

## Fixed Assets and Consumer Durable Goods for 2002–2013

On September 17, 2014, the Bureau of Economic Analysis (BEA) released new statistics on fixed assets and consumer durable goods for 2013 and revised statistics for 2002–2012. These statistics reflect (1) the annual revision of the national income and product accounts (NIPAs), released on July 31, 2014, and (2) new benchmark estimates of private fixed investment by industry and by legal form of organization. BEA undertakes benchmark revisions of the fixed assets accounts (FAAs) roughly every 5 years to improve the accuracy and relevance of its estimates by incorporating the most complete and reliable source data available and by improving and updating the definitions and classifications of the FAA components.

The benchmarking of private fixed investment results in revisions for 2003 forward; for some components, revisions extend back to previous years.<sup>1</sup> When estimates for the reference year (2009) are revised, the levels of the related index numbers and the chained-dollar estimates for the entire historical period are revised, but revisions to percent changes before 2003 are mostly small.

### Benchmarking private fixed investment

Revised estimates of FAA private fixed investment by industry and by legal form of organization reflect benchmarked levels of investment for 2007. For benchmark years in which the economic census occurs (such as 2002 and 2007), additional data on private fixed in-

1. The revisions to consumption of fixed capital by industry and legal form that result from the fixed asset accounts benchmark have been incorporated in the NIPAs on a best-level basis for 2011 forward.

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vestment by industry and by legal form for specific asset types are available.<sup>2</sup> The FAA benchmarking process relies upon special tabulations and published data from the Census Bureau's 2007 and 2008 Annual Capital Expenditures Surveys (ACES), the 2007 and 2008 Information and Communication Technology (ICT) surveys, the 2007 Economic Census, Department of Agriculture statistics, Department of Labor statistics, Internal Revenue Service (IRS) tabulations of tax returns, BEA estimates for items not covered by these surveys, and other sources.

The FAA benchmark did not lead to revisions to total fixed investment or to fixed investment by asset type. The FAA benchmark instead resulted in revisions to total investment by industry, total investment by legal form of organization, and investment by industry and by legal form within each asset type. The FAA benchmarking process consists of five broad steps: (1) establish capital expenditures by industry for total equipment, total structures, and total intellectual

2. The current benchmarking process was initially developed to produce benchmarked estimates for 2002, following the discontinuation of the capital flow table. Estimates for private fixed investment by industry and by type of asset for 1997 were benchmarked to the 1997 capital flow table, which was produced as part of BEA's benchmark input-output accounts. The FAA benchmark process used for 1997 centered on converting the capital flow table from a "use basis" to an "ownership basis." The new benchmarking process relies heavily on survey-based capital expenditures, which are already reported on an "ownership basis." For more information on the 1997 capital flow table, see "Capital Flow" in "Industry Economic Accounts" on BEA's Web site.

### Data Availability

The complete [fixed assets accounts](#) are available interactively by industry, by legal form of organization, and by asset type on BEA's Web site. Statistics on net stocks, depreciation (consumption of fixed capital), "other changes in volume of assets," and the average age of net stocks are available, beginning with the statistics for 1925; estimates of fixed investment are available, beginning with the statistics for 1901.

property products (including software) (2) develop detailed asset-type shares by industry, (3) balance the results to ensure consistency with FAAs and NIPA asset-type controls, (4) develop legal form of organization shares by industry, and (5) interpolate benchmark year revisions back to previous benchmark years and extrapolate to future years.

**Capital expenditures by industry.** The first step in benchmarking FAA fixed investment by industry is to develop benchmark year (2007) estimates of capital expenditures by industry for equipment, structures, and intellectual property products. Estimates are prepared for over 60 industries, defined by the 2007 North American Industry Classification System (NAICS). The building blocks for these estimates include industry-level capital expenditures produced by the Census Bureau from the ACES and ICT survey, the economic census, and BEA reconciliation adjustments. These unadjusted survey-based statistics underestimate (significantly in some cases) FAA and NIPA private fixed investment statistics prepared by BEA using alternative methods and sources.<sup>3</sup> As a result, a number of adjustments have been developed and applied to the survey-based statistics to ensure consistency with existing FAA statistics. Adjustments are made for a variety of reasons, such as to include nonemployers and mixed-use (household and business) motor vehicles, to complete the coverage of all industries (for example, the farm industry and pension funds are not covered by ACES), and to include products not capitalized by survey respondents but included in the FAA statistics (for example, certain types of software and expensed petroleum exploration-related expenditures).

It is important to note that ACES and ICT survey are conducted at the company level, whereas FAA industry statistics reflect establishment-based industries. However, the ACES and ICT survey collect and reclassify expenditures to secondary industries in which the company has activities, so that the reported statistics are closer to an establishment basis. Farm, mining, construction, and manufacturing industries are based on establishment-level source data covered by the economic census. The other industries covered by ACES and ICT survey of sectors—such as transportation, information, finance, and other services—are not completely establishment based, but in most cases, they are acceptably close to an establishment basis. In some

cases, explicit adjustments are made to account for this difference.

**Asset type by industry shares.** The second step in the benchmarking process is to develop benchmark year estimates of shares of capital expenditures by detailed asset type and by industry (for over 90 different asset-type categories). In the year immediately following an economic census year (for example, 2003 and 2008), the Census Bureau conducts expanded data collection for ACES; in the expanded survey, ACES collects capital expenditures not only by industry but also by type of asset for each industry. Detailed asset-type shares are developed using special tabulations of the expanded ACES and the ICT survey, supplemented by other source data to resolve coverage issues. These shares are applied to the 2007 estimates of capital expenditures by industry developed in the first step, and these estimates serve as the basis for the prebalanced estimates of private fixed investment by asset type and by industry. Capital expenditures by asset type from the ACES and ICT survey do not always correspond in definition or in expenditure level with detailed NIPA estimates of private fixed investment. As a result, some significant adjustments are required to better align these two sets of estimates.

**Balancing industries and asset types.** The third step in the benchmarking process is to force the results from second step to match FAA published asset-type totals; that is, detailed estimates of private fixed investment by asset type and by industry are reconciled with published, unrevised, FAA all-industry private fixed investment by asset type. FAA private fixed investment by asset type is not subject to revision in this benchmarking process; instead, it is the asset-type mix and industry totals for FAA private fixed investment by industry that are benchmarked.

**Legal form of organization shares.** In the fourth step, the FAA benchmarking process updates the estimates of each industry's shares of investment by legal form—the proportion of fixed investment for an industry from corporations, proprietorships, partnerships, nonprofit institutions, and tax-exempt cooperatives. The revisions to legal form shares for the benchmark year 2007 reflect data from the 2007 Economic Census and Census of Agriculture, IRS tax return tabulations, County Business Patterns, and other data sources. Revisions to estimates of total investment for each legal form of organization (corporations, nonprofits, and so on) reflect both these revisions to legal form shares by industry and the revisions to asset type by industry shares.

**Interpolate and extrapolate revisions.** In the fifth step, revisions stemming from the 2007 benchmarking

3. FAA private fixed investment is derived from NIPA private fixed investment; however there are some conceptual differences between the two sets of estimates. Reconciliation tables are available on BEA's Web site showing the relationship between these two measures. For more information on the estimation of private fixed investment, see "Private Fixed Investment" in *NIPA Handbook: Concepts and Methods of the U.S. National Income and Product Accounts* on BEA's Web site.

process are, in most cases, incorporated incrementally back to the previous benchmark year, 2002, creating a gradual transition between benchmark years. Some revisions that reflect changes in definitions and classifications or other significant methodological improvements are incorporated for several years prior to 2002. Estimates are extrapolated forward from the 2007 benchmark levels, primarily using capital expenditures by industry reported in the ACES and in the Annual Survey of Manufacturers (ASM), as well as private fixed investment by asset type as reported in the NIPAs. For the extrapolated years, revised estimates of shares of investment by legal form of organization within industries are held constant.

### Improvements and revisions

The benchmarked estimates of private fixed investment by industry and by legal form of organization also reflect the revised classification of industries from a 2002 NAICS basis to a 2007 NAICS basis. The most important reclassification moves real estate investment trusts (REITs) from “funds, trusts, and other financial vehicles” to “real estate”; this revision was implemented back to the 1950s. REITs remain in the financial sector. Two other classification changes resulting in minor revisions were implemented back to 1998: (1) “internet publishing and broadcasting” was reclassified from “publishing” to “information and data processing services” and (2) “internet service providers” was reclassified from “information and data processing services” to “broadcasting and telecommunications.” Other reclassifications of investment to different industries had less noticeable effects. The revisions to private fixed investment by industry and by legal form of organization reflect these classification changes, the statistical revisions from the benchmarking process,

and some improved methodologies.

Several notable and offsetting revisions to private nonresidential fixed investment by industry for 2007, reflecting the improved benchmark estimates. An upward revision to “real estate” (\$32.0 billion) and a partly offsetting downward revision to “funds, trusts and other financial vehicles” (\$25.6 billion) are mainly accounted for by the reclassification of investment for REITs and improved source data. A downward revision to “management of companies and enterprises” (\$12.5 billion) mainly reflects an improved methodology for the allocation of software and autos by industry was implemented for 1998 forward. An upward revision to investment for credit intermediation and related activities (\$11.4 billion) mainly reflects updated source data. Other revisions to private fixed investment by industry are typically much smaller.

Some notable and offsetting revisions to private nonresidential fixed investment by legal form of organization result from the improved benchmark estimates. A downward revision to sole proprietors (\$10.4 billion) and an upward revision to partnerships (\$23.4 billion) reflect revised source data. A downward revision to corporate financial (\$10.0 billion) reflects revised source data and an improved methodology for allocating investment in software and autos for “management of companies and enterprises.” A downward revision to nonprofit institutions (\$17.2 billion) reflects revised source data and an improved method for allocating investment for REITs and establishments that remain classified as “funds, trusts, and other financial vehicles”; this change in methodology was implemented back to the 1960s. An upward revision to cooperatives (\$7.4 billion) reflects an improved allocation of investment for the electric power industry that was implemented back to 1992.

*[Access the FAA data on BEA's Web site.](#)*