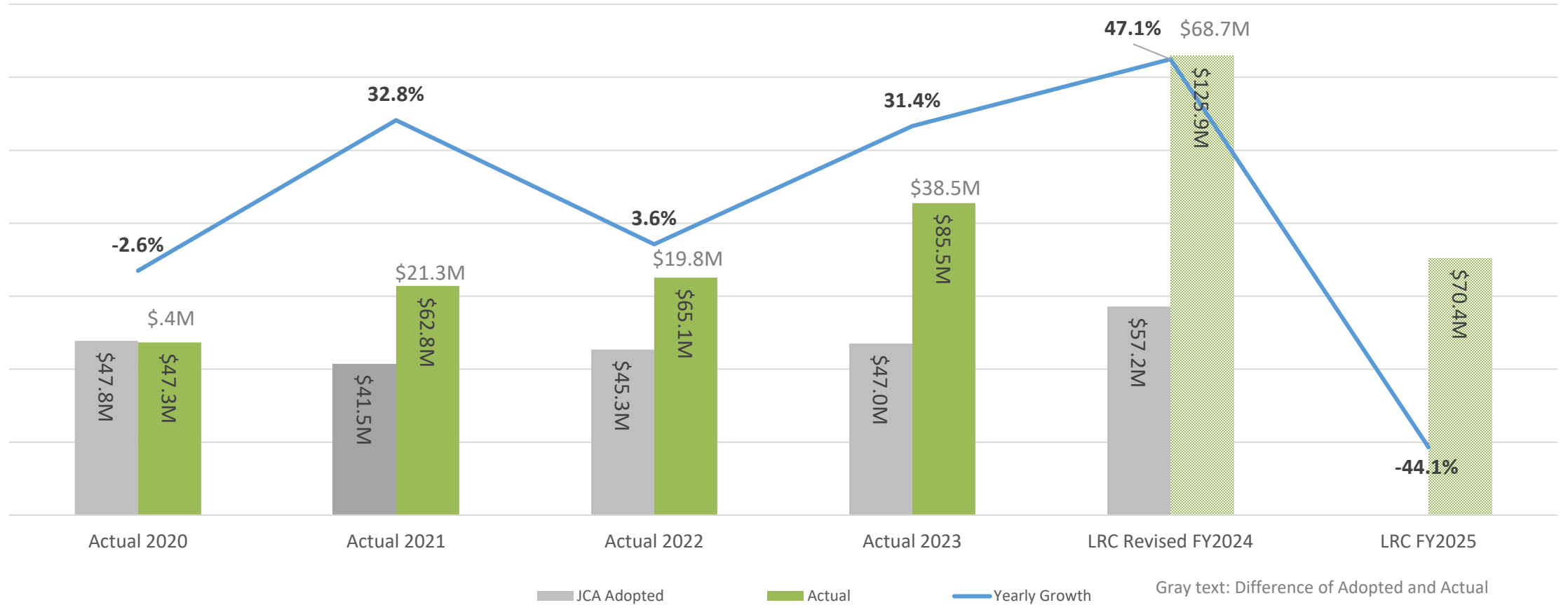


Insurance Company Tax



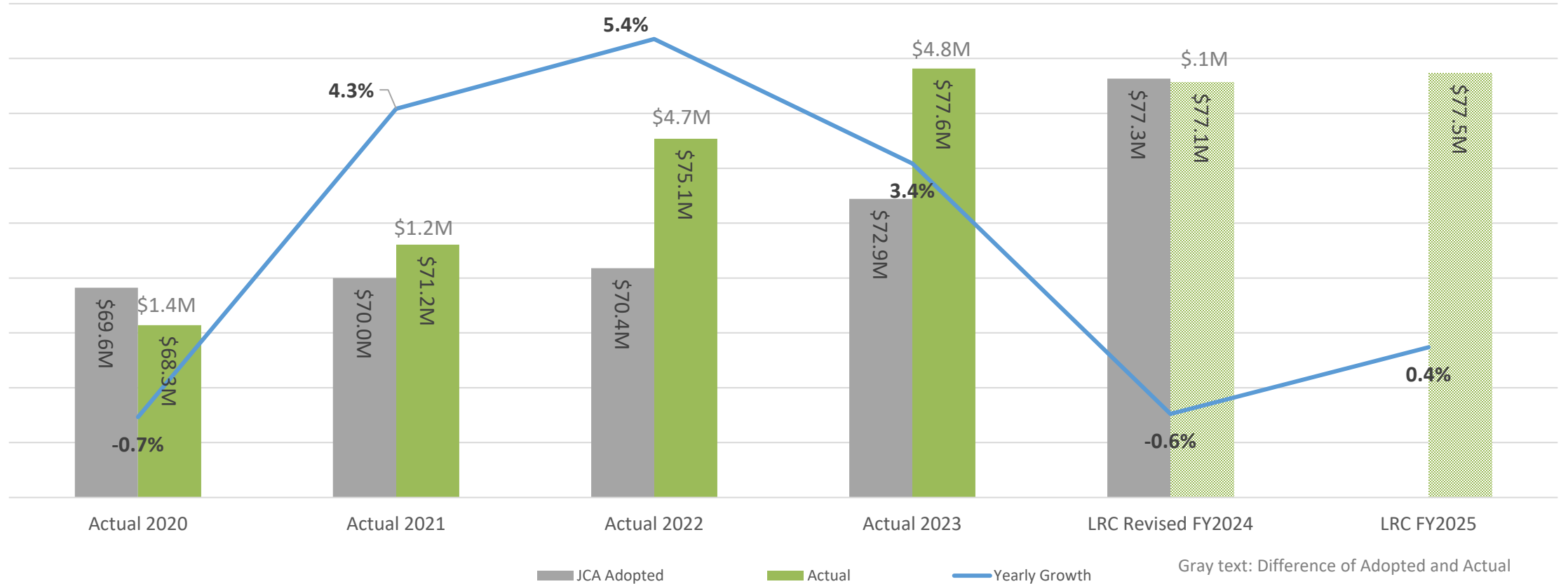
	Actual FY2020	Actual FY2021	Actual FY2022	Actual FY2023	JCA Adopted FY2024	LRC Revised FY2024	LRC FY2025
Insurance							
Total Revenues	93,271,112	97,010,439	103,995,420	112,141,293	114,432,223	113,422,883	114,960,388
Dollar Change	2,923,571	3,739,327	6,984,981	8,145,873	2,290,930	1,281,590	1,537,505
Percent Change	3.2%	4.0%	7.2%	7.8%	2.0%	1.1%	1.4%

Unclaimed Property



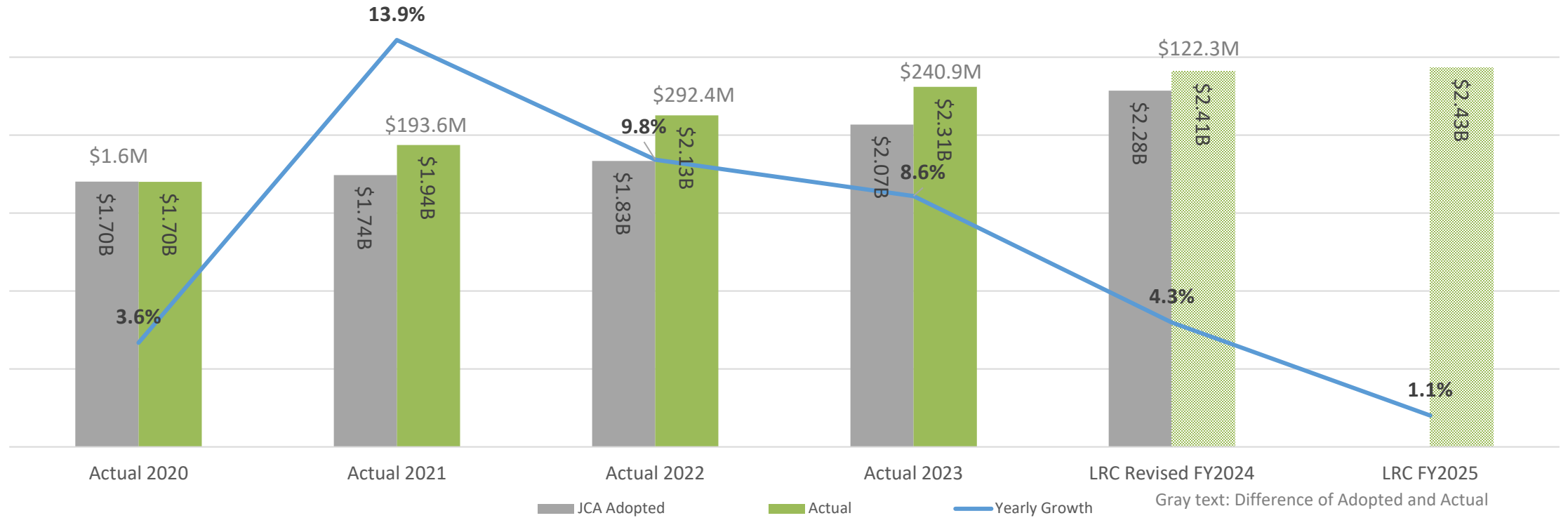
Unclaimed Property	Actual FY2020	Actual FY2021	Actual FY2022	Actual FY2023	JCA Adopted FY2024	LRC Revised FY2024	LRC FY2025
Total Revenues	47,308,472	62,809,930	65,097,628	85,536,039	57,185,445	125,855,625	70,382,500
Dollar Change	(1,265,128)	15,501,458	2,287,698	20,438,411	(28,350,594)	40,319,586	(55,473,125)
Percent Change	-2.6%	32.8%	3.6%	31.4%	-33.1%	47.1%	-44.1%

Licenses, Permits, Fees



Licenses, Permits, Fees	Actual FY2020	Actual FY2021	Actual FY2022	Actual FY2023	JCA Adopted FY2024	LRC Revised FY2024	LRC FY2025
Total Revenues	68,278,839	71,212,896	75,077,171	77,636,494	77,267,444	77,134,806	77,468,939
Dollar Change	(479,230)	2,934,057	3,864,275	2,559,323	(369,050)	(501,688)	334,133
Percent Change	-0.7%	4.3%	5.4%	3.4%	-0.5%	-0.6%	0.4%

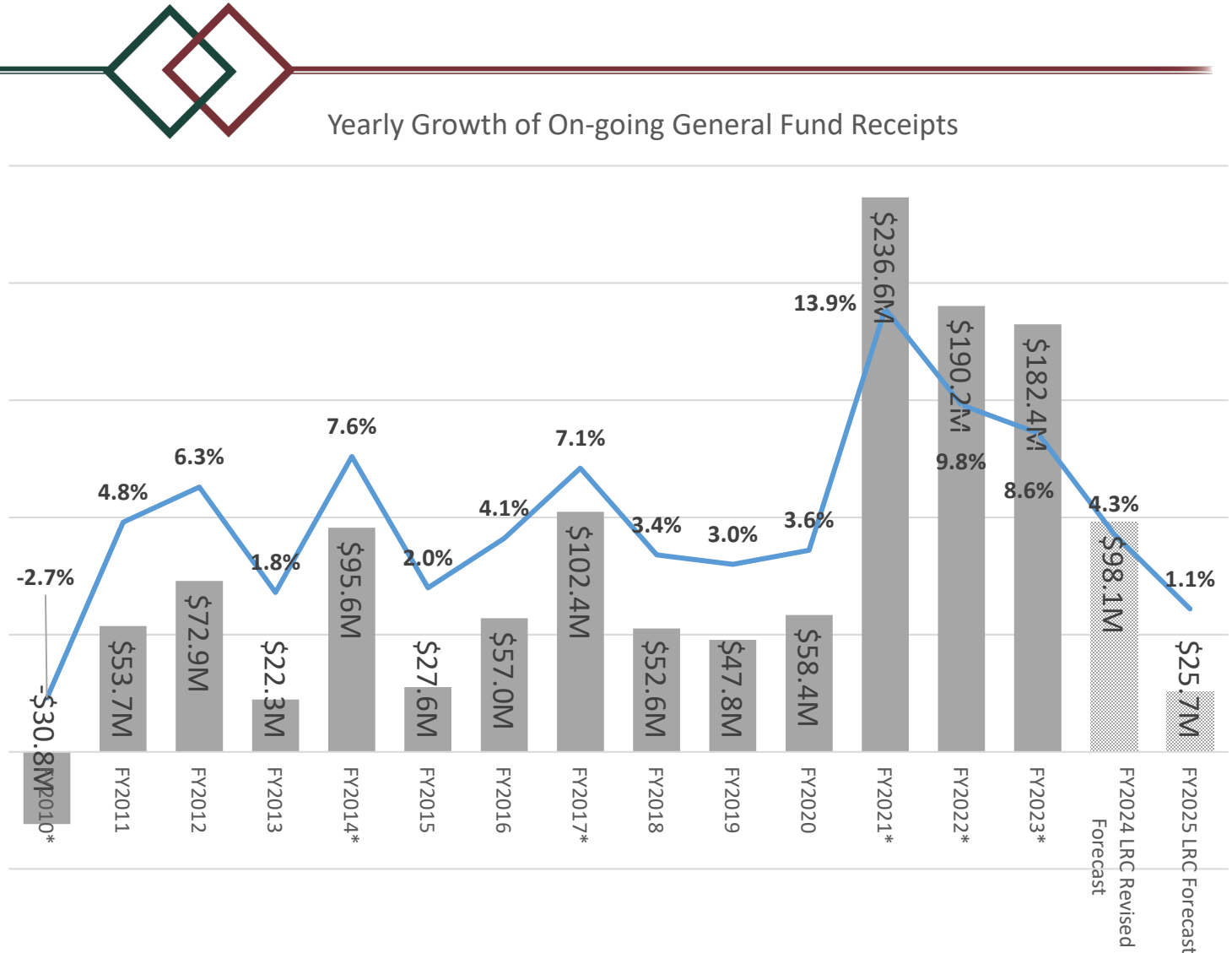
Total On-Going Revenue



	Actual FY2020	Actual FY2021	Actual FY2022	Actual FY2023	JCA Adopted FY2024	LRC Revised FY2024	LRC FY2025
On-going Total							
Total Revenues	1,699,623,137	1,936,198,459	2,126,409,366	2,308,844,888	2,284,640,706	2,406,986,393	2,432,716,412
Dollar Change	58,419,849	236,575,322	190,210,907	182,435,522	(24,204,182)	98,141,505	25,730,019
Percent Change	3.6%	13.9%	9.8%	8.6%	-1.0%	4.3%	1.1%

Total On-Going Revenue

History of Actual On-going General Fund Receipts	\$ Y/Y Growth	% Y/Y Growth
FY2010*	(30.8)	-2.7%
FY2011	53.7	4.8%
FY2012	72.9	6.3%
FY2013	22.3	1.8%
FY2014*	95.6	7.6%
FY2015	27.6	2.0%
FY2016	57.0	4.1%
FY2017*	102.4	7.1%
FY2018	52.6	3.4%
FY2019	47.8	3.0%
FY2020	58.4	3.6%
FY2021*	236.6	13.9%
FY2022*	190.2	9.8%
FY2023*	182.4	8.6%
10 year avg.	105.1	6.3%
Average w/o Outliers	49.0	3.6%
FY2024 JCA Adopted*	(24.2)	-1.0%
FY2024 LRC Revised Forecast	98.1	4.3%
FY2025 LRC Forecast	25.7	1.1%



*Outlier year

Amounts not adjusted for inflation

Total On-Going Forecast



LRC History of Total Revenue Forecasts							
Fiscal Year	Actual	Original	Revised	Original % Diff	Revised % Diff	Original Over/Under	Revised Over/Under
2017	1,540,793,974	N/A	1,544,563,714		-0.24%		Over
2018	1,593,405,860	1,576,858,862	1,586,817,721	1.0%	0.42%	Under	Under
2019	1,641,203,289	1,641,295,684	1,647,503,472	-0.01%	-0.38%	Over	Over
2020	1,699,623,137	1,715,790,303	1,717,263,764	-0.94%	-1.03%	Over	Over
2021	1,936,198,459	1,756,660,260	1,863,586,824	10.2%	3.90%	Under	Under
2022	2,126,409,368	1,886,074,638	2,085,473,049	12.7%	1.96%	Under	Under
2023	2,308,844,888	2,136,859,288	2,316,618,071	8.0%	-0.34%	Under	Over
2024		2,438,969,407	2,406,986,393				
			Average	5.2%	0.61%		

FY2024 General Fund Revenues

February 14, 2024

On-going Receipts	LRC Original FY24 2/14/2023	Legislature Adopted FY24	Governor's Dec. Revised FY24	LRC Revised FY24	\$ Change from Governor's Revised	\$ Change from Legislature Adopted FY24	% Growth over FY23 Actual
Sales & Use Tax	1,494,282,725	1,457,750,000	1,435,189,097	1,469,664,809	34,475,712	11,914,809	-0.7%
Lottery	193,185,381	185,788,211	177,813,515	182,514,217	4,700,702	(3,273,994)	3.3%
Contractor's Excise Tax	202,864,979	195,000,000	207,999,417	213,317,856	5,318,439	18,317,856	12.6%
Insurance Company Tax	115,238,315	114,432,223	120,382,354	113,422,883	(6,959,471)	(1,009,340)	1.1%
Unclaimed Property	61,585,732	57,185,445	106,876,913	125,855,625	18,978,712	68,670,180	47.1%
Licenses, Permits, and Fees	77,041,973	77,267,444	75,715,166	77,134,806	1,419,640	(132,638)	-0.6%
Tobacco Taxes	47,537,716	46,560,484	44,315,875	44,251,702	(64,173)	(2,308,782)	-6.0%
Trust Funds	48,475,153	48,538,231	48,360,904	48,319,904	(41,000)	(218,327)	4.5%
Net Transfers In	24,354,780	23,891,068	25,194,167	25,007,657	(186,510)	1,116,589	-2.5%
Alcohol Beverage Tax	9,020,694	9,272,874	9,183,170	9,038,536	(144,634)	(234,338)	1.1%
Bank Franchise Tax	20,685,011	19,927,443	18,941,200	19,530,776	589,576	(396,667)	-4.4%
Charges for Goods & Services	15,213,315	15,273,363	12,298,640	13,980,945	1,682,305	(1,292,418)	3.8%
Telecommunications Tax	1,762,794	2,047,035	2,319,050	2,257,062	(61,988)	210,027	-8.5%
Mineral Severance Taxes	7,875,676	8,170,526	8,361,759	10,441,876	2,080,117	2,271,350	84.6%
Interest Income & Interest	12,564,277	20,334,000	49,154,738	49,216,809	62,071	28,882,809	251.5%
Alcohol Bev. 2% Wholesale Tax	3,155,886	3,202,359	3,040,095	3,030,930	(9,165)	(171,429)	3.2%
Subtotal On-going Receipts	2,334,844,407	2,284,640,706	2,345,146,060	2,406,986,393	61,840,333	122,345,687	4.25%
One-Time Receipts							
One-Time Sales Tax Revenue			9,726,426	-	(9,726,426)		
Obligated Cash Carried Forward			96,775,123	96,775,123	-		
Bank Franchise Tax Prior Year Revenue			1,751,228	-	(1,751,228)		
Unexpended Carryovers & Specials			6,400,000	-	(6,400,000)		
Subtotal One-Time Receipts			-	114,652,777	(17,877,654)		
GRAND TOTAL		2,284,640,706	2,459,798,837	2,503,761,516	43,962,679	219,120,810	

FY2025 General Fund Revenues

February 14, 2024

On-going Receipts	Governor's Dec. FY25	LRC Revised FY24	LRC FY25 Estimate	\$ Change from Governor's Rec.	\$ Change from LRC Revised FY24	% Change from LRC Revised FY24
Sales & Use Tax	1,494,649,338	1,469,664,809	1,502,578,812	7,929,474	32,914,002	2.2%
Lottery	179,963,037	182,514,217	184,563,334	4,600,297	2,049,117	1.1%
Contractor's Excise Tax	212,036,057	213,317,856	227,602,205	15,566,148	14,284,349	6.7%
Insurance Company Tax	126,522,130	113,422,883	114,960,388	(11,561,742)	1,537,505	1.4%
Unclaimed Property	60,103,683	125,855,625	70,382,500	10,278,817	(55,473,125)	-44.1%
Licenses, Permits, and Fees	77,756,620	77,134,806	77,468,939	(287,681)	334,133	0.4%
Tobacco Taxes	43,205,556	44,251,702	42,110,603	(1,094,953)	(2,141,099)	-4.8%
Trust Funds	50,650,800	48,319,904	50,267,500	(383,300)	1,947,596	4.0%
Net Transfers In	25,073,004	25,007,657	25,023,919	(49,085)	16,263	0.1%
Alcohol Beverage Tax	9,396,965	9,038,536	9,005,594	(391,371)	(32,942)	-0.4%
Bank Franchise Tax	17,299,461	19,530,776	18,462,823	1,163,362	(1,067,953)	-5.5%
Charges for Goods & Services	12,876,310	13,980,945	13,895,177	1,018,867	(85,768)	-0.6%
Telecommunications Tax	2,276,173	2,257,062	2,234,612	(41,561)	(22,450)	-1.0%
Mineral Severance Taxes	9,326,838	10,441,876	10,281,064	954,226	(160,812)	-1.5%
Interest Income & Interest	74,929,000	49,216,809	80,790,374	5,861,374	31,573,565	64.2%
Alcohol Bev. 2% Wholesale Tax	3,138,450	3,030,930	3,088,568	(49,882)	57,638	1.9%
Subtotal On-going Receipts	2,399,203,422	2,406,986,393	2,432,716,412	33,512,990	25,730,019	1.1%

One-Time Receipts

GRAND TOTAL	2,399,203,422	2,406,986,393	2,432,716,412	33,512,990	25,730,019	1.1%
--------------------	----------------------	----------------------	----------------------	-------------------	-------------------	-------------