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❖ What Drives the Market for Diesel Fuel?

Some components of the U.S. economy are large, but little noticed in our everyday lives. The market for diesel fuel is one such part of the economy. Gallons of diesel sold for on-highway use in California are about 20 percent as large as the market for gasoline. In addition to taxable on-highway diesel fuel, significant quantities of diesel are used in California rail transport, public transit, agriculture, construction, and other off-road activities that are generally exempt from the diesel excise tax. According to the California Energy Commission, 30 to 40 percent of total diesel demand in California is exempt from the excise tax, accounting for a less visible component of the overall market for diesel.¹ While today's high prices make most of us continuously aware of the market for gasoline, fewer of us notice similar or even larger increases that have occurred for the price of diesel fuel in recent years. This article describes some major factors affecting the diesel fuel market in California.

Trucks Large Consumers

About 90 percent of diesel fuel sold for use on California roads is consumed by medium and heavy duty commercial trucks.²

¹Staff Workshop Before the California Energy Resources Conservation and Development Commission In the Matter of: Implementation of Assembly Bill 868 (Davis, Chapter 398, Statutes of 2007) Fuel Temperature Study," March 4, 2008.

²Data from 2007 *California Motor Vehicle Stock, Travel and Fuel Forecast*, California Department of Transportation, May 2008 and Board of Equalization records.

National figures show that an average of 41 tons of freight (81,203 pounds) valued at \$31,727 was transported by truck for every American resident in 2002.³ Indirectly, we consume about 74 gallons of diesel fuel per capita, per year in moving this freight in California.⁴

California Trucking Profile

According to data from the U.S. Department of Transportation, about 43 percent of the value of all California freight is from shipments within the state. The majority of the value of shipments (57 percent) is to or from California or to or from other places. Top products shipped in terms of value within the state include machinery, electronics, and gasoline. Some of the top products in terms of value shipped to or from the state include machinery, electronics, precision instruments and textiles. Foreign destinations represent about 30 percent of the value of products shipped to or from California.⁵

Globalization Impacts

The importance of foreign destinations implies that much California diesel use is ultimately related to foreign trade for moving both imported and exported goods. The long term trend of increased globalization has resulted in increased diesel consumption. Over the past ten years the real value

³Calculated from data found in *Freight in America: A New National Picture*, U.S. Department of Transportation, January 2006

⁴Calculated by multiplying taxable California diesel fuel gallons in 2007 by 90 percent and then dividing by California population on July 1, 2007.

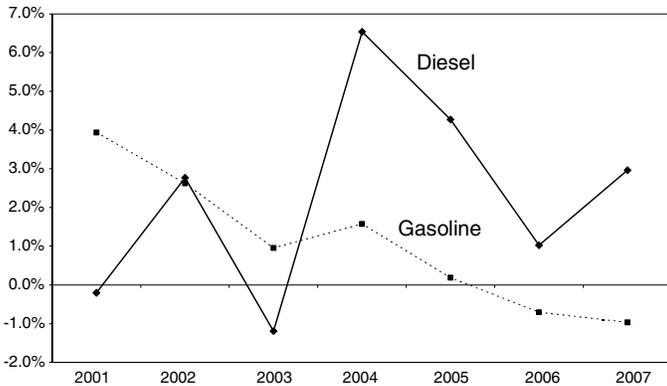
⁵U.S. Department of Transportation, "Freight Analysis Framework" data for California in 2002.

of U.S. imported goods has grown an average of 6.9 percent per year, while the real value of U.S. exported goods has risen an average of 4.3 percent per year. Using these figures, imported and exported goods have had combined growth averaging over 11 percent per year.

Diesel Consumption Forecast to Increase in the Long Term

This trend in foreign trade of goods is expected to continue for the foreseeable future. The California Energy Commission forecasts California diesel fuel gallonage to increase an average of about 2.8 percent per year from 2005 through 2030, mostly on account of freight hauling related to imported goods.⁶ In 2007 Californians consumed 3.0 percent more gallons of diesel fuel than 2006, close to this long term average forecast. The chart below compares trends in annual changes of diesel and gasoline gallonage over the past several years.

Annual Percent Change in Gallonage of California Taxable Diesel and Gasoline

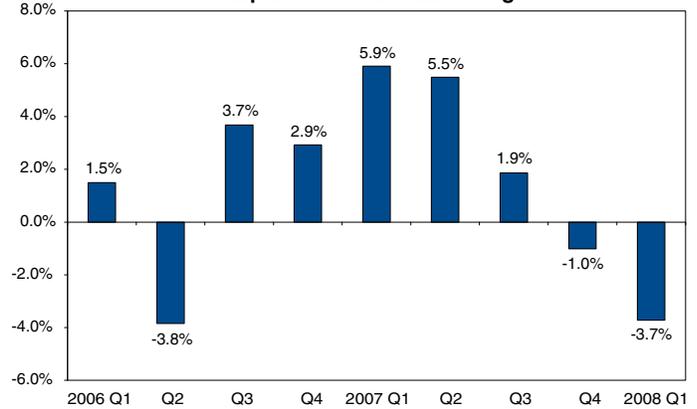


California Diesel Use Currently Trending Downward

An examination of recent quarterly gallonage data shows that consumption has been trending downward since early 2007, but growth remained positive

until the fourth quarter (see chart below). The positive growth throughout most of 2007 may be partially explained by demand related to exporting goods. Even with slowing economic growth, exports were one of the few bright spots in the U.S. economy in 2007. In 2007 real U.S. exports of goods increased 7.5 percent, much faster than overall real gross domestic product (GDP) growth of 2.0 percent.

Change in Diesel Gallons Compared to Four Quarters Ago



Many Factors Affect Diesel Prices

Diesel prices are largely a function of crude oil prices set in world markets, but also depend on diesel supply and demand conditions worldwide. Diesel cars have become popular in Europe in recent years, boosting the demand. Also, increased demand for diesel from construction and freight hauling in rapidly developing countries such as China and India have put additional upward pressure on prices. On the supply side, a lack of worldwide refining capacity and the difficulty of increasing it rapidly have contributed to higher prices.

Ultra-Low-Sulfur Diesel

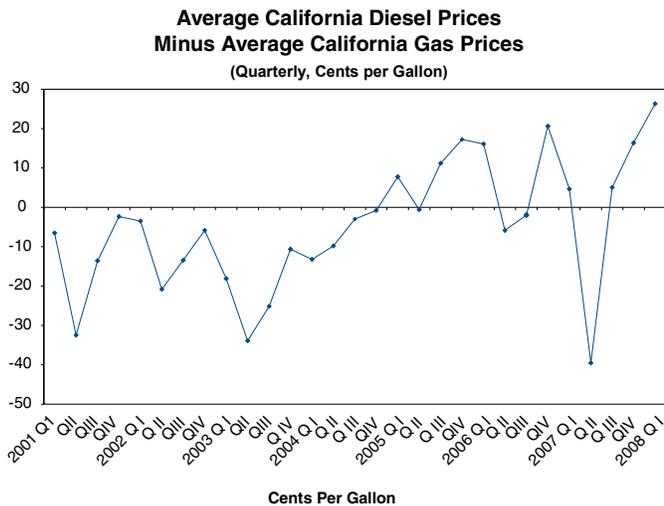
More stringent environmental regulations have also played a role in increasing diesel prices in recent

⁶Transportation Energy Forecasts for the 2007 Integrated Energy Policy Report, Draft Staff Report, California Energy Commission, July 2007.

years. In 2006 the U.S. Environmental Protection Agency mandated a drop in the amount of sulfur in diesel from 500 parts per million (ppm) to 15 ppm. According to the U.S. Energy Information Administration, complying with the new ultra-low-sulfur diesel standard was estimated to increase the cost of refining diesel by about \$0.05 per gallon in 2001. However, increases in crude oil prices since 2001, uncertainties regarding this estimate, and the added distribution costs to the diesel consumer could push costs several times higher, especially during the implementation period through 2010.⁷

Diesel Prices Rising Faster Than Gas

Until 2005 diesel prices were generally lower than gasoline prices. However, due to all of the factors mentioned above, diesel prices have generally been higher than gasoline prices in recent years. The chart below shows the average quarterly difference between diesel and gasoline prices (diesel prices minus gas prices, in cents per gallon). Since 2005 California diesel prices have generally been higher than gas prices, and the recent trend is toward a larger disparity between the two.



⁷RL30737: *Diesel Fuel and Engines: An Analysis of EPA's New Regulations*, U.S. Congressional Research Service, May 1, 2001. Also, "Diesel – Fuel of the Future?" *Gasoline Column*, May 2, 2007, U.S. Federal Trade Commission. One industry trade group predicted that ultra-low-sulfur diesel fuel could cost as much as \$0.50 per gallon more than traditional diesel ("ULSD Cost May Soar," *Light and Medium Truck*, May 2005).

Sales Taxes on Diesel Increasing

The California tax on diesel fuel for use on highways is \$0.18 per gallon, the same as gasoline. In addition, sales taxes are collected on the value of diesel sold. In 2007 the Board of Equalization collected an estimated \$666 million in sales taxes related to on-highway diesel fuel use. If off-road diesel use is 30 percent of the total diesel market (the low end of California Energy Commission's estimates) an additional \$285 million in sales tax revenues are related to diesel fuel use. With the large price increases for diesel over the past several years, these figures have more than doubled since 2003.

❖ U.S. Economic Developments

Slow Growth Continues

Turning to recent trends in the overall economy, U.S. economic growth slowed dramatically in late 2007 and this slowdown has continued through the first half of 2008. Real GDP rose 1.4 percent in the first half.

Little Change in Growth Expected

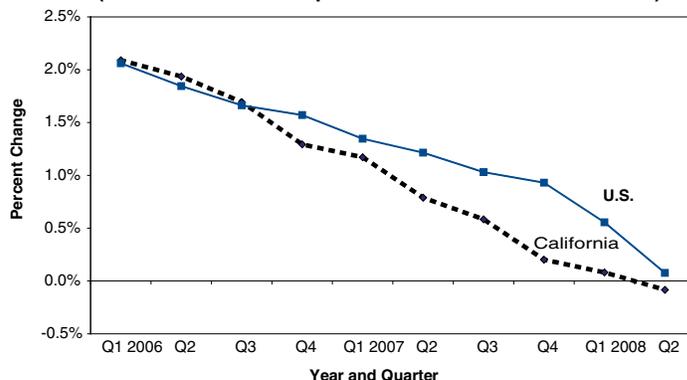
According to many economists, real GDP growth is expected to remain relatively weak for the rest of 2008. The most recent survey of about 50 professional forecasters polled by the Federal Reserve Bank of Philadelphia calls for real GDP to increase 1.5 percent in 2008. If achieved, this growth would be only about half of the 2.9 percent per year average of the past ten years.

❖ California Economic Developments

U.S. and California Employment Growth Converges at a Standstill

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 California was well below the U.S. in most of 2007 (quarters compared to corresponding quarters of one year ago). However, the most recent data show that California and U.S. employment growth have converged, and neither is growing more than 0.1 percent. California employment growth has remained almost flat for several quarters while U.S. growth has decreased rapidly.

U.S. and California Average Growth in Nonagricultural Jobs
(Percent Growth Compared to Quarter of Previous Year)



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To contact your Board Member, see www.boe.ca.gov/submenus/boardmembers.htm

Online Resources

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

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
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