



# Global Insights

When the Future  
Arrives Early



Rather than a simple and swift return to conditions that prevailed January 2020, this recovery will be a longer-term process of adaptation and reinvention.

While the most obvious differences in economic performance today are between industries, within two years the wider dispersion will be between businesses operating in the same industry.

As the pace of digitization accelerates, investors would be better served to think in terms of the differences between business models rather than differences between industries. “Technology” may no longer be viewed as an industry in its own right but instead understood as the key differentiator between all companies irrespective of industry.

# When the Future Arrives Early

The recession triggered by the coronavirus pandemic was so sharp, sudden and *intentional* that many observers anticipated the recovery would be symmetric in its speed and slope. It was reasoned that once policymakers lifted the lockdowns, economic activity would swiftly revert to prior levels, just as occurs annually in beach towns at the start of the summer season. Unfortunately, a “V-shaped” rebound of this sort was not only unlikely to materialize but also pernicious to expect. Those who conceive of this shock as a temporary disruption akin to a seasonal fluctuation miss its enduring features and may be inclined to manage businesses and investment portfolios backwards towards a world that has ceased to exist.

Make no mistake: the global economy will fully recover and that process has been underway for the past few months.<sup>1</sup> Proprietary data suggest that China’s GDP is already at or above year-ago levels; output in the U.S. and many European economies may exceed prior peaks by the end of next year or soon thereafter. The initial snapback in economic activity from the April lows assuaged worries of an even deeper and more protracted downturn. Likewise, July portfolio data

provided encouraging news about the durability of the recovery, as the U.S. economy continued to expand even as new virus outbreaks raged in southern and western states that combine to account for nearly a third of U.S. GDP. This recovery has not been a reversion to the *status quo ante*, however, but a process of adaptation that raises questions about how much future conditions will resemble those of January 2020.

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<sup>1</sup> There are no guarantees that this will actually materialize.

**FROM DISPERSION ACROSS SECTORS TO DIFFERENCES BETWEEN COMPANIES**

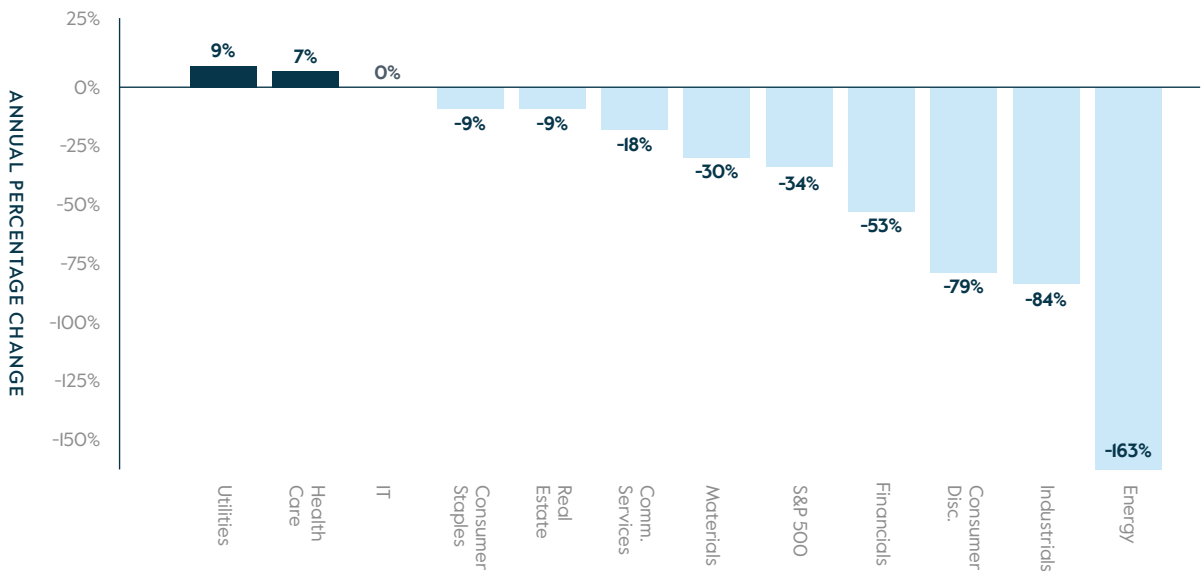
What has been most striking about the recession is not only its unprecedented depth (an -11% to -16% drop in advanced economies' GDP relative to -4% to -5% in 2008-09) but also the degree of dispersion in performance across sectors.<sup>2</sup> While many businesses in information and communications technology and health care managed to grow through the pandemic, lockdowns and social distancing exacted a heavy toll on bars and restaurants, hotels and accommodations, live events, travel and tourism, and energy. Industry-wide earnings in these sectors dropped by -50% or more and their U.S. payrolls have shrunk between -20% and -40% (Figures 1 and 2).

While the drop in discretionary spending on “experiences” accounts for most of the contraction,

activity elsewhere has hardly returned to “normal.” Survey data from professional services firms in our global portfolio suggest that many business managers have revised down expectations for future revenues and staffing needs (Figure 3). Anecdotes suggest that many executives are not only relying on more conservative forecasts, but also rethinking business fundamentals, even in cases where demand has largely recovered.

Recessions often take on a life of their own. Sudden macroeconomic shocks lead management teams to dial back expansion plans, scrutinize cost structures, reevaluate business lines and production processes, and reconsider broader strategic direction.<sup>3</sup> Rather than being attenuated by the supposed temporary nature of this shock, such critical reassessment has been even more pronounced today because of the scale of disruption to most businesses' operations.

*Figure 1.*  
**Dispersion in Q2-2020 Earnings Growth**

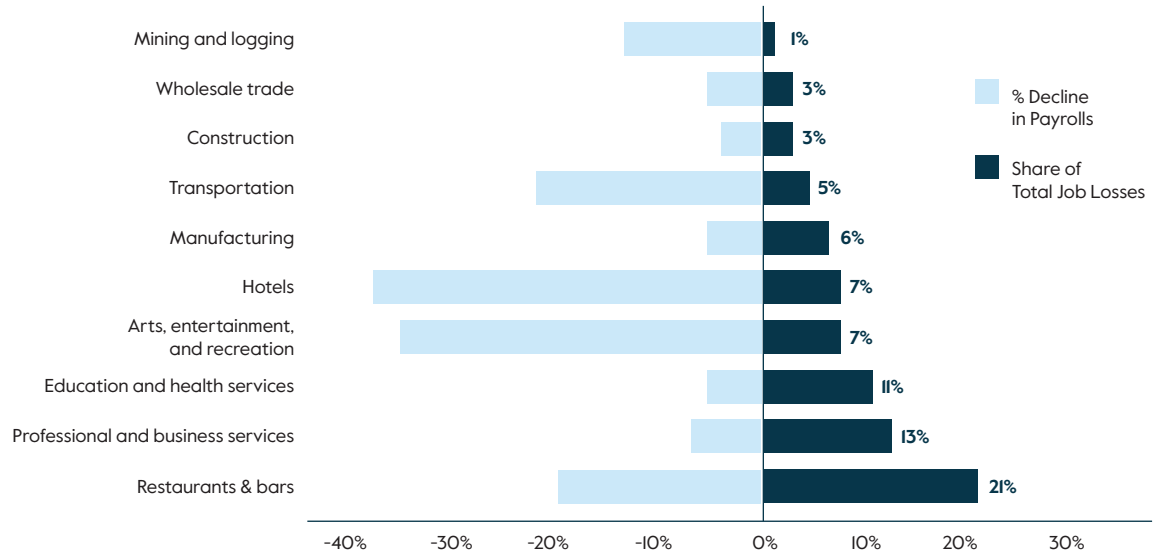


<sup>2</sup> BEA, NIPA Accounts, August 2020. FactSet, August 2020. EuroStat, August 2020. Refinitiv, August 2020.

<sup>3</sup> C.f. Ilut, C. and M. Schneider. (2012), “Ambiguous Business Cycles,” NBER Working Paper 17900. Li, N. and V. Martin. (2018), “Real Sectoral Spillovers: A Dynamic Factor Analysis of the Great Recession,” IMF Working Paper 18/100.

Figure 1. Source: FactSet, August 9, 2020.

*Figure 2.*  
**U.S. Payrolls Down -20% to -40% in Food Service, Accommodations, Live Events, Transportation & Hospitality**



*Figure 3.*  
**Expected Growth in Revenues and Staffing Needs by Industry**

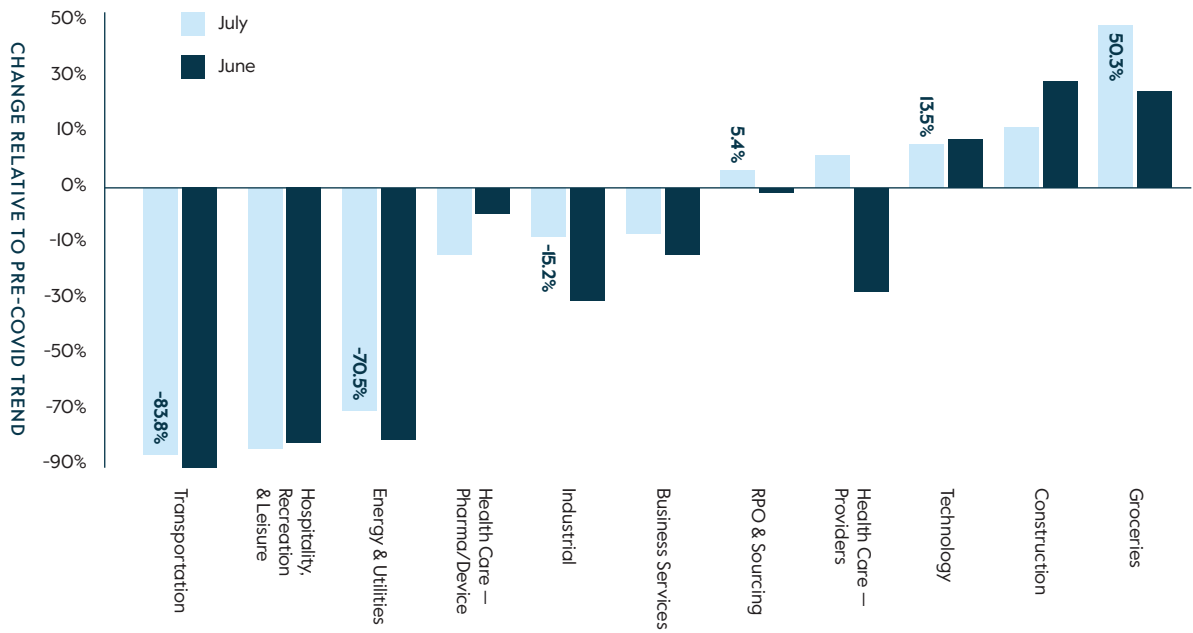


Figure 2. Source: Carlyle; BLS.

Figure 3. Source: Carlyle Analysis of Portfolio Company Data.

Figure 4.  
Dispersion in Multiples Across Industry



Within a matter of weeks, various companies of all sizes and complexity levels found that they were able to meet or exceed pre-pandemic business volumes with their employees working on a remote basis.<sup>4</sup> While many CEOs projected a public sense of assurance and satisfaction that their firms were able to thrive in the face of this real world business continuity test, in private some of these same executives expressed surprise and even awe at the ease with which their companies could adapt to such radical change.<sup>5</sup> Such an experience both opens the mind to more ambitious plans for technology-based business transformation

and arouses a sense of vexation about past complacency or inaction.

So while current attention rightly focuses on the wide dispersion in performance across different industries, it is likely that, as in the last recession, the most salient disparities in two years' time will be between companies within the same industry (Figure 4), as some management teams successfully reinvent their businesses while others futilely endeavor to get back to January 2020.

<sup>4</sup> Carlyle analysis of portfolio company data; Institute for Supply Management, Services, August 2020.

<sup>5</sup> C.f. Wall Street Journal, June 24, 2020: "Executives were amazed at how well their workers performed remotely," and Wall Street Journal, July 25, 2020, "The Work-From-Home Shift Shocked Companies—Now They're Learning Its Lessons."

Figure 4. Source: Carlyle Analysis; Bloomberg Data, August 2020.

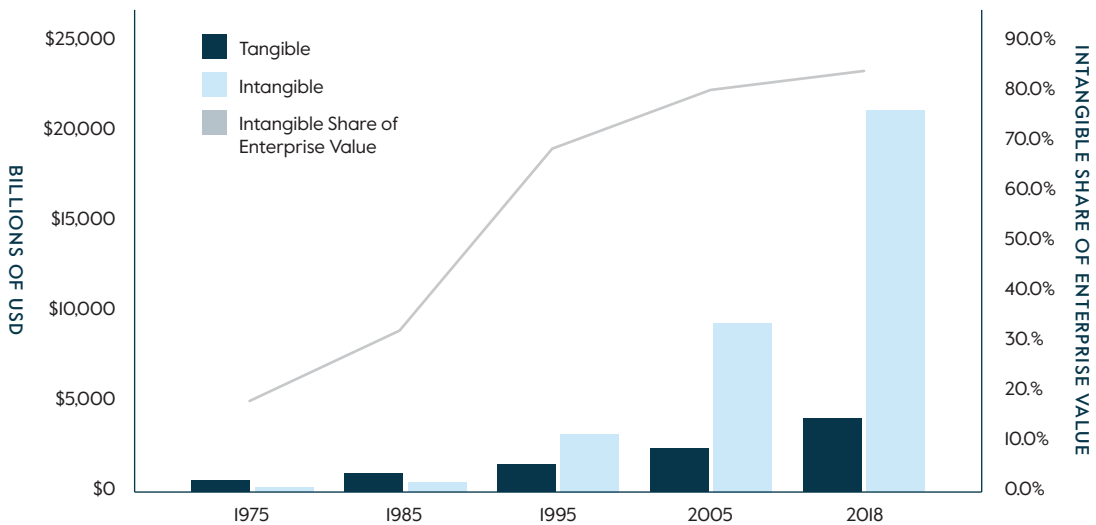
## THE DIGITAL REVOLUTION IN BUSINESS MODELS

The most consequential innovation of the past twenty years may not be a specific application or device, but the way technology facilitated the emergence of new business models. “Taxi” companies arose that didn’t own cars or employ drivers; businesses could enter the hospitality space with no physical assets or employee overhead; and media companies no longer required broadcast licenses, network infrastructure or cable carriage to reach millions of subscribers. The emergence and growth of “virtual” businesses provided conspicuous evidence that, in the digital age, value accrues to ideas, R&D, brands, content, data and human capital – i.e. intangible assets – rather than industrial machinery, factories or other physical assets (Figure 5).<sup>6</sup>

The rise of virtual businesses dovetailed with a complementary shift in investor preferences following the Global Financial Crisis (GFC). When funding markets froze following the Lehman bankruptcy, businesses lost access to external sources of liquidity to finance fixed assets, distribution networks, inventories, payrolls and other liabilities. Suddenly, “size,” “footprint” and “incumbency” came to be understood as an expensive legacy rather than a competitive advantage. Investors wanted companies that were smarter instead of larger, as reflected in the new patois of sell-side flipbooks which now marketed businesses as “agile,” “disruptive,” “nimble” and – especially – “asset light” (Figure 6).

This shift not only shaped new firm formation – asset-light businesses in idea-intensive industries now attract the bulk of start-up funding<sup>7</sup> – but

Figure 5.  
Enterprise Value of S&P 500 Constituents

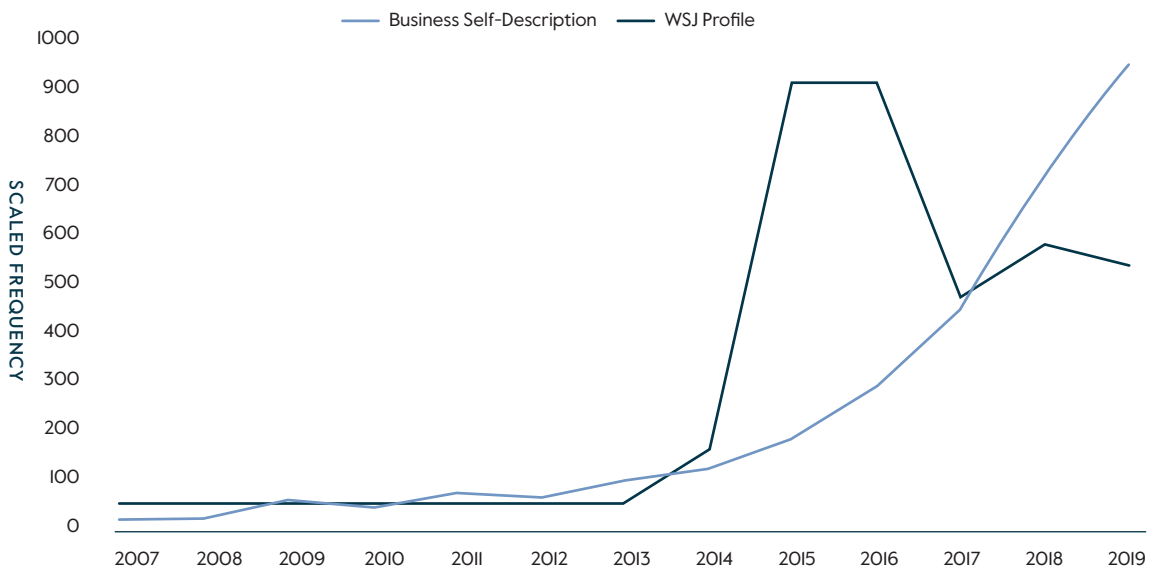


<sup>6</sup> McKinsey Global Institute, “Playing to Win: The New Global Competition for Corporate Profits,” 2015.

<sup>7</sup> “Value of venture capital investment in the United States,” Data through Q2-2020, Statista.

Figure 5. Source: Carlyle; AON, July 2019.

Figure 6.  
Use of “Asset-Light” to Describe Business Model



also contributed to broader and more meaningful changes in corporate strategy and organization across the economy.

For example, consider what these developments mean for a (hypothetical) vertically-integrated beverage manufacturer. While virtually all of its enterprise value likely comes from brand, trade secrets (formulas) and the human capital involved in product development and marketing, nearly all of its financing needs and associated risk come from its concentrate manufacturing plants, bottling facilities, and warehouses and delivery trucks.<sup>8</sup> In an era when technology allows these discrepant aspects of the production process to be unbundled, why not divest the lower value-add, capital-intensive parts of the business

and focus on data-driven product development and marketing and algorithmic intermediation between contract manufacturers, bottlers and distributors?<sup>9</sup>

In many cases, reinvention on this scale may seem too radical for an otherwise healthy business to contemplate. Inertia can be a powerful force, as business practices and organizational forms tend to reflect precedents rather than optimal arrangements.<sup>10</sup> Technology facilitates business transformation,<sup>11</sup> but change ultimately depends on the initiative of management teams and the investors who back them. That’s where recessions come in: while expansions can breed complacency, macroeconomic shocks often spur rethinking that accelerates the evolution of business models.

<sup>8</sup> Wall Street Journal, March 22, 2016.

<sup>9</sup> C.f. “Giants Can Dance: Agile Organizations in Asset-Heavy Industries,” McKinsey & Co., 2019.

<sup>10</sup> Rumelt, R. (1995), “Inertia and Transformation,” *Resources in an Evolutionary Perspective: Towards a Synthesis of Evolutionary and Resource-Based Approaches to Strategy*. Klumer Academic Publishers.

<sup>11</sup> C.f. Baldwin, R. (2016), *The Great Convergence: Information Technology and the New Globalization*, Harvard University Press.

Figure 6. Source: Carlyle Analysis of EGDAR Database and DowJones Text Data.



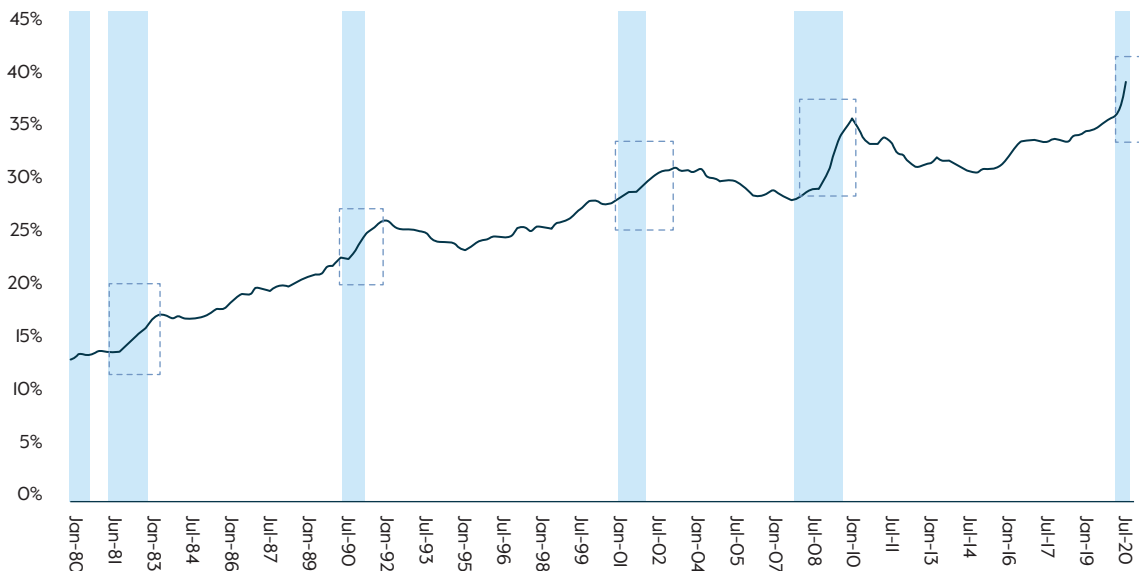
**INTANGIBLES INVESTMENT & JOBLESS RECOVERIES**

Intangibles investment is notoriously difficult to measure, both at the individual company and national economy level, but the (small) portion of intangibles recorded in GDP – spending on R&D, software, patents and content – has been rising steadily over time and tends to jump as a share of total business investment during recessions (Figure 7). Intangibles spending is not just the last line item to be cut in downturns; cost-conscious managers often increase spending on inventory management technology, customer acquisition software and other intangibles to increase efficiency and dampen the practical impact from cutbacks in other areas. It should be no surprise that during the past three business cycles, most of the productivity growth observed over the entirety of the expansion occurred in the two years following the

surge in intangibles' share of total corporate outlays (Figure 8).

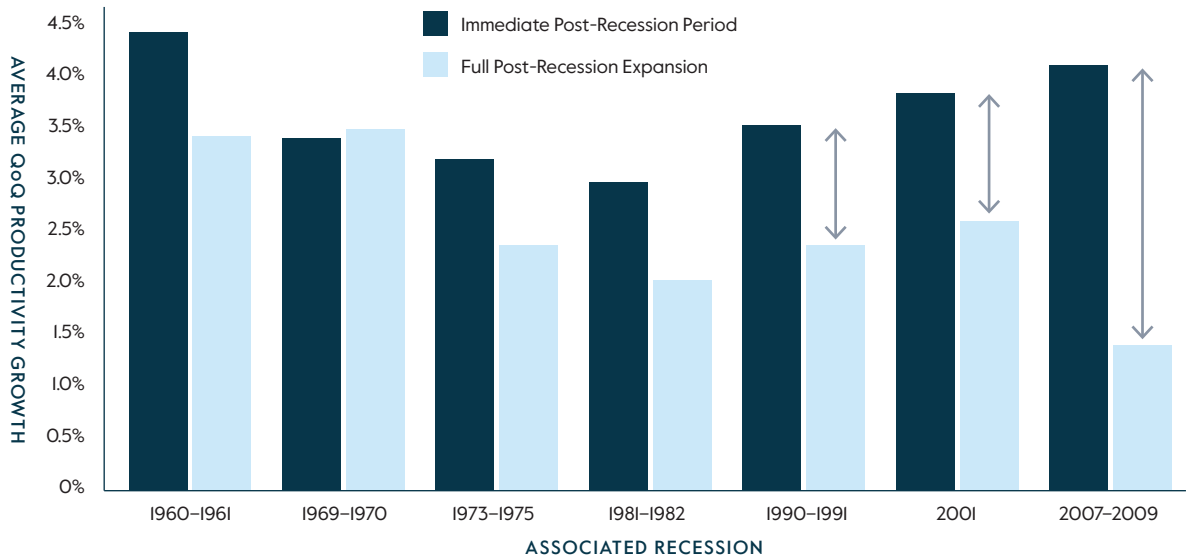
The remote working experience of 2020 seems destined to erode the importance of physical assets further in the minds of executives and accelerate spending on research, customer acquisition, and data management capabilities.<sup>12</sup> Proprietary data suggest that the intangible share of measured business investment could rise 11% in this recession, nearly 1.5x the record increase observed in the “asset light” revolution following the GFC (Figure 9). In the short-run, such spending tends to be motivated by a desire to do more with less. Past increases in the intangible share of corporate outlays have been associated with slower recoveries in employment (Figure 10). If that relationship holds this cycle, a return to full employment in the U.S. may be much further off than the late-2021-or-2022 recovery in GDP.

*Figure 7.*  
**Intangibles' Share of (Measured) Business Investment**



<sup>12</sup> Cruzet, N. and J. Eberly. (2018), “Intangibles, Investment and Efficiency,” American Economic Review. Figure 7. Source: Carlyle Analysis, Bureau of Economic Analysis, August 2020.

*Figure 8.*  
**Most of the Productivity Growth in the Business Cycle Occurs in the Two Years After Recession**



*Figure 9.*  
**Change in Intangibles' Share of Total Fixed Investment Spending, Pre- vs. Post-Recession**

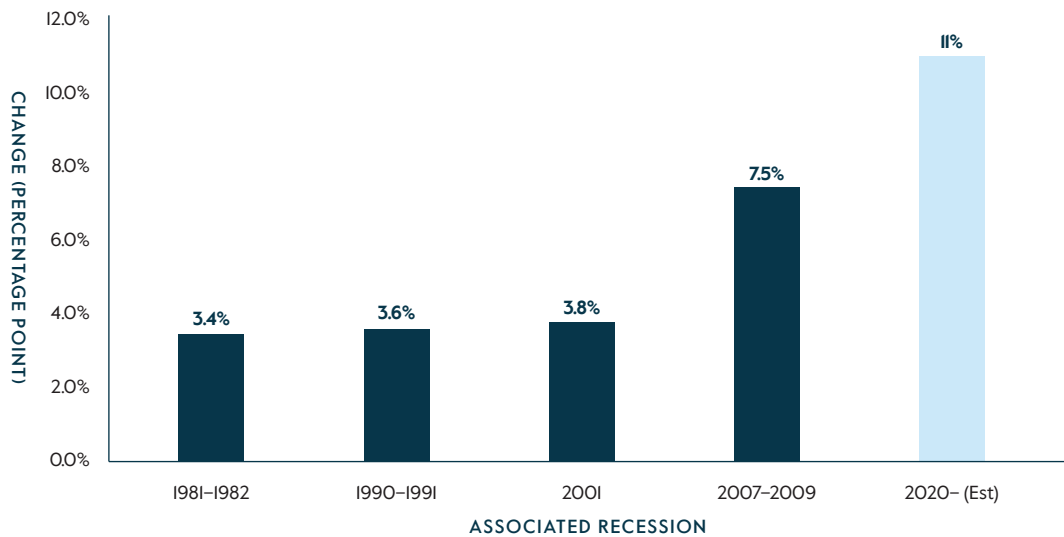
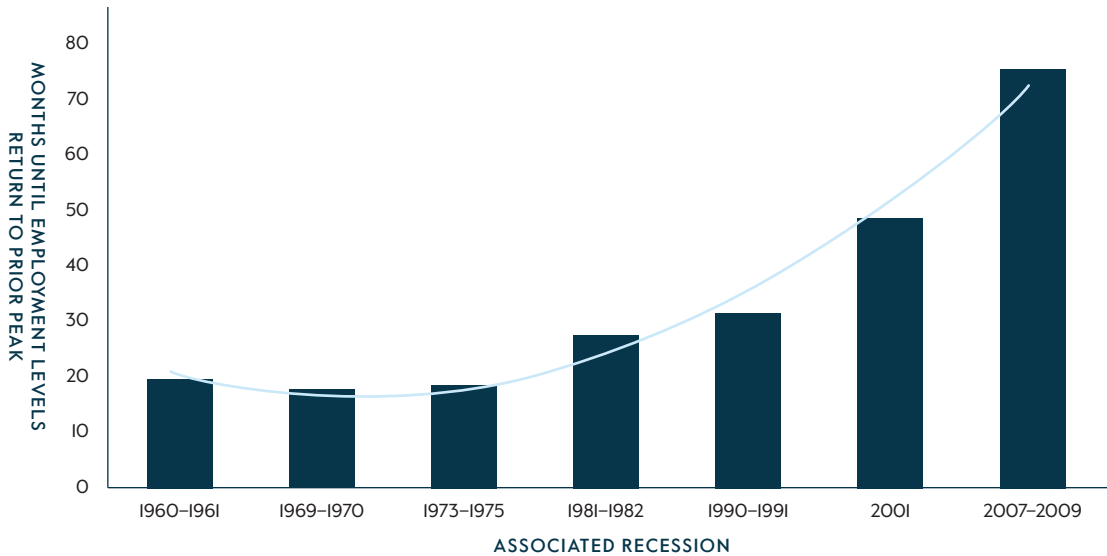


Figure 8. Source: Carlyle Analysis; Bureau of Labor Statistics; NBER.  
 Figure 9. Source: Carlyle Analysis, Bureau of Economic Analysis, August 2020.

Figure 10.  
Increasingly Jobless Recoveries



“Past increases in the intangible share of corporate outlays have been associated with slower recoveries in employment.”

## FROM THE “VALUE PREMIUM” TO THE “VALUE TRAP”

The rise of digital business models and intangible assets has led to a profound shift in historical risk-return relationships. For decades, “value investing” has been predicated on the notion of a “margin of safety,” conventionally measured as the difference between the market price of the asset and its “intrinsic value.” Academic research found that the ratio between the price of a stock and its book value per share provided a reliable proxy for “value,”<sup>13</sup> as stocks with the lowest price-to-book ratios outperformed stocks with the highest price-to-book ratios by about 6.5% per year, on average (Table I). This outperformance came to be known as the “value premium,” and provided academic substantiation for many practitioners’ rules-of-thumb regarding risk and return relationships and portfolio strategy.

In the industrial age, “book value” served as a reliable measure because virtually all of a company’s productive assets were recorded on its balance sheet. Any deviation between “book” and “intrinsic” values reflected differences in depreciation or inflation rates. “Book” could overstate fair value if the effective depreciation rate of plant and equipment exceeded the accounting expense; likewise, book could understate fair value if an increase in wages and material costs made the same capital equipment more expensive to reproduce. Often, these differences would net to zero and the book value per share remained an unbiased proxy for the intrinsic value of most businesses.

In the digital age, this paradigm no longer holds. Current accounting rules do not allow internally-generated intangible assets to be capitalized and recorded on balance sheets.<sup>14</sup> As a result, intangible assets account for nearly 85% of corporate enterprise value (Figure 5, above), but are not reflected in the book value unless they are acquired and characterized as goodwill.<sup>15</sup> These missing assets have not only caused price-to-book to lose its explanatory power, but caused the historical relationship to reverse over the past decade. Between the start of 2010 and the end of last year, the stocks with the widest “margin of safety” (lowest price-to-book) actually underperformed their most “overvalued” counterparts (highest price-to-book) by -5.4% per year, a 1.6x difference in ten-year cumulative returns. This trend intensified in 2020, as “value” investments underperformed the highest price-to-book stocks by nearly -50% through the first half of the year (Table I). Rather than signal that a company is overvalued, a high price-to-book ratio would seem to indicate the presence of highly valuable intangible assets like user and customer data, proprietary algorithms and technology, and human capital.

These returns data do not suggest that “value” is dead as a concept, but that true value has become much harder to ascertain. The problem is not only that intangible assets are hard to value and missing from accounting statements, but that investors must also grapple with the risk of functional obsolescence. In the past, discounts to book value were a sign that the assets or businesses were undervalued; buying a factory for \$75 million that would cost \$100 million

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<sup>13</sup> Fama, E. and K. French (1993), “Common Risk Factors in the Returns on Stocks and Bonds,” *Journal of Financial Economics*.

<sup>14</sup> FASB, “Internally Generated Intangible Assets,” July 2019.

<sup>15</sup> Microsoft’s \$26 billion acquisition of LinkedIn is perhaps the best manifestation of this phenomenon. C.f. Short, J. and S. Todd. (2017), “What’s Your Data Worth?” MIT Sloan Management Review.

*Table 1*  
Returns by Price-to-Book and Price-to-Earnings Ratios

ANNUALIZED STOCK RETURNS –  
VALUE PREMIUM 6.5% PER ANNUM

	Value Stocks (Lowest P/BV)	Growth Stocks (Highest P/BV)	Differential
1950-59	25.06%	20.92%	4.14%
1960-69	13.23%	9.57%	3.66%
1970-79	17.05%	3.89%	13.16%
1980-89	24.48%	12.94%	11.54%
1990-99	20.17%	21.88%	-1.71%
2000-09	8.59%	-0.49%	9.08%
2010-19	11.27%	16.67%	-5.39%
2020	-33.29%	15.59%	-48.88%

ANNUALIZED STOCK RETURNS –  
VALUE PREMIUM 7.5% PER ANNUM

	Value Stocks (Lowest P/E)	Growth Stocks (Highest P/E)	Differential
1950-59	29.25%	17.90%	11.34%
1960-69	12.73%	8.35%	4.38%
1970-79	12.09%	-0.29%	12.37%
1980-89	17.67%	12.74%	4.93%
1990-99	19.43%	20.45%	-1.02%
2000-09	11.49%	-3.78%	15.26%
2010-19	10.15%	16.37%	-6.22%
2020	-17.49%	16.79%	-34.28%

to rebuild provides a “day one” return and valuable downside risk protection. Since the GFC, these discounts mostly provide compensation for the risk of technological disruption or disintermediation. Returns data suggest that such compensation has thus far proved inadequate.

It may be that “asset-heavy” value stocks underperformed to such a great extent this year precisely because remote working has sensitized

investors to the risk that future cash flows will come to depend less on physical assets, like offices. As the pace of digitization accelerates, this risk premium for obsolescence may have to widen further, turning the “value premium” into a “value trap.”

**THINKING IN TERMS OF BUSINESS MODELS RATHER THAN INDUSTRIES**

Analysis of cross-sectional differences in returns also suggests that most of what investors consider to be the outperformance of the “technology” sector actually goes away when controlling for business model. That is, tech-enabled digital platforms tend to outperform the broader market whether their primary businesses are in health care, retail, autos, or beverage manufacturing. The technology sector’s outperformance over the past decade (Figure 11) largely reflects the fact that so many of the software, internet and data analytics firms in the space have “asset light” business models with market values that depend largely, if not entirely, on intangibles like human capital, R&D, and proprietary data and technology.

Much has been made of the extent to which public market returns in the U.S. have come to depend on the largest “tech” businesses. The top-five U.S. stocks by market capitalization have returned 48% year-to-date (through August 21) compared to a net loss of -3.3% for the rest of the S&P 500 (Figure 12). As a result of this disparity, these five mega cap stocks now account for nearly 25% of the index, up from 17% at the start of the year. But, it is important to note, only two of these five businesses are classified as “Information Technology” (Apple and Microsoft); two fall in the “Communications Services” sector (Alphabet and Facebook) and the other is categorized as “Consumer Discretionary” by S&P and “retail” by its Standard Industrial Classification (SIC) code (Amazon). Indeed, when expanding the analysis to all publicly-listed companies and sorting stocks by primary line of business (SIC code), “tech” isn’t even

*Figure 11.*  
Annualized Returns by Industry, January 2010 – June 2020

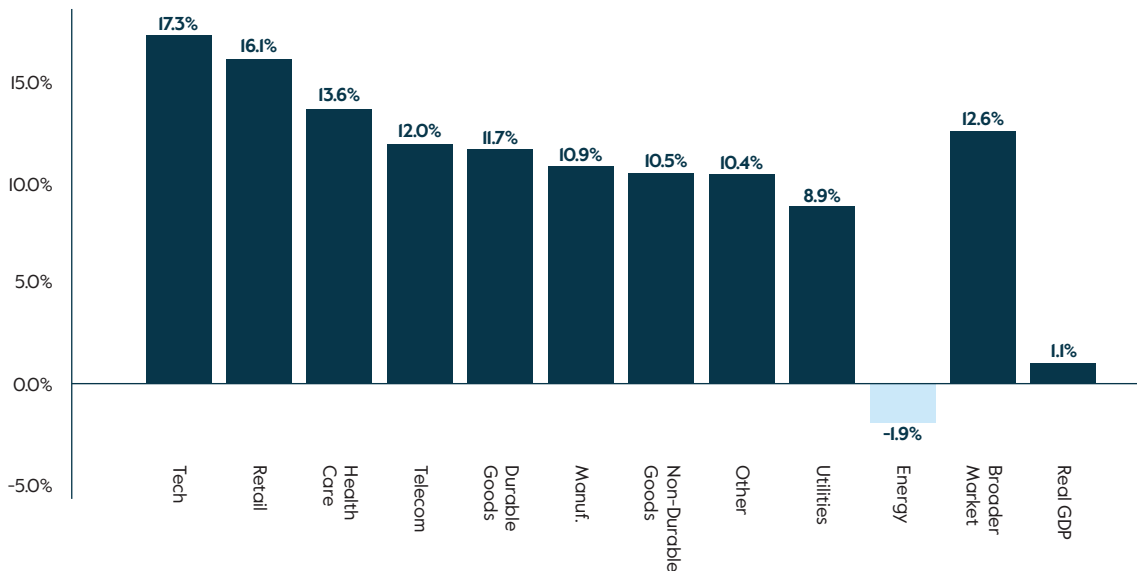


Figure 11. Source: Carlyle Analysis, CRSP, BEA, August 2020.

Figure 12.  
Five Mega Cap Stocks Account for All of the S&P 500 Gains in 2020

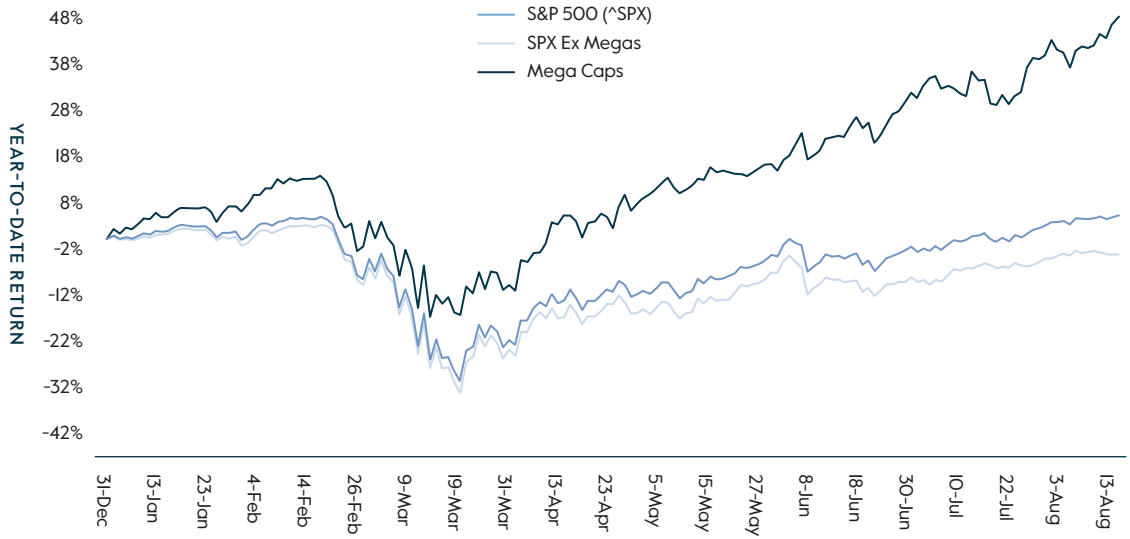


Figure 13.  
Industry YTD Returns: 2020 through June 30

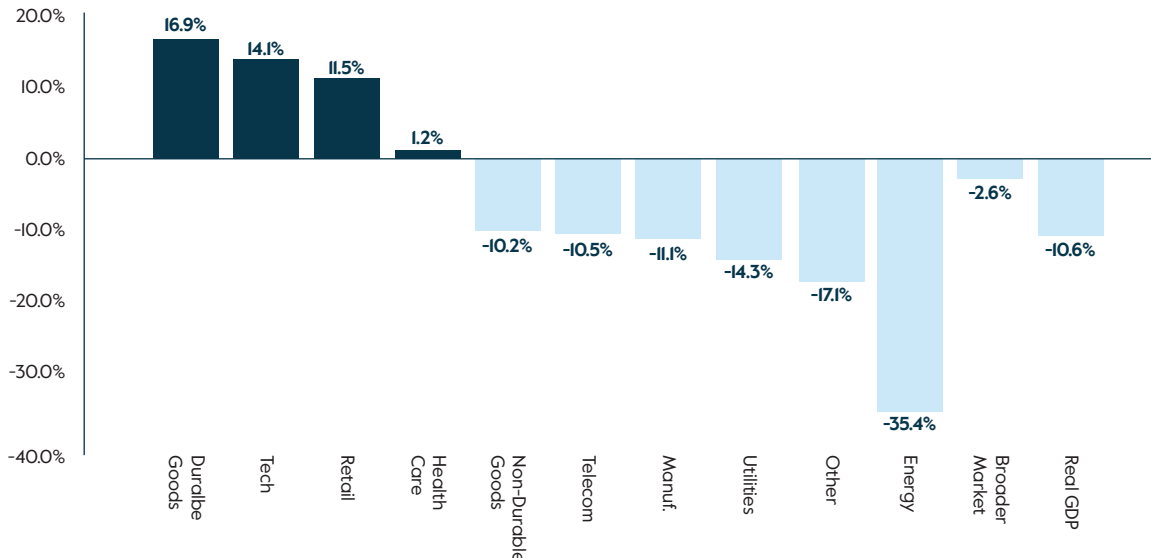
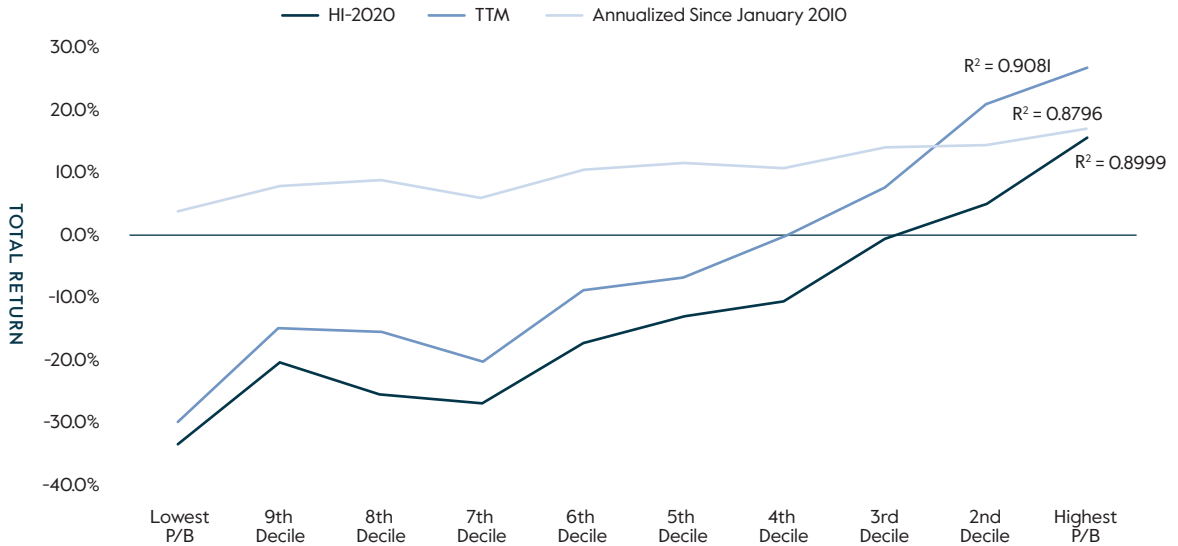


Figure 12. Source: S&P Capital IQ Database.  
Figure 13. Source: Carlyle Analysis, CRSP, BEA, August 2020.

Figure 14.  
Returns Sorted by Price-to-Book Ratio



the best performing industry of 2020 (Figure I3).

If we ignore industry, and instead think in terms of business model, a clearer pattern emerges. When sorting stocks into deciles based on their price-to-book ratio, returns rise almost monotonically whether measured year-to-date, over the past 12 months, or on an annualized basis from the start of 2010 (Figure I4). The correlation in returns across deciles is sufficiently high to suggest that business model captures most of the cross-sectional variation traditionally ascribed to industry.<sup>16</sup> If these trends hold, 2020 may be the year that “technology” stopped being thought of as a sector in its own right and more of the key differentiator between all

companies irrespective of industry.

**CONCLUSION**

Rather than a temporary blip that quickly recedes from memory, the coronavirus recession will impact economic and financial conditions for some time to come. Recessions often take on a life of their own. Many corporate executives will use this time as an opportunity to rethink and re-imagine their businesses in ways that accelerate the pace of digitization and cause more investors to categorize in terms of business models rather than industries. Traditional notions of “margin of safety” will have to be rethought to account for the value derived from intangible assets and the risks of disintermediation and disruption embedded in physical assets. There is nothing wrong with optimism, but those who conceive of this shock as a temporary disruption seem likely to miss much of what’s to come.

<sup>16</sup> It is important to note that while companies with valuable intangible assets and relatively few physical assets at risk of disintermediation would have high price-to-book ratios, some high price-to-book companies may in fact be overvalued. The data simply indicate that these situations have been rare over the past decade relative to the industrial age when high price-to-book reliably signaled that a business was overvalued.

Figure 14. Source: Carlyle Analysis; CRSP Data, August 2020.



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