Chapter 7
Intangible Assets: Measurement, Drivers, and Usefulness

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ABSTRACT
This chapter develops an economic approach to estimating the value of intangible assets that are not recorded on the firm’s balance sheet. The authors demonstrate that their approach provides economically meaningful and useful estimates for the value of intangible assets. Their results indicate that investments in R&D, advertising, brands, and information technology are important drivers of intangible capital, and in turn corporate value. Their approach is shown to be useful to investors seeking information on future performance of intangible-intensive firms. They document evidence that the intangibles-based measures can effectively distinguish between overvalued and undervalued stocks. They believe the intangibles measures described here can add an essential, and hitherto missing, valuation tool for managers and investors concerned with intangible assets.

INTRODUCTION
Over the last three decades, intangible assets have become the major drivers of firm value and economic growth in most economic sectors. Scientific innovations (e.g., new drugs), breakthroughs in information technologies (e.g., the Internet), and other successes in intangible investment are clearly the sources of productivity enhancement in existing economic sectors and also provide the lifeblood of new industries giving rise to new market and wealth. The high importance of intangibles in economic value creation is also attested by the large gap between firms’ accounting book value, which mostly reflects only tangible assets, and stock market value that captures investors’ assessment of the value of all valuable economic assets, including intangible assets. Recent trends further indicate that intangible investment, such as R&D and software, is quickly surpassing investment in tangible assets, such as plant and equipment, to become the largest type of investment in the U.S.
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economy (Nakamura, 2003). The rising size of intangible investment, its growing contribution to economic growth, and the ongoing transition from a production (tangible assets)-based economy to a knowledge (intangible assets)-based economy increase the importance of measuring the value of intangibles, particularly at corporations that invest in creating these assets.

In this chapter, we develop a new approach to valuing intangible assets that are not recorded on firms’ balance sheet. The remainder of the chapter is organized as follows. First, we review the existing methodologies of intangible valuation and highlight our contribution. We then present the details of our intangible valuation methodology and its implementation. To shed light on the dynamics of intangible value creation, we employ our methodology and identify activities that increase firms’ intangible capital. Lastly, we discuss the implications of our intangible valuation methodology for managers concerned with intangible assets in making economic decisions.

BACKGROUND

Intangible (knowledge) assets, such as new discoveries (drugs, software, etc.), brands or unique organizational designs (e.g., Internet-based supply chains), are nonphysically embedded sources of future benefits. The risk of intangible assets (e.g., drugs or software under development not making it to the market) is higher than that of physical assets. Accordingly, many, particularly accountants and corporate executives, are reluctant to recognize intangible capital as assets in financial reports, on par with physical and financial assets. Instead, most intangible expenditures are expensed, leaving the impression that these expenditures do not contribute to firm value. The lack of useful information significantly hinders the task of assessing the value of intangibles, particularly for investors who are outside the firm. Research finds that the information deficiency of intangible assets leads to large losses for investors, due to the information advantage of insiders (e.g., Aboody & Lev, 2000) and distorted and misleading accounting information (e.g., Lev, Sarath & Sougiannis, 2005). Managers also face significant difficulty in valuing the intangibles of target firms for acquisition as they frequently overpay for the intangibles of target firms in acquisition, such as goodwill, and bear the blame for subsequent goodwill write-off (Gu & Lev, 2009). Thus, managers also need more reliable approaches to valuing intangibles.

Although firms’ spending on R&D, advertising, and other forms of intangibles may be included in accounting reports, the value of intangible assets cannot be measured by the inputs of intangible investment, due to the high risk of the investment. For example, failed R&D projects likely do not produce much value, regardless of the amount of R&D money spent by the firm. On the other hand, successful R&D investment can lead to dominant market positions for innovative firms and generate profits far exceeding the cost of the initial investment. Similarly, spending on advertising does not indicate the full benefits of the investment, due to the high uncertainty in the success of the investment (e.g., effective vs. ineffective advertising). Thus, more informative measures of intangible value are clearly needed for assessing the value and performance of intangible investment.

The need for more reliable measures of intangible value also stems from the deficiency that exists in widely used approaches to valuing intangibles. Broadly, existing literature of intangible valuation includes three categories of intangible measurement methodologies: (1) market value approach, (2) accounting valuation approach, and (3) component valuation approach. We briefly review each approach below and explain the benefits of our valuation methodology described in this chapter.