



STATE BOARD OF EQUALIZATION

ECONOMIC PERSPECTIVE

Summary of Recent Economic Developments

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❖ *U.S. Economic Developments*

Software Included As Investment in Revised GDP Data

In late October, the U.S. Department of Commerce released comprehensive historical revisions of gross domestic product (GDP) going back to 1959. This is the eleventh such revision Commerce has ever made; the last major revision was released in 1996. The revisions reflect definitional and industrial classification modifications caused by technological changes in the economy over time, improved statistical methodologies, and more recent data. Starting with this data release, the Department of Commerce also includes all business and government software as fixed investment. (For a more detailed description of this definitional change and its implications for GDP, see the last section of this newsletter, "BEA Revisions Defining Software as Investment Increase GDP.") The new definition, which is widely considered by most economists to be an improvement in measurement, more accurately reflects the changing nature of the U.S. economy, which has become much more dependent on software in recent years. The change has added more than 0.2 percent to U.S. annual real GDP growth in the last few years, and is expected to add similar amounts in the future.

Real GDP Growth Accelerates in Third Quarter

Using this new methodology, real GDP rose 4.8 percent in the third quarter of 1999, according to the "advance" (first) estimate made by the U.S. Department of Commerce. This growth rate is up sharply from 1.9 percent growth in the second quarter, and somewhat higher than the 1998 annual increase of 4.3 percent. Much of the difference in the second and third quarter growth rates is accounted for by differences in inventories in the two quarters. Real final sales of domestic product — GDP less change in private inventories — increased 4.1 percent in the third quarter, compared with an increase of 3.4 percent in the second. Most of the major components of GDP contributed to the increase in the third quarter. The strongest component was real nonresidential fixed investment, which increased at an annual rate of 14.9 percent in the third quarter, up from a gain of 7.0 percent in the second quarter. Real business equipment and software purchases (a subcomponent of non-residential fixed investment) was especially strong in the third quarter, increasing 21.7 percent, up from a gain of 11.2 percent in the second quarter. (Source: U.S. Department of Commerce, STAT-USA Web site: www.stat-usa.gov.)

❖ *California Economic Developments*

Employment Growth Continuing

One of the most comprehensive measures of economic well being available for states on a timely basis is nonagricultural employment. Over the past several months California has continued to have steadily increasing nonagricultural employment growth. Since May, California nonagricultural employment has increased an average of 0.2 percent per month. The October *Western Blue Chip Economic Forecast*, a consensus average forecast of eight California economists, calls for nonagricultural payrolls to increase 3.3 percent in 1999. If achieved, this growth rate would be close to the 3.5 percent increase of 1998. For 2000, the *Blue Chip Forecast* shows California nonagricultural employment growth slowing to a gain of 2.5 percent.

Falling Unemployment Rate

With the monthly gains in jobs and slower growth in the labor force (those employed or looking for jobs), the California unemployment rate has declined since early 1999. In April 1999, the California unemployment rate stood at 5.7 percent. The rate fell to 4.8 percent by October, the lowest monthly rate the state has had in nearly 30 years (since December, 1969). With the decline in October, the gap between the U.S. and California rates has narrowed. In April 1999, the California unemployment rate was 1.4 percent higher than the U.S. unemployment rate. The October California unemployment rate was 0.7 percent above the October U.S. unemployment rate, cutting the gap in

half. The California unemployment rate has not been this close to the U.S. unemployment rate since early 1991.

Strong Taxable Sales Growth in Early 1999

The Board of Equalization's preliminary estimate shows that taxable sales increased 9.5 percent in the second quarter of 1999 compared to the second quarter of 1998. This is the second consecutive quarter of extremely strong growth, as taxable sales rose an estimated 8.8 percent in the first quarter. These two quarters show the fastest growth in taxable sales since the first quarter of 1996. The average first-half 1999 growth of 9.2 percent over the first half of 1998 is also much stronger than annual growth rates for the last two years. Annual taxable sales rose 5.3 percent in 1998 and 6.2 percent in 1997. (Sources: California Employment Development Department (EDD), "Interim Industry Employment," *Labor Market Conditions in California, October 15, 1999*; EDD Labor Market Information web site: www.calmis.cahwnet.gov/; Bank One Economic Outlook Center, Arizona State University, *Western Blue Chip Economic Forecast*, October 1999; Board of Equalization news release # 47, September 16, 1999.)

❖ *BEA Revisions Defining Software as Investment Increase GDP*

In late October, the U.S. Department of Commerce Bureau of Economic Analysis (BEA) issued a comprehensive revision to the national income and product accounts (NIPA). GDP is one of

the most widely quoted of all the NIPA accounts. The last such revision was issued in January 1996.

Sources of Revisions

These comprehensive revisions to historical data arise from three main sources: (1) definitional changes, that update the accounts to more accurately reflect the changing U.S. economy, (2) statistical changes, that update accounts to report the results of improved methodologies and revised source data, and (3) presentational changes in BEA publications. Some of the data revised go back in history as far as 1929, the first year the federal government began to collect and maintain modern economic statistics.

Software Now Defined as Investment

This particular comprehensive revision includes one definitional change that has a significant impact on GDP: the recognition of all business and government software spending as *fixed investment*.¹ Fixed investment (also commonly referred to as simply “investment”) purchases are defined as those goods and services that produce a flow of other goods and services that lasts more than one year. For example, a sewing machine purchased by a shirt manufacturer to make shirts is fixed investment. Prior to this change in definitions, most business and government software expenditures were

classified as “intermediate inputs” to the production of goods and services.² Now, software purchased or produced “in-house” by businesses and governments is considered as investment rather than as an intermediate input in the production of goods and services. The BEA believes that this change will provide users of economic statistics with more accurate information on the important role of software in the economy, reflecting the rapid growth in software purchases over the past decade. The reason for this change in definitions is the recognition that software, like other assets traditionally included in fixed investment such as buildings and equipment, does produce a flow of goods and services that lasts more than one year. The BEA estimates that business and government software have average service lives of 3-5 years, depending on the type of software. Data back to 1959 were revised to reflect this definitional change.

Software Investment Definition Increases GDP

The reason that this definitional change has significant ramifications on GDP is because of the way GDP is defined. GDP is defined as the value of all *final* goods and services purchases. Final purchases are most commonly made by consumers. But for GDP accounting purposes, investment by businesses is also defined as a final purchase. The value of *intermediate* input purchases is excluded, by definition of GDP, to avoid double counting of values. For example, in measuring GDP, the value of cloth in a shirt is included in the final price of the shirt paid by the consumer. The cost of the cloth paid by the shirt manufacturer to the cloth manufacturer as recorded by

¹ Most of the following discussion will refer to business software, which has a much larger impact on GDP than does government software. Conceptually, many of the same principles discussed also apply to government software.

² One significant exception to this general rule is software embedded in equipment. Such equipment had previously been classified as fixed investment. For purposes of this discussion the use of the term “software” prior to these revisions excludes this type of software.

sales receipts between the two parties is not counted separately and added to GDP. Otherwise the value of the cloth would be added twice in this example, since it is already included in the final purchase price paid by the consumer. In contrast, the cost of purchasing a sewing machine by the shirt manufacturer is added to GDP because it has always been considered an investment purchase. Until the comprehensive NIPA revisions were made, the value of software necessary to produce the shirt was excluded from GDP, just as the cost of purchasing the cloth was. With the change in definitions, the value of software necessary to produce a shirt is explicitly added to GDP in the same way that the value of purchasing a sewing machine has been traditionally added to GDP.

Numerical GDP Increases Caused by Software Investment

As a result of this definitional change, GDP increases by the value of software purchased or produced by businesses and government. GDP also increases by the annual value of estimated economic depreciation of business and government software.³ The BEA estimates that adding the value of software (purchases and depreciation) increased GDP by \$115 billion in 1996 (\$95 billion in

³ Economic depreciation is defined as the reduction in the value of investment goods and services over time due to use in production. Usually equipment wears out or becomes technologically obsolete. Economic depreciation may differ from depreciation as defined for other purposes, such as for purposes of determining bases for income taxation. Economic depreciation, also commonly called capital consumption allowances in the NIPA accounts, more closely corresponds to the useful life of the investment in the production of goods and services.

private fixed investment and \$20 billion in government investment). The \$115 billion figure is about 1.5 percent of total 1996 GDP. From 1992 through 1998, real GDP has grown at an average rate of 3.6 percent per year as estimated in the comprehensive revision, up 0.4 percent from the estimates made before the revision (an average rate of 3.2 percent). The BEA stated that a “substantial part” of the 0.4 percent upward revision reflects the business software definitional change. Economists generally expect the new software definition to increase real GDP growth about 0.2 percent per year in the years ahead. (Sources: “A Preview of the 1999 Comprehensive Revision of the National Income and Product Accounts: Definitional and Classificational Changes,” *Survey of Current Business*, August 1999, Bureau of Economic Analysis; “An Introduction to National Economic Accounting,” *Survey of Current Business*, March 1985; Bureau of Economic Analysis web site: www.stat-usa.gov/; “Business Outlook,” in *Businessweek*, November 1, 1999; *Economics*, William Boyes and Michael Melvin, Houghton Mifflin Co., 1991.)

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