
Technical Notes



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MA'S MEASURE OF MONTHLY GDP

MA now constructs a monthly Gross Domestic Product Index (MGDPI), in both nominal and real terms, from the major monthly source data used by the BEA to construct its officially reported quarterly estimates of GDP. The intent was twofold: first, to construct a comprehensive high-frequency measure to serve as a better guide to near-term movements in the production of goods and services than, say, Industrial Production, or even the Index of Coincident Indicators produced by the Conference Board; second, to ensure that the measure ties as directly as possible back to GDP, which is a key objective of MA's regular forecasting exercises. To these ends, nominal monthly GDP is calculated as the sum of the following series (except for imports, which are subtracted): personal consumption expenditures (from the NIPAs, personal income and outlays), non-PCE spending on autos (NIPAs, underlying detail), non-PCE spending on trucks (estimated by MA from various NIPA data), the value of new construction put in place (Bureau of the Census), manufacturers' shipments of capital goods (Census), exports of goods and services (balance of payments basis, Census/BEA), imports of goods and services (balance of payments basis, Census/BEA), the change in private inventories for nonfarm industries (NIPAs, underlying detail), and government wage and salary disbursements (BEA, personal income and outlays). From 1993:Q1 to 2001:Q4, monthly nominal GDP, on average, accounted for 93% of reported nominal GDP. Most of the uncovered elements are quarterly imputations that follow smooth trends so they do not seriously undermine the value of the monthly index as a useful guide to near-term fluctuations in the current production of goods and services.

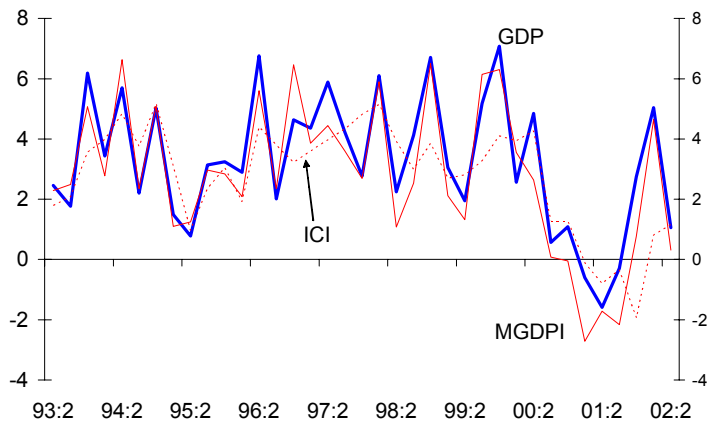
Real monthly GDP is calculated by Fisher aggregation. The details follow. For Fisher aggregation, it is necessary to assemble both the real spending values and the associated price indices for the subcomponents of GDP. For PCE, published data are available for both real spending and for the price index. For the value of construction put in place, published data are available for nominal and real spending, so MA calculates an implicit price index.

For several series, published data are available for nominal spending, and MA chooses a published price index for deflation: non-PCE auto sales are deflated with the PCE price index for new autos (BEA), shipments of capital goods are deflated with the PPI for capital equipment (manufacturing industries, BLS), exports are deflated with the export price index for all commodities (BLS), and imports are deflated with the import price index for all commodities (BLS). The change in nonfarm private inventories is available from BEA in both nominal and real terms, and MA calculates a book-value weighted price index, where the weights are the book values of inventories (Census) and the prices are mainly PPI's (BLS). MA estimates real non-PCE spending on trucks from various data from BEA and uses BEA's price index for PCE on new and net used trucks and RV's. Real government wages and salaries are assumed to grow at the rate of government payroll employment (BLS) and are scaled to equal government wages and salaries (BEA) averaged over 1996. The price index is then calculated implicitly as the ratio of nominal to real government wages and salaries. Given the real subcomponents of GDP (which are all scaled to equal their nominal counterparts in 1996) and the associated price indices (which are all scaled to equal 100 in 1996), monthly real GDP is calculated using Fisher aggregation.

The monthly GDP index does have some shortfalls. For one thing, several limitations of the data (including the new NAICS classifications) prevented the calculation of monthly GDP before mid-1992. In addition, imputations in GDP and the (nominal) monthly GDP index sum to more than total GDP. This suggests there is some double counting. For example, government wage and salary disbursements include own-account investment in structures that are also included in the Census value of construction put in place. Furthermore, shipments of nondefense capital goods may include some shipments of intermediate goods.

Still the preliminary results are encouraging. Growth of real GDP (as reported by the BEA) and growth of

Annualized Growth of GDP, ICI, and MGDPI



rate of growth for Q1-2002), the economy has been in a modest recovery.

the quarterly average of the monthly index are highly correlated (0.93). This compares favorably to the correlation between growth of real GDP and the Index of Coincident Indicators (ICI) at the quarterly frequency over the same period (0.68) and between growth of real GDP and the Index of Industrial Production at the quarterly frequency over the same period (0.67). (See the nearby chart.)

The second nearby chart compares the recent history of monthly real GDP with that of industrial production; the latter is scaled to equal real GDP in 1996. Even after industrial production peaked in mid 2000 and began declining, the more comprehensive monthly GDP remained on a sideways trend for a few months. The subsequent decline in monthly GDP was subdued compared to that of IP; this is the sense in which the US was mired in a manufacturing recession beginning in mid 2000. The modest decline in monthly GDP thereafter was punctuated by a sharp decline in September that no doubt was related to September 11. In December, monthly GDP turned sharply higher, but has waffled since then. We interpret this as implying that the last recession month was November 2001, and with the exception of a sharp rise in December (which implied a very strong

Scaled IP and MGDPI

