

EMBARGOED UNTIL RELEASE AT 8:30 A.M. EDT, WEDNESDAY, JUNE 30, 2010

Technical: Carol Moylan (202) 606-9711
Erich Strassner (202) 606-5307

BEA 10-34

Media: Ralph Stewart (202) 606-9690

2010 Satellite Account Underscores Importance of R&D

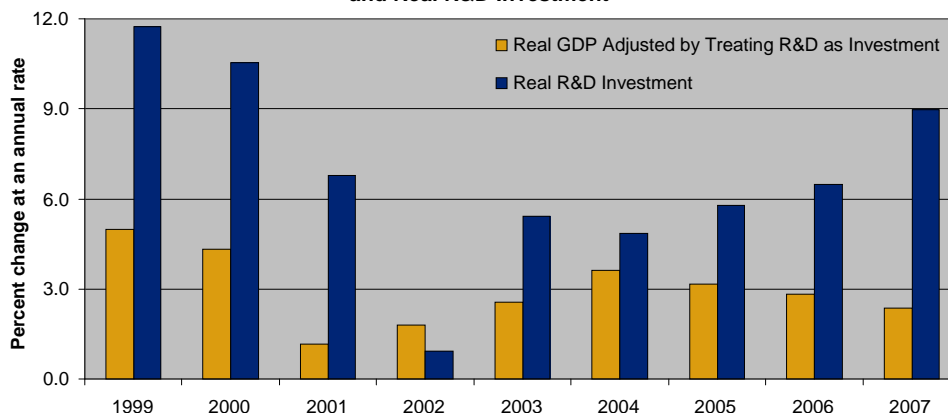
Gross Domestic Product (GDP) would have been, on average, 2.7 percent, or \$301.5 billion higher between 1998 and 2007 if research and development (R&D) spending was treated as investment in the U.S. national income and product accounts, the Bureau of Economic Analysis (BEA) announced today. The 2010 R&D Satellite Account updates and extends BEA's estimates of the effect of R&D on economic growth through 2007, and now includes coverage of the most recent business cycle expansion.

R&D accounted for about 6.3 percent of average annual growth in real GDP—that is, GDP adjusted for inflation—between 1998 and 2007, and 6.6 percent between 2002 and 2007. To put the contribution of R&D in perspective, the business sector's investment in commercial and other types of structures accounted for just over 1.3 percent of average annual growth in real GDP between 1998 and 2007.

Highlights of the release include:

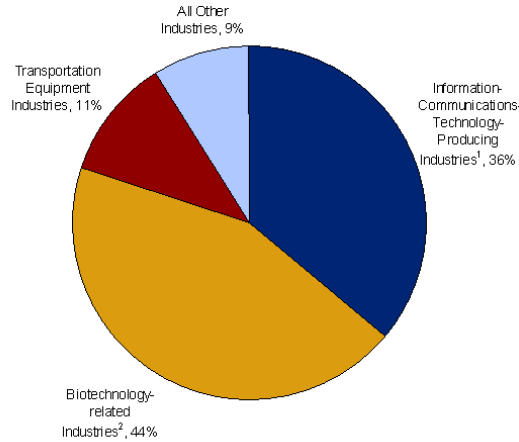
By treating R&D as investment, real GDP increased at an average annual rate of 3.0 percent over the period 1998-2007. As in previous periods, growth in R&D investment continued to track business cycles. R&D's contribution to growth slowed in 2001 and 2002, recovered in 2003, and outpaced the expansion through 2007. In 2002, business sector R&D subtracted from growth, but was more than offset by contributions from the government and nonprofit sectors.

Chart 1. Real GDP Adjusted by Treating R&D as Investment and Real R&D Investment



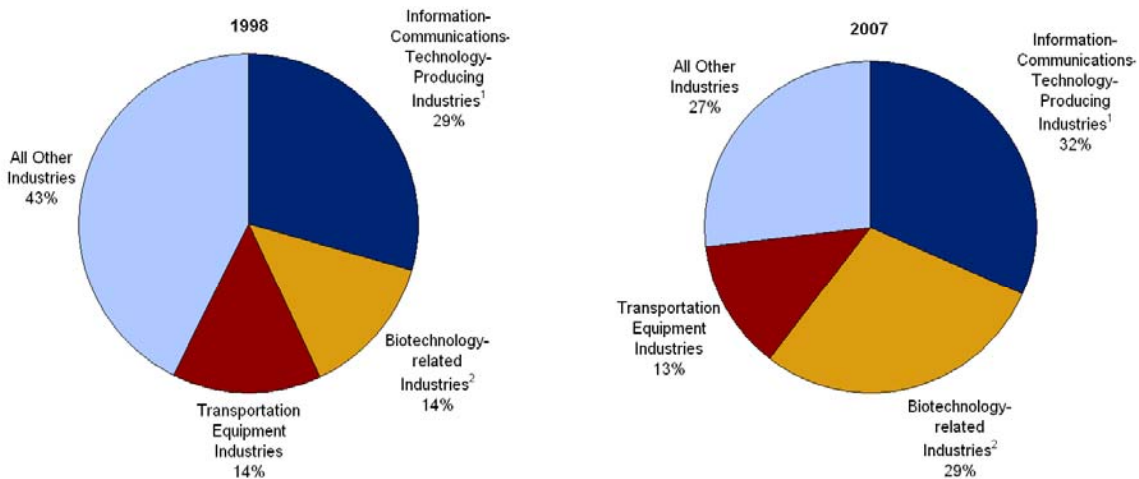
Biotechnology and information, communication, and technology (ICT) industries accounted for four-fifths of the business sector's R&D contribution to GDP growth between 1998 and 2007.

Chart 2. Sources of Business R&D's Contribution to Real GDP Growth, 1998-2007



By 2007, biotechnology-related industries' share of the business sector's R&D investment was about 29 percent, more than double its share in 1998. The share of business sector R&D accounted for by ICT industries increased slightly, to 32 percent.

Chart 3. Shares of Private Business Investment in R&D by Selected Industries, 1998 and 2007



¹ Consists of computer and electronic products within durable-goods manufacturing; publishing industries (includes software) and information and data processing services within information, and computer systems design and related services within professional, scientific, and technical services.

² Consists of pharmaceutical and medicine manufacturing and scientific R&D services.
U.S. Bureau of Economic Analysis

More detailed information about the 2010 R&D Satellite Account will be available in an article in the *Survey of Current Business* later this year. The article will describe the satellite account in more detail and will include statistics for R&D-intensive industries for 1987-2007, as well as statistics for the regional and international accounts.

BEA's national, international, regional, and industry estimates; the *Survey of Current Business*; and BEA news releases are available without charge on BEA's Web site at www.bea.gov. By visiting the site, you can also subscribe to receive free e-mail summaries of BEA releases and announcements.

* * *

Table A. GDP and the Decomposition of the Adjustments to GDP by Treating R&D as Investment

[Billions of dollars]

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
GDP (from the NIPAs)	8,793.5	9,353.5	9,951.5	10,286.2	10,642.3	11,142.1	11,867.8	12,638.4	13,398.9	14,077.6
2010 R&D satellite account										
Total adjustments to GDP from R&D investment	243.0	257.8	278.4	281.2	278.3	288.8	302.6	328.9	360.1	396.3
Business	145.3	159.6	178.3	181.6	174.3	177.6	182.7	198.7	219.7	246.0
Government	92.3	92.6	94.1	93.3	97.2	103.8	111.7	121.3	130.7	139.7
Nonprofit institutions serving households	5.3	5.6	6.0	6.3	6.8	7.5	8.2	8.9	9.8	10.6
GDP with R&D treated as investment ¹	9,036.5	9,611.2	10,229.9	10,567.4	10,920.6	11,431.0	12,170.4	12,967.3	13,759.1	14,473.9
Percent change in the level of GDP	2.8	2.8	2.8	2.7	2.6	2.6	2.6	2.6	2.7	2.8
2007 R&D satellite account										
Total adjustments to GDP from R&D investment	241.8	256.0	276.9	277.9	264.6	274.1	283.5			
Business	145.4	159.2	178.5	180.2	162.9	165.4	166.3			
Government	91.0	91.2	92.4	91.3	94.9	101.3	109.1			
Nonprofit institutions serving households	5.3	5.6	6.0	6.3	6.8	7.4	8.1			
GDP with R&D treated as investment ¹	9,035.3	9,609.5	10,228.4	10,564.1	10,906.9	11,416.2	12,151.3			
Percent change in the level of GDP	2.7	2.7	2.8	2.7	2.5	2.5	2.4			
Addendum:										
R&D investment (2010 vintage) ²	239.1	258.4	281.5	292.4	292.0	306.0	321.5	345.3	371.7	405.7

1. GDP adjusted by treating R&D as investment and with the double-counting of R&D software investment removed.

2. R&D investment includes spending on R&D by government and nonprofit institutions serving households, whereas the adjustment to GDP for this spending consists only of consumption of fixed capital charges and net returns to R&D investment.

NOTE. Implemented using the aggregate output price index.

Table B. Contributions to the Annual Growth Rate of Real GDP Adjusted by Treating R&D as Investment, 1999-2007

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Percent change at annual rate:									
Real GDP¹	5.0	4.3	1.2	1.8	2.6	3.6	3.2	2.8	2.4
Percentage points at annual rates:									
Effect of R&D as Investment ³	0.29	0.28	0.13	0.02	0.13	0.13	0.19	0.22	0.27
Business	0.22	0.23	0.09	-0.05	0.04	0.04	0.10	0.14	0.19
Government	0.06	0.05	0.04	0.06	0.08	0.09	0.08	0.07	0.08
Nonprofit institutions serving households	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Addendum:									
Percent change at annual rate:									
Real GDP (from the NIPAs)	4.8	4.1	1.1	1.8	2.5	3.6	3.1	2.7	2.1

Average Annual Contributions and Shares

	1998-2007
Percent change at annual rate:	
Real GDP¹	2.97
Percentage points at annual rates:³	
GDP excluding R&D Investment	2.79
Effect of R&D as Investment ²	0.19
Business	0.11
Government	0.07
Nonprofit institutions serving households	0.01
Percent of average annual growth:⁴	
GDP excluding R&D Investment	93.7
Effect of R&D as Investment ²	6.3
Business	3.7
Government	2.3
Nonprofit institutions serving households	0.2

1. GDP adjusted by treating R&D as investment and with the double-counting of R&D software investment removed.

2. Includes business investment, consumption of fixed capital charges for government and nonprofit institutions serving households, and a net return to government and these nonprofit institutions.

3. Average annual contributions to GDP growth including R&D are computed as the arithmetic average of annual contributions to growth.

4. Percent of total is computed as the ratio of average annual contributions to growth over the average growth of GDP including R&D.

NOTE. Implemented using the aggregate output price index.

Table C. Contributions to the Annual Growth Rate of Real Business Sector Investment in R&D, 1999-2007

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Percent change:									
Private Business R&D Investment	15.4	14.2	4.8	-2.8	3.6	4.0	7.0	8.2	11.4
Percentage points:									
Pharmaceutical and medicine manufacturing	3.1	1.5	1.7	2.7	3.0	3.9	1.1	2.3	6.8
Chemicals minus pharmaceutical and medicine manufacturing	-0.7	0.3	0.1	-0.6	0.4	0.2	0.1	-0.3	0.6
Computer and peripheral equipment manufacturing	-2.5	0.5	-0.9	0.3	-0.3	1.2	-0.4	1.1	-0.3
Communications equipment manufacturing	-0.6	3.5	3.1	-3.0	-0.2	-1.6	0.5	0.6	0.1
Semiconductor and other electronic component manufacturing	1.2	1.1	1.3	0.5	0.8	0.6	0.4	0.0	0.0
Navigational, measuring, electromedical, and control instruments manufacturing	2.3	0.7	-1.0	1.7	-0.3	-1.1	0.2	0.8	0.8
Other computer and electronic products manufacturing	0.1	-0.2	0.4	-0.2	0.1	0.2	0.0	0.0	-0.1
Motor vehicles, bodies and trailers, and parts manufacturing	3.4	0.4	-0.8	-0.3	1.2	-0.9	0.1	0.2	-0.1
Aerospace product and parts manufacturing	-0.7	-0.8	0.2	0.6	1.4	0.9	0.9	0.2	0.6
Other transportation equipment manufacturing	0.2	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1
Software publishers	1.3	1.1	0.6	0.2	1.3	0.1	0.0	0.9	0.2
Finance, insurance, real estate, rental, and leasing	0.0	1.5	-0.8	-0.2	-0.2	0.1	0.6	-0.5	0.0
Computer systems design and related services	0.8	1.1	3.3	2.3	-0.7	-1.7	0.9	0.3	0.2
Scientific R&D services	0.6	1.3	0.3	-0.7	-0.5	0.5	0.2	0.1	0.5
All other for-profit industries	7.0	2.2	-2.6	-6.1	-2.3	1.5	2.1	2.3	2.1

NOTE. Implemented using the aggregate output price index.