

San Joaquin Valley Real Gross Regional Product

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Introduction

Real total product is the cornerstone of economic accounting systems. This is as true of nations as it is of smaller regions. For the San Joaquin Valley, gross regional product (GRP) is the final value of all goods and services produced in the region during a given period of time. As such, GRP provides a measure of the size of economy and can be used to calculate economic growth. Since the region's output is eventually purchased by firms, households, and government, it also provides a measure of the total income. From the perspective of a firm or government, reliable GRP data is an essential aid for planning public and private investment. In this paper we calculate an estimate of GRP for the years 1969 to the present. We also provide a sectoral breakdown of GRP, so that growth rates of individual industries can be tracked and compared.

Other data provide useful information for a regional economy, but none are as comprehensive or topical as GRP. For example, it is important to track employment data, as is done by the State of California's Employment Development Department, but employment tends to lag the business cycle and this limits its usefulness as an economic indicator. Personal income, estimated by the Bureau of Economic Analysis (BEA) is also a useful measure of economic activity. However, personal income omits contributions made by firms and government, and therefore does not provide a complete picture of a region's economic activity. In fact, on the national level, personal income has been shown to deviate from the cyclical movement of total output.

Fresno County

Services were the largest sector in Fresno County from 2001 – 2005 and grew at an average annual rate of 3.6%. The strongest growth in this sector came from Administrative and Support Services, Educational Services, and Professional and Technical Services; which grew at a rate of 11.9%, 9.0%, and 7.9% respectively. The Finance and Real Estate Sector represented the second largest sector of the economy during this time period and grew at an average annual rate of 4.9%. Real Estate comprised the bulk of this sector and grew at a rate of 8.2%.

Not surprisingly, the fastest growing segment of Fresno's economy during this time period was Federal Military spending, which grew at an average annual rate of 16.7% -- largely due to sharp increases in 2001 and 2002. Of the major sectors in the economy, agriculture and real estate posted the largest gains at 9.3% and 8.2% respectively.

Fresno County grew at an annual average rate of 4.5% between 2001 and 2005. This compares favorably to the 2.7% growth in the U.S. economy as a whole during the same

time period. However, while the U.S. economy posted its strongest gains in 2004 and 2005, Fresno County saw a sharp drop in growth in 2005 – falling to 2.1% from 5.1% in 2004.

Our estimates of per capita GRP grew at an annual average rate of 2.7%, from \$23,616 in 2001 to \$26,264 in 2005. The growth in population therefore outpaced the growth in output. Moreover, Fresno's per capita GRP fell significantly below the U.S. as a whole, which saw a rise in per capita GDP from \$34,659 to \$37,127 during the same time period.

Kern County

The service sector, which comprised 18% of GRP, represented the largest single contributor to Kern County's economy. Services grew at an average annual rate of 5.0% between 2001 and 2005. With the exception of Management of Companies and Enterprises, which contracted by 1.5%, growth was strong throughout the service sector. Administrative and Support Services and Educational Services posted the biggest gains at 9.5% and 8.7% respectively. State and Local Government represented the second largest segment of the economy at 12%, followed closely by Mining at 11%. These sectors grew at an average annual rate of 3.4% and 12.3% respectively.

Of the major sectors of Kern County's economy, the fastest growing segment was mining, real estate, and agriculture; with the latter two growing at rates of 10.4% and 8.1% respectively. Primary metal manufacturing grew at a dramatic average annual rate of 42.3% during this time period, although it posted a loss 8.2% in 2005. Petroleum and Coal Products Manufacturing also grew strongly at 27.2%.

Kern County real GRP grew at 4.9% with the largest gain coming in 2005 – a 7.2% increase from 2004. Thus Kern County outpaced the 2.7% gains posted by the U.S. as a whole during this period. Per capita GRP was also strong in Kern County, growing from \$36,233 in 2001 to \$39,314 in 2005 for an average annual increase of 2.0%.

Kings County

At 36% of total GRP, Government and Government Services represented the largest segment of the Kings County economy during the period from 2001 to 2005. This sector grew at an annual average rate of 7.2%, largely due to increases in Federal Military spending during 2001 and 2002. Agriculture and Service contributed 15% and 12% to GRP, and were the second and third largest segments of the economy. These sectors grew at rates of 9.4% and 5.6% respectively.

Of the major sectors of the economy, Agriculture posted the largest gains, while Nondurable Manufacturing grew at a rate of 6.4% and Services at a rate of 5.9%. Two major categories, Retail Trade and Real Estate, showed a negative annual average growth rate at -0.4% and -1.5% respectively. Retail Trade rebounded somewhat, growing at a rate of 5.1% in 2005 after falling 8.7% between 2001 and 2003. On the other hand, Real Estate dropped 14.0% in 2005 after showing small gains in 2003 and 2005. This drop is largely due to a decline in Rental and Leasing Services which fell at an annual average rate of 14.2% from 2001 to 2005, and 38.5% in 2005 alone.

Kings County GRP grew at an average annual rate of 6.3% from 2001 to 2005, well beyond the 2.7% growth in the U.S. as a whole. However, these gains were mostly due to sharp increases in 2002 and 2003, which posted gains of 7.9% and 9.3% respectively. In 2005 Kings County grew at the modest rate of 2.0%. Per capita GRP grew from \$17,777 in 2001 to \$21,014 in 2005 – well below the U.S. as a whole. The average annual growth in per capita GRP of 4.2% indicates that population is growing more rapidly in Kings County than output.

Madera County

Services, which accounted for an average of 19% of total GRP, was the largest sector in Madera's economy from 2001 to 2005. The service sector grew at an average annual rate of 5.9% over this time period. While the most rapid growth occurred in Educational Services, at 19.0%, the bulk of Madera's service sector was comprised of Health Care and Social Assistance, which grew at a rate of 7.9%. Government Spending was the second largest contributor to GRP, followed by agriculture. Both of these sectors grew significantly during the first half of the decade – 7.6% growth in government spending and 12.7% for agriculture.

Of the major sectors of Madera's economy, real estate saw the fastest growth at an annual average of 14.5%. As noted above, agriculture as posted strong gains over this time period. Growth in real estate was particularly strong in 2001 and 2003, while agriculture strong growth between 2001 and 2004 followed by a drop of 8.2% in 2005.

Per capita GRP was low in Madera County, averaging \$17,953 from 2001 to 2005, compared to \$35,682 for the U.S as a whole over the same time period. On the other hand, per capita GRP grew more rapidly in Madera than the nationwide average – 4.0% in Madera compared to 1.7% for the U.S. Growth was strongest during the 2002 and 2004, at 5.6% and 5.8% respectively, while the most recent data show only a very modest increase – a 0.4% increase in 2005.

Merced County

Merced County real GRP grew strongly over the years 2001 to 2004, but fell by 0.3% in 2005. This pattern is closely mirrored by the agriculture sector, Merced's largest contributor to GRP over this time period. Agriculture grew at an average annual rate of 16.0% between 2001 and 2004, but declined by 15.7% in 2005. Growth in agriculture was particularly strong in 2003 and 2004, which saw gains of 18.8% and 26.9% respectively. Services, which comprised 16.0% of GRP, were the second largest sector of the Merced economy and grew at an average annual rate of 3.4%. Hospitals, nursing and residential care represented the largest single portion of the services sector and grew at an average annual rate of 5.7%. The most rapid growth in services occurred among waste management and remediation at 9.9%, although this industry remains one of the smaller components of the service sector.

Of the major components of Merced's GRP, real estate posted the strongest gains at an average annual rate of 14.3%. These gains were strongest in 2002, and growth has declined

to steadily to 4.6% in 2005. Not surprisingly, construction also posted strong gains, growing at an average annual rate of 13.5%. Construction growth jumped sharply from 5.8% in 2002 to 15.1% in 2003, and remained in the 15% - 16% range up to the most recent data. Federal civilian and military spending also experienced strong growth during this time period, although its overall contribution to the county economy was modest.

Merced per capita real GRP was significantly lower than the U.S. as a whole – an annual average of \$19,022 for Merced compared to \$35,682 for the U.S. Similar to real GRP, per capita GRP grew strongly in Merced during 2002 to 2004, but declined by 2.5% in 2005. This is likely due to a sharp decline in agriculture combined with modest growth in other major sectors such as services and local government.

San Joaquin County

At 20% of GRP the Services sector constitutes the largest single contributor to the San Joaquin County economy. Between the years 2001 and 2005 services grew at an average annual rate of 5.3%. Health care and social assistance was the largest component in the service sector and grew by a 6.8%. Other major components were professional and technical services, which grew at an average rate of 5.8%; Administrative and Waste Services, which grew at a rate of 4.3%; and Accommodation and Food Services, which grew at a rate of 7.0%. Of these components health care and accommodation and food services showed consistent strong growth throughout 2001 – 2005, while professional and technical services dropped significantly in 2005 after showing strong growth in previous years. Growth in the administrative and waste management component showed a similar decline in 2005, although still posting gains of nearly 1.0%.

Of the major sectors of the San Joaquin economy, real estate and construction showed the strongest growth – rising at an average annual rate of 8.1% and 9.4% respectively. State and local government, which constituted 11% of the county's entire GRP, grew 3.1% over this time period with virtually all of those gains coming from local government. Retail trade constituted 11.0% of the county's economy and grew at an average annual rate 3.7%. Of the eight counties in the San Joaquin Valley, San Joaquin is the only one for which manufacturing represents an above average contributor to GRP. However, manufacturing slipped by an annual average 0.6% during this time period due to a sharp decline in 2002. Since 2002 manufacturing growth has been modest but steadily increasing, reaching 3.7% in 2005.

Per Capita GRP averaged \$22,692 for the San Joaquin County during 2001 – 2005, well below the U.S. average of \$35,682. Growth was strongest in 2002 and declined steadily to a low of 0.1% in 2005. On average per capita GRP grew 1.9% during these years. Real GRP grew at the significantly higher rate of 4.8%, however, indicating that population growth has significantly outpaced output.

Stanislaus County

The service sector constituted the largest single contributor to Stanislaus County GRP over the years 2001 to 2005. Services grew at an average annual rate of 5.5% largely due to an

7.2% rise in health care services and an 8.2 rise in professional and technical services. While services constituted 20% of Stanislaus County's GRP, real estate, nondurable goods production and state and local government also contributed significantly to output. Real estate, the second largest contributor behind services, grew at an average annual rate of 12.6%, although 2005 saw a significant decline – less 0.01% growth. Nondurable production, largely accounted for by food production, grew at an annual average rate of 1.5%. The trend in non-durable manufacturing was the opposite of real estate, with losses in 2002 and 2003, but strong growth in more recent years.

Aside from real estate, whose growth had fallen virtually to zero in 2005, agriculture experienced the fastest growth among the larger sectors of the Stanislaus economy. Agriculture grew at an average annual rate of 9.2% with particularly strong growth in 2004, 38.0%, and a contraction of 17.7% in 2005.

Stanislaus County per capita GRP averaged \$23,185 during the years 2001 – 2005, below the U.S. per capita GDP of \$35,682 for the same time period. Growth was strongest in 2002 and 2004, while the 2.2% increase of 2005 was the smallest gain. Despite being lower than U.S. as a whole, these numbers compare favorably to the other counties of the San Joaquin Valley.

Tulare County

The service sector constituted the largest component in the Tulare County economy during the years 2001 to 2005, followed closely by State and Local government and agriculture. Services grew at an average annual rate of 5.8% with much of these gains coming from health care services – 6.2% average growth rate--and professional and technical services— 8.4% average annual growth. Overall growth in services was strongest in 2002 with a gradual decline to 2.8% growth in 2005. Like other counties in the San Joaquin Valley, agriculture saw significant growth in 2004 and a decline in 2005. On average, agriculture grew at a rate of 6.8% over this period. Local government growth was strong in 2002 at 5.1%, but remained stable at between 2% - 4% for the remaining years.

Other than those components listed above, the real estate and construction showed significant growth. With the exception of 2002, real estate grew at an annual rate of over 10% with the largest gains coming in 2003. Growth in construction occurred more slowly early in this time period, but posted gains of 11.8% in 2004 and 16.2% in 2005.

At \$19,810 per capita GRP was low relative to the U.S. and the San Joaquin Valley as a whole. Growth was strongest in 2004, which saw a 5.3% increase, and lowest in 2005 when per capita GRP grew by only 0.2%. On average Tulare County saw a 2.8% increase in per capita GRP during the first half of the decade.

Methodology

We use a method proposed by Snead and Ireland (2002)¹ to construct our estimate of nominal GRP. Specifically, we obtain Gross State Product (GSP) for California and earnings by economic sector for each county and the state from the Bureau of Economic Analysis (BEA). We then calculate the ratio of earnings in each county to statewide earnings by sector. This ratio is used to prorate GSP by sector in order to obtain sectoral shares of GRP. Finally we sum each sector's share to obtain our estimate of nominal GRP. Nominal GRP is then adjusted for inflation using the U.S. gross domestic product chain-type price index.

Monthly data is approximated from annual GRP by calculating weights equal to employment in each sector, divided by average annual employment. We then use the product of each month's weight to annual GRP to estimate an annualized monthly GRP. Quarterly GRP is calculated as an average of the seasonally adjusted monthly data. For more information regarding the construction of GRP, please contact the authors.

If you have any questions or would like access to the data, please contact Ed Birdyshaw at 559.278.3950 or ebirdyshaw at csufresno.edu.

¹ *Oklahoma Business Bulletin* 7(4), Center for Economic and Management Research, The University of Oklahoma.