



STATE BOARD OF EQUALIZATION ECONOMIC PERSPECTIVE

Summary of Recent Economic Developments
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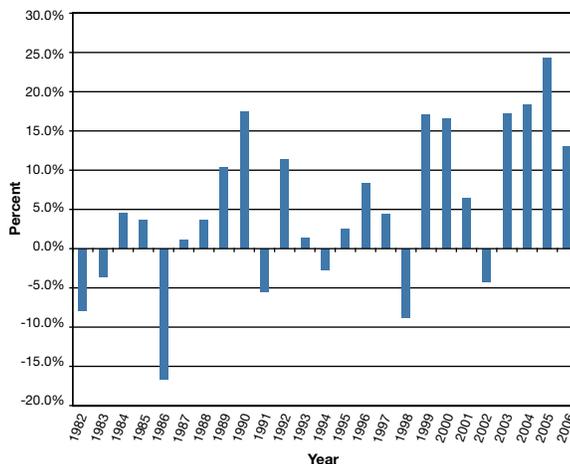
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❖ Perspectives on Gasoline Prices

Gasoline Prices Highly Variable

As we all know, gasoline prices have increased dramatically in recent years. Average California gasoline prices at the pump rose 79 percent from 2002 to 2006. Rising gasoline prices are reflected in taxable sales since gasoline is a taxable good. Using data for gallons sold and average prices we have derived estimates of taxable sales of gasoline from 1981 through 2006 (data includes aviation gasoline). (These figures differ from service station sales since service stations sell other taxable goods besides gasoline.) We plotted annual changes in taxable gasoline sales in the accompanying chart. As shown in the chart, annual taxable sales of gas have risen at double-digit rates since 2002. The chart also shows that taxable sales of gasoline rose at double digit rates in several individual years of the 1980s and 1990s, and they declined in many years.

Annual Changes in Taxable Sales of Gasoline



Gasoline Consumption Increasing Slower Than Vehicle Registrations

From 1981 through 2006 there has been a 42 percent increase in gallons of taxable gasoline sold in California. Over the same time period there has been a 77 percent increase in the total number of motorized vehicles registered in California (cars, motorcycles, light trucks and commercial trucks). Therefore, on average for this 26-year period, gallons of gasoline consumed have increased about 55 percent as fast as registrations. U.S. data indicate that miles per vehicle have increased about 28 percent from 1981 to 2006, but have remained fairly constant over the most recent ten years.

Recent Gasoline Consumption Trend Down Compared to Registrations

From 2002 to 2006 motorized vehicle registrations have increased 9.6 percent, while total gallons consumed rose 2.0 percent. (The table on the next page shows details of the annual percentage changes during this period.) If the historical average relationship of these two variables (55 percent) had held from 2002 to 2006, gas consumption would have risen 5.3 percent. So while it is difficult to precisely measure, these data and numerical relationships indicate that gasoline prices appear to have had a large impact in reducing gasoline consumption over this time period. Of course other factors, such as consumer responses to a greater awareness of global warming, could have also had impacts in reducing gasoline consumption during the past several years.

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	<i>Annual Percentage Changes</i>			
California:	2003	2004	2005	2006
Motorized Vehicle Registrations	0.4%	7.3%	-0.7%	2.3%
Taxable Gallons of Gasoline Sold	1.0%	1.6%	0.2%	-0.7%
Average Pump Price	17.5%	15.4%	16.3%	13.4%

Comparisons of Gasoline and All Other Taxable Sales

The taxable sales data we tabulated also enable us to analyze nongasoline taxable sales, which are defined as total taxable sales minus gasoline taxable sales. Over the entire 26-year period gasoline sales and all nongasoline taxable sales each increased an identical average of 5.4 percent per year. In 2006, nongasoline taxable sales rose 3.6 percent. Total taxable sales, boosted by a 13.0 percent increase in gasoline taxable sales, rose 4.2 percent in 2006. Therefore, total taxable sales rose 0.6 percent faster than nongasoline taxable sales in 2006. In an average year, we would expect nongasoline and total taxable sales to rise by the same percentage.

Gasoline Substitution Effects

Do these data necessarily imply that total taxable sales rose 0.6 percent more than they would have been if gasoline prices had increased by an average percentage in 2006? Perhaps somewhat surprisingly, many economists would say no. The reason for such a response is what economists call a “substitution effect.” In today’s economy many consumers consider gasoline to be a basic necessity. As a result, consumers are slow to reduce spending on gasoline if gas prices increase, even if they increase dramatically. Economic theory suggests that when gasoline prices rise, many consumers

will instead reduce spending of other goods and services in order to free up funds for at least some portion of their higher gas bills. While individual consumers vary, lower income households see this trade off more acutely than higher-earning households. Even middle income households may choose, for example, to go out to dinner less frequently and use the savings to pay for higher fuel bills. Such trade offs may not always even be made consciously in reaction to rising gasoline prices, but may be made as responses to overall household budget balancing decisions.

Quantification of Substitution Effects

Some of the substitutions consumers make may be from spending on items subject to the sales tax, such as hot prepared meals or beverages. One can think of many other taxable items consumers may do without to pay higher gas prices. Can such substitution effects be quantified? Economists in the state of New York have developed a statistical methodology to estimate the substitution effect.¹ They found that, on average, for every additional dollar of spending on gasoline when gasoline prices rise faster than disposable incomes, New York consumers reduced spending on other taxable goods by about \$0.75. This is a substitution effect for other taxable goods of 75 percent. The remaining 25 percent of increased gasoline spending comes from substitutions of nontaxable goods or services (that is, less spending on these items pay for increased gas costs) or from reduced savings or increased borrowing.

¹ *Do Rising Gasoline Prices Yield Increased State Sales Tax Revenues? Evidence from New York State*, William Casey and James Stevens, New York State Department of Taxation and Finance, Office of Tax Policy Analysis. Prepared for the Federation of Tax Administrators Revenue Estimating Conference, Oklahoma City, Oklahoma, October 11, 2005, www.taxadmin.org/fta/meet/05rev_est/casey_stevens.pdf.

California Substitution Effects

We applied a similar econometric methodology to that used in New York for California, and our results are similar. Using quarterly data from 1981 through mid-2005, we estimated a substitution effect for other taxable goods of about 83 percent. If this estimate is correct, the vast majority of the increased taxable sales of gasoline came as a substitution of less spending on other taxable goods.

❖ U.S. Economic Developments

Slowing Growth in Late 2007

Turning to recent trends, U.S. economic growth slowed in late 2007. With a weak fourth quarter, real gross domestic product (GDP) rose 2.2 percent for all of 2007. This is well below the ten-year average growth of 2.9 percent per year. According to many economists, real GDP growth is expected to remain below its long term average in 2008. The *2008-09 Governors' Budget* forecasts real GDP to rise 1.9 percent in 2008, about the same as last year, before increasing 2.9 percent in 2009.

❖ California Economic Developments

U.S. and California Growth Slow Throughout 2007

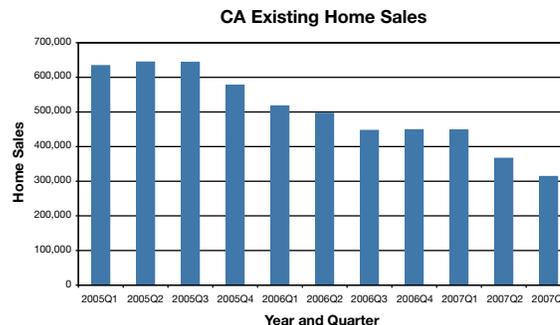
One of the most comprehensive indicators of economic well being available for states on a timely basis is nonagricultural payroll employment. As shown in the chart, quarterly nonagricultural payroll employment growth in both the U.S. and California have slowed dramatically in 2007 compared to the same quarters of 2006. Furthermore,

California growth was above the U.S. in the first half of 2007, but fell below the U.S. in the second half.



California Home Sales Falling Sharply

One measure of the weakness in real estate markets related to the much discussed problems of subprime lending practices is home sales. Data from the California Association of Realtors indicate that sales of existing single-family detached homes have fallen by more than half since the middle of 2005. As shown in the chart, seasonally adjusted California home sales declined from an annual rate of 644,000 in the third quarter of 2005 to 314,000 by the third quarter of 2007. More recent monthly data indicate that sales are continuing to decline. Numbers of home sales are extremely important for property tax revenues since market values are only reflected in assessed values when homes are sold.



A Review of 2006 Taxable Sales

In January the Board of Equalization released detailed taxable sales figures for calendar year 2006. While these data are over a year old, certain relationships between state and national figures indicate that retail spending trends for 2007 are similar in many respects to 2006. So the 2006 California data could provide some insights into growth patterns for 2007 and trends that may continue into 2008.

California taxable sales rose 4.2 percent in 2006. After adjusting for inflation using the California taxable sales deflator, taxable sales rose 2.4 percent. Sales by durable goods retailers grew by 0.4 percent, while sales by nondurable goods retailers increased 6.7 percent. Weak car sales and household and home furnishings sales held down growth in the durable goods category. Stronger than average sales made by service stations, restaurants, and apparel stores contributed to raise growth for nondurable goods.

Service station sales led all major categories with a 13.0 percent increase in taxable sales, mostly on account of higher gasoline prices. Gas prices increased 13.4 percent in 2006 and the pump price averaged \$2.851 per gallon. Gasoline consumption decreased 0.7 percent. (For additional details on 2006 taxable sales, use this link to the Board website www.boe.ca.gov/news/tsalescont06.htm.)

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For more information about topics covered in this issue, please visit any of the websites listed below.

Online Resources

California Department of Finance

www.dof.ca.gov

California Employment Development Department (EDD), *Labor Market Conditions in California*

www.labormarketinfo.edd.ca.gov

Federal Reserve Bank of Philadelphia,

Survey of Professional Forecasters

www.phil.frb.org/econ/spf/index.html

National Association for Business Economists

www.nabe.com

U.S. Bureau of Economic Analysis

www.bea.gov

U.S. Bureau of Labor Statistics

www.bls.gov/cpi/

U.S. Census Bureau

www.census.gov