BEA BRIEFING

GDP for American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the U.S. Virgin Islands

Annual Estimates for 2002–2007

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IN EARLY 2009, the Bureau of Economic Analysis (BEA) began work on a project to develop the first official estimates of gross domestic product (GDP) for American Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and the U.S. Virgin Islands. The estimates were developed in partnership with the Department of the Interior's Office of Insular Affairs (OIA), which provided funding for this project (called the Statistical Improvement Program) and facilitated interactions between BEA and the territorial governments.[1] The purpose of this ongoing project is to provide data users with a comprehensive, objective measure of economic growth for these four U.S. territories.

GDP measures the value of final goods and services produced by an economy (in this case, the economies of the four territories) in a given period. The estimates of total GDP described in this article were initially released in May. Estimates of the components of GDP were later released during separate visits to the four territories. According to these estimates, real GDP—GDP adjusted to remove price changes—grew in each of the territories except the CNMI from 2002 to 2007. American Samoa's GDP grew at an average annual rate of 0.4 percent; Guam's GDP grew at an average annual rate of 1.8 percent; and the U.S. Virgin Islands' GDP grew at an average annual rate of 2.9 percent. In contrast, the CNMI's GDP decreased at an average annual rate of 4.2 percent. (For comparison, the average annual growth rate for the United States excluding the territories was 2.7 percent over this period.)[2]

This GDP measurement project represents an important first step toward achieving BEA and OIA's ultimate goal: to integrate these territories not only into the estimates of national GDP but also into the full set of the national income and product accounts (NIPAs). Currently, the NIPAs cover the 50 states and the District of Columbia, and transactions with the territories are included in transactions with the "rest-of-the-world."

A primary obstacle to realizing this long-term goal is the lack of coverage of these four territories by most of the major surveys used by BEA to produce its estimates of GDP and related economic measures.[3] Because the territories are not within the scope of most of these surveys, BEA depended heavily on the assistance and information provided by each of the territorial governments. (For a complete list of contributors, see the box "Acknowledgments.")

The estimates of GDP for American Samoa, the CNMI, Guam, and the U.S. Virgin Islands are presented in this article. The accompanying tables show

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1. OIA is the federal agency that manages the federal government's relations with the governments of American Samoa, CNMI, Guam, and the U.S. Virgin Islands. It works with these territories to encourage economic development, transparency of government, financial stability, and accountability.

2. Before the release of the 2010 annual revision of the NIPAs, the average annual growth rate for U.S. real GDP from 2002 to 2007 was 2.8 percent, as stated in the territorial GDP releases.

3. These surveys include merchant wholesale trade and retail trade surveys; the annual capital expenditures survey; value of construction put in place; the service annual survey; the annual survey of manufactures; manufacturers' shipments, inventories, and orders; and government finances.

estimates of GDP and its major components, including consumer spending, private fixed investment, private inventory investment, net exports of goods and services, and government spending.[4] The methods used to derive the estimates for all four territories are described in the appendix “Summary of Methodologies.”

Real GDP Growth Highlights

American Samoa

From 2002 to 2007, real gross domestic product of American Samoa increased at an average annual rate of 0.4 percent. Real GDP increased in each year except 2006 (table 1). The population of American Samoa increased at an average annual rate of 2.3 percent, and per capita real GDP decreased at an average annual rate of 1.9 percent. The price index for GDP decreased at an average annual rate of 0.5 percent; the price index for consumer spending increased at an average annual rate of 3.0 percent.

The largest private industry in American Samoa from 2002 to 2007 was the tuna canning industry. Between 2002 and 2007, the tuna cannery share of total private employment averaged 42 percent.[5] Exports of the canneries accounted for over 90 percent of total exports from 2002 to 2007. Imports associated with the canneries accounted for a large portion of total imports. These imports included tin plates, landed fish, and petroleum products used by the canneries. The primary component of inventory investment was tin plates used by the canneries.

The estimates of GDP for American Samoa show the impact of the tuna canning industry on the economic growth of the territory. Changes in exports, imports, and inventory investment associated with the tuna canning industry accounted for much of the year-to-year variation in real GDP growth between 2002 and 2007. For example, the increase in real GDP in 2005 reflected an increase in cannery exports and a decrease in cannery imports that were partly offset by a decrease in cannery inventory investment. The decrease in real GDP in 2006 reflected a decrease in cannery exports that was partly offset by a decrease in cannery imports and a smaller decumulation of cannery inventories.

Consumer spending and government spending also significantly affected economic growth from 2002 to 2007. The growth in real GDP in 2003 reflected an increase in consumer spending (in addition to an

4. Private inventory investment is assumed to be negligible for the CNMI and Guam and is not shown in the tables for these territories. “Consumer spending” refers to “personal consumption expenditures,” “inventory investment” refers to “change in private inventories,” and “government spending” refers to “government consumption expenditures and gross investment.”

5. See Department of Commerce Statistics Division, *American Samoa Statistical Yearbook 2008.*

Table 1. Highlights of GDP Growth, American Samoa

Percent Change From Preceding Year in Real GDP

	2003	2004	2005	2006	2007	2002–2007 average
Gross domestic product	**1.5**	**0.7**	**2.1**	**–2.9**	**0.5**	**0.4**
Personal consumption expenditures	**2.5**	**4.9**	**0.1**	**0.2**	**–2.0**	**1.1**
Private fixed investment	**3.3**	**35.8**	**12.4**	**–8.4**	**–2.5**	**7.1**
Change in private inventories	....	....	....	....	....	....
Net exports of goods and services	....	....	....	....	....	....
Exports	–2.2	–16.0	4.4	–6.9	1.1	–4.2
Goods	–2.4	–16.8	5.4	–6.9	1.8	–4.1
Services	1.0	–1.2	–10.3	–7.3	–11.5	–6.0
Imports	1.9	–14.8	–5.9	–3.4	–6.9	–6.0
Goods	1.4	–15.4	–5.3	–3.5	–7.0	–6.1
Services	8.6	–5.8	–13.5	–1.5	–5.7	–3.8
Government consumption expenditures and gross investment	**1.1**	**–7.0**	**–2.9**	**–4.3**	**–6.1**	**–3.9**
Federal	65.9	10.8	–40.2	–17.2	6.3	–0.6
Territorial	–2.2	–8.5	0.9	–3.5	–6.7	–4.0

Percent Change From Preceding Year in Price Indexes

	2003	2004	2005	2006	2007	2002–2007 average
Gross domestic product	**–3.0**	**4.0**	**–2.4**	**2.5**	**–3.4**	**–0.5**
Personal consumption expenditures	**4.1**	**3.5**	**3.0**	**1.8**	**2.6**	**3.0**

Real GDP
[Millions of chained (2005) dollars]

	2002	2003	2004	2005	2006	2007
Gross domestic product	**527**	**535**	**539**	**550**	**534**	**537**
Personal consumption expenditures	**334**	**342**	**359**	**360**	**360**	**353**
Private fixed investment	**14**	**14**	**19**	**22**	**20**	**19**
Change in private inventories	**4**	**29**	**24**	**–17**	**–6**	**–22**
Net exports of goods and services	**–94**	**–120**	**–109**	**–53**	**–69**	**–27**
Exports	592	579	487	508	473	478
Goods	561	548	456	480	447	455
Services	31	31	31	28	26	23
Imports	686	699	596	561	542	505
Goods	645	654	553	524	506	471
Services	41	45	42	37	36	34
Government consumption expenditures and gross investment	**262**	**265**	**246**	**239**	**229**	**215**
Federal	12	21	23	14	11	12
Territorial	249	244	223	225	217	203
Addenda:						
Population (thousands)[1]	60.8	62.6	64.1	65.5	66.9	68.2
Per capita real GDP (chained dollars)	8,668	8,546	8,409	8,397	7,982	7,874

1. Source: *2008 American Samoa Statistical Yearbook*

GDP
[Millions of dollars]

	2002	2003	2004	2005	2006	2007
Gross domestic product	**536**	**527**	**553**	**550**	**548**	**532**
Personal consumption expenditures	**301**	**321**	**349**	**360**	**367**	**369**
Private fixed investment	**12**	**13**	**18**	**22**	**20**	**20**
Change in private inventories	**3**	**23**	**22**	**–17**	**–7**	**–29**
Net exports of goods and services	**–18**	**–76**	**–76**	**–53**	**–71**	**–56**
Exports	528	523	471	508	503	511
Goods	503	496	441	480	477	487
Services	25	27	29	28	26	23
Imports	547	599	546	561	573	567
Goods	512	559	506	524	536	532
Services	34	40	40	37	37	35
Government consumption expenditures and gross investment	**238**	**247**	**240**	**239**	**239**	**229**
Federal	11	20	22	14	12	12
Territorial	227	227	218	225	227	217

NOTE. Detail may not add to total because of rounding.

Contributions to Percent Change in Real GDP
[Percentage points]

	2003	2004	2005	2006	2007	2002–2007 average
Gross domestic product[1]	**1.5**	**0.7**	**2.1**	**–2.9**	**0.5**	**0.4**
Personal consumption expenditures	**1.46**	**2.98**	**0.09**	**0.12**	**–1.39**	**0.65**
Private fixed investment	**0.08**	**0.86**	**0.42**	**–0.33**	**–0.09**	**0.19**
Change in private inventories	**3.70**	**–0.80**	**–7.14**	**2.20**	**–3.84**	**–1.18**
Net exports of goods and services	**–4.22**	**0.95**	**9.98**	**–2.98**	**8.58**	**2.46**
Exports	–2.21	–16.13	3.85	–6.49	1.00	–4.00
Goods	–2.26	–16.06	4.42	–6.13	1.56	–3.69
Services	0.05	–0.07	–0.57	–0.37	–0.56	–0.30
Imports	–2.01	17.08	6.13	3.51	7.59	6.46
Goods	–1.43	16.63	5.11	3.41	7.19	6.18
Services	–0.58	0.45	1.02	0.10	0.39	0.28
Government consumption expenditures and gross investment	**0.51**	**–3.28**	**–1.30**	**–1.89**	**–2.72**	**–1.74**
Federal	1.45	0.40	–1.68	–0.43	0.14	–0.02
Territorial	–0.94	–3.68	0.38	–1.46	–2.86	–1.71

1. These estimates are percent changes.

increase in inventory investment of the canneries). Consumer spending also increased in 2004; however, this growth was offset by a decrease in government spending that reflected a decrease in major public construction projects. Government spending continued to decrease in each year from 2005 to 2007, largely reflecting decreases in public construction activity.

Commonwealth of the Northern Mariana Islands

From 2002 to 2007, real GDP of CNMI decreased at an average annual rate of 4.2 percent. Real GDP increased in 2003 but decreased in each year from 2004 to 2007 (table 2). The population of the CNMI decreased rapidly as foreign workers left the territory, and per capita real GDP increased at an average annual rate of 0.5 percent. The price index for GDP decreased at an average annual rate of 2.0 percent; the price index for personal consumption expenditures increased at an average annual rate of 0.4 percent.

From 2002 to 2007, the largest private industries in the CNMI were the garment manufacturing industry and the tourism industry. Exports associated with these industries accounted for the vast majority of exports of goods and services. Imports of the garment manufacturing industry were also a major component of total imports of goods. From 2002 and 2007, the garment manufacturing and tourism industries in the CNMI experienced a number of economic shocks. Garment manufacturing was impacted by a reduction of quotas on imports to the United States of foreign textiles and garments. Tourism was affected by the SARS epidemic, the outbreak of avian flu, and the suspension of two major airline carriers' daily flights from Japan.[6]

The estimates of GDP for the CNMI highlight the impact that the garment manufacturing and tourism industries had on the CNMI's economy. For example, the notable decrease in real GDP in 2005 reflected significant decreases in exports of garments and in exports of tourism services. Real GDP continued to decrease in 2006 and 2007, reflecting further decreases in both types of exports.[7]

Consumer spending and territorial government spending also contributed to variations in real GDP growth from 2002 to 2007. The increase in real GDP in 2003 was more than accounted for by an increase in

6. See Marianas Visitors Authority "Japan Arrivals Down 28% in April" (May 2007) at www.mymarianas.com/html/display.cfm?sid=1676.

7. According to data published by the CNMI Department of Commerce, from 2005 to 2007, exports of garments measured in current dollars fell by over 50 percent, and the number of visitor arrivals decreased by over 20 percent. See "Economic Indicator" (January–March 2009).

Table 2. Highlights of GDP Growth, CNMI

Percent Change From Preceding Year in Real GDP

	2003	2004	2005	2006	2007	2002–2007 average
Gross domestic product	**2.2**	**–1.4**	**–11.0**	**–6.3**	**–3.8**	**–4.2**
Personal consumption expenditures	**5.9**	**–2.5**	**–7.0**	**7.8**	**–0.3**	**0.6**
Private fixed investment	**–6.1**	**80.5**	**–7.7**	**–17.7**	**–33.2**	**–2.9**
Net exports of goods and services	....	....	....	....	....	....
Exports	–3.2	10.0	–18.6	–20.7	–26.5	–12.8
Goods	–3.3	5.2	–19.3	–23.6	–32.2	–15.7
Services	–2.5	27.8	–16.3	–12.6	–12.2	–4.4
Imports	–4.6	13.8	–15.9	–11.4	–27.9	–10.2
Goods	–5.1	13.2	–15.8	–11.6	–27.7	–10.4
Services	4.1	24.7	–18.2	–7.0	–32.4	–7.8
Government consumption expenditures and gross investment	**–0.3**	**–7.2**	**–5.0**	**2.2**	**–7.3**	**–3.6**
Federal	24.8	–18.4	–9.5	–0.7	–9.3	–3.6
Territorial	–1.2	–6.7	–4.8	2.3	–7.2	–3.6

Percent Change From Preceding Year in Price Indexes

	2003	2004	2005	2006	2007	2002–2007 average
Gross domestic product	**–6.1**	**–1.6**	**–1.9**	**0.1**	**–0.7**	**–2.0**
Personal consumption expenditures	**–3.0**	**1.8**	**0.1**	**1.6**	**1.5**	**0.4**

Real GDP
[Millions of chained (2005) dollars]

	2002	2003	2004	2005	2006	2007
Gross domestic product	**1,197**	**1,223**	**1,206**	**1,073**	**1,006**	**967**
Personal consumption expenditures	**532**	**563**	**549**	**511**	**551**	**549**
Private fixed investment	**25**	**23**	**42**	**39**	**32**	**21**
Net exports of goods and services	**259**	**263**	**260**	**188**	**79**	**68**
Exports	1,072	1,038	1,142	930	737	542
Goods	846	818	861	694	531	360
Services	226	220	281	235	206	180
Imports	813	775	882	742	657	474
Goods	775	736	833	701	620	448
Services	38	40	49	40	38	25
Government consumption expenditures and gross investment	**382**	**380**	**353**	**335**	**343**	**318**
Federal	12	15	12	11	11	10
Territorial	369	365	340	324	331	307
Addenda:						
Population (thousands)[1]	74.4	76.6	78.9	70.6	60.7	58.6
Per capita real GDP (chained dollars)	16,095	15,963	15,287	15,191	16,584	16,494

1. Source: U.S. Census Bureau, International Data Base

GDP
[Millions of dollars]

	2002	2003	2004	2005	2006	2007
Gross domestic product	**1,320**	**1,267**	**1,229**	**1,073**	**1,007**	**962**
Personal consumption expenditures	**538**	**553**	**549**	**511**	**560**	**566**
Private fixed investment	**23**	**22**	**41**	**39**	**33**	**22**
Net exports of goods and services	**388**	**344**	**292**	**188**	**53**	**20**
Exports	1,104	1,056	1,156	930	752	548
Goods	875	836	870	694	537	364
Services	229	220	287	235	215	184
Imports	717	712	864	742	699	529
Goods	679	673	815	701	663	501
Services	38	39	49	40	37	28
Government consumption expenditures and gross investment	**371**	**347**	**347**	**335**	**362**	**354**
Federal	11	15	12	11	11	10
Territorial	359	332	335	324	351	344

NOTE. Detail may not add to total because of rounding.

Contributions to Percent Change in Real GDP
[Percentage points]

	2003	2004	2005	2006	2007	2002–2007 average
Gross domestic product[1]	**2.2**	**–1.4**	**–11.0**	**–6.3**	**–3.8**	**–4.2**
Personal consumption expenditures	**2.46**	**–1.10**	**–3.16**	**3.74**	**–0.17**	**0.35**
Private fixed investment	**–0.11**	**1.43**	**–0.26**	**–0.64**	**–1.09**	**–0.13**
Net exports of goods and services	**–0.07**	**0.32**	**–6.17**	**–10.05**	**0.15**	**–3.16**
Exports	–2.72	8.37	–17.54	–18.14	–19.82	–9.97
Goods	–2.27	3.47	–13.75	–15.32	–17.24	–9.02
Services	–0.45	4.90	–3.80	–2.82	–2.58	–0.95
Imports	2.65	–8.05	11.37	8.09	19.97	6.81
Goods	2.77	–7.29	10.64	7.83	18.70	6.53
Services	–0.12	–0.76	0.73	0.26	1.27	0.28
Government consumption expenditures and gross investment	**–0.10**	**–2.07**	**–1.43**	**0.69**	**–2.71**	**–1.12**
Federal	0.23	–0.22	–0.10	–0.01	–0.11	–0.04
Territorial	–0.33	–1.85	–1.33	0.70	–2.60	–1.08

1. These estimates are percent changes.

consumer spending.[8] The decrease in real GDP in 2004 was more than accounted for by decreases in territorial government spending and in consumer spending. The decrease in real GDP in 2005 reflected continued decreases in consumer spending and territorial government spending in addition to the decrease in exports. The decrease in real GDP in 2007 also reflected a significant decrease in territorial government spending.

Guam

From 2002 to 2007, the real GDP of Guam grew at an average annual rate of 1.8 percent (table 3). The population increased at an average annual rate of 1.5 percent, and real GDP per capita increased at an average annual rate of 0.3 percent. The price index for GDP increased at an average annual rate of 1.9 percent; the price index for personal consumption expenditures increased at an average annual rate of 2.6 percent.

The primary sectors of Guam's economy are government and tourism. The federal government's presence in Guam is much larger than in American Samoa, the CNMI, and the U.S. Virgin Islands. In 2007, federal government expenditures accounted for more than 25 percent of current-dollar GDP; the majority of these expenditures reflected federal defense spending. Exports of tourism services were the primary component of exports of services, accounting for more than 15 percent of current-dollar GDP in 2007.[9] Guam's tourism industry was affected by a number of external factors during this period, including the SARS epidemic and the outbreak of avian flu that also affected the CNMI's tourism industry.

The estimates of the major components of Guam's GDP show that changes in government spending and in exports of tourism services accounted for much of the year-to-year volatility in real GDP growth. The estimates also show that changes in consumer spending significantly affected economic growth. The decrease in real GDP in 2003 reflected decreases in consumer spending and in exports of tourism services that were partly offset by a decrease in imports and an increase in government spending (including construction spending).[10] After contracting in 2003, Guam's economy rebounded in 2004. The growth in real GDP

8. Prices of consumer good and services decreased in 2003 (table 2). This decrease primarily reflected movements in the consumer price index for the territory published by the Central Statistics Division of the CNMI Department of Commerce.

9. The tourism industry in Guam is highly dependent on visitors from Asia, particularly visitors from Japan and Korea. Together, these two markets accounted for almost 90 percent of total air arrivals in Guam from 2002 to 2007. See Bureau of Statistics and Plans, *Guam Statistical Yearbook (2008)*.

10. Guam's economy was affected in 2003 by the aftermath of Typhoon Pongsona, which struck Guam in December 2002.

Table 3. Highlights of GDP Growth, Guam

Percent Change From Preceding Year in Real GDP

	2003	2004	2005	2006	2007	2002–2007 average
Gross domestic product	**–0.2**	**8.1**	**4.2**	**–3.4**	**0.7**	**1.8**
Personal consumption expenditures	**–8.4**	**7.0**	**5.5**	**–1.3**	**1.8**	**0.8**
Private fixed investment	**32.9**	**–8.5**	**–9.5**	**7.0**	**24.9**	**8.0**
Net exports of goods and services	......	......	......	......	......	......
Exports	–14.6	27.4	4.8	–9.4	–2.1	0.2
Goods	–16.9	15.5	–7.3	–2.0	63.6	7.4
Services	–14.4	28.5	5.8	–9.9	–6.8	–0.5
Imports	–13.9	4.4	3.2	2.0	9.9	0.8
Goods	–14.3	4.0	3.2	2.0	9.3	0.5
Services	5.8	21.6	3.6	–1.0	32.2	11.8
Government consumption expenditures and gross investment	**6.7**	**2.0**	**2.5**	**–0.6**	**5.1**	**3.1**
Federal	10.0	1.4	1.0	–5.0	5.6	2.5
Territorial	2.0	2.9	4.6	5.7	4.4	3.9

Percent Change From Preceding Year in Price Indexes

	2003	2004	2005	2006	2007	2002–2007 average
Gross domestic product	**–0.5**	**0.5**	**2.4**	**5.5**	**1.7**	**1.9**
Personal consumption expenditures	**1.2**	**1.0**	**3.7**	**4.1**	**2.8**	**2.6**

Real GDP
[Millions of chained (2005) dollars]

	2002	2003	2004	2005	2006	2007
Gross domestic product	**3,651**	**3,643**	**3,936**	**4,100**	**3,959**	**3,988**
Personal consumption expenditures	**2,503**	**2,293**	**2,455**	**2,589**	**2,554**	**2,601**
Private fixed investment	**111**	**148**	**135**	**122**	**131**	**164**
Net exports of goods and services	**–657**	**–571**	**–451**	**–453**	**–557**	**–703**
Exports	736	628	801	839	761	744
Goods	58	48	56	52	51	83
Services	677	580	745	788	710	662
Imports	1,393	1,199	1,252	1,292	1,318	1,448
Goods	1,372	1,176	1,223	1,263	1,288	1,408
Services	22	24	29	30	30	39
Government consumption expenditures and gross investment	**1,653**	**1,763**	**1,797**	**1,842**	**1,830**	**1,923**
Federal	958	1,055	1,069	1,080	1,026	1,084
Territorial	694	708	728	762	805	841
Addenda:						
Population (thousands)[1]	161.1	163.6	166.1	168.6	171.0	173.5
Per capita real GDP (chained dollars)	22,669	22,269	23,698	24,323	23,149	22,991

1. Source: *2008 Guam Statistical Yearbook*

GDP
[Millions of dollars]

	2002	2003	2004	2005	2006	2007
Gross domestic product	**3,568**	**3,542**	**3,846**	**4,100**	**4,176**	**4,280**
Personal consumption expenditures	**2,359**	**2,189**	**2,366**	**2,589**	**2,660**	**2,783**
Private fixed investment	**95**	**130**	**126**	**122**	**140**	**180**
Net exports of goods and services	**–368**	**–444**	**–363**	**–453**	**–507**	**–690**
Exports	611	544	741	839	812	814
Goods	50	43	53	52	53	91
Services	561	501	688	788	759	723
Imports	979	988	1,103	1,292	1,318	1,504
Goods	958	966	1,076	1,263	1,288	1,463
Services	21	22	28	30	31	41
Government consumption expenditures and gross investment	**1,482**	**1,668**	**1,717**	**1,842**	**1,883**	**2,006**
Federal	861	993	1,031	1,080	1,077	1,142
Territorial	620	675	686	762	806	864

NOTE. Detail may not add to total because of rounding.

Contributions to Percent Change in Real GDP
[Percentage points]

	2003	2004	2005	2006	2007	2002–2007 average
Gross domestic product[1]	**–0.2**	**8.1**	**4.2**	**–3.4**	**0.7**	**1.8**
Personal consumption expenditures	**–5.60**	**4.36**	**3.38**	**–0.83**	**1.18**	**0.50**
Private fixed investment	**0.89**	**–0.32**	**–0.32**	**0.21**	**0.84**	**0.26**
Net exports of goods and services	**1.64**	**3.08**	**–0.02**	**–2.54**	**–3.56**	**–0.28**
Exports	–2.57	4.35	0.96	–1.94	–0.41	0.08
Goods	–0.24	0.19	–0.10	–0.03	0.82	0.13
Services	–2.33	4.15	1.06	–1.91	–1.23	–0.05
Imports	4.21	–1.27	–0.98	–0.60	–3.15	–0.36
Goods	4.24	–1.13	–0.96	–0.61	–2.91	–0.27
Services	–0.03	–0.14	–0.03	0.01	–0.24	–0.09
Government consumption expenditures and gross investment	**2.85**	**0.93**	**1.11**	**–0.27**	**2.28**	**1.38**
Federal	2.50	0.39	0.27	–1.30	1.43	0.66
Territorial	0.36	0.54	0.84	1.03	0.85	0.72

1. These estimates are percent changes.

in 2004 was more than accounted for by increases in consumer spending and in exports of tourism services.[11] Real GDP continued to increase in 2005; this increase was more than accounted for by increases in consumer spending and in government spending. The largest contributor to the decrease in real GDP in 2006 was a decrease in exports of tourism services.[12] In 2007, real GDP increased, reflecting positive contributions from all major components of GDP except net exports of goods and services; the largest positive contributions were from government spending and consumer spending.

U.S. Virgin Islands

From 2002 to 2007, real GDP of the U.S. Virgin Islands grew at an average annual rate of 2.9 percent. Real GDP decreased in 2003 but increased in each year from 2004 to 2007 (table 4). The population increased at an average annual rate of 0.8 percent, and per capita real GDP increased at an average annual rate of 2.0 percent. The price index for GDP increased at an average annual rate of 5.2 percent; the price index for personal consumption expenditures increased at an average annual rate of 4.5 percent.

The estimates of GDP for the U.S. Virgin Islands highlight the effect that the oil refining industry has had on the territory's economic growth from 2002 to 2007. Along with tourism, oil refining ranks among the most important industries in the territory. In fact, the Hovensa oil refinery, located on St. Croix, is one of the world's largest oil refineries. Changes in exports, imports, and investment (including inventory investment) associated with the oil refining industry accounted for much of the year-to-year variation in real GDP growth. For example, the decrease in real GDP in 2003 reflected a decrease in construction activity due to the completion in 2002 of several large private and public sector projects, including a $0.5 billion coker unit for the oil refinery in St. Croix.[13] The increase in real GDP in 2005 also reflected an increase in construction activity associated with the oil refinery: specifically, the construction of a desulfurization unit that began in September of that year.[14] The increase in real GDP in 2007 largely reflected trade activities associated with the oil refining industry. The decrease in imports of crude oil was far greater than the decrease in exports

11. Total air arrivals increased by 31 percent in 2004 following a decrease of 17 percent in 2003. See *2008 Guam Statistical Yearbook*.

12. The decrease in exports of tourism services partly reflected a decrease in average on-island expenditures by Japanese tourists. See *2008 Guam Statistical Yearbook*.

13. See Virgin Islands Bureau of Economic Research, *U.S. Virgin Islands Economic Review* (January 2003) at www.usviber.org/pdfs/EconReviewJan2003.pdf.

14. See Virgin Islands Bureau of Economic Research, *U.S. Virgin Islands Economic Review and Industry Outlook* (March 2006) at www.usviber.org/pdfs/EconReviewMar2006.pdf.

Table 4. Highlights of GDP Growth, U.S. Virgin Islands

Percent Change From Preceding Year in Real GDP

	2003	2004	2005	2006	2007	2002–2007 average
Gross domestic product	**–1.2**	**3.5**	**3.7**	**4.0**	**4.4**	**2.9**
Personal consumption expenditures	**1.0**	**1.9**	**6.8**	**9.4**	**–1.5**	**3.4**
Private fixed investment	**–30.4**	**9.5**	**17.8**	**5.4**	**–20.6**	**–5.6**
Change in private inventories	....	....	....	....	....	....
Net exports of goods and services	....	....	....	....	....	....
Exports	15.9	7.3	1.2	–5.1	–0.3	3.5
Goods	19.3	7.1	0.7	–5.4	0.2	4.1
Services	3.6	8.0	4.1	–3.1	–5.1	1.4
Imports	17.5	7.5	1.4	–5.6	–5.8	2.6
Goods	17.6	7.4	1.5	–5.6	–6.0	2.6
Services	13.0	8.9	–1.8	–8.2	8.7	3.8
Government consumption expenditures and gross investment	**–11.9**	**2.8**	**1.3**	**8.5**	**9.9**	**1.8**
Federal	3.3	5.6	–7.8	–5.8	4.1	–0.3
Territorial	–13.6	2.4	2.7	10.4	10.6	2.1

Percent Change From Preceding Year in Price Indexes

	2003	2004	2005	2006	2007	2002–2007 average
Gross domestic product	**6.6**	**7.2**	**13.4**	**–2.6**	**2.1**	**5.2**
Personal consumption expenditures	**4.0**	**4.7**	**5.5**	**2.9**	**5.7**	**4.5**

Real GDP
[Millions of chained (2005) dollars]

	2002	2003	2004	2005	2006	2007
Gross domestic product	**3,996**	**3,949**	**4,088**	**4,240**	**4,411**	**4,604**
Personal consumption expenditures	**1,287**	**1,299**	**1,324**	**1,414**	**1,547**	**1,524**
Private fixed investment	**496**	**345**	**378**	**445**	**469**	**373**
Change in private inventories	**–184**	**51**	**27**	**–5**	**–45**	**–386**
Net exports of goods and services	**1,410**	**1,503**	**1,594**	**1,588**	**1,557**	**2,088**
Exports	9,600	11,124	11,933	12,073	11,454	11,415
Goods	8,253	9,849	10,550	10,626	10,054	10,077
Services	1,241	1,286	1,389	1,446	1,402	1,330
Imports	8,189	9,621	10,339	10,485	9,896	9,327
Goods	7,985	9,395	10,092	10,243	9,675	9,092
Services	200	226	246	241	221	240
Government consumption expenditures and gross investment	**870**	**766**	**787**	**798**	**866**	**952**
Federal	93	96	102	94	88	92
Territorial	775	670	686	704	777	859
Addenda:						
Population (thousands)[1]	110.0	110.7	111.5	111.5	113.7	114.7
Per capita real GDP (chained dollars)	36,319	35,660	36,677	38,037	38,799	40,124

1. Source: *2008 U.S.Virgin Islands Annual Economic Indicators*

GDP
[Millions of dollars]

	2002	2003	2004	2005	2006	2007
Gross domestic product	**3,085**	**3,248**	**3,605**	**4,240**	**4,298**	**4,580**
Personal consumption expenditures	**1,121**	**1,176**	**1,255**	**1,414**	**1,592**	**1,657**
Private fixed investment	**435**	**311**	**357**	**445**	**498**	**409**
Change in private inventories	**–93**	**27**	**13**	**–5**	**–55**	**–533**
Net exports of goods and services	**803**	**978**	**1,213**	**1,588**	**1,330**	**2,000**
Exports	5,106	6,831	8,993	12,073	13,170	14,496
Goods	3,911	5,575	7,637	10,626	11,708	13,062
Services	1,195	1,257	1,356	1,446	1,462	1,434
Imports	4,304	5,853	7,781	10,485	11,840	12,496
Goods	4,140	5,651	7,547	10,243	11,615	12,251
Services	164	202	234	241	225	244
Government consumption expenditures and gross investment	**819**	**756**	**768**	**798**	**933**	**1,047**
Federal	80	84	98	94	90	100
Territorial	739	671	670	704	843	947

NOTE. Detail may not add to total because of rounding.

Contributions to Percent Change in Real GDP
[Percentage points]

	2003	2004	2005	2006	2007	2002–2007 average
Gross domestic product[1]	**–1.2**	**3.5**	**3.7**	**4.0**	**4.4**	**2.9**
Personal consumption expenditures	**0.35**	**0.70**	**2.31**	**3.24**	**–0.57**	**1.21**
Private fixed investment	**–4.24**	**0.90**	**1.72**	**0.60**	**–2.40**	**–0.68**
Change in private inventories	**3.93**	**–0.67**	**–0.63**	**–1.06**	**–10.29**	**–1.74**
Net exports of goods and services	**1.93**	**1.97**	**0.04**	**–0.43**	**15.50**	**3.80**
Exports	27.45	16.52	3.17	–15.96	–1.08	6.02
Goods	26.09	13.49	1.69	–14.87	0.66	5.41
Services	1.36	3.03	1.49	–1.09	–1.74	0.61
Imports	–25.52	–14.54	–3.13	15.52	16.58	–2.22
Goods	–24.82	–13.99	–3.25	15.04	17.03	–2.00
Services	–0.70	–0.55	0.12	0.48	–0.45	–0.22
Government consumption expenditures and gross investment	**–3.15**	**0.62**	**0.28**	**1.69**	**2.16**	**0.32**
Federal	0.08	0.15	–0.20	–0.13	0.09	0.00
Territorial	–3.24	0.48	0.48	1.83	2.07	0.32

1. These estimates are percent changes.

of refined petroleum, resulting in a large increase in net exports of goods and services. A decrease in petroleum inventory investment partly offset the increase in net exports.

The strength of the private economy and growth in corporate profits tax revenue in 2006 and 2007 helped to fund increases in territorial government spending. These increases in government spending contributed significantly to real GDP growth in 2006 and 2007.

Other notable factors affecting economic growth in the U.S. Virgin Islands were changes in territorial government spending (other than those described above), changes in exports of tourism services, and changes in consumer spending. As noted previously, the decrease in real GDP in 2003 reflected the completion in 2002 of several private and public sector construction projects. The major government construction projects included the expansion of St. Croix's Henry E. Rohlsen Airport and various road and housing construction projects.[15] The increase in real GDP in 2004 largely reflected an increase in exports of tourism services, which is the primary component of exports of services for the U.S. Virgin Islands. In 2005 and 2006, increases in consumer spending contributed significantly to the increases in real GDP.

Future Directions

Over the next several months, BEA will continue to work closely with the territorial governments to extend the estimates of GDP for the four territories. Estimates for 2008 and 2009, in addition to revised estimates for 2002–2007, are scheduled to be released in the spring of 2011.

It is important to note that GDP is only one summary measure of economic activity. Future enhancements to the estimates for the four territories (subject to data availability) include developing other measures found in the full set of the NIPAs, such as personal income and saving rates.

Appendix: Summary of Methodologies

Gross domestic product (GDP) is measured as the sum of consumer spending (or "personal consumption expenditures"), private investment, net exports (exports less imports) of goods and services, and government spending (or "government consumption expenditures and gross investment"). The methodologies used to estimate the major components of GDP for American Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and the U.S. Virgin Islands are summarized below. These methods are consistent with the methods used to estimate U.S. GDP. Information from the Economic Census of Island Areas was used to establish levels of GDP for each territory for 2002 and 2007. Annual series were then developed and used to estimate GDP for the intervening years.

Consumer spending. Personal consumption expenditures (PCE) consists primarily of purchases of goods and services by households.[16] For American Samoa, the CNMI, and Guam, economic census data on the consumer shares of sales for each industry sector were used to benchmark the estimates of household purchases of most goods. For the CNMI and Guam, annual growth rates for most goods and services were derived using gross business revenue data; for American Samoa, annual growth rates for most goods were derived using data on imports of goods. Annual estimates of goods for the U.S. Virgin Islands were mostly based on imports data from the Census Bureau's *U.S. Trade With Puerto Rico and U.S. Possessions* (series FT895) and *U.S. International Trade in Goods and Services* (series FT900).[17]

Economic census data on the consumer shares of sales for each industry sector were used for all four territories to benchmark the estimates of most services except housing and utilities. Annual growth rates were derived primarily using gross business revenue data for the CNMI and Guam and wage data for American Samoa and the U.S. Virgin Islands. Housing services and utilities services were estimated independently. Housing services were estimated using information on the number of occupied housing units and average rental rates reported in the Census of Population and Housing. Utilities services were estimated using revenue data reported by government-owned utilities and by the U.S. Energy Information Administration. Other services not covered by the economic census —such as financial services furnished without payment, insurance, and sales by government—were also estimated independently.

Private investment. Private investment consists of spending on new fixed assets—equipment, software and structures by private businesses, and improvements to existing assets. It also includes the construc-

15. See Virgin Islands Bureau of Economic Research, *U.S. Virgin Islands Economic Review* (January 2003).

16. A small portion of PCE consists of purchases by nonprofit institutions serving households.

17. It was assumed for both American Samoa and the U.S. Virgin Islands that most consumer purchases of goods were imported.

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tion of new residential structures and the improvements to these structures.[18] Because of data limitations, estimates of private investment in equipment and software and in structures were indirectly measured. Investment in equipment and software was estimated based on the value of imports of capital goods or on economic census data on the business share of sales of the wholesale durable goods sector.[19] Investment in structures was estimated using building permit data and construction industry receipts less sales to other construction firms and less sales to government as reported in the economic census.[20]

Net exports of goods and services. The estimates of exports of goods to the United States from the four territories reflected data from the Census Bureau's FT895 publication. Estimates of exports of goods from American Samoa, the CNMI, and Guam to the rest of the world were based on information compiled by the territorial governments. Estimates of exports of goods from the U.S. Virgin Islands to the rest of the world were based on data from the series FT900 publication. Estimates of imports of goods for American Samoa, the CNMI, and Guam were based on values or quantities of imported commodities reported by the territorial governments. For the U.S. Virgin Islands, estimates of imports of goods reflected data from the series FT895 and FT900 publications.

Information on imports of services and on exports of services other than tourism was limited. Estimates of exports of tourism services for the CNMI and Guam were based on survey data on tourist expenditures and visitor arrivals provided by the territorial government visitors' authorities. For the U.S. Virgin Islands, the estimate of exports of tourism services was based on total visitor expenditures published by the Virgin Islands Bureau of Economic Research.[21]

Government consumption expenditures and gross investment. The estimates of government expenditures were prepared separately for the territorial governments and for the federal government sector. The primary sources of information for the territorial governments estimates were financial statements of the primary government and of the government component units. The main data source for the federal government estimates was the *Consolidated Federal Funds Report*, an annual report published by the U.S. Census Bureau.

Estimates of real GDP. Inflation-adjusted estimates of total GDP and its components were derived within a chain-type Fisher Index framework. For most of the detailed components of GDP, inflation-adjusted estimates were calculated by deflating each component using an appropriate price index. Consumer price indexes produced by each territorial government were used to deflate most of the detailed components of PCE. Inflation-adjusted estimates for most components other than PCE were calculated using U.S. prices from the U.S. Bureau of Labor Statistics.

18. For American Samoa and the U.S. Virgin Islands, private investment also includes private inventory investment (or "change in private inventories").

19. For Guam, after discussion with officials in the Guam Bureau of Statistics and Plans, it was assumed that a majority of the goods purchased by durable goods wholesalers for resale were imported.

20. The method assumed that the receipts by construction industry reported in the economic census were collected for work done in the same year.

21. Exports of tourism services were a small component of American Samoa's economy and are not discussed.