

**A LONG-RUN FORECAST OF
TAXABLE SALES FOR ORANGE COUNTY**

Prepared for
ORANGE COUNTY TRANSPORTATION AUTHORITY

BY
JAMES L. DOTI, PRESIDENT EMERITUS AND PROFESSOR OF ECONOMICS
AND
RAYMOND SFEIR, PROFESSOR OF ECONOMICS

A. GARY ANDERSON CENTER FOR ECONOMIC RESEARCH
CHAPMAN UNIVERSITY

MAY 2024

Table of Contents

I.	Summary	1
II.	Remnants of the Covid Recession Recovery Measures.....	2
III.	Taxable Sales Determining Factors	2
	A. Population.....	2
	B. Impact of Population Growth on Employment.....	4
IV.	Employment Projections.....	5
	A. Real Gross Domestic Product	7
	B. Consumer Price Index	7
	C. Labor Force Participation Rate.....	8
	D. Payroll Employment Forecast	9
V.	Taxable Sales Forecasts	10
VI.	Comparison.....	12
	Definition of Variables.....	14
	Disclaimer	30
	Appendix.....	31

A Long-Run Forecast of Taxable Sales for Orange County

This study revises, updates and extends the results of a previous study completed in May 2023 that forecasted annual taxable sales in Orange County. This study provides a quarterly forecast for 2024Q1 to 2025Q4, and a yearly forecast from 2024 to 2041. Although Covid is behind us, the federal government is still in a mood to perpetuate a high level of spending that it got used to during the Covid recession. The measures that the Federal Reserve took to combat inflation continue as of the publishing of this report. Inflation remains above the level set by the Federal Reserve, and interest rates remain high. Speculation as to when the Federal Reserve will start lowering the federal funds rate abounds.

I. Summary

- Payroll employment in Orange County increased by 0.95 percent in 2023, similar to California's rate, but much lower than the nation's growth rate of 2.3 percent.
- The population of Orange County decreased by 0.27 percent in 2022-23. Neither this decrease nor the low payroll employment growth helped taxable sales.
- Real gross domestic product grew by 2.5 percent in 2023, higher than most expectations. No recession is forecasted for 2024. Real gross domestic product is expected to grow at a lower rate compared to 2023.
- The Federal Reserve is expected to decrease the federal funds rate by a 1/4 percent two or three times this year.
- The 12.5 percent increase in taxable sales in 2022 was high due to the still high stock of household savings and the high price level. The real rate was only 4.3 percent. Last year's forecast called for a low growth rate of taxable sales in 2023 due to the diminishing household savings stock. But the actual rate turned negative at -1.6 percent. The growth rate in taxable sales is forecasted to be 2.0 percent in 2024.

II. Remnants of the Covid Recession Recovery Measures

Following the Covid recession, the federal government and the Federal Reserve took measures to alleviate the negative impact of the recession and to propel the economy into a recovery. Congress voted for three stimuli amounting to a total of over \$5 trillion. Many economists believe that the third stimulus was overly large and that it led to a high level of consumption which resulted in a higher inflation rate. The Federal Reserve pushed interest rates close to zero. The very low interest rates coupled with a very high growth rate in the money supply pushed demand for goods and services even higher, leading to a yet higher inflation rate. Disruptions to the supply chain made things even worse by increasing shipping costs resulting in higher prices. The Federal Reserve, faced with an inflation rate above its desired 2% level, pushed interest rates upward and sold Treasury securities and mortgage-backed securities to decrease the growth in the money supply. These actions pushed inflation down, but as of the first quarter of 2024 the inflation rate continued to be on the high side.

On the housing front, home listings have reached very low levels in 2023 and are expected to remain low in 2024. This decline together with high mortgage rates led to a decrease in the number of homes sold. Although home prices declined in the first half of 2023, they rose since then and the median single family home price in Orange County reached a new peak in March 2024, at \$1,400,000.

III. Taxable Sales Determining Factors

A. Population

In 2020, the fertility rate in the U.S. was 56 births per 1,000 women 15 to 44 years old, about half what it was in the early 1960s. This in part explains the lower growth rate in the U.S. population. This rate declined further and reached 54.4 births in 2023 according to the Center for Disease Control and Prevention (the data is provisional at this time). The decline in the total number of births was offset by an influx of immigrants into the country in the last three years. The table on the next page shows the percentage increase in the Orange County population over

the decades. Orange County’s population grew by only 5.8 percent between 2010 and 2020 compared to 101.8 percent in the 1960s. This growth rate is expected to decrease in the coming decades. The upcoming slow growth in the population will have a substantial impact on the growth in employment, taxable sales, city and county tax revenues, residential development, and the broader real estate market. City and county governments will have to assess the impact on their jurisdictions and take the necessary steps to mitigate the negative consequences.

ORANGE COUNTY POPULATION GROWTH RATE¹		
YEAR	PERCENT CHANGE	ACTUAL CHANGE
1950-1960	228.8%	489,864
1960-1970	101.8%	716,461
1970-1980	36.1%	512,535
1980-1990	22.6%	437,010
1990-2000	20.1%	476,358
2000-2010	5.8%	163,943
2010-2020	5.9%	176,757

(1) Bureau of the Census, April 1st data

The table on the next page shows that the Orange County population growth rate has even turned negative in the last five years. Although the population growth rate is expected to be positive in the coming years, the rate is expected to remain at a very low level in the coming decades according to projections made by the California Department of Finance. In comparison, population growth in the Inland Empire has been higher than Orange County’s. It is expected to drop over time but will continue to be greater than Orange County’s. The decline in the population growth rate will impact not only the number of jobs in each county, but taxable sales

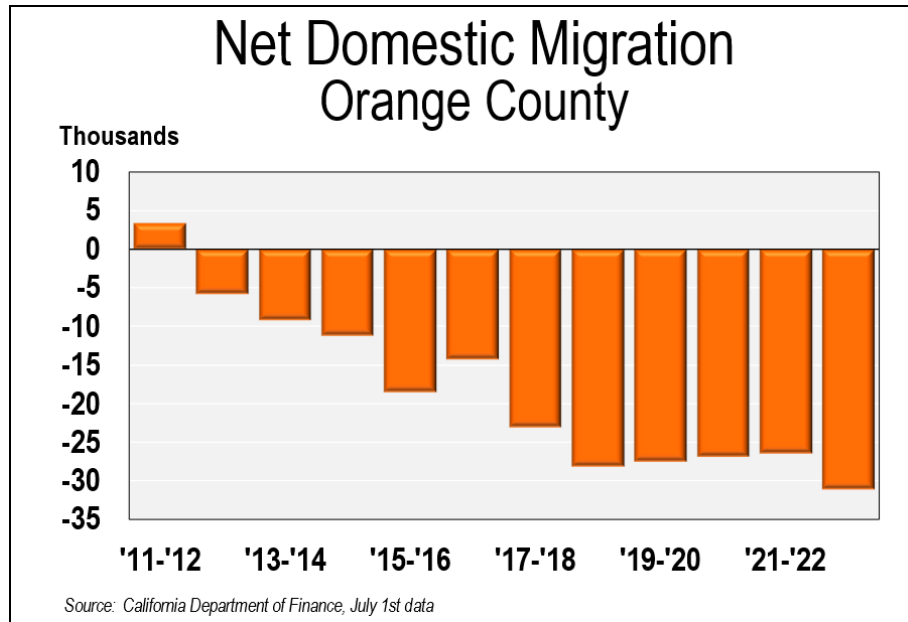
growth as well. It is also important to note that the proportion of people over the age of 65 will continue to increase in the coming years as the baby boomer generation grows older.

POPULATION GROWTH RATE²		
YEAR	ORANGE COUNTY	INLAND EMPIRE
2018	0.17%	0.77%
2019	-0.07%	0.69%
2020	-0.13%	0.72%
2021	-0.73%	0.21%
2022	-0.47%	0.06%
2023	-0.27%	0.35%

(2) California Department of Finance, July 1st data

B. Impact of Population Growth on Employment

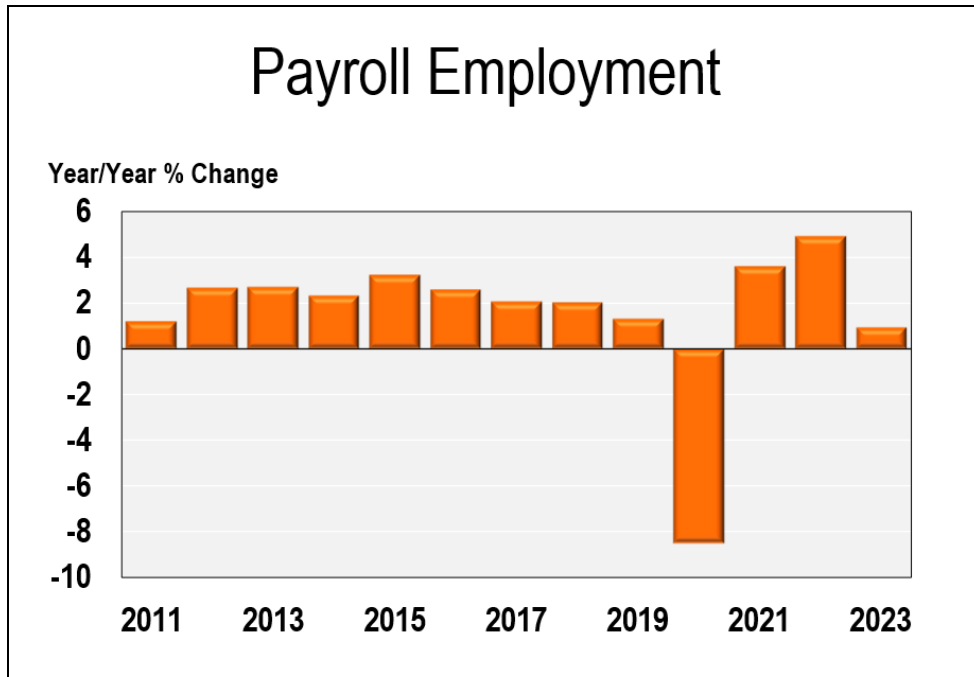
The Orange County population has declined in the last four years for several reasons: Covid deaths, lower international migration, lower birth rate, and higher net population outflow. While the Orange County population growth rate from 2019 to 2023 was negative, it is expected to turn positive starting 2024. Net population outflow in California to other states added up to -1,239,026 in the last four years according to the California Department of Finance. During that same period, net population outflow to other states and other parts of California was -111,902 in Orange County. The net population outflow was -31,075 last year alone.



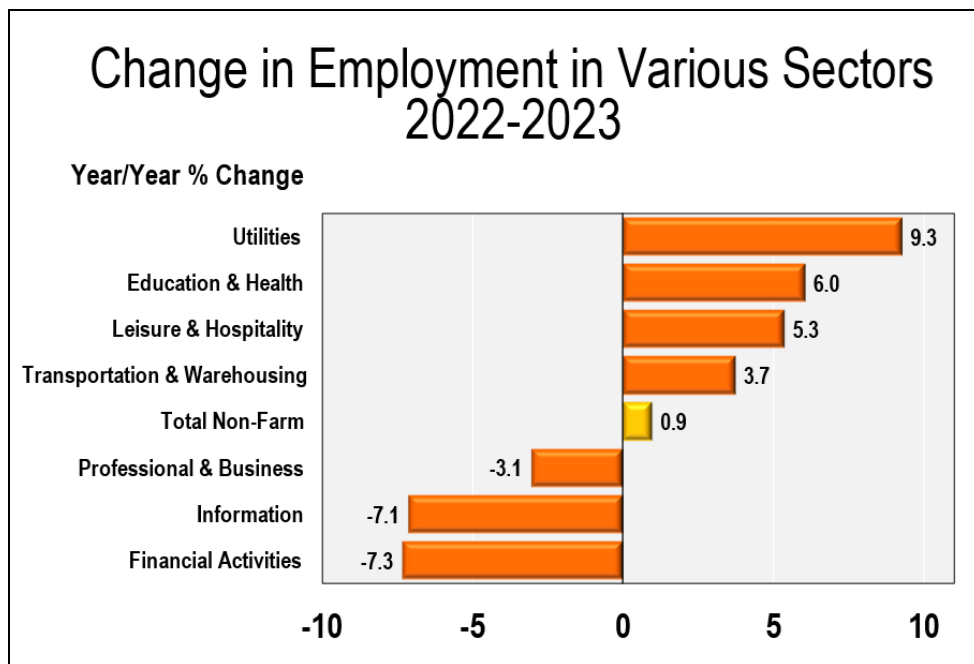
The population growth rate is forecasted to remain low in future years compared to previous years. With a lower population growth rate, one wonders where is Orange County going to get additional workers to fill its need for employees in order to continue growing its economy at a healthy growth rate. Given the high cost of living in Orange County, particularly the high home prices and rents, it is not surprising that many employees are unable to afford to live in Orange County. Consequently, an increasing number of people work in Orange County and live in neighboring counties such as the Inland Empire and Los Angeles County. This has occurred in previous years and will continue to occur in the future, possibly on a larger scale, particularly that the population growth rate in Orange County is expected to be below that of the Inland Empire’s as mentioned earlier. In fact, more than 690,000 people worked in Orange County but lived outside Orange County in 2021 (the latest year this data is available).

IV. Employment Projections

Employment in Orange County reached a peak in February 2020 before the onset of the Covid recession. It reached a trough in May 2020, started recovering the lost jobs, and surpassed the previous peak in November 2022. A new peak was reached in December 2023. In 2023, employment increased by 0.95 percent compared to 2022.



The Utilities, Education & Health, and Leisure and Hospitality industries showed the highest increase, while the Financial Activities and Information industries showed the highest decrease compared to 2022.



Employment plays a critical role in forecasting taxable sales. That is why there is a need to forecast employment first. Our empirical findings suggest that growth in employment is explained by the real gross domestic product and the labor force participation rate.

A. Real Gross Domestic Product

While it would be advantageous to include consumption in our forecasting equation, unfortunately long-term consumption projections are not available. Since there is a strong and statistically significant relationship between consumption and gross domestic product, we use gross domestic product as a proxy for consumption spending to explain the growth rate in employment.

The almost depleted stock of excess household savings will lend less support to the economy in 2024. The federal funds rate that is set by the Federal Reserve has reached a range of 5.00-5.25 percent as of May 2023. Since then, banks have tightened lending standards. Around the end of 2023, some believed that the Federal Reserve would decrease the federal funds rate by 1/4 percent five or six times in 2024. Due to the continued high inflation rate, the researchers at the A. Gary Anderson Center for Economic Research expect the Federal Reserve to decrease the federal funds rate only twice this year. The high inflation rate and the high level of interest rates in the economy lead the Anderson researchers to conclude that the economy will face a slowdown in the growth rate of real gross domestic product but no recession is expected. We project that the real gross domestic product will increase by 2.1 percent in 2024 compared to 2.5 percent in 2023. Projection of the growth rate in real gross domestic product for 2024 is derived from the forecasting model at the A. Gary Anderson Center for Economic Research. Further years' projections are based on projections by the Federal Reserve and our own research.

B. Consumer Price Index

The Consumer Price Index is a measure of the average price paid by urban consumers for a market basket of consumer goods and services. It is used in this study to compute real taxable sales, which are taxable sales adjusted for inflation. The Consumer Price Index increased by 4.1 percent in 2023. It is expected to increase by 3.1 percent in 2024.

Longer-run projection of the increase in the Consumer Price Index is 2.5 percent starting in 2028.

CONSUMER PRICE INDEX	
YEAR	ANNUAL % CHANGE
2023	4.14%
2024	3.06%
2025	2.82%

C. Labor Force Participation Rate

The long-run nature of this forecast study limits the type of variables that can be used in forecasting taxable sales. One might hypothesize that both the population and the labor force participation rate would be significant variables in explaining employment. Although as a general principle one would expect employment to increase as the population increases, the number of employed workers is cyclical and varies substantially over the business cycle. Demographics also impact employment such as the aging of the population and the proportion of people in each age cohort who seek employment. As a result, it is the labor force participation rate that is the relevant variable in explaining employment.

The labor force participation rate in Orange County reached a trough in 2022 at 61.6. It recuperated in 2023 and reached 61.9. Projections of the U.S. labor force participation rate over the 2024-2034 period were made by the Congressional Budget Office. Orange County's percentage change in the labor force participation rate is assumed to be equal to that of the U.S. over that period since county level labor force participation rate projections are not available. The U.S. growth rate was applied to compute the Orange County labor force participation rate. The rate beyond 2034 is assumed to be equal to the 2034 value.

OC LABOR FORCE PARTICIPATION RATE	
YEAR	RATE
2010	64.9
2015	63.1
2020	60.6
2025	61.8
2030	61.2

The labor force participation rate for people over 65 years old is lower than the other population cohorts. Since the proportion of people over 65 years old will be higher over the years, the labor force participation rate is expected to continue to decline. This will negatively affect employment in Orange County.

D. Payroll Employment Forecast

The above information was used to forecast employment. The table on the next page presents the forecast of payroll job growth over the 2024-2027 period. The growth rate in payroll employment in 2024 will reach 1.3 percent. It is on the low side because we are projecting a slowdown in the economy in the second half of the year due to the tight monetary policy that is followed by the Federal Reserve. While the federal funds rate averaged 0.08 percent in 2021, it stands now at 5.33 percent, a 5.25 percentage points increase. Future employment growth rates are expected to be low due to the expected low population growth rate. The longer-run projections of Orange County payroll employment are shown on page 16 of this report.

ORANGE COUNTY PAYROLL EMPLOYMENT	
YEAR	ANNUAL % CHANGE
2024	1.30%
2025	1.29%
2026	1.27%
2027	1.24%

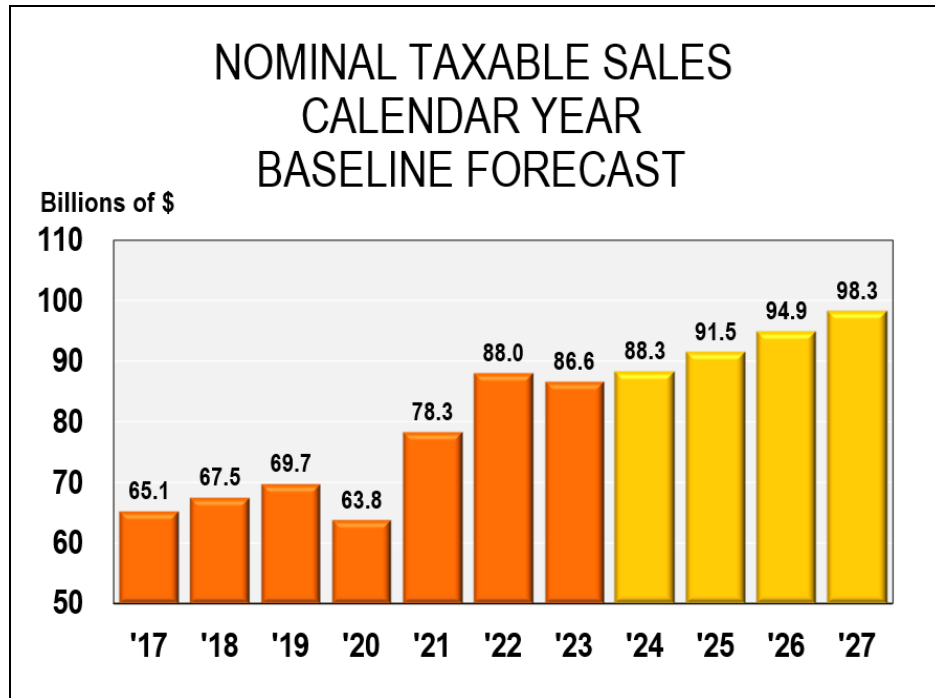
V. Taxable Sales Forecasts

Projections of payroll employment, the real gross domestic product, and the consumer price index allow us to forecast real taxable sales. Real taxable sales forecasts are converted to nominal forecasts using a projection of the Consumer Price Index (CPI) referenced earlier. The forecasts can be found on page 19 of this report.

The table below presents calendar year actual year-to-year percentage change in Orange County’s nominal (not adjusted for inflation) taxable sales for 2022 and 2023, and forecasts for 2024 to 2026.

NOMINAL TAXABLE SALES CALENDAR YEAR BASELINE FORECAST	
YEAR	ANNUAL % CHANGE
2022	12.49%
2023	-1.63%
2024	1.97%
2025	3.68%
2026	3.68%

Nominal values of taxable sales are presented in the chart below. The data from 2017 to 2023 represent actual values, while the rest of the data are forecasted values.



The Orange County taxable sales projections (ASTO), derived from the model, represent a baseline (most-likely) forecast. Optimistic (ASTOO) and pessimistic (ASTOP) forecasts of taxable sales in Orange County are projected by adding and subtracting one standard error of the regression equation to the baseline forecast. The quarterly baseline, optimistic and pessimistic forecasts of taxable sales are shown on page 23, and the annual baseline, optimistic and pessimistic forecasts are shown on page 24.

Additionally, the fiscal year baseline, optimistic and pessimistic, nominal and real (adjusted for inflation) taxable sales forecasts over the 2005-2041 period are presented on pages 26 and 27 of this report.

VI. Comparison

In our 2023 report, we forecasted a substantial decrease in taxable sales from 12.49 percent in 2022 to 3.0 percent in 2023 due to the slow depletion of household savings that propelled the large increases in taxable sales in 2021 and 2022. The depletion of savings was expected to lead to a slowdown in the economy in the second half of 2023 resulting in lower employment and lower consumption. The actual change in taxable sales turned out to be steeper than expected, reaching a decrease of -1.63 percent (from \$88.03 billion to \$86.6 billion). Why weren't taxable sales expected to decline in 2023? As the table below indicates, California and Orange County taxable sales growth rates mimicked the growth rate in U.S. retail sales in 2021 and 2022. But in 2023 although U.S. retail sales, excluding food, increased by 3.5 percent, taxable sales in California and Orange County declined. What was the cause of the decline?

	YEAR TO YEAR GROWTH RATE		
YEAR	U.S. RETAIL SALES	CALIFORNIA TAXABLE SALES	ORANGE COUNTY TAXABLE SALES
2021	20.1%	22.1%	22.6%
2022	9.8%	10.3%	12.5%
2023	3.5%	-2.1%	-1.6%

Many variables could explain the decline. The table on the next page shows that U.S. employment grew by 2.3 percent in 2023 but it grew substantially less in both California and Orange County. Oil prices declined substantially in 2023 worldwide leading to lower gasoline sales. Motor vehicles and parts sales, which is a large component of total taxable sales, dropped by -6.34 percent due to higher prices and high interest rates. Data will also show that Orange County's population barely increased in calendar year 2023. Nevertheless, it would not be surprising if taxable sales are revised slightly upward for the fourth quarter of 2023.

	YEAR TO YEAR GROWTH RATE IN EMPLOYMENT		
YEAR	U.S.	CALIFORNIA	ORANGE COUNTY
2023	2.3%	0.87%	0.95%

Our forecast for 2024 is lower than the forecast made last year because we anticipate a slowdown this year as we explained earlier. The long-run forecast is very close to the forecast made last year.

The forecast of fiscal year percentage change in taxable sales made last May (PASTOF2023) together with the forecast developed this May (PASTOF2024) are presented on page 29.

Definition of Variables

STO:	Total quarterly taxable sales, actual and baseline forecast
STOO:	Total quarterly taxable sales, optimistic forecast
STOP:	Total quarterly taxable sales, pessimistic forecast
ASTO:	Total annual (calendar year) taxable sales, actual and baseline forecast
ASTOO:	Total annual (calendar year) taxable sales, optimistic forecast
ASTOP:	Total annual (calendar year) taxable sales, pessimistic forecast
ARSTO:	Total annual (calendar year) real taxable sales, actual and baseline forecast
ARSTOO:	Total annual (calendar year) real taxable sales, optimistic forecast
ARSTOP:	Total annual (calendar year) real taxable sales, pessimistic forecast
ASTOF:	Total annual (fiscal year) taxable sales, actual and baseline forecast
ASTOOF:	Total annual (fiscal year) taxable sales, optimistic forecast
ASTOPF:	Total annual (fiscal year) taxable sales, pessimistic forecast
ARSTOF:	Total annual (fiscal year) real taxable sales, actual and baseline forecast
ARSTOOF:	Total annual (fiscal year) real taxable sales, optimistic forecast
ARSTOPF:	Total annual (fiscal year) real taxable sales, pessimistic forecast
ACPI:	Annual (calendar year) average of the consumer price index, actual and forecast
ACPIF:	Annual (fiscal year) average of the consumer price index, actual and forecast
ALFPR:	Annual (calendar year) Orange County labor force participation rate
AOCPOP:	Annual Orange County population (July 1 st)
RGDP:	Real gross domestic product
ANTO:	Annual (calendar year) employment

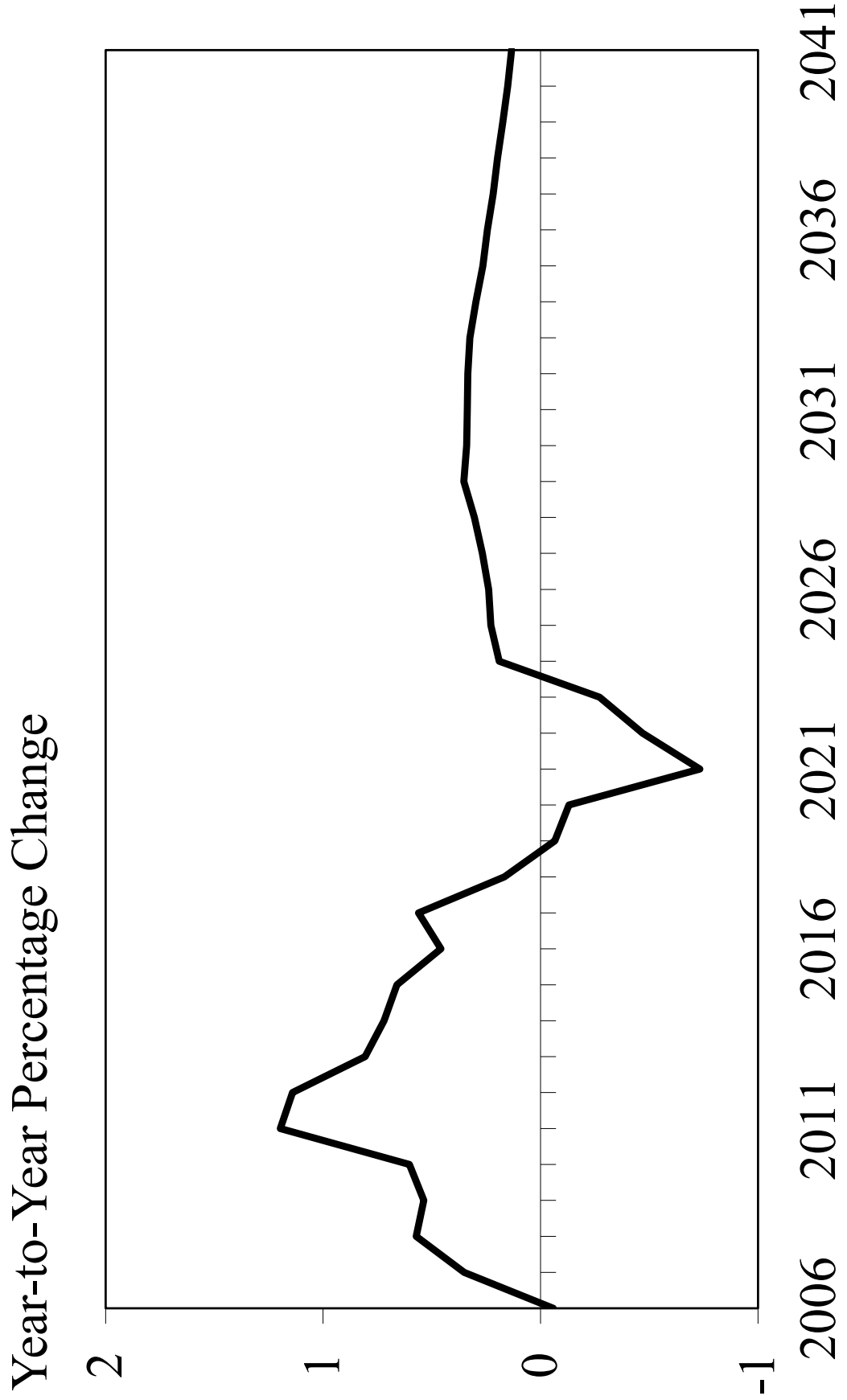
For any of the above variables, the letter P preceding the name of the variable indicates the year over year percentage change in that variable.

All taxable sales and real taxable sales are in millions of dollars.

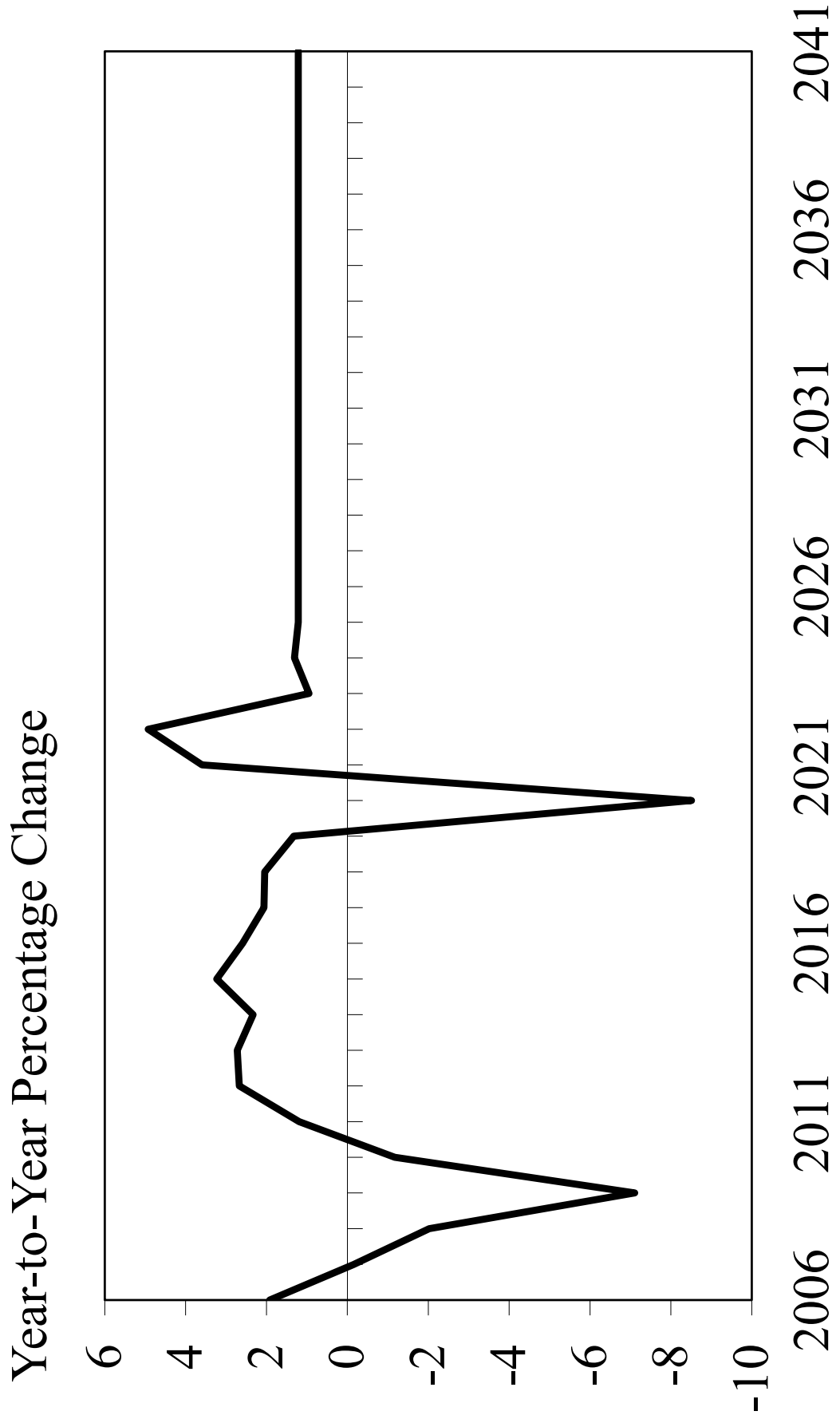
	ACPI	PACPI	AOCPOP	PAOCPOP
2005	195.27	3.37	2,957,151	0.02
2006	201.56	3.22	2,955,433	-0.06
2007	207.34	2.87	2,965,823	0.35
2008	215.25	3.81	2,982,788	0.57
2009	214.56	-0.32	2,998,816	0.54
2010	218.08	1.64	3,016,922	0.60
2011	224.92	3.14	3,053,035	1.20
2012	229.59	2.07	3,087,846	1.14
2013	232.95	1.47	3,112,757	0.81
2014	236.72	1.62	3,135,170	0.72
2015	237.00	0.12	3,155,895	0.66
2016	240.01	1.27	3,170,359	0.46
2017	245.12	2.13	3,188,158	0.56
2018	251.10	2.44	3,193,464	0.17
2019	255.65	1.81	3,191,365	-0.07
2020	258.85	1.25	3,187,189	-0.13
2021	270.97	4.68	3,163,851	-0.73
2022	292.62	7.99	3,149,004	-0.47
2023	304.70	4.13	3,140,475	-0.27
2024	314.03	3.06	3,146,456	0.19
2025	322.90	2.82	3,153,646	0.23
2026	331.37	2.62	3,161,172	0.24
2027	339.70	2.51	3,169,643	0.27
2028	348.19	2.50	3,179,293	0.30
2029	356.90	2.50	3,190,520	0.35
2030	365.82	2.50	3,201,361	0.34
2031	374.96	2.50	3,212,161	0.34
2032	384.34	2.50	3,222,911	0.33
2033	393.95	2.50	3,233,389	0.33
2034	403.80	2.50	3,243,012	0.30
2035	413.89	2.50	3,251,619	0.27
2036	424.24	2.50	3,259,574	0.24
2037	434.84	2.50	3,266,686	0.22
2038	445.71	2.50	3,273,162	0.20
2039	456.86	2.50	3,278,852	0.17
2040	468.28	2.50	3,283,811	0.15
2041	479.99	2.50	3,288,186	0.13

	ANTO	ACPIF	ALFPR
2005	1,499,575	191.70	1,586,225
2006	1,528,367	198.94	1,600,375
2007	1,525,934	204.11	1,608,583
2008	1,495,050	211.68	1,616,258
2009	1,388,800	214.65	1,595,692
2010	1,372,559	216.76	1,537,708
2011	1,388,925	221.06	1,543,783
2012	1,426,050	227.55	1,558,467
2013	1,464,859	231.39	1,559,483
2014	1,498,992	234.99	1,565,458
2015	1,547,442	236.67	1,584,300
2016	1,587,542	238.24	1,597,425
2017	1,620,283	242.68	1,605,792
2018	1,653,392	248.13	1,616,150
2019	1,675,284	253.26	1,613,900
2020	1,532,725	257.27	1,563,792
2021	1,587,825	263.15	1,557,250
2022	1,666,050	282.03	1,579,258
2023	1,681,867	299.66	1,588,867
2024	1,703,868	309.50	1,598,019
2025	1,724,553	318.51	1,601,790
2026	1,745,489	327.19	1,605,719
2027	1,766,679	335.53	1,610,807
2028	1,788,127	343.92	1,616,536
2029	1,809,834	352.52	1,623,029
2030	1,831,806	361.33	1,629,259
2031	1,854,044	370.37	1,635,715
2032	1,876,552	379.62	1,641,396
2033	1,899,333	389.12	1,647,577
2034	1,922,391	398.84	1,652,376
2035	1,945,729	408.81	1,658,262
2036	1,969,350	419.03	1,662,780
2037	1,993,258	429.51	1,665,095
2038	2,017,456	440.25	1,667,542
2039	2,041,948	451.25	1,670,683
2040	2,066,738	462.54	1,673,419
2041	2,091,828	474.10	1,675,947

Population



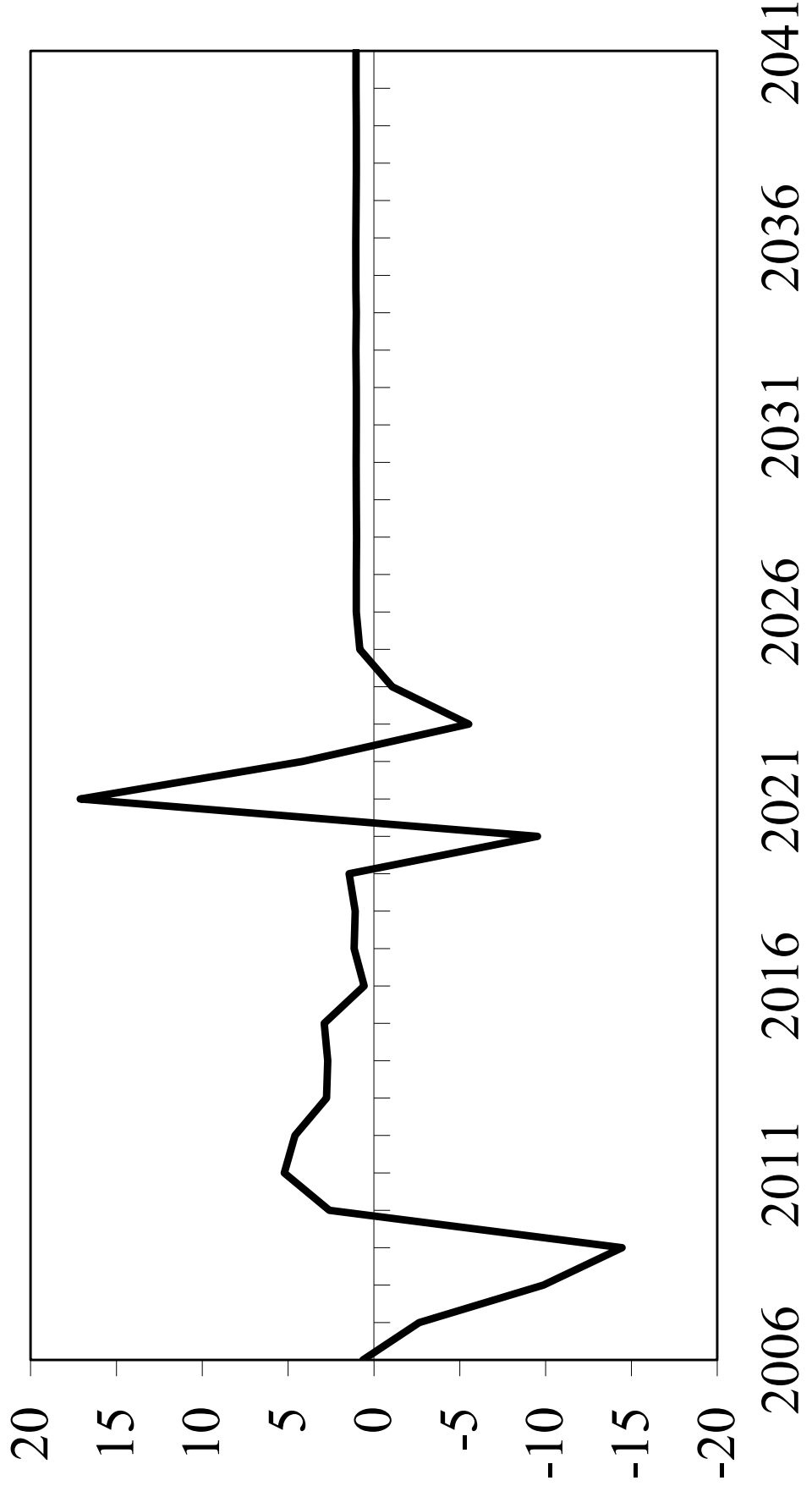
Employment



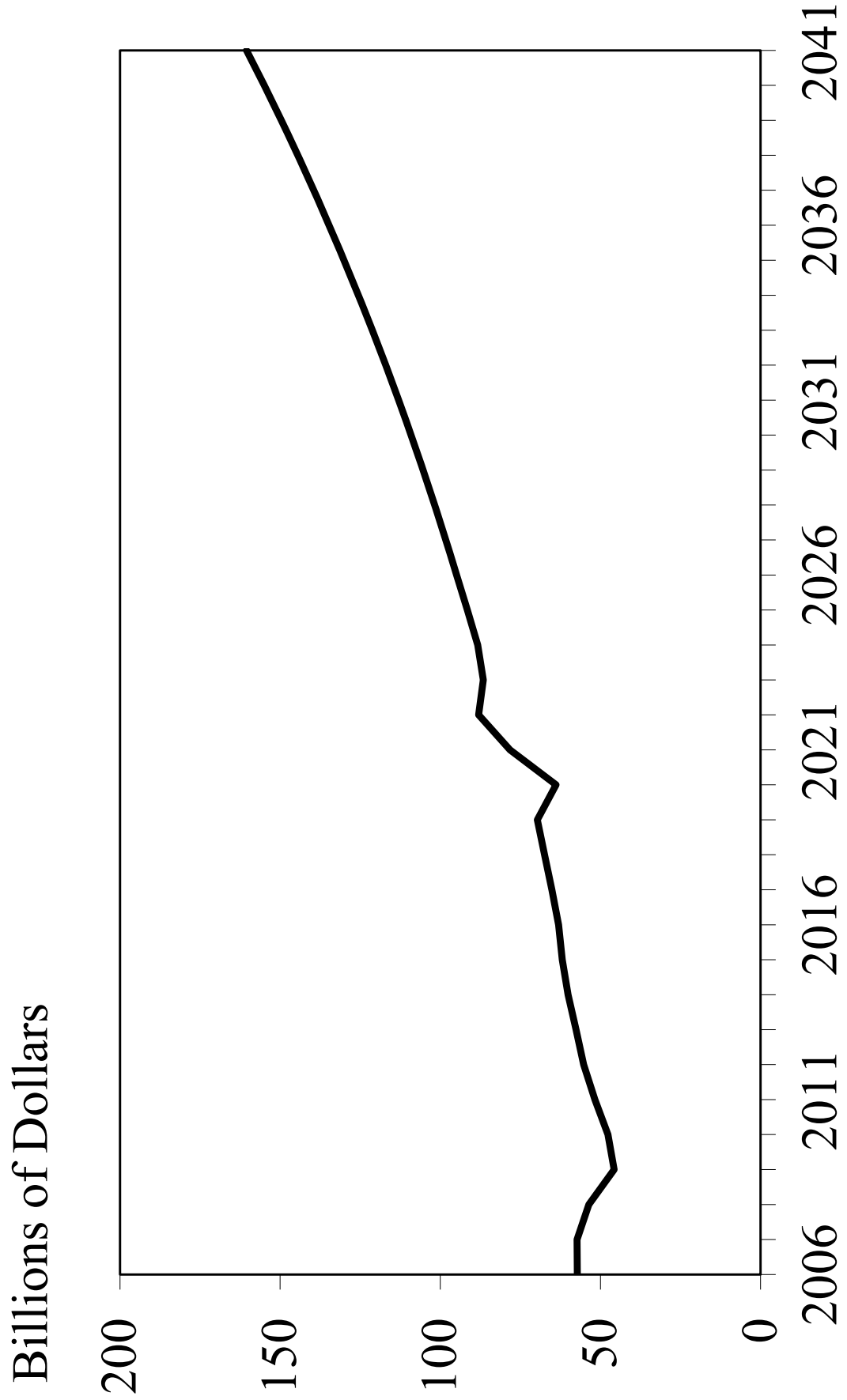
	ASTO	PASTO	ARSTO	PARSTO
2005	55,063	6.54	28,199	3.07
2006	57,203	3.89	28,380	0.64
2007	57,293	0.16	27,632	-2.64
2008	53,607	-6.43	24,904	-9.87
2009	45,713	-14.73	21,305	-14.45
2010	47,667	4.28	21,858	2.60
2011	51,731	8.53	22,999	5.22
2012	55,231	6.76	24,057	4.60
2013	57,591	4.27	24,722	2.77
2014	60,097	4.35	25,388	2.69
2015	61,916	3.03	26,125	2.90
2016	63,059	1.85	26,274	0.57
2017	65,148	3.31	26,578	1.16
2018	67,469	3.56	26,869	1.10
2019	69,689	3.29	27,259	1.45
2020	63,834	-8.40	24,661	-9.53
2021	78,254	22.59	28,880	17.11
2022	88,027	12.49	30,082	4.16
2023	86,596	-1.63	28,420	-5.53
2024	88,298	1.97	28,118	-1.06
2025	91,543	3.68	28,350	0.83
2026	94,912	3.68	28,642	1.03
2027	98,298	3.57	28,937	1.03
2028	101,774	3.54	29,229	1.01
2029	105,396	3.56	29,531	1.03
2030	109,152	3.56	29,838	1.04
2031	113,033	3.56	30,145	1.03
2032	117,051	3.55	30,455	1.03
2033	121,238	3.58	30,775	1.05
2034	125,551	3.56	31,093	1.03
2035	130,042	3.58	31,420	1.05
2036	134,708	3.59	31,753	1.06
2037	139,508	3.56	32,082	1.04
2038	144,471	3.56	32,413	1.03
2039	149,611	3.56	32,748	1.03
2040	154,957	3.57	33,091	1.05
2041	160,495	3.57	33,437	1.05

Calendar Year Real Taxable Sales

Year-to-Year Percentage Change

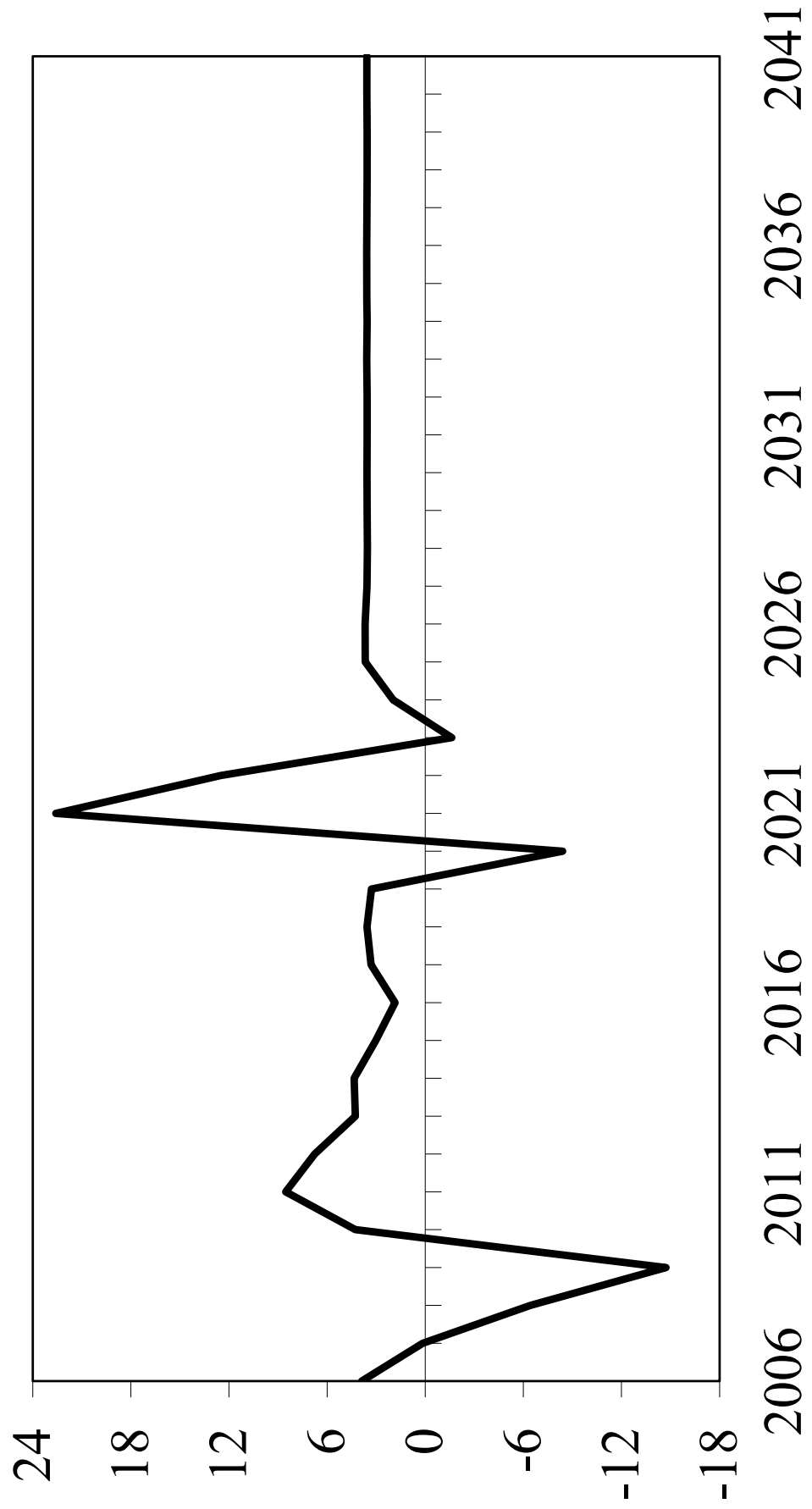


Calendar Year Taxable Sales



Calendar Year Taxable Sales

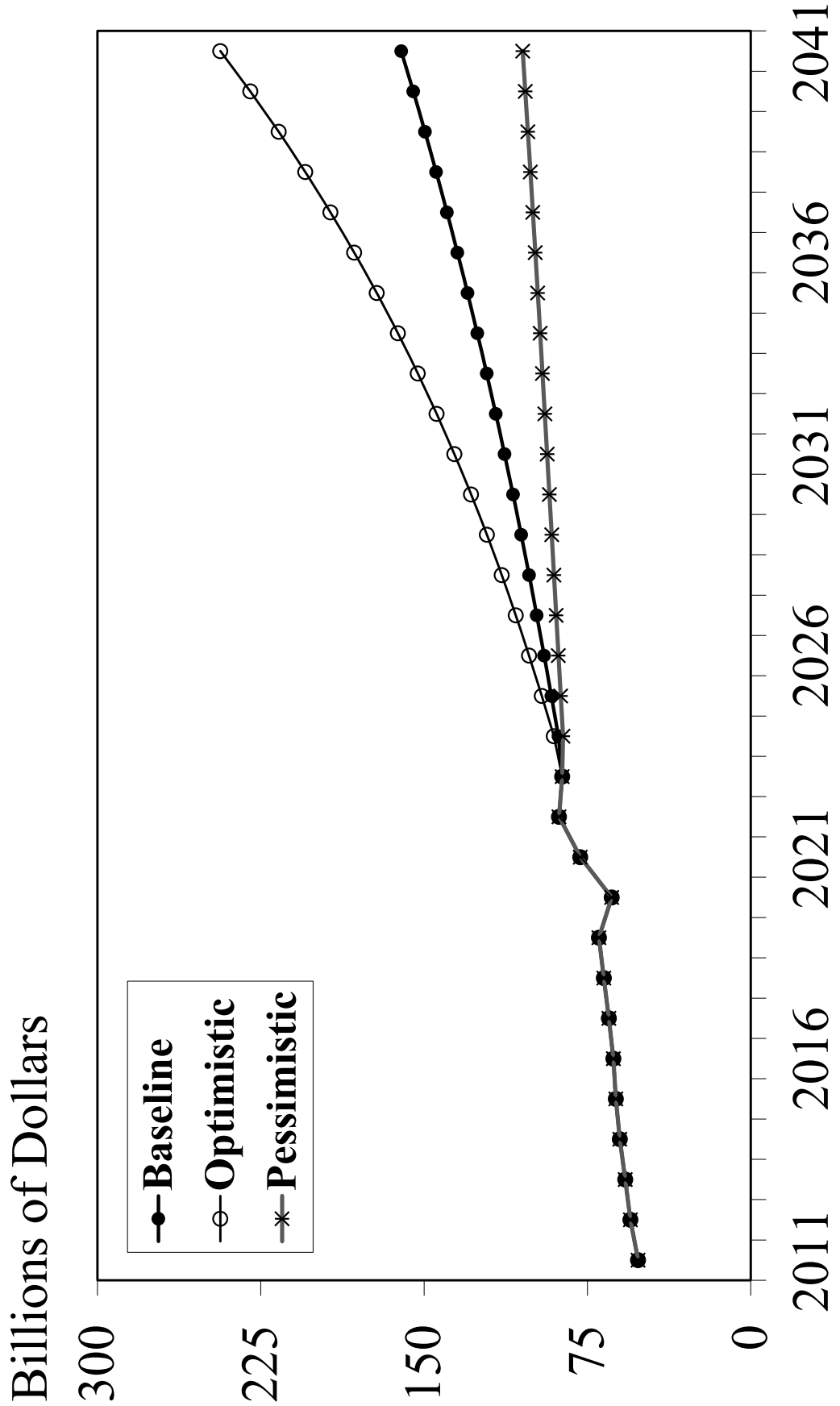
Year-to-Year Percentage Change



	STO	STOO	STOP
2015Q1	14,168	14,168	14,168
2015Q2	15,535	15,535	15,535
2015Q3	15,652	15,652	15,652
2015Q4	16,561	16,561	16,561
2016Q1	14,592	14,592	14,592
2016Q2	15,681	15,681	15,681
2016Q3	15,953	15,953	15,953
2016Q4	16,833	16,833	16,833
2017Q1	14,933	14,933	14,933
2017Q2	16,398	16,398	16,398
2017Q3	16,386	16,386	16,386
2017Q4	17,432	17,432	17,432
2018Q1	15,584	15,584	15,584
2018Q2	16,691	16,691	16,691
2018Q3	16,893	16,893	16,893
2018Q4	18,301	18,301	18,301
2019Q1	15,819	15,819	15,819
2019Q2	17,578	17,578	17,578
2019Q3	17,366	17,366	17,366
2019Q4	18,927	18,927	18,927
2020Q1	15,332	15,332	15,332
2020Q2	13,730	13,730	13,730
2020Q3	16,513	16,513	16,513
2020Q4	18,257	18,257	18,257
2021Q1	16,442	16,442	16,442
2021Q2	19,588	19,588	19,588
2021Q3	20,278	20,278	20,278
2021Q4	21,946	21,946	21,946
2022Q1	20,206	20,206	20,206
2022Q2	22,471	22,471	22,471
2022Q3	21,965	21,965	21,965
2022Q4	23,386	23,386	23,386
2023Q1	20,231	20,231	20,231
2023Q2	22,199	22,199	22,199
2023Q3	21,892	21,892	21,892
2023Q4	22,274	22,274	22,274
2024Q1	20,741	21,235	20,247
2024Q2	22,717	23,259	22,176
2024Q3	22,175	22,709	21,642
2024Q4	22,664	23,206	22,122
2025Q1	21,409	22,436	20,406
2025Q2	23,501	24,627	22,401
2025Q3	23,028	24,134	21,947
2025Q4	23,605	24,734	22,502

	ASTO	ASTOO	ASTOP
2005	55,063	55,063	55,063
2006	57,203	57,203	57,203
2007	57,293	57,293	57,293
2008	53,607	53,607	53,607
2009	45,713	45,713	45,713
2010	47,667	47,667	47,667
2011	51,731	51,731	51,731
2012	55,231	55,231	55,231
2013	57,591	57,591	57,591
2014	60,097	60,097	60,097
2015	61,916	61,916	61,916
2016	63,059	63,059	63,059
2017	65,148	65,148	65,148
2018	67,469	67,469	67,469
2019	69,689	69,689	69,689
2020	63,834	63,834	63,834
2021	78,254	78,254	78,254
2022	88,027	88,027	88,027
2023	86,596	86,596	86,596
2024	88,298	90,409	86,186
2025	91,543	95,931	87,257
2026	94,912	101,792	88,350
2027	98,298	107,891	89,358
2028	101,774	114,324	90,352
2029	105,396	121,165	91,376
2030	109,152	128,421	92,417
2031	113,033	136,102	93,461
2032	117,051	144,240	94,516
2033	121,238	152,898	95,606
2034	125,551	162,045	96,688
2035	130,042	171,772	97,802
2036	134,708	182,101	98,939
2037	139,508	193,006	100,065
2038	144,471	204,552	101,198
2039	149,611	216,790	102,344
2040	154,957	229,795	103,520
2041	160,495	243,579	104,708

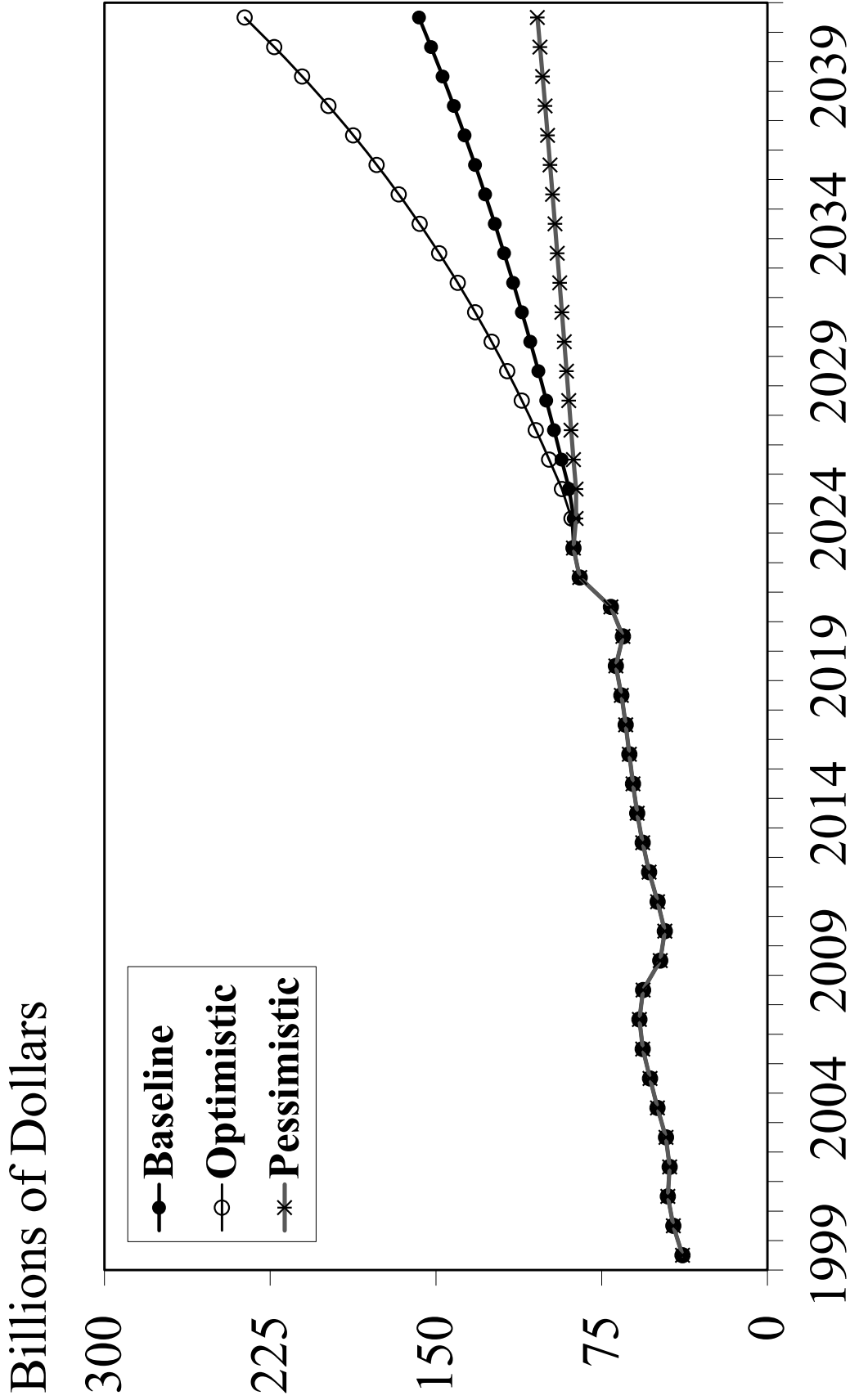
Calendar Year Taxable Sales Forecast (Baseline, Optimistic, Pessimistic)



	ASTOF	ASTOOF	ASTOPF	PASTOF	PASTOOF	PASTOPF
2005	53,101	53,101	53,101	6.72	6.72	6.72
2006	56,396	56,396	56,396	6.20	6.20	6.20
2007	57,900	57,900	57,900	2.67	2.67	2.67
2008	56,234	56,234	56,234	-2.88	-2.88	-2.88
2009	48,509	48,509	48,509	-13.74	-13.74	-13.74
2010	46,424	46,424	46,424	-4.30	-4.30	-4.30
2011	49,692	49,692	49,692	7.04	7.04	7.04
2012	53,503	53,503	53,503	7.67	7.67	7.67
2013	56,402	56,402	56,402	5.42	5.42	5.42
2014	58,894	58,894	58,894	4.42	4.42	4.42
2015	60,801	60,801	60,801	3.24	3.24	3.24
2016	62,486	62,486	62,486	2.77	2.77	2.77
2017	64,116	64,116	64,116	2.61	2.61	2.61
2018	66,093	66,093	66,093	3.08	3.08	3.08
2019	68,590	68,590	68,590	3.78	3.78	3.78
2020	65,355	65,355	65,355	-4.72	-4.72	-4.72
2021	70,801	70,801	70,801	8.33	8.33	8.33
2022	84,900	84,900	84,900	19.91	19.91	19.91
2023	87,780	87,780	87,780	3.39	3.39	3.39
2024	87,624	88,660	86,589	-0.18	1.00	-1.36
2025	89,749	92,978	86,571	2.43	4.87	-0.02
2026	93,175	98,785	87,772	3.82	6.24	1.39
2027	96,588	104,800	88,859	3.66	6.09	1.24
2028	100,075	111,126	89,911	3.61	6.04	1.18
2029	103,613	117,751	90,908	3.54	5.96	1.11
2030	107,292	124,790	91,930	3.55	5.98	1.12
2031	111,099	132,244	92,961	3.55	5.97	1.12
2032	115,035	140,138	94,000	3.54	5.97	1.12
2033	119,137	148,534	95,072	3.57	5.99	1.14
2034	123,339	157,374	96,119	3.53	5.95	1.10
2035	127,753	166,824	97,229	3.58	6.00	1.15
2036	132,305	176,813	98,335	3.56	5.99	1.14
2037	137,051	187,442	99,479	3.59	6.01	1.16
2038	141,912	198,634	100,595	3.55	5.97	1.12
2039	146,959	210,515	101,733	3.56	5.98	1.13
2040	152,217	223,151	102,907	3.58	6.00	1.15
2041	157,655	236,535	104,088	3.57	6.00	1.15

	ARSTOF	ARSTOOF	ARSTOPF	PARSTOF	PARSTOOF	PARSTOPF
2005	27,699	27,699	27,699	3.61	3.61	3.61
2006	28,351	28,351	28,351	2.35	2.35	2.35
2007	28,372	28,372	28,372	0.07	0.07	0.07
2008	26,576	26,576	26,576	-6.33	-6.33	-6.33
2009	22,581	22,581	22,581	-15.03	-15.03	-15.03
2010	21,418	21,418	21,418	-5.15	-5.15	-5.15
2011	22,478	22,478	22,478	4.95	4.95	4.95
2012	23,512	23,512	23,512	4.60	4.60	4.60
2013	24,376	24,376	24,376	3.67	3.67	3.67
2014	25,064	25,064	25,064	2.82	2.82	2.82
2015	25,688	25,688	25,688	2.49	2.49	2.49
2016	26,228	26,228	26,228	2.10	2.10	2.10
2017	26,423	26,423	26,423	0.75	0.75	0.75
2018	26,640	26,640	26,640	0.82	0.82	0.82
2019	27,083	27,083	27,083	1.66	1.66	1.66
2020	25,402	25,402	25,402	-6.21	-6.21	-6.21
2021	26,892	26,892	26,892	5.86	5.86	5.86
2022	30,103	30,103	30,103	11.94	11.94	11.94
2023	29,300	29,300	29,300	-2.67	-2.67	-2.67
2024	28,313	28,645	27,981	-3.37	-2.24	-4.50
2025	28,177	29,188	27,181	-0.48	1.90	-2.86
2026	28,477	30,189	26,828	1.06	3.43	-1.30
2027	28,786	31,231	26,485	1.09	3.45	-1.28
2028	29,098	32,308	26,144	1.08	3.45	-1.28
2029	29,391	33,399	25,789	1.01	3.38	-1.36
2030	29,692	34,532	25,443	1.02	3.39	-1.34
2031	29,996	35,702	25,101	1.02	3.39	-1.35
2032	30,301	36,910	24,762	1.02	3.38	-1.35
2033	30,616	38,167	24,433	1.04	3.41	-1.33
2034	30,922	39,453	24,100	1.00	3.37	-1.36
2035	31,248	40,802	23,784	1.05	3.42	-1.31
2036	31,572	42,190	23,468	1.04	3.40	-1.33
2037	31,907	43,636	23,162	1.06	3.43	-1.30
2038	32,233	45,114	22,851	1.02	3.39	-1.34
2039	32,566	46,646	22,546	1.03	3.40	-1.33
2040	32,908	48,240	22,250	1.05	3.42	-1.31
2041	33,253	49,887	21,956	1.05	3.41	-1.32

Fiscal Year Taxable Sales Forecast (Baseline, Optimistic, Pessimistic)



	PASTOF2023	PASTOF2024
2024	0.47	-0.18
2025	5.97	2.43
2026	3.07	3.82
2027	3.77	3.66
2028	3.90	3.61
2029	3.97	3.54
2030	4.06	3.55
2031	3.61	3.55
2032	3.77	3.54
2033	3.81	3.57
2034	3.75	3.53
2035	3.66	3.58
2036	3.89	3.56
2037	3.62	3.59
2038	3.47	3.55
2039	3.87	3.56
2040	3.34	3.58
2041	3.68	3.57

Disclaimer

This report is prepared by Raymond Sfeir and James Doti (Consultants). Consultants who are affiliated with the Chapman University, Argyros School of Business and Economics, shall conduct their business as an Independent Contractor and nothing contained herein shall be construed to create involvement of the Chapman University or of the Argyros School of Business and Economics between the Client and Consultants. Chapman University's Argyros School of Business and Economics shall not be liable to the Client, or to anyone who may claim any right due to Consultants' relationship with the Client, for any acts or omissions in the performance of said services on the part of the Consultants or on the part of the agents or employees of the Consultants.

Appendix

Sources of Data

- **Consumer Price Index** — "The Consumer Price Index," U.S. Department of Labor, Bureau of Labor Statistics. Projections made by the A. Gary Anderson Center for Economic Research.
- **Orange County Payroll Employment** — Employment Development Department, Labor Market Information Division, State of California. Projections made by the A. Gary Anderson Center for Economic Research.
- **Orange County Taxable Sales** — "Taxable Sales in California (Sales and Use Tax)," California Department of Tax and Fee Administration.
- **Orange County Population** — California Department of Finance. Population projections also made by the California Department of Finance.
- **Orange County Labor Force Participation Rate** — California Department of Finance. Labor force participation rate projections are modeled after the U.S. labor force participation rate projections.
- **U.S. Real Gross Domestic Product** — U.S. Department of Commerce, Bureau of Economic Analysis. Projections made by the Congressional Budget Office, the Federal Reserve, and the A. Gary Anderson Center for Economic Research.
- **Inland Empire Population** — California Department of Finance.