

**Summary of Methodologies:  
Gross Domestic Product for American Samoa,  
the Commonwealth of the Northern Mariana  
Islands, Guam, and the U.S. Virgin Islands**



The methodologies that are used to estimate gross domestic product (GDP) for American Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and the U.S. Virgin Islands (USVI) are consistent with the methods used to estimate GDP for the United States (excluding the territories). Information from the U.S. Census Bureau Economic Census of Island Areas (ECIA) is used to establish levels of spending for specific components for the benchmark years 2002, 2007, 2012, and 2017. For other years, annual estimates are developed using a combination of data sets collected by the U.S. Bureau of Economic Analysis (BEA) from federal agencies, the territorial governments, and private sector sources. These data sets are listed in tables A–D.

The U.S. territories are not included in many federal economic data sources used in national (or state-level) GDP. BEA relies on territorial government data in conjunction with the limited federal data that are available for its annual estimates of territory GDP. As noted in a [May 2021 Survey of Current Business article](#), there are a number of implications to BEA's reliance on territorial government data. Notably, in addition to having distinct key industries and economic structures, each territory has a different set of survey and administrative data. Thus, while rooted in the same core expenditure-based GDP estimation framework that is used for BEA's national estimates, the specific methods and information used for each territory are unique to that territory's economic structure and available data.

### **Estimates of current-dollar GDP**

GDP for American Samoa, the CNMI, Guam, and the USVI is estimated using the expenditures approach, i.e., as the sum of goods and services sold to final users. It is calculated by summing personal consumption expenditures, private fixed investment, change in private inventories, net exports of goods and services, and government consumption expenditures and gross investment. These components are described in more detail below.

### **Personal consumption expenditures**

Personal consumption expenditures (PCE), or “consumer spending,” measures the goods and services purchased by “persons”—that is, by households and by nonprofit institutions serving households (NPISHs)—who are resident in each territory.

ECIA data on the consumer shares of sales by industry are used to benchmark the estimates of household purchases of most goods and selected services. However, for multiple categories of services, the ECIA does not fully reflect all consumer expenditures measured in GDP, and so other data sources are used to benchmark these estimates. These other data sources are described below.

For services sold by governments, including hospital services, utility services, and higher education services, the data sources used to establish levels of spending for benchmark years are the same as the annual data sources listed in tables A–D.

Data sources covering consumer purchases of housing services, financial services, and insurance services are currently limited. For these estimates, spending in most years is interpolated or extrapolated using broad nominal indicators of spending such as resident population multiplied by a relevant consumer price index. Data sources that are used to establish the levels of these services for select years are described below:

- For housing services, information on the number of owner- and tenant-occupied housing units and average rental rates reported in the decennial Census of Population and Housing is used to estimate values in census years. When available, intercensal household expenditure surveys conducted by the territorial governments that report number of housing units and household spending on rents are also used.
- For financial services, a key data source used to estimate spending on banking services was the Federal Deposit Insurance Corporation call report data. However, commercial bank mergers and acquisitions that cut across territories and states have created challenges in using these data to estimate more recent years of spending, as the activities of establishments in a single territory are no longer separately identified in most cases.
- For insurance services, private-sector data sources on premiums collected by type of insurance were used in the calculation of consumer spending for some territories. However, these data sources are no longer available. Territorial government offices of the insurance commissioner may have more recent data that can be used to update and improve the estimates of insurance services; more research needs to be conducted in this area.

Note that the goods and services estimates described in this section can reflect on-island spending by both residents and nonresidents. To ensure that aggregate PCE reflects spending by residents of each territory (including their spending while traveling abroad), foreign travel expenditures by residents must be added, and expenditures by nonresidents must be removed.<sup>1</sup> Net foreign travel equals foreign travel expenditures by residents less expenditures in the territory by nonresidents and is shown as a separate series in the PCE tables for each territory. For American Samoa, Guam, and the CNMI, resident spending abroad is benchmarked using information from household surveys conducted by the territorial governments. For the USVI, resident spending abroad is estimated for all years using USVI resident spending data from Puerto Rico's balance-of-payment accounts and a scaling factor to capture spending by USVI residents in locations other than Puerto Rico. Data sources used to benchmark nonresident spending in each territory include visitor exit surveys conducted by the territorial governments and ECIA data on shares of sales to visitors by industry.

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<sup>1</sup> "Foreign travel expenditures by residents" includes spending in the rest of the world, that is, other countries, the 50 states and the District of Columbia, and other U.S. territories.

### **Private fixed investment**

Private fixed investment (PFI) measures spending by private businesses, nonprofit institutions, and households on structures and equipment that are used in the production of goods and services.

ECIA data on capital expenditures by private-sector establishments are used to benchmark most of PFI. Construction of new homes is not covered in the ECIA capital expenditures data except when it is intended to be used as rental property for the real estate industry. Investment in new homes is benchmarked separately using ECIA product line data for the construction sector or territorial government data for residential building permits.

### **Change in private inventories**

Change in private inventories (CPII) is a measure of the value in current prices of the change in the physical volume of the inventories—additions less withdrawals—that businesses maintain to support their production and distribution activities.

Because of limited data, CPII, or “private inventory investment,” is estimated only for commodities that are especially significant to the territorial economy, can be stored for a relatively long time, and account for a substantial share of imports of goods. For American Samoa, this includes cannery supplies such as tin plates that are used to manufacture cans for tuna. For the USVI, this includes crude oil and other petroleum products that are stored at the refinery and oil storage facility in St. Croix.

There are currently no annual data available on the physical stocks of these products. Therefore, private inventory investment is estimated based on imports, exports, and domestic consumption of these products. The key data sources used are listed in tables A and D.

### **Net exports of goods and services**

Net exports represents the difference between a territory's exports and its imports. Exports measures the portion of total production of goods and services in a territory that is provided to the rest of the world (including other countries, the 50 states and the District of Columbia, and other U.S. territories); imports measures the portion of total expenditures in a territory that is accounted for by goods and services provided by the rest of the world.

For exports of goods to the rest of the United States (that is, the 50 states, the District of Columbia, and other U.S. territories), all years reflect values for shipments published in the Census Bureau's *U.S. Trade with Puerto Rico and U.S. Possessions* (FT895) reports. For exports of goods to other countries, the Census Bureau's *U.S. International Trade in Goods and Services* (FT900) report covers shipments from the USVI and Puerto Rico only. For the other three territories, data on exports of goods to other countries are produced by the territorial governments.

For imports of goods from the rest of the United States and from other countries, the FT895 and FT900 cover shipments to the USVI and Puerto Rico only. For the other three territories, data on imports of goods are produced by the territorial governments. The data vary greatly in coverage, detail, and timeliness.<sup>2</sup>

The estimates of exports of services primarily reflect spending by visitors, which is estimated using the same data sources that are described above in the net foreign travel component of PCE. For American Samoa, exports of services also includes an estimate of services provided to foreign ships by the government port authority. Information on exports of other services is limited.

The estimates of imports of services include freight and insurance charges on imported goods, business and personal insurance services, construction-related services (for example, architectural, design, and other support services), and travel and transportation services. For the CNMI, imports of services also includes other business services that are assumed to be purchased primarily by the casino industry. These imports are derived by comparing estimates of intermediate expenses of CNMI businesses, including casinos, with information on revenues of establishments located in the CNMI; intermediate expenses that are not paid to CNMI businesses must be imported.<sup>3</sup>

Like PCE insurance services, data sources covering imports of insurance services are limited. Private-sector data sources are used when available; other years are extrapolated using broad nominal indicators such as employment.

Imports of construction-related services is the value of construction spending that reflects support services produced elsewhere. This equals the difference between the value of all construction spending (that is, the sum of private-sector investment in structures and government investment in structures) and the value of construction performed by domestic construction establishments.<sup>4</sup> Except for American Samoa, the value of construction performed by domestic construction establishments is benchmarked using information on construction-sector revenues from the ECIA. For American Samoa, imports of construction services cannot be benchmarked in this manner due to limitations in the detailed construction-sector data from the ECIA.<sup>5</sup> Instead, imports of construction services are estimated for years in which they are assumed to be substantial, using government financial statements and news

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<sup>2</sup> Guam government data on imports of goods are especially limited. Data are not collected for all periods and do not represent the universe of imports of goods.

<sup>3</sup> Intermediate expenses are purchases of goods and services that are used in the production process of other goods and services and are not sold in final-demand markets.

<sup>4</sup> The estimation of private-sector and government gross investment in structures is described in the PFI and government spending sections, respectively.

<sup>5</sup> For Guam, imports of construction services for defense projects are benchmarked separately using information on U.S. Department of Defense contracts reported by the Guam Bureau of Labor Statistics.

reports.

Imports of travel and transportation services are estimated using the same data sources that are described above in the net foreign travel component of PCE. For American Samoa, imports of services also includes territorial government imports of transportation services.

The key annual data sources used to estimate exports and imports are listed in tables A–D.

### **Government consumption expenditures and gross investment**

Government consumption expenditures and gross investment—or “government spending”—measures final expenditures accounted for by the territorial government (including the primary government and its component units) and the U.S. federal government.

Government consumption expenditures consists of spending by government agencies, except government enterprises, to provide goods and services to the public.<sup>6</sup> Consumption expenditures includes compensation of government employees, consumption of fixed capital, and purchases of intermediate goods and services. Sales to other sectors, which is the value of goods and services sold to the household and business sectors, is netted out to prevent double-counting of the expenditures across the components of GDP.

Gross investment consists of spending by all government agencies, including government enterprises, for structures and equipment that are used in producing the goods and services provided by the government.

The key data sources used to estimate federal government spending and territorial government spending are listed in tables A–D.

### **Estimates of real GDP**

Inflation-adjusted, or “real”, estimates of GDP and its components are derived within a chain-type Fisher index framework.<sup>7</sup> For most of the detailed components of GDP, inflation-adjusted estimates are calculated by deflating each component using an appropriate price index. Because of the limited availability of price indexes that are specific to the territories, U.S. price indexes are used for deflation in many cases. The territorial governments each produce their own consumer price indexes, which BEA uses within the estimates of consumer spending, but there are no producer price indexes for any territory, nor are there price indexes that cover trade in goods and services between each of the

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<sup>6</sup> Government enterprises are government agencies that cover a substantial portion of their operating costs by selling goods and services to the public and that maintain their own separate accounts.

<sup>7</sup> For additional information, see J. Steven Landefeld, Brent R. Moulton, and Cindy M. Vojtech, “[Chained-Dollar Indexes: Issues, Tips on Their Use, and Upcoming Changes](#),” *Survey of Current Business* 83 (November 2003):8–17.

territories and the rest of the United States.

### **Personal consumption expenditures**

Consumer price indexes (CPI) produced by the territorial governments are used to deflate many detailed components of consumer spending. In cases where the composition of consumer spending categories does not align well with the territory-specific CPIs, other price data are used, such as U.S. PCE price indexes from BEA or U.S. import and export prices from the U.S. Bureau of Labor Statistics (BLS). Exceptions include consumer spending on electricity for all territories and gasoline for American Samoa and Guam. Real consumer spending on electricity is estimated using quantity information on residential consumption by territory from the U.S. Energy Information Administration. Real consumer spending on gasoline for American Samoa and Guam is estimated using quantity information on gasoline consumption or sales provided by the territorial governments.

### **Private fixed investment**

U.S. PFI price indexes from BEA and Producer Price Indexes from the U.S. BLS are used to deflate most of the detailed components. Currently, there are no territory-specific price indexes covering capital goods purchased by businesses in the island areas.

### **Change in private inventories**

For American Samoa, cannery supplies held in inventory are adjusted for inflation using U.S. import, export, and producer prices from the U.S. BLS. For the USVI, inventories of crude oil and petroleum products are adjusted for inflation using U.S. import and export prices from the U.S. BLS.

### **Net exports of goods and services**

For exports and imports of goods, a variety of price indexes are used, including territory CPIs and U.S. import, export, and producer prices from the U.S. BLS. Note that the U.S. BLS International Price Program treats the territories as part of the United States; thus, import and export price indexes in theory reflect prices for goods traded between the territories and other countries. However, the prices paid and received by the territories cannot be separately identified from the prices paid and received by the rest of the United States. For exports and imports of services, territory CPIs and price indexes from BEA estimates of U.S. trade in services and U.S. consumer spending are used.

### **Government consumption expenditures and gross investment**

For compensation, information on average wages and salaries derived from administrative or survey data is used to deflate compensation. For other components of government spending, government price indexes from BEA's U.S. National Income and Product Accounts are used.

**Table A. Source Data for Current-Dollar Gross Domestic Product, American Samoa**

Component	Annual estimates: Key source data used to prepare an extrapolator or interpolator <sup>1</sup>
<b>Personal consumption expenditures (PCE)</b>	
<b>Goods</b>	
Durable goods	American Samoa Department of Commerce (ASDOC) fiscal year (FY) data for imports of consumer durable goods, such as motor vehicles, furniture, and household appliances, <sup>2</sup> and Census Bureau County Business Patterns (CBP) wages for retail trade industries.
Nondurable goods	For gasoline and energy goods, quantity times price: American Samoa Office of Petroleum Management data on gasoline imports and U.S. Energy Information Administration (EIA) data on average U.S. gasoline prices; for all other nondurable goods, ASDOC FY data for imports of consumer nondurable goods, such as food, alcohol, and clothing, and CBP wages for retail trade industries.
Services	For tenant-occupied and owner-occupied rents, quantity times price: population <sup>3</sup> and American Samoa consumer price index (CPI) for housing; for utilities, EIA data for residential revenues of electric utilities by territory, American Samoa Power Authority financial statement data for utility revenues; for hospitals, Lyndon B. Johnson (LBJ) Tropical Medical Center Authority financial statement data for net patient revenues; for resident food services, quantity times price: population and American Samoa CPI for food; for nonresident food services, quantity times price: ASDOC data for visitor arrivals and American Samoa CPI for food; for accommodations, quantity times price: ASDOC data for visitor arrivals and U.S. PCE price for hotels and motels; for private education, quantity times price: ASDOC data for private school enrollment and American Samoa CPI; for public education, American Samoa Community College financial statement data for education revenues; for communication services, American Samoa Telecommunications Authority financial statement data for operating revenues; for retirement fund services, American Samoa Government Employees' Retirement Fund financial statement data for administrative expenses; for most other services, quantity times price: population and American Samoa CPIs or U.S. PCE price indexes.
Net foreign travel	For foreign travel expenditures by American Samoa residents, quantity times price: ASDOC data for resident departures or U.S. Bureau of Transportation Statistics (BTS) Air Carrier Statistics (T-100) data for airplane passenger flight segments and U.S. PCE price indexes for travel and accommodations; for off-island health expenditures for residents, LBJ Tropical Medical Center Authority financial statement data and information collected from news reports; for expenditures in

<sup>1</sup> Not all data sources are available for every year; for example, Census Bureau County Business Patterns data are not available for the most recent year of estimates.

<sup>2</sup> The Bureau of Economic Analysis uses tabulations of imports data provided by the American Samoa Department of Commerce. These tabulations are presented at a greater level of detail and typically include more recent periods compared to what is published in the American Samoa Statistical Yearbook.

<sup>3</sup> Estimates of population reflect data from the American Samoa Department of Commerce and the U.S. Census Bureau.



	American Samoa by nonresidents, quantity times price: ASDOC data for visitor arrivals or BTS T-100 data for airplane passenger flight segments, American Samoa Ports Authority data for cruise ship passenger arrivals, and various American Samoa CPIs and U.S. PCE price indexes.
<b>Gross private domestic investment</b>	
<b>Private fixed investment (PFI)</b>	For structures, ASDOC FY data for imports of construction materials, American Samoa Department of Public Works data for land use and building permits, and Federal Emergency Management Agency (FEMA) data for disaster assistance; for equipment, ASDOC FY data for imports of capital equipment by type.
<b>Change in private inventories</b>	ASDOC FY data for imports of tuna canning supplies, Census Bureau data for exports of canned tuna and related products from the U.S. Trade with Puerto Rico and the U.S. Possessions (FT895) report.
<b>Net exports of goods and services</b>	
<b>Exports</b>	
Goods	ASDOC FY data for exports of goods and Census Bureau data for exports of goods from the FT895 report.
Services	For expenditures in American Samoa by nonresidents, quantity times price: ASDOC data for visitor arrivals, BTS T-100 data for airplane passenger flight segments, American Samoa Ports Authority data for cruise ship passenger arrivals, and various American Samoa CPIs and U.S. PCE price indexes; for services provided to foreign ships by the government port, American Samoa Port Authority financial statement data for charges for services.
<b>Imports</b>	
Goods	For goods excluding landed fish, ASDOC FY data for imports of goods; for landed fish, BEA estimate of landed fish used in production based on exports of canned tuna and related goods from the ASDOC and Census Bureau.
Services	For freight and insurance charges on goods imported from foreign countries and the rest of the United States, BEA estimates of imports of landed fish and BEA estimates of imports of all other goods; for foreign travel expenditures by American Samoa residents, quantity times price: ASDOC data for resident departures BTS T-100 data for airplane passenger flight segments and U.S. PCE price indexes for travel and accommodations; for off-island health expenditures for residents, LBJ Tropical Medical Center Authority financial statement data and information collected from news reports; for off-island government travel, tabulations of central government expenditures data provided by the American Samoa Department of Treasury; for imports of construction services, American Samoa government financial data and information collected from news reports.
<b>Government consumption expenditures and gross investment</b>	
<b>Federal</b>	For compensation of federal government employees, tabulations of wage and personnel data provided by the U.S. Department of Defense and ratios of fringe benefits to wages derived from U.S. National Income and Product Account data for federal employee compensation; for intermediate purchases of goods and services, Federal Procurement Data System (FPDS) <sup>4</sup> contract obligations data for purchases of goods and services excluding equipment; for structures, FPDS contract

<sup>4</sup> The Federal Procurement Data System (FPDS) is a database of federal contracts maintained by the General Services Administration. The database provides detailed information at the individual contract level, including place of performance, dates of performance, the contract obligation amount, and a product and service code.

	obligations data for construction projects; for equipment, FPDS contract obligations data for purchases and major repairs of equipment.
<b>Territorial</b>	Government financial statement data for the Territory of American Samoa, the LBJ Medical Center Authority, the American Samoa Power Authority, the American Samoa Telecommunications Authority, the Development Bank of American Samoa, the Territorial Bank of American Samoa, the American Samoa Community College, and the American Samoa Government Employees' Retirement Fund; tabulations of central government expenditures and capital asset data provided by the American Samoa Department of Treasury.

**Table B. Source Data for Current-Dollar Gross Domestic Product, Commonwealth of the Northern Mariana Islands (CNMI)**

Component	Annual estimates: Key source data used to prepare an extrapolator or interpolator <sup>1</sup>
<b>Personal consumption expenditures (PCE)</b>	
<b>Goods</b>	
Durable goods	For autos, quantity times price: CNMI Central Statistics Division (CSD) data for sales of autos and Guam consumer price indexes (CPI) for motor vehicles and parts; <sup>2</sup> for home furnishings and household equipment, quantity times price: population and CNMI CPI for other goods and services; for all other durable goods, tabulations of business revenues data for retail trade industries provided by the CNMI Department of Finance (DOF).
Nondurable goods	Tabulations of imports data for consumer nondurable goods, such as food, alcohol, clothing, and gasoline provided by the CNMI Division of Customs Services (Customs) and tabulations of business revenues data for retail trade industries provided by the CNMI DOF.
<b>Services</b>	For tenant-occupied and owner-occupied rents, quantity times price: population and Guam CPI for rental and lodging; <sup>3</sup> for utilities, U.S. Energy Information Administration (EIA) data for residential revenues of electric utilities, Commonwealth Utilities Corporation financial statement data for utility revenues; for hospitals, Commonwealth Healthcare Corporation financial statement data for net patient revenues; for private education, quantity times price: population and CNMI CPI for education and communication; for public education, Northern Marianas College and Public School System financial statements for education revenues; for casino gambling services, publicly available financial statement data for casinos operating in Saipan; for other recreation services, tabulations of business revenues data for various recreation industries provided by the CNMI DOF and Census Bureau County Business Patterns wage data for arts, entertainment, and recreation industries; for retirement fund services, CNMI Government financial statement data for retirement fund administrative expenses; for banking services, CSD data for total deposits and loans; for insurance services, quantity times price: population and CNMI CPI for other goods and services; for most other services: tabulations of business revenues data for various industries provided by the CNMI DOF.
<b>Net foreign travel</b>	For foreign travel expenditures by CNMI residents, quantity times price: Marianas Visitor Authority (MVA) data for resident departures and U.S. PCE price indexes for travel and accommodations; for casino gambling expenditures in the CNMI by nonresidents, publicly available financial statement data for casinos operating in

<sup>1</sup> Not all data sources are available for every year; for example, Census Bureau County Business Patterns data are never available for the most recent year of estimates.

<sup>2</sup> Guam CPI data are available at a finer level of detail than the CNMI CPI and are assumed to be reasonable substitutes for some categories. For the CNMI, motor vehicles are embedded in the CPI for transportation.

<sup>3</sup> For the CNMI, housing is embedded in the CPI for housing and utilities.

	Saipan; for all other expenditures by nonresidents, MVA data for arrivals of visitors and BEA estimates of PCE categories assumed to substantially reflect spending by tourists, including apparel, accommodation and food services, recreation services, and transportation services.
<b>Gross private domestic investment</b>	
<b>Private fixed investment (PFI)</b>	For structures, CSD data for building permit values, tabulations of administrative data for construction wages provided by the CNMI DOF, and publicly available financial statement data for capital expenditures of casinos operating in Saipan; for equipment, CNMI Customs data for imports of motor vehicles and capital equipment by type.
<b>Net exports of goods and services</b>	
<b>Exports</b>	
Goods	Quantity times price: CSD data for revenue tonnage of exports by type and U.S. Bureau of Labor Statistics export price indexes;
Services	For casino gambling expenditures in the CNMI by nonresidents, publicly available financial statement data for casinos operating in Saipan; for all other expenditures by nonresidents, MVA data for arrivals of visitors and BEA estimates of PCE categories assumed to substantially reflect spending by tourists, including apparel, accommodation and food services, recreation services, and transportation services.
<b>Imports</b>	
Goods	Tabulations of imports data for imports of goods by type provided by CNMI Customs.
Services	For freight and insurance charges on imported goods, BEA estimates of imports of goods; for foreign travel expenditures by CNMI residents, quantity times price: MVA data for resident departures and U.S. PCE price indexes for travel and accommodations; for imports of other business services, BEA estimates of operating revenues and intermediate expenses of establishments located in the CNMI. <sup>4</sup>
<b>Government consumption expenditures and gross investment</b>	
<b>Federal</b>	For compensation of federal government employees, tabulations of wage and personnel data provided by the U.S. Department of Defense and ratios of fringe benefits to wages derived from U.S. National Income and Product Account data for federal employee compensation; for intermediate purchases of goods and services, Federal Procurement Data System (FPDS) <sup>5</sup> data for contract obligations data for purchases of goods and services excluding equipment; for structures, FPDS contract obligations data for construction projects; for equipment, FPDS contract obligations data for purchases and major repairs of equipment.
<b>Territorial</b>	Government financial statement data for the Government of the CNMI, the Commonwealth Utilities Corporation, the Mariana Visitors Authority, the Northern Marianas College, the Public School System, the Marianas Public Land Trust, the

<sup>4</sup> Intermediate expenses of establishments located in the CNMI that are not paid to CNMI businesses must be imported.

<sup>5</sup> The Federal Procurement Data System is a database of federal contracts maintained by the General Services Administration. The database provides detailed information at the individual contract level, including place of performance, dates of performance, the contract obligation amount, and a product and service code.

	Commonwealth Healthcare Corporation, the Commonwealth Ports Authority, the Commonwealth Development Authority, and the Northern Marianas Housing Corporation.
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**Table C. Source Data for Current-Dollar Gross Domestic Product, Guam**

Component	Annual estimates: Key source data used to prepare an extrapolator or interpolator <sup>1,2</sup>
<b>Personal consumption expenditures (PCE)</b>	
<b>Goods</b>	
Durable goods	For motor vehicles, quantity times price: Guam Department of Revenue and Taxation (DRT) data for motor vehicle registrations and Guam consumer price indexes (CPI) for new cars; for home furnishings and household equipment, quantity times price: population <sup>3</sup> and Guam CPI for furnishings and household equipment; for all other durable goods, tabulations of gross receipts tax data for retail trade industries provided by the Guam DRT and Guam Bureau of Labor Statistics Current Employment Statistics (CES) data for employment and average earnings for retail and wholesale trade industries.
Nondurable goods	For gasoline and energy goods, quantity times price: Guam Energy Office data for gasoline sales and Guam CPI for motor fuel; for food, Census Bureau County Business Patterns (CBP) wage data for grocery and other food stores; for alcohol, quantity times price: Guam Bureau of Budget and Management Research (BBMR) data for alcoholic beverages excise tax revenues and Guam CPI for alcoholic beverages; for all other nondurable goods, tabulations of gross receipts tax data for retail trade industries provided by the Guam DRT and Guam CES data for employment and average earnings for retail trade industries.
Services	For tenant-occupied and owner-occupied rents, quantity times price: population and Guam CPI for rent and lodging; for utilities, U.S. Energy Information Administration (EIA) data for residential revenues of electric utilities by territory, Guam Power Authority (GPA) and Guam Waterworks Authority financial statement data for utility revenues; for banking services, call report data from the Federal Deposit Insurance Corporation; for hospitals, net patient revenues from Guam Memorial Hospital Authority financial statements and Centers for Medicare and Medicaid Services hospital cost reports; for private education, quantity times price: Guam Department of Education reports for private school enrollment and Guam CPI for tuition and other fees; for public education, Guam Department of Education and University of Guam financial statements for education revenues; for accommodations, food services, and amusements: Guam BBMR data for hotel occupancy tax revenues, tabulations of gross receipts tax data for various industries provided by the Guam DRT, Guam Visitors Bureau (GVB) data for arrivals of visitors by country, and GVB data for average spending per visitor by country; for transportation, Guam CES data for employment and average earnings for

<sup>1</sup> Not all data sources are available for every year; for example, Census Bureau County Business Patterns data are not available for the most recent year of estimates.

<sup>2</sup> For years prior to 2016, the Bureau of Economic Analysis (BEA) used imports data published by the [Guam Bureau of Statistics and Plans \(BSP\)](#) as indicators within the estimates of consumer spending on goods, private fixed investment, and imports of goods. Due to reductions in the amount of imports data collected for subsequent years, BEA changed its indicators for these estimates to the data sets listed in this table. As noted on the BSP web site, "For 2016 and beyond months captured [of imports data] will be determined on an ad hoc basis."

<sup>3</sup> Estimates of population reflect data from the U.S. Census Bureau.

	transportation and warehousing industries; for most other services, quantity times price: population and Guam CPIs or U.S. PCE price indexes.
<b>Net foreign travel</b>	For foreign travel expenditures by Guam residents, quantity times price: population and various travel-related Guam CPIs; for expenditures on accommodations in Guam by nonresidents, BBMR data for hotel occupancy tax revenues; for all other expenditures in Guam by nonresidents: GVB data for arrivals of visitors by country and GVB data for average spending per visitor by country.
<b>Gross private domestic investment</b>	
<b>Private fixed investment (PFI)</b>	For structures, Guam Bureau of Labor Statistics data for building permits and Guam CES data for employment and average earnings for construction industries; for autos and light trucks, quantity times price: Guam DRT data for motor vehicle registrations and U.S. import price indexes for automotive vehicles, parts, and engines; for all other equipment, Bureau of Economic Analysis (BEA) estimates of gross investment in structures. <sup>4</sup>
<b>Net exports of goods and services</b>	
<b>Exports</b>	
Goods	Guam government data for exports of goods and Census Bureau data for exports of goods from the U.S. Trade with Puerto Rico and the U.S. Possessions (FT895) report.
Services	For expenditures on accommodations in Guam by nonresidents, BBMR data for hotel occupancy tax revenues; for all other expenditures in Guam by nonresidents: GVB data for arrivals of visitors by country and GVB data for average spending per visitor by country.
<b>Imports</b>	
Goods	For fuel imported by GPA, GPA financial statement data for cost of production fuel; for all other fuel, quantity times price: Guam Energy Office data on fuel sales by type and Guam CPI for motor fuel; for consumer goods other than gasoline, BEA estimates of PCE goods by type; for equipment purchased by private sector businesses, BEA estimates of PFI equipment; for equipment imported by governments, BEA estimates of federal and territorial government gross investment in equipment; <sup>5</sup> for all other goods imported by wholesalers, tabulations of gross receipts tax data for wholesale trade industries provided by the Guam DRT and Guam CES data for employment and average earnings for wholesale trade industries.
Services	For freight and insurance charges on imported goods, BEA estimates of imports of goods for select categories; <sup>6</sup> for foreign travel expenditures by Guam residents, quantity times price: population and various travel-related Guam CPIs; for imports of construction services, BEA estimates of PFI structures and federal government gross investment in structures.

<sup>4</sup> Currently, no annual indicators are available that directly reflect private sector business purchases of equipment.

<sup>5</sup> Guam has a small manufacturing sector; it was assumed that most goods purchased by households, businesses, and governments were imported.

<sup>6</sup> For some categories of imports, such as fuel and equipment, the value estimated within imports of goods already reflects freight and insurance charges incurred in bringing the merchandise to Guam; thus, no additional charges are estimated within imports of services.

<b>Government consumption expenditures and gross investment</b>	
<b>Federal</b>	For compensation of federal government employees, tabulations of wage and personnel data provided by the U.S. Department of Defense (DOD), data for military active duty and dependents in Guam published by the Guam Bureau of Labor Statistics, and ratios of fringe benefits to wages derived from U.S. National Income and Product Account data for federal employee compensation; for intermediate purchases of goods and services, Federal Procurement Data System (FPDS) <sup>7</sup> contract obligations data for purchases of goods and services excluding equipment; for structures, tabulations of gross receipts tax data for construction industries provided by the Guam DRT, Guam CES data for employment and average earnings for construction industries, FPDS contract obligations data for construction projects, U.S. DOD contract data published by the Guam Bureau of Labor Statistics, and annual reports from the U.S. DOD Interagency Coordination Group of Inspectors General for Guam Realignment; for equipment, FPDS contract obligations data for purchases and major repairs of equipment.
<b>Territorial</b>	Government financial statement data for the Government of Guam, the Guam Department of Education, the University of Guam, the Guam Memorial Hospital Authority, the Guam Housing and Urban Renewal Authority, the Guam Visitors Bureau, the Guam Education Telecommunications Authority, the Government of Guam Retirement Fund, the Guam Community College, the Guam Economic Development Authority, the Guam Preservation Trust, the Guam Power Authority, the Guam Waterworks Authority, the Port Authority of Guam, the A.B. Won Pat International Airport Authority, and the Guam Housing Corporation.

<sup>7</sup> The Federal Procurement Data System is a database of federal contracts maintained by the General Services Administration. The database provides detailed information at the individual contract level, including place of performance, dates of performance, the contract obligation amount, and a product and service code.



**Table D. Source Data for Current-Dollar Gross Domestic Product, USVI**

Component	Annual estimates: Key source data used to prepare an extrapolator or interpolator <sup>1</sup>
<b>Personal consumption expenditures (PCE)</b>	
<b>Goods</b>	
Durable goods	Census Bureau data for imports of durable goods from the U.S. Trade with Puerto Rico and U.S. Possessions (FT895) and the U.S. International Trade in Goods and Services (FT900) reports and U.S. Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW) wage data for the retail trade sector. <sup>2</sup>
Nondurable goods	
Food and beverages	Census Bureau data for imports of food and beverages and QCEW wage data for grocery and other food stores.
All other nondurable goods	Census Bureau data for imports of nondurable goods (excluding food and beverages) and QCEW wage data for the retail trade sector.
<b>Services</b>	
Housing and utilities	For tenant-occupied and owner-occupied rents, quantity times price: population <sup>3</sup> and the USVI consumer price index (CPI) for housing; <sup>4</sup> for utilities, U.S. Energy Information Administration (EIA) data for residential revenues of electric utilities by territory, USVI Water and Power Authority operating and financial statement data for utility revenues, and QCEW wage data for waste collection.
Health care	For hospitals, Governor Juan F. Luis Hospital and Medical Center and Schneider Regional Medical Center financial statement data for net patient revenues; for other health care, QCEW wage data for health care facilities other than hospitals.
Accommodations and food services	For accommodations, USVI Bureau of Internal Revenue (BIR) data for hotel occupancy tax revenues; for food services, quantity times price: QCEW employment data for food services and drinking establishments and U.S. PCE price indexes for food services and accommodations.
All other services	For higher education, University of Virgin Islands financial statement data for education revenues; for retirement fund services, Government Employees' Retirement System of the Virgin Island financial statement data for administrative expenses; for lotteries, USVI Government financial statement and budget data for lottery revenues; for most other services, QCEW wage data by industry.
<b>Net foreign travel</b>	For foreign travel expenditures by USVI residents, Puerto Rico balance-of-payments data from the Puerto Rico government for spending in Puerto Rico by USVI residents and information collected from news reports; for jewelry purchases in the USVI by

<sup>1</sup> Not all data sources are available for every year; for example, some government financial statements may not be available for the most recent year of estimates.

<sup>2</sup> Census Bureau imports data from the U.S. Trade with Puerto Rico and U.S. Possessions (FT895) report and the U.S. International Trade in Goods and Services (FT900) report is abbreviated "Census Bureau data for imports." Census Bureau exports data from these reports is abbreviated "Census Bureau data for exports."

<sup>3</sup> Estimates of population reflect data from the USVI Bureau of Economic Research and the U.S. Census Bureau.

<sup>4</sup> BEA uses tabulations of USVI CPI data by type provided by the USVI Bureau of Economic Research.

	nonresidents, Census Bureau data for imports of jewelry and related durable goods; for all other expenditures by nonresidents arriving by cruise ship, quantity times price: USVI Bureau of Economic Research (BER) data for cruise passenger arrivals and various USVI CPIs and U.S. price indexes; for all other expenditures by nonresidents arriving by air, quantity times price: BER data for air visitor arrivals and various USVI CPIs and U.S. price indexes.
<b>Gross private domestic investment</b>	
<b>Private fixed investment (PFI)</b>	For structures, BER data for building permit values, QCEW wages for the construction sector, and Census Bureau data for imports of construction materials; for equipment, Census Bureau data for imports of equipment and QCEW wage data for repair and maintenance industries.
<b>Change in private inventories</b>	Census Bureau data for exports and imports of crude oil and other petroleum products and Bureau of Economic Analysis (BEA) estimates of domestic fuel consumption. Fuel usage is assumed to trend with output of the industrial sector; data sources include USVI Water and Power Authority statistics on megawatt-hours of electricity generation and the indicators listed in this table for private fixed investment in structures and government gross investment in structures.
<b>Net exports of goods and services</b>	
<b>Exports</b>	
Goods	Census Bureau data for exports of goods.
Services	For jewelry purchases in the USVI by nonresidents, Census Bureau data for imports of jewelry and related durable goods; for all other expenditures by nonresidents arriving by cruise ship, quantity times price: USVI BER data for cruise passenger arrivals and various USVI CPIs and U.S. price indexes; for all other expenditures by nonresidents arriving by air, quantity times price: BER data for air visitor arrivals and various USVI CPIs and U.S. price indexes.
<b>Imports</b>	
Goods	Census Bureau data for imports of goods.
Services	For freight and insurance charges on goods imported from countries other than the U.S., Census Bureau FT900 data for charges; for freight and insurance charges on goods imported from the rest of the United States, ratios of charges to values of imported goods derived from Census Bureau FT900 data and BEA estimates of imports of goods from the rest of the United States; for foreign travel expenditures by USVI residents, Puerto Rico balance-of-payments data from the Puerto Rico government on spending in Puerto Rico by USVI residents and information collected from news reports; for imports of construction services, BEA estimates of PFI structures and government gross investment in structures.
<b>Government consumption expenditures and gross investment</b>	
<b>Federal</b>	For compensation of employees, QCEW wage data for civilian employees, tabulations of wage and personnel data provided by the U.S. Department of Defense, and ratios of fringe benefits to wages derived from U.S. National Income and Product Account data for federal employee compensation; for intermediate purchases of goods and services, Federal Procurement Data System (FPDS) <sup>5</sup> contract obligations data for

<sup>5</sup> The Federal Procurement Data System is a database of federal contracts maintained by the General Services Administration. The database provides detailed information at the individual contract level, including place of performance, dates of performance, the contract obligation amount, and a product and service code.

	purchases of goods and services excluding equipment; for structures, FPDS contract obligations data for construction projects; for equipment, FPDS contract obligations data for purchases and major repairs of equipment.
<b>Territorial</b>	For compensation of employees, QCEW wage data for USVI "state" government employees, government financial statement data, and budget data for wages and fringe benefits; for all other consumption expenditures, government financial statement data, general fund and agency budget data, USVI government Open Finance data, and Federal Emergency Management Agency (FEMA) data for disaster assistance; for gross investment in structures and equipment, government operating and financial statement data, general fund and agency budget data, USVI government Open Finance data, and FEMA data for disaster assistance. <sup>6</sup>

<sup>6</sup> Data are collected from government financial statements for: the USVI central government, the Governor Juan F. Luis Hospital and Medical Center, the Schneider Regional Medical Center, the USVI Water and Power Authority, the USVI Waste Management Authority, the Government Employees' Retirement System of the Virgin Islands, the University of the Virgin Islands, the USVI Economic Development Authority, the Virgin Islands Housing Finance Authority, the Virgin Islands Housing Authority, and the Virgin Islands Port Authority.

**Additional information on source data**

The annual data sources listed in tables A–D include a variety of economic measures, such as sales or receipts, expenses, wages and salaries, and tax collections.

For many components, the indicators are derived from source data that are “value data”: they encompass both the quantity data and the price data required to prepare the current-dollar estimates. For indicators that are not derived from value data, a “quantity-times-price” method is used. For example, the indicator for Guam consumer spending on gasoline is calculated as gasoline sales in gallons times the Guam consumer price index for motor fuel.

All fiscal year data sources are adjusted to a calendar year basis for use in estimation.