10 ADVANCED TECHNOLOGY PROGRAM

The Advanced Technology Program (ATP) is a public/private partnership, and, as shown in Table 10.1, it leverages private R&D through direct involvement through the provision of financial resources.[1]

Table 10.1. Taxonomy of Public/Private Partnerships

	Economic Objective	
Governmental Involvement	*Leverage Public R&D*	*Leverage Private R&D*
Indirect		Patent system (Patent Act) Tax incentives (R&E tax credit) Research joint ventures (NCRA and NCRPA)
Direct Financial Resources		**Advanced Technology Program** (Omnibus Trade and Competitiveness Act)
Infrastructural Resources Research Resources		

[1] This chapter draws on Link (1996b), Link and Scott (1998), and Link (1999b).

The ATP was established within the National Institute of Standards and Technology (NIST, see Chapter 11) through the Omnibus Trade and Competitiveness Act of 1988, and modified by the American Technology Preeminence Act of 1991. The goals of the ATP, as stated in its enabling legislation, are to assist U.S. businesses in creating and applying the generic technology and research results necessary to:

(1) commercialize significant new scientific discoveries and technologies rapidly
(2) refine manufacturing technologies.

These same goals were restated in the *Federal Register* on July 24, 1990:

> The ATP . . . will assist U.S. businesses to improve their competitive position and promote U.S. economic growth by accelerating the development of a variety of pre-competitive generic technologies by means of grants and cooperative agreements.

As shown in Figure 4.1, TFP significantly declined in the early 1980s. While it recovered in the mid-1980s, the U.S. position in critical technologies, relative to Japan and to Europe, was not strong. Table 10.2 shows the technologies where, in 1989, the U.S. was still behind, and Table 10.3 shows the technologies where the trend remained unfavorable. In general, computer-based operating and processing technologies were, at that time, no longer a strength of the United States.

The ATP received its first appropriation from Congress in FY 1990. The program funds research, not product development. Commercialization of the technology resulting from a project might overlap the research effort at a nascent level, but generally full translation of the technology into products and processes may take a number of additional years. ATP, through cost sharing with industry, invests in risky technologies that have the potential for spillover benefits to the economy.

Appropriations to ATP increased from $10 million in 1990 to a peak of $341 million in 1995. Funding decreased in 1996 to $221 million, and it has averaged about $200 million per year until 2004 when it fell to just under $150 million. To date, ATP has funded through competitive processes approximately 770 research projects involving over 1,500 organizations. In total, ATP has awarded over $2.0 billion with industry allocating nearly that same amount in the form of research matching funds.