

CHAPTER

1

LOGISTICS
AND THE SUPPLY CHAIN



Special logistics staffs handle the movement of items and displays for trade shows and special events. This sleek Mercedes racer is being loaded aboard a KLM Boeing 747.

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Key Terms

- Channel intermediaries
- Cost trade-offs
- Economic utility
- FOB destination pricing
- FOB origin pricing
- Form utility
- Freight absorption
- Inbound logistics
- Landed costs
- Logistics
- Mass logistics
- Materials management
- Phantom freight
- Place utility
- Possession utility
- Postponement
- Power retailer
- Reverse logistics
- Stock-keeping units (SKUs)
- Stockouts
- Systems approach
- Tailored logistics
- Time utility
- Total cost approach

Learning Objectives

- To learn the definition of logistics
- To understand the economic importance of logistics
- To learn of recent events and their influences on logistics practices
- To gain an understanding of logistics practices within a firm
- To learn different pricing policies
- To know about logistics careers

ECONOMIC IMPACTS OF LOGISTICS

At this point, you may have limited awareness of, and knowledge about, logistics—the subject matter of this textbook. However, if that is the case, you're really not very different from lots of other people who inhabit this planet, and it might come as a surprise to you that logistics tends to have significant economic impacts. From a macroeconomic perspective, Table 1-1 summarizes U.S. logistics costs in relation to gross domestic product (GDP) for five-year time periods between 1960 and 2005. Note that logistics as a percentage of GDP has declined from approximately 15 percent in 1960 to less than 10 percent in 2005 and that annual aggregate logistics costs now approach \$1.2 trillion. Although absolute and relative logistics costs in relation to GDP vary from country to country (logistics expenditures in China are estimated to be about 19 percent),¹ logistics is most definitely an important component in any country's economy.

Continuing with a macro perspective, logistics can also play an important role in a nation's economic growth and development. Hannigan and Mangan pointed out that logistics, particularly improvements in transportation efficiency, played a key role in the explosive growth of Ireland's economy in the mid- and late-1990s (they had a GDP increase of 62 percent in this period). According to Hannigan and Mangan, future growth of Ireland's economy will not be

¹Paul Page, "The China Effect," *Traffic World*, May, 8, 2006, 19–21.

TABLE 1-1 The Cost of the Business Logistics System in Relation to Gross Domestic Product (GDP)

<i>In \$ Billion</i>					
<i>Year</i>	<i>Inventory Carrying Costs</i>	<i>Transportation Costs</i>	<i>Administrative Costs</i>	<i>Total U.S. Logistics Cost</i>	<i>Logistics As a Percentage of GDP</i>
1960	31	44	3	78	14.7
1965	38	64	4	106	14.7
1970	56	91	6	153	14.7
1975	97	116	9	222	13.5
1980	220	214	17	451	16.1
1985	227	274	20	521	12.4
1990	283	351	25	659	11.4
1995	302	441	30	773	10.4
2000	377	590	39	1,006	10.1
2005	393	744	46	1,183	9.5

Sources: Rosalyn Wilson and Robert Delaney, Twelfth Annual *State of Logistics Report*, 2001; Rosalyn Wilson, Seventeenth Annual *State of Logistics Report*, 2006.

possible without improvements to its logistical capabilities.² In a similar fashion, both the Chinese government and the private sector recognize that as China's labor cost advantage shifts to other countries, logistics efficiency becomes an essential component to fueling an economy that has been expanding at between 8 and 10 percent per year.³

Apart from the previous examples of macro-level economic impacts, the economic impacts of logistics can affect individual consumers such as you. These impacts can be illustrated through the concept of **economic utility**, which is the value or usefulness of a product in fulfilling customer needs or wants. The four general types of economic utility are possession, form, time, and place. Logistics clearly contributes to time and place utilities.

Possession utility refers to the value or usefulness that comes from a customer being able to take possession of a product. Possession utility can be influenced by the payment terms associated with a product. Credit and debit cards, for example, facilitate possession utility by allowing the customer to purchase products without having to produce cash or a cash equivalent. Likewise, automotive leases allow customers to take possession of a more desirable model than would be possible with conventional automotive loans.

Form utility refers to a product's being in a form that (1) can be used by the customer and (2) is of value to the customer. Although form utility has generally been associated with production and manufacturing, logistics can also contribute to form utility. For example, to achieve production economies (i.e., lower cost per unit), a soft-drink company may produce thousands of cases of a certain type of soft drink (e.g., diet cola). You're not likely to purchase diet cola by the thousands of cases (unless you're having a really big social event!) but rather in smaller lot sizes, such as a six- or twelve-pack. Through *allocation*, which will be discussed more fully in

²Kevin Hannigan and John Mangan, "The Role of Logistics and Supply Chain Management in Determining the Competitiveness of a Peripheral Economy," *Irish Marketing Review* 14, no. 1 (2001): 35–42.

³Peter Tirschwell, "In China, Full Speed Ahead," *Journal of Commerce*, April 17, 2006, 38.