electorate. Second, a general vote is taken on whether that proposal will be accepted.

Redesigning Democracy suggests creative new procedures for enabling democratic systems to achieve better results than are presently available. Gersbach's proposals admirably do not alter the rights of all citizens to participate in elections and to set the agenda. Hopefully, some existing political systems will consider, if not introduce, the proposed reforms. But scholars working in the field of public choice are always faced with the difficult task of finding new ways to motivate politicians, interest groups, and the electorate to introduce reforms. The innovations proposed in this book are worthy of consideration.

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Capitalism without Capital: The Rise of the Intangible Economy
Jonathan Haskel and Stian Westlake
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In the introduction to *Capitalism without Capital*, economists Haskel and Westlake focus on the concept of "investment." They argue that "investment is what builds up capital, which together with labor, constitutes the two measured inputs to production that power the economy, the sinews and joints that make the economy work." Traditionally, when economists measured investment, they were measuring investment in physical goods, plants, and machinery. However, with the advent of the internet in the 1990s, the idea of a new "knowledge economy" emerged, based on what economists began to recognize as the results of research and development (R&D) and the largely nonphysical ideas resulting from it. If this new economy were to be measured by economists, the valuation of these intangible assets would need to be incorporated into their models of economic growth.

In his seminal research into Microsoft Corporation's financial accounts, economist Charles Hulten found that the traditional assets of plant and equipment were only $3 billion, equivalent to 4 percent of Microsoft's assets and 1 percent of its market value. This was a stark example of "capitalism without capital"—namely, a 21st-century corporation that develops "specific products or processes," or invests

in "organizational capabilities" that create or strengthen "product platforms that position a firm to compete in certain markets."

Haskel and Westlake's central argument is that there is "something fundamentally different about intangible investment, and that understanding the steady move to intangible investment helps us understand some of the key issues facing us today: innovation and growth, inequality, the role of management, and financial and policy reform." There are, however, two major differences between intangible assets and tangible assets. First, most measurement conventions ignore intangible assets. As they become more important, however, we are now trying to measure capitalism without capital. For example, conventional accounting practices do not measure an intangible investment, such as developing better software, because making such a measurement is a difficult, arduous process and accountants (being cautious types) prefer not to do so except in limited circumstances (such as after the asset has been successfully developed and sold). Second, the basic economic properties of intangibles make an intangible-rich economy behave differently from a tangible-rich one. Why? First, intangible investments tend to represent *sunk* costs; second, they generate *spillovers*; third, they are likely to be *scalable*; and fourth, intangible investments tend to possess *synergies*, or complementarities, whereby they are more valuable together in the right combinations.

Haskel and Westlake present economic data for Europe and the United States that show intangible investment overtook tangible investment at the time of the Great Recession in 2008. It did so for five reasons:

- First, labor-intensive services become more expensive relative to manufactured goods, and intangible investments (such as design, R&D, and software development) depend much more on labor. Thus, over time, one would expect intangible investment spending to rise relative to tangible investment.
- Second, new technology also seems to be increasing the opportunities for businesses to invest in intangibles, and, as many intangibles involve information and communications, they can be made more efficient with better information technology (IT).
- Third, while the structure of the economy will affect the relative importance of intangibles, that effect will change over time. For example, while the service sector in the 1990s was more tangible-intensive, the manufacturing sector is now more

intangible-intensive than tangible-intensive and has grown more so.
- Fourth, there is some evidence that looser regulation of product markets and labor markets encourages intangible investment.
- Fifth, market size is critical, because intangibles (such as Starbucks' brand or Facebook's software) can be "scaled up" more or less indefinitely.

The authors go through a detailed history of how economists have measured intangible investment. The first real attempts took place in the 1980s, when the U.S. Bureau of Economic Analysis (BEA), in conjunction with the IBM Corporation, began to produce indexes of computer prices that were quality adjusted. Subsequently, those computer price indexes made a major difference in allowing the BEA to measure how much investment U.S. businesses were allocating to computer hardware. By the early 2000s, there was a growing belief among U.S. business economists that firms were spending significant funds on assets that had no physical presence but were valuable and durable. In 2005, Carol Corrado, Charles Hulten, and Dan Sichel initiated their foundational research to measure intangible investment in the United States (and gradually other countries). The result was an operational definition of intangible investment divided into three broad categories each producing a different type of capital asset: (1) computerized investment, e.g., software and databases; (2) innovative property, e.g., R&D and product and service development; and (3) economic competencies, e.g., brand names, business models, and organization-level training.

Haskell and Westlake then turn their attention to the "unusual economic characteristics of intangibles"—namely, scalability, sunkenness, spillovers, and synergies (the "Four S's"). *Scalability* means intangible assets can be used repeatedly and in multiple places at the same time, unlike tangible assets. The scalability of knowledge derives from a key feature of ideas—namely, that nonrivalry, and powerful network effects fuel scalability. Scalability is important in the modern economy, as it has been crucial to the success of companies like Google, Facebook, and Microsoft, as well as to creating barriers to potential competitors of these firms.

Sunkenness involves irrecoverable costs, and when it comes to intangible assets, unless a company has valuable intellectual

property (IP), such "knowledge" becomes almost impossible to liquidate. This creates a problem because investments with high irrecoverable costs can be difficult to finance, especially with debt, in which there is a lack of collateral available to a lender liquidation.

Spillovers are often created by intangible investments, and it is relatively easy for other businesses (including competitors) to take advantage of these intangible investments. While companies may keep trade secrets, some ideas are simply nonexcludable. Such spillovers often emanate from company R&D activities, but they are also found in branding and marketing, copying of organizational innovations, and employee training. Spillovers matter, argue Haskell and Westlake, for three reasons:

- First, if companies are unsure if they will obtain the benefits of their investments, they will likely invest less.
- Second, there is a company premium in making the most of their own intangible investments (or from other companies' intangible spillovers), and those firms will have competitive success.
- Third, spillovers affect the geography of modern economies, such as creative people locating to urban areas to encourage connectedness.

Synergies are important in intangible-based economies, as ideas and other ideas (especially in technology) often work well together. The concept of "open innovation," defined as when a firm directly engages with and benefits from new knowledge gathered from outside the company, is a major driver of intangible synergy at both the company and industry levels, as well as for the national and local economies.

The authors also argue that the "Four S's" produce two general characteristics: *uncertainty* and *contestedness*. Haskell and Westlake believe that in an intangible-rich economy firms would naturally be expected to exhibit greater uncertainty. In addition, intangibles also tend to be contested because of the ambiguity of intangible investment ownership rules. Patent disputes over ownership of intangible property tend to be less well established than those over tangible property.

Haskell and Westlake see intangible spending playing an important role in the recent trend in secular stagnation—that is, the fact that business investment is consistently low, despite every

economic indication showing it should be to the contrary. The authors argue that this stagnation is partly due to the shift from tangible to intangible investments occurring since the 1990s. Because of the characteristics of intangibles, the authors believe that, since intangibles can be scaled up, the largest and most profitable firms in industries break away from their less successful competitors. Moreover, because they are unmeasured, the measured productivity and profitability appear high. However, as a result of reduced intangible investment (as happened after the Great Recession), intangible capital building slowed, which generated fewer spillovers, thus causing firms to scale up less, resulting in a slowing of total factor productivity.

The authors further document that the rise of synergies and spillovers from intangibles might be expected to increase wealth and income inequality, as well as inequality between competing companies and increasing differences in employee pay. In addition, intangible-intensive firms will need managers with particular skills and education and will pay them more handsomely. Since cities are places where synergies and spillovers occur, the rise of intangibles makes cities increasingly attractive places to live, thus driving up the price of prime housing. Haskell and Westlake speculate that there is an inequality of esteem, whereby the cultural characteristics required to succeed in the intangible economy are at odds with people having traditional views who are supporters of populist movements in Europe and the United States.

The economy's greater reliance on intangible investment changes the investment debate, prevalent in the United States and the United Kingdom, that there is inadequate infrastructure investment. Haskell and Westlake note that the importance of spillovers and synergies has increased the importance of places where people meet to share ideas, as well as the importance of public transportation and social spaces that make the urban economy work. Information technologies, however, are reducing the need for some aspects of face-to-face interaction. In addition, the authors see a need for an evolving intangible infrastructure, one built upon standards and norms and a foundation of trust and social capital.

Haskell and Westlake recognize the common critiques of the financial system: it is unsuited to the critical task of business investment, financial markets are oriented to the short term, there is

misunderstood risk, and it places perverse incentives on managers. In an intangible economy, the authors expect to see a movement away from bank lending as the primary source of business financing. Some of this financing shortfall will be replaced by the creation of new debt products secured against IP, but the major driver would be a shift toward the use of equity as a means of financing small- and medium-sized businesses. They also see new efforts at tax reform, in the form of ending the favorable treatment of debt and introducing increased tax advantages for business start-ups, coupled with the emergence of new financial institutions enabling small-scale equity investment and facilitating due diligence.

In addition, the authors also expect to see public equity investment dominated by institutions, many of which will commit to taking larger equity stakes in intangible-based firms, therefore enabling greater overall investment in the economy. The largest of these institutional investors may adopt a different strategy to invest widely across an industry-based ecosystem. Because they have a stake in the industry as a whole, large investors will benefit from such strategic investment (in spite of large spillovers) even if a different firm takes advantage. Moreover, Haskell and Westlake forecast an expansion of venture capital, although the development of serious venture capital sectors in many locales or in entirely new industry sectors is less certain. Finally, if public subsidies to private-sector institutions cannot generate enough public spillovers, the authors recommend further financial support for what they term "truly knowledge-generating institutions," perhaps including research institutes rather than universities.

What will successful companies look like in an intangible economy, and how can managers and investors create and invest in them? Companies that produce intangible assets will want to maximize synergies, create opportunities to learn from others' ideas (by appropriating their spillovers), and retain the company's best talent. Skilled leadership will be increasingly valued, as those managers will guide firms to coordinate intangible investments in different product/service areas and exploit their synergies. Financial investors who place a premium on quality equity research and on insight into firm management will also do well. This will be a challenge, however, as funding equity analysis is becoming more difficult for many institutional investors, because of the inherent tension

between diversification, which allows shareholders to gain from spillover effects, and concentrated ownership, which reduces the costs of analysis.

Haskell and Westlake note five fundamental issues facing policymakers in an intangible economy:

- First, since intangibles tend to be contested, the authors expect an economy increasingly dependent on intangibles to place a premium on solid IP frameworks. But working out a "good" and "effective" IP framework will be a major undertaking.
- Second, creating the conditions for ideas ("synergy") should be an important objective for policymakers. This challenge includes encouraging effective urban development and research into new forms of collaboration and communication.
- Third, the challenge of financial markets and their underinvestment in scalable, sunk intangible investments needs addressing. The authors expect that a thriving intangible economy will make significant changes to financial architecture to make company investment easier, along with cultural changes in the business environment.
- Fourth, all other things being equal, it is likely that it will be harder for most businesses to appropriate the benefits of capital investment in an intangible economy. Haskell and Westlake expect such intangible-rich economies to increase public investment in intangibles, including, but not limited to, scientific R&D. Thus, a greater proportion of the economy's investment will be publicly funded, which will create major demands both on the effectiveness of government (as to its competence and impartiality), and on its popular legitimacy.
- Fifth, governments must find a solution for dealing with increasing inequality and social division, two things that intangibles seem to encourage. The authors believe that to make the most of the spillovers and synergies of intangibles requires effective social institutions and trust.

Haskell and Westlake offer the reader much intellectual fodder about a topic of increasing importance in developed (and developing) economies. They have taken the issue of "capitalism without capital" straight on, with a carefully laid out research approach that addresses both macroeconomic issues (such as inequality and financial stability) and microeconomic issues (such as management and IP).

Their approach largely works. The emerging data over the last quarter century convincingly document the shift from tangible to intangible spending in developed economies, such as in the United States and OECD countries. While there is controversy about accounting measurements and standards concerning intangible investments, there is enough evidence to verify the economy-level shift to these types of investments. Nevertheless, the authors make a strong case that much of the intangible spending by firms goes unmeasured.

The authors' conceptual framework (the "Four S's") is useful for identifying and defining the characteristics of intangibles. One constructive criticism, however, is that, while "network effects" are mentioned under "scalability," they have greater importance for intangible assets than tangible assets because of the overwhelming influence of digitalization on the intangible economy. The authors, however, argue that the shift to intangibles is likely to be accelerating at least in part because of the changing work-related skill sets required in an intangible economy. They opine that the economic results of this shift from tangibles may be responsible for the rise in populist movements in the United States and Europe. There may be some truth to that opinion, because the evolution to advanced manufacturing (robotics and digital controls) has reduced the demand for labor, hence reducing job opportunities for those with low skills. Manufacturing continues to become increasingly capital intensive and less labor intensive. However, this may simply be another example of "creative destruction," resulting in new types of employment that complement those "creatives" directly working with intangible assets.

Issues that Haskell and Westlake raise regarding the financial sector, while familiar to entrepreneurs and small business owners, are exacerbated by the unique nature of intangible assets. The greater use of equity to finance growth has a long history with initial public offerings (IPOs), but such offerings are not made in the early stages of business growth (and certainly only then for a minority of business enterprises). Before any movement toward the greater use of equity can take place, viable intangible accounting measurements and standards need to be developed in conjunction with improved valuation methods for IP to provide sufficient collateral for newly developed debt instruments.

The authors are not convinced that existing company IP protections can reduce spillovers flowing to competing firms. While

intangible assets are more difficult to clarify for their scope of patent protection, it is not an impossible undertaking by patent examiners. In some cases, this clarification is accomplished administratively; in other cases, legislatively. Yet spillovers from IP are often intentional; network effects may allow for nonenforcement of patent-protected technology to accelerate network effects and subsequently allow the firm to compete with complementary products (whose patents are enforced) based on the original technological innovation. In addition, in the case of IT, the rapid obsolescence of many inventions means business-method patents may not be cost-effective, and firms depend on trade secrets.

Perhaps the authors' most controversial policy recommendation is to increase public investment in intangibles, largely based on the spillover problem. Haskell and Westlake present this recommendation as a subtle paean to industrial policy. It is not clear, however, whether this policy recommendation is "research" in general, "basic research" (which is predominately funded by government), or "applied research" (where government supplies a minority of such funding). This may be a moot point, however, because of the murky transition between basic and applied research on intangible products. The question of "which industries to publicly invest in" always arises. Yet a firm's "knowledge appropriation issue" with intangibles appears greater than with tangible assets. Until that problem is resolved, reliance on research institutes focused on developing new intangible assets (eventually available to companies planning on developing commercial products) may be more effective than working solely with universities.

In sum, once the authors present the necessary, semi-dry opening chapters on economic data trends among developed economies, they move through the remaining chapters in an easily digestible fashion. While business management scholars would present much of the material on the intangible economy's effects on the firm in greater depth and acuity, as well as offer suggestions for its future competitive success, the overarching theme of *Capitalism without Capital* is clearly presented throughout the book. For those uninitiated to the seismic foundational changes that have occured, and continue to occur, in the world's developed economies, this book will be an illuminating experience.

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