

### 3 PUBLIC SUPPORT OF INNOVATION

The government has historically had, as briefly overviewed in Chapter 2, and should continue to have an important partnership role with the private sector in fostering innovation. This intuitive conclusion logically follows from these facts:

- Innovation leads to technology.
- Technology is the prime driver of economic growth.
- In the absence of government intervention, firms will underinvest in the innovation process, especially in R&D.
- Government has a responsibility to address this underinvestment by providing incentives for the continued conduct of, or perhaps increase in, R&D.

Such sequential reasoning to justify the role of government in innovation has dominated the history of public-sector involvement in the innovation process, and more recently of the growth of public/private partnerships as related to innovation. And, the focus of R&D in this sequence of thought reflects upon the linear model in Chapter 2 wherein R&D leads to enhanced production and enhanced production leads to economic growth:

$$R\&D \rightarrow Enhanced\ Production \rightarrow Economic\ Growth$$

However, the economic underpinnings of government's role in innovation are more complex than the above logic might suggest.<sup>1</sup>

---

<sup>1</sup> This chapter draws directly from Link and Scott (2004, forthcoming a).

## GOVERNMENT'S ROLE IN INNOVATION

The theoretical basis for government's role in market activity is based on the concept of market failure. Market failure is typically attributed to market power, imperfect information, externalities, and public goods. The explicit application of market failure to justify government's role in innovation—in R&D activity in particular—is a relatively recent phenomenon within public policy.

Many point to President George H.W. Bush's 1990 *U.S. Technology Policy* as the Nation's first formal domestic technology policy statement. Albeit an important initial policy effort, it however failed to articulate a foundation for government's role in innovation and technology. Rather, it implicitly assumed that government had a role, and then set forth the general statement (1990, p. 2):

The goal of U.S. technology policy is to make the best use of technology in achieving the national goals of improved quality of life for all Americans, continued economic growth, and national security.

President William Clinton took a major step forward from the 1990 policy statement in his 1994 *Economic Report of the President* by articulating first principles about why government should be involved in the technological process (1994, p. 191):

The goal of technology policy is not to substitute the government's judgment for that of private industry in deciding which potential 'winners' to back. Rather, the point is to correct market failure ...<sup>2</sup>

Subsequent Executive Office policy statements have echoed this theme; *Science in the National Interest* (1994) and *Science and Technology: Shaping the Twenty-First Century* (1998) are among such examples. President Clinton's 2000 *Economic Report of the President* (2000, p. 99) elaborated upon the concept of market failure as part of U.S. technology policy:

---

<sup>2</sup> The conceptual importance of identifying market failure for policy is also emphasized, although without any operational guidance, in Office of Management and Budget (1996).