Economic Analysis

Business Investment – Lower, Higher or just Different?

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July 3, 2019

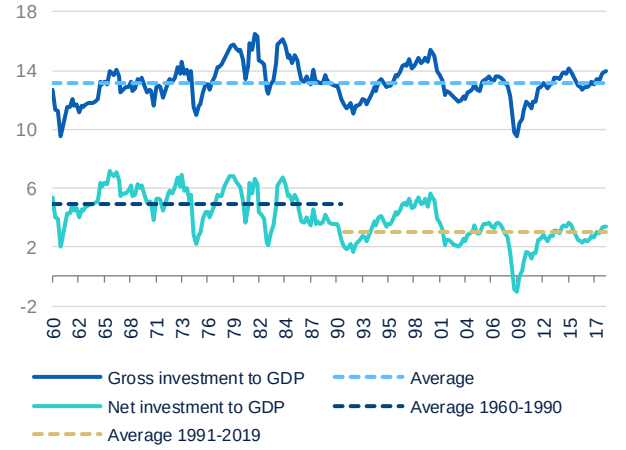
- **Lower net investment in real estate and high depreciation rates of intangibles account for most of the slowdown in net business investment over the last 30 years**
- **Growth of business investment in structures is likely to remain modest due to greater office space efficiency, decline in relative importance of manufacturing, higher energy efficiency, new technologies and slower population growth**
- **The increase in importance of the services sector and a greater share of intangibles in the economy will keep net business investment growth at more moderate levels than before the 1990s**

"The future ain't what it used to be" quipped famous baseball player Yogi Berra. The same goes for business investment – it seems to be weaker than it used to be, or at least inadequate. The weakness in business investment and its possible negative effect on growth is one of the few issues where the political left and right are in agreement. A recent report released by Sen. Marco Rubio starts with the following premise: "Business investment in the United States is decreasing. The trend is most clearly revealed in comparison to what was typical of the U.S. economy for much of the 20th century"[1]. Lawrence Summers and Anna Stansbury state that the pervasive weakness of investment relative to saving has "also resulted in a period of secular stagnation, in which we can attain reasonable growth only with a combination of large budget deficits, extraordinary monetary policies and high levels of leverage."[2] This brief takes stock of the long-term change in business investment, and discusses its causes and implications.

Business investment is measured in gross and net terms and often relative to some broader metric such as Gross Domestic Product (GDP). While gross business investment to GDP has remained more or less in line with its historical average, the ratio of net business investment to GDP has been persistently weak since the early 1990s. To pinpoint the source of this slowdown, it is useful to investigate business investment in a more disaggregated way. The Financial Accounts of the United States, published by the Federal Reserve, contain detailed information on the balance sheets of nonfinancial businesses (Figure 2), and the change in asset levels represent a good proxy for net business investment once price-based revaluations are accounted for.

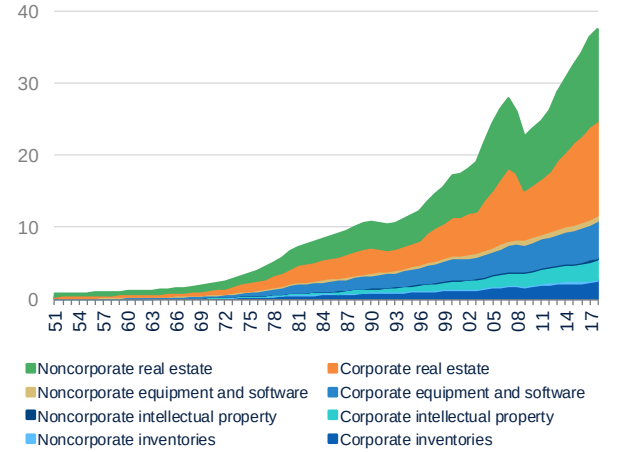
1 Senator Marco Rubio. (2019). American investment in the 21st century. https://bit.ly/2Iw6Mek
2 Summers, L. and Stansbury, A. (2019). What Marco Rubio gets right — and wrong — about the decline of American investment. *The Washington Post.* May 31, 2019. https://wapo.st/2Ktq2eV

Figure 1. **Business investment to GDP** (%)



Source: BBVA Research and BEA

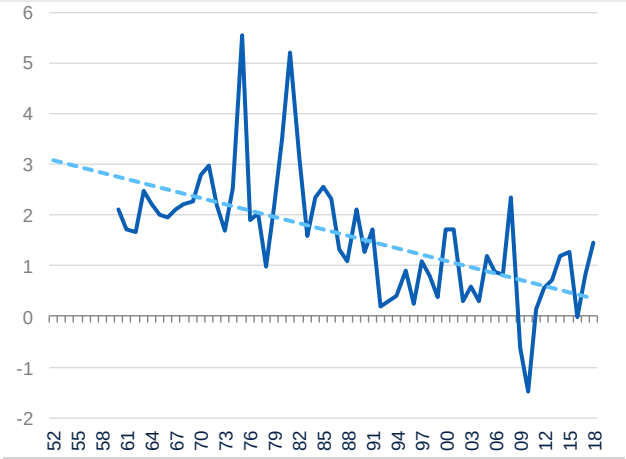
Figure 2. **Nonfinancial business, nonfinancial assets** ($tn)



Source: BBVA Research and FRB

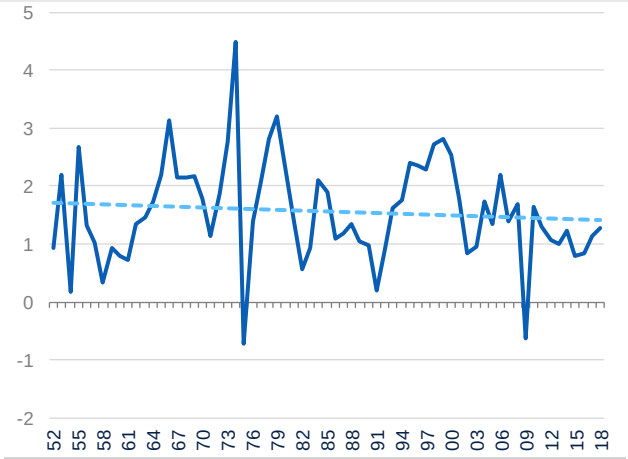
An analysis of the changes in asset levels suggests that the cause of the slowdown in net investment lies in lower net investment in real estate, both nonresidential and residential (Figure 3). The trends in investment in equipment and software (Figure 4), and inventories (Figure 5), while downward at first sight, are not statistically significant, especially in the case of equipment and software. In the case of inventories, any downward trend might also be a net-positive for the economy, as businesses have become more efficient in using inventories with the help of new technologies and methodologies such as just-in-time. In contrast, net investment in intellectual property has increased over time (Figure 6), although it has not been enough to offset the weaknesses in real estate investment.

Figure 3. **Real estate, net business investment to GDP** (%)



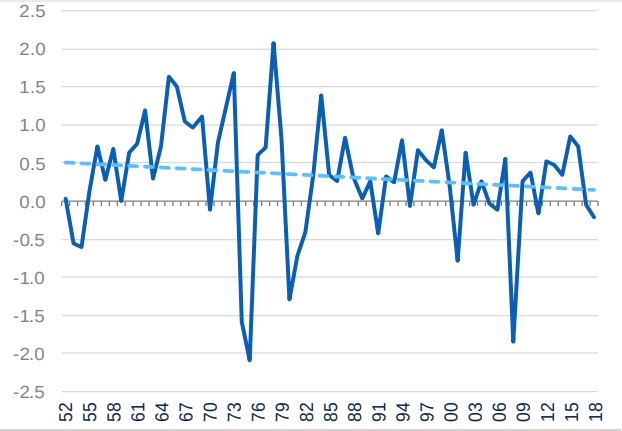
Source: BBVA Research calculations using FRB and BEA data

Figure 4. **Equipment and software, net business investment to GDP** (%)



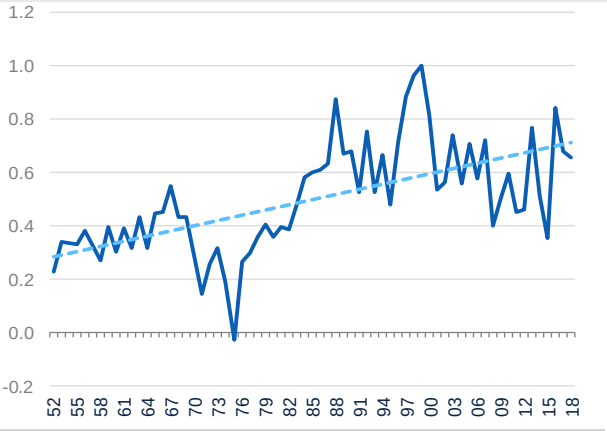
Source: BBVA Research calculations using FRB and BEA data

Figure 5. **Inventories, net business investment to GDP** (%)



Source: BBVA Research calculations using FRB and BEA data

Figure 6. **Intellectual property, net business investment to GDP** (%)

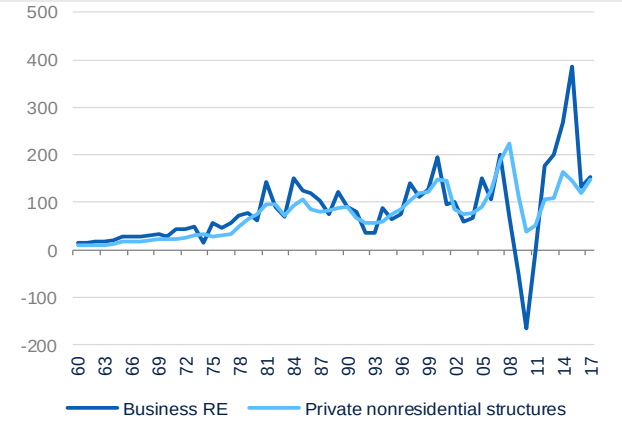


Source: BBVA Research calculations using FRB and BEA data

Real estate investment

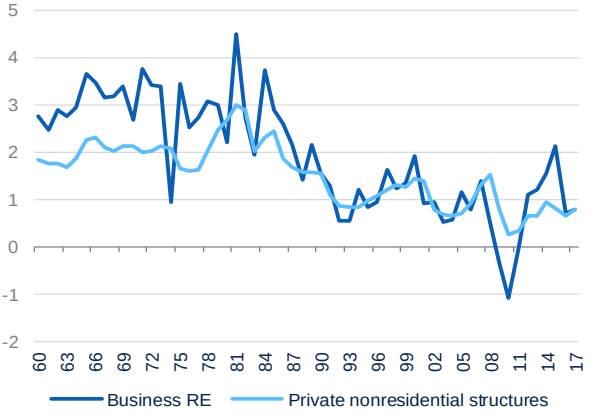
A large share of business' real estate investment is made of nonresidential structures, so it is not surprising that our calculation of net business investment in real estate matches net private nonresidential investment in structures (Figure 7). The minor discrepancy is a result of net business investment not including investments by households, and net private nonresidential structures not including business investment in residential structures.[3] The ratio of net investment in nonresidential structures to GDP clearly exhibits a structural shift in the early 1990s (Figure 8), just like the headline net business investment series.

Figure 7. **Net investment** ($bn)



Source: BBVA Research calculations using FRB and BEA data and BEA

Figure 8. **Net investment to GDP** (%)



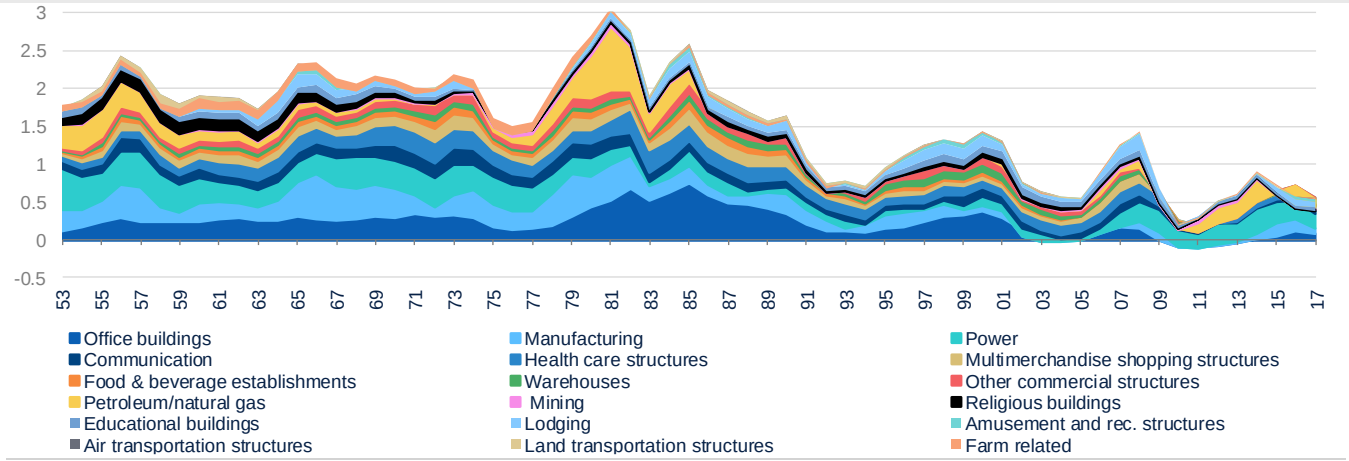
Source: BBVA Research calculations using FRB and BEA data and BEA

3 Predominantly rental apartments and apartment buildings

Identification of the source of the structural shift requires further disaggregation of the data on structures. The details show that while most structure categories exhibit a slowdown, the bulk of the adjustment in the late 1980s and early 1990s comes from investment in five categories: office buildings, manufacturing structures, power, communication and healthcare (Figure 9).

Investment in office buildings was particularly strong in the 1980s, precipitated to some extent by an increase in demand for offices as baby boomers entered the workforce, as well as tax code changes in 1981[4]. An important factor was also the increased competition in the banking sector, which resulted in greater willingness to underwrite riskier commercial real estate projects.[5] Eventually, construction outstripped demand, leading to higher vacancy rates and a commercial real estate bust.[6] The overhang of properties suppressed investment in office structures. Investment has been particularly week since the turn of the century (Figure 10). The recent trend towards more efficient use of office space, an increased prevalence of telecommuting, flexible office arrangements and coworking, have all contributed to smaller space allocations per employee over time (Figure 11). This trend is likely to continue, leading to lackluster demand for new office space and thus investment in office buildings.

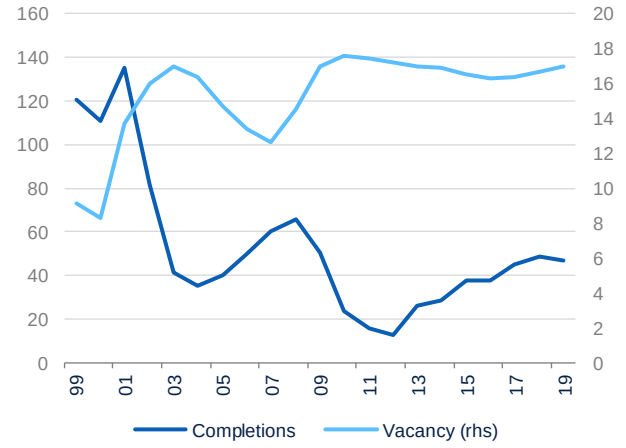
Figure 9. **Components of net private investment in nonresidential structures as a share of GDP** (%)



Source: BBVA Research calculations using BEA data

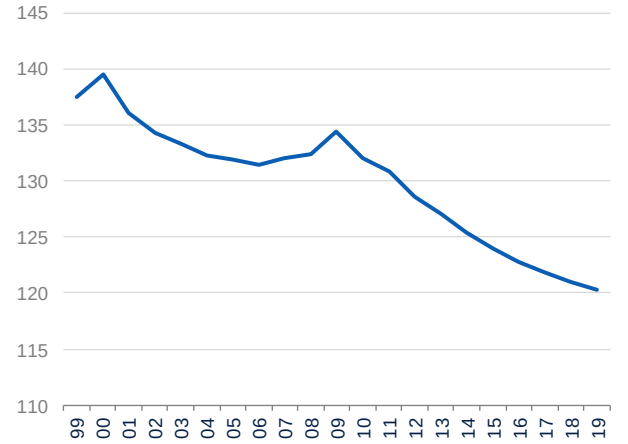
4 Browne, L. and Hellerstein R. (1997). *Are we investing too little?* New England Economic Review. https://bit.ly/31GaUjz
5 FDIC (1997). *History of the Eighties - Lessons for the Future*. https://bit.ly/31PrEVG
6 Browne, L. and Hellerstein R. (1997). *Are we investing too little?* New England Economic Review. https://bit.ly/31GaUjz

Figure 10. **Office completions and vacancy rates, metropolitan areas** (Million square feet and %)



Source: BBVA Research and REIS

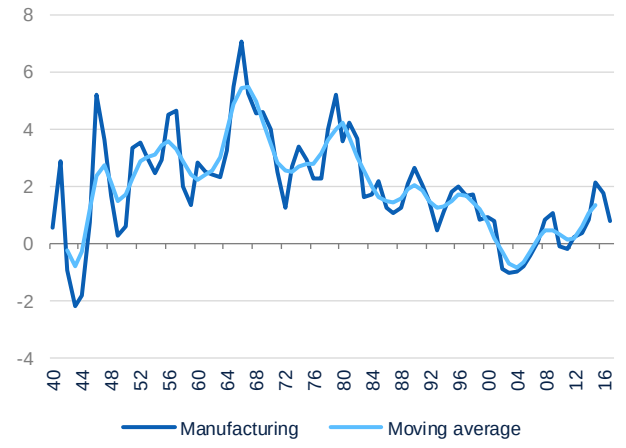
Figure 11. **Occupied office space per office employee** (Square feet)



Source: BBVA Research and REIS

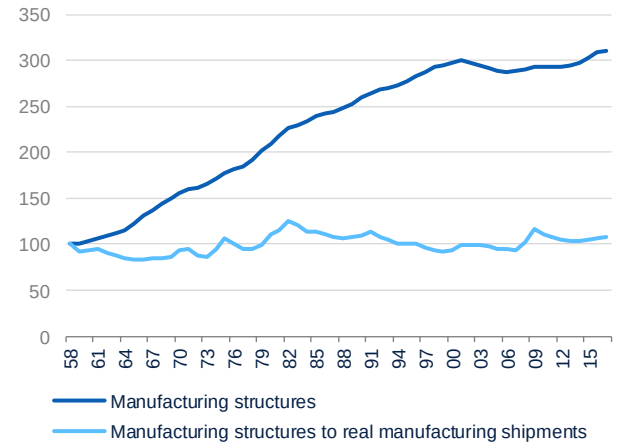
The slowdown in investment in manufacturing structures occurred in two waves – one starting in the mid-1980s and the other one at the turn of the century (Figure 12). These were a result of a slower increase in real manufacturing output and a relative decline in manufacturing competitiveness. A transition to more efficient use of existing real estate due to cost pressures might have been an additional factor. The slowdown in investment in manufacturing structures has kept the net stock of structures to real manufacturing output in check (Figure 13). As most of the trends evident in the last 30 years are likely to continue in the coming period, investment in manufacturing structures is expected to remain below the rates achieved before the mid-1980s.

Figure 12. **Real net stock of private structures** (%YoY)



Source: BBVA Research calculations using FRB and BEA data

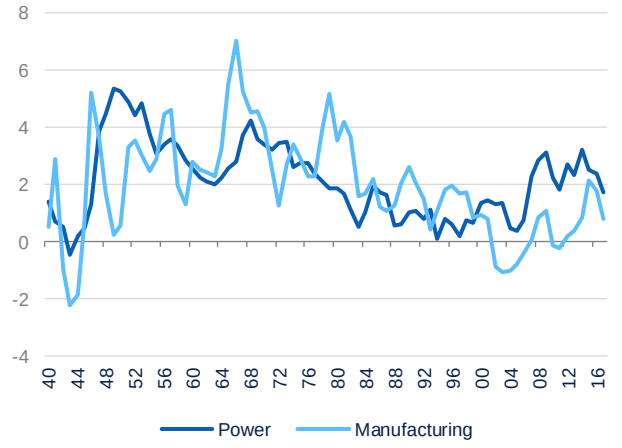
Figure 13. **Real net stock of private structures** (Index, 1958=100)



Source: BBVA Research calculations using FRB, BEA, Census Bureau and BLS data

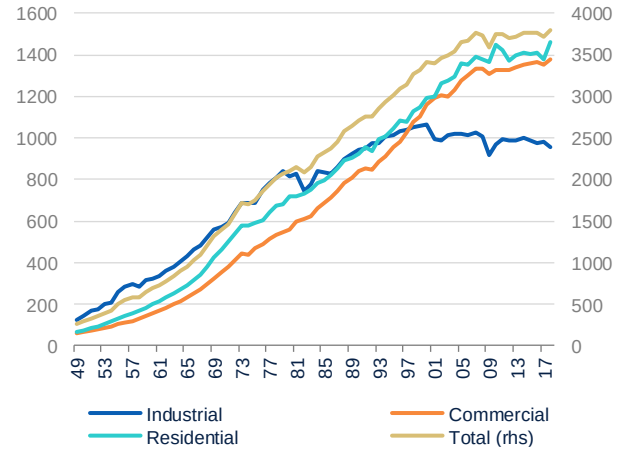
The slowdown in manufacturing is also related to the weaker investment in power structures[7] (Figure 14). This type of investment was growing at a particularly low rate for about twenty years starting in 1983. In addition to lower growth in demand for power due to a slowdown in manufacturing output growth, all sectors in the economy have become more energy efficient. This has resulted in a flatter trajectory of electricity consumption in the 1980s, and especially in the 2000s (Figure 15). Improvements in energy efficiency will likely prevent significant capital spending increases in electrical power structures going forward; in fact, the majority of new investment will be directed to replace obsolete structures, upgrade existing capacity to meet new regulatory requirements, and integrate increased generation capacity from renewable sources. That said, the shale oil and gas revolution has propelled higher investment in gas pipelines, which partially explains the jump in power structures investment between 2008 and 2015.

Figure 14. **Real net stock of private structures** (%YoY)



Source: BBVA Research and BEA

Figure 15. **Electricity end use by sector** (bn KWh)



Source: BBVA Research calculations using and FRB and BEA data

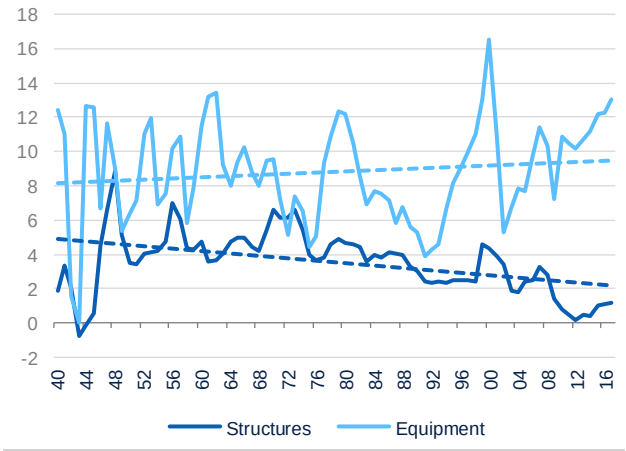
Like manufacturing and power, communication structures have also experienced a significant decline in investment since the mid-80s, although the downward trend might have started even earlier. This trend reflects the advances in telecommunication technologies, such as the introduction of wireless networks and microprocessor miniaturization, which has resulted in a lower requirement for structures that house communication equipment. The lower structure intensity of the sector is evident in the diverging trends of capital stock growth in structures and equipment (Figure 16).

Last but not least, investment in healthcare structures also slowed down markedly at the end of the 1980s (Figure 17), after a period of strong investment, especially in hospitals. While hospitals are primarily built by non-profits and thus do not strictly represent business investment, they drive the expansion in the medical buildings segment, which does represent business investment. In 1945, the U.S. Congress passed the Hill-Burton Act that provided hospitals, nursing homes and other health facilities grants and loans for construction and modernization, in return for making services available to all persons residing near the facility as well as a reasonable volume of services to people unable to pay[8]. The act was designed to help states achieve a target of 4.5 beds per 1000 inhabitants. Suburbanization also supported

7 Primarily for electricity and natural gas
8 Health Resources and Services Administration. https://www.hrsa.gov/get-health-care/affordable/hill-burton/index.html

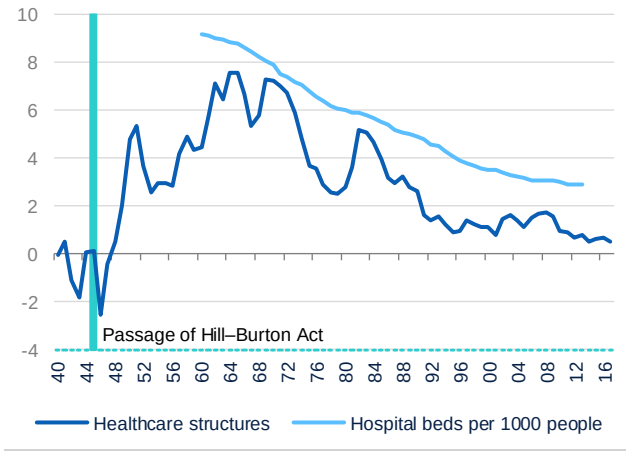
the construction of new hospitals and medical buildings, as did the introduction of Medicare and Medicaid. As the U.S. achieved the targeted coverage with hospital services by the late 1980s, the need to build additional structures declined. For example, the Hill-Burton Act program stopped providing funds in 1997. By 2013, the U.S. had an average of 2.9 hospital beds per 1000 people, a better ratio than all other developed nations except for Sweden and the UK[9]. Business investment in healthcare structures is likely to remain moderate going forward due to a high level of market saturation, slower population growth, as well as political pressures to contain cost increases.

Figure 16. **Real net stock of private fixed assets, communications** (% YoY)



Source: BBVA Research and BEA

Figure 17. **Real healthcare structures and hospital beds** (%YoY and number)



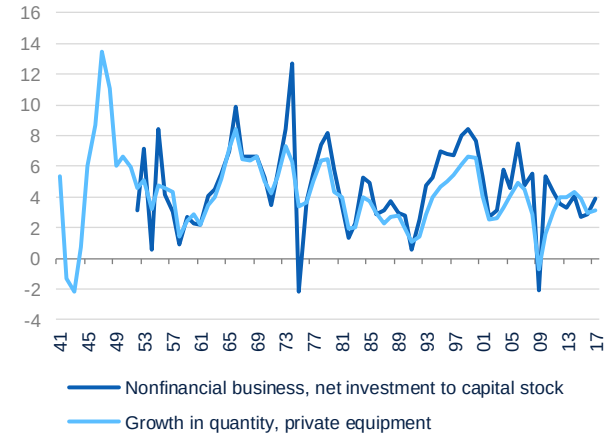
Source: BBVA Research, BEA and The World Bank

Equipment investment

The change in real net capital stock of equipment is a good proxy for net business investment in equipment (Figure 18). Unlike investment in structures, net investment in equipment has not experienced a sustained downward shift. Moreover, the growth in the net stock of private equipment per private employee could be even trending upwards (Figure 19). A deeper dive into these changes sheds more light on the developments underneath the headline figure. While some equipment categories have experienced a slowdown in growth in the 1980s, similar to the one observed in structures, it has not been sustained, except to some degree in the case of industrial equipment (Figure 20), which is related to the decline in relative importance of manufacturing. At the same time, the investment in information processing equipment has been growing at a high rate throughout the period, resulting in an increased share of this type of equipment (Figure 21). As in the case of structures, long-term technological changes underlie these trends and explain the secular changes in equipment investment.

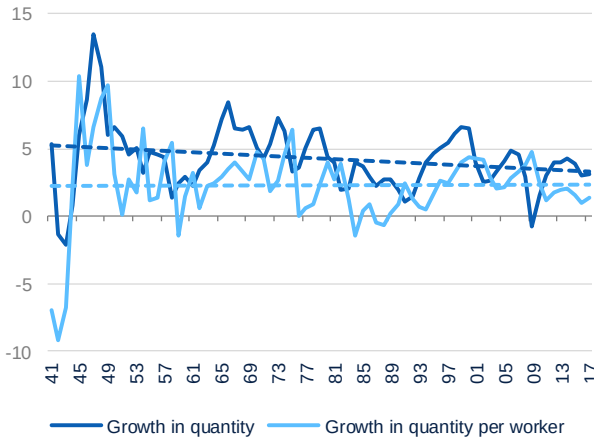
9 The World Bank, World Development Indicators. https://bit.ly/2MYzLfj

Figure 18. **Net business investment in equipment and software and change in real net stock of private equipment** (% and % YoY)



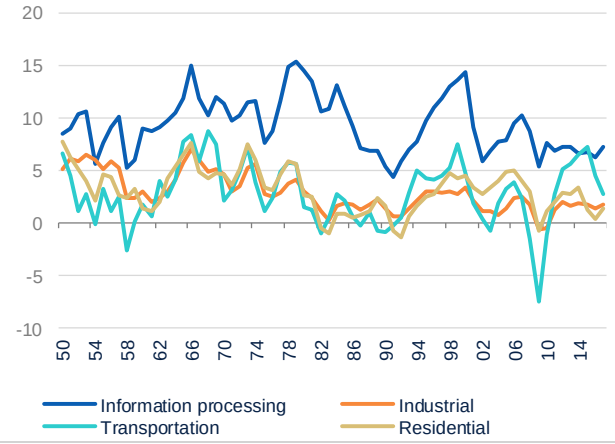
Source: BBVA Research calculations and FRB and BEA

Figure 19. **Real net stock of private equipment** (% YoY)



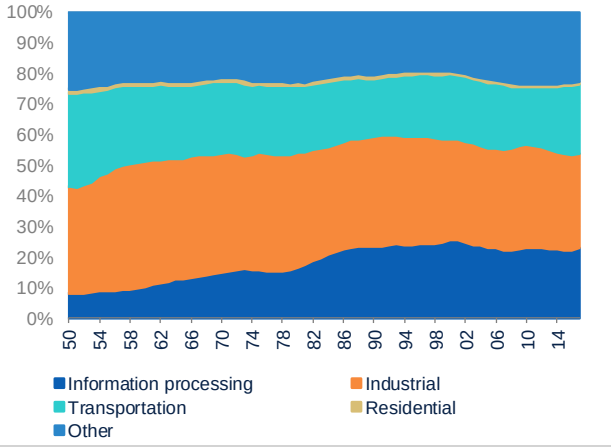
Source: BBVA Research BEA and BLS

Figure 20. **Net equipment stock** (% YoY)



Source: BBVA Research and BEA

Figure 21. **Composition of the net stock of private equipment by type at current cost**

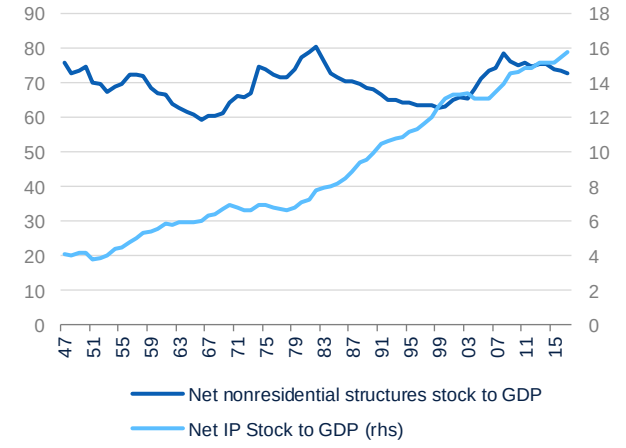


Source: BBVA Research and BEA

Intellectual property investment

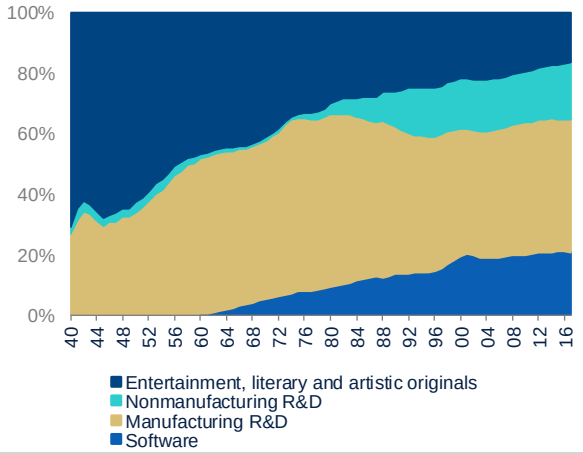
Unlike structures, net investment in intellectual property has been increasing as a share of GDP persistently over the last seventy years (Figure 22). A large part of this increase is attributable to the growth in capital stock of software and nonmanufacturing R&D from negligible levels prior to the 1970s (Figure 23). Throughout the period, however, the volume of intellectual property assets has remained relatively small due to the fact that intellectual property depreciates much faster than structures, preventing a massive buildup of assets.

Figure 22. **Net capital stock to GDP**
(%)



Source: BBVA Research and BEA

Figure 23. **Composition of the net stock of private intellectual property by type at current cost**



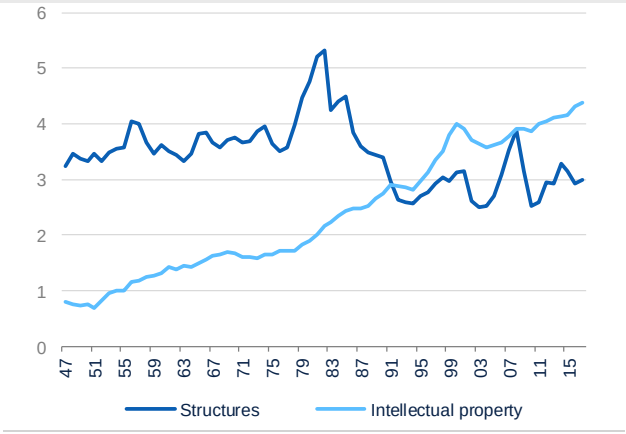
Source: BBVA Research and BEA

Depreciation

If technological advancement is resulting in an economy that is less intensive in structures and more intensive in intangible assets, the question that arises is why lower net investment in structures has not been offset entirely by higher net investment in intangibles. The reason lies in the fact that structures usually depreciate slowly and over decades, while intangible assets depreciate much more quickly. According to the Bureau of Economic Analysis, the useful lifespan of most structures is between 30 and 50 years. Assessments of useful lives of intangibles conducted by the Israeli Statistical Bureau and the U.K. Office of National Statistics suggest that R&D ideas are useful for around ten years, while other intangibles have useful lives of around three years[10]. The effect of the different rates of depreciation is evident in the different behavior of gross and net investment to GDP of the two asset categories. While gross investment in intellectual property overtook gross investment in structures in the late 1980s, net investment in intellectual property still remains below that of structures. Going forward, as the stock of intellectual property assets increases, the consumption of this type of fixed capital will also increase, making it difficult to significantly increase the rate of net investment. The result will be ongoing weak net investment compared to the pre-1980 era, even with the same amount of gross investment relative to GDP.

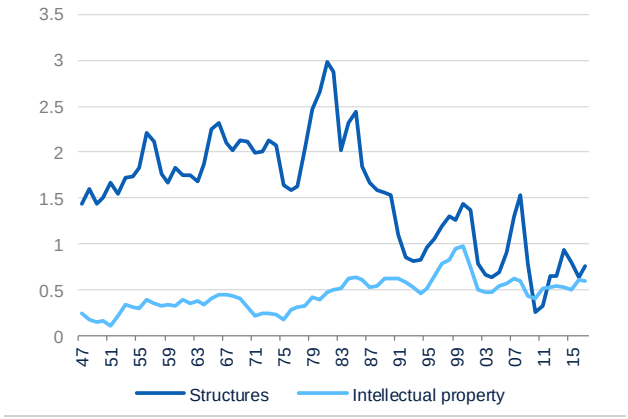
10 Haskel, J. and Westlake, S. (2018). *Capitalism without capital. The rise of the intangible economy*. Princeton University Press.

Figure 24. **Gross investment to GDP** (%)



Source: BBVA Research and BEA

Figure 25. **Net investment to GDP** (%)



Source: BBVA Research and BEA

Implications

The large investments in long-lived assets, such as structures that characterized the post-war economy until the mid-1980s, were a result of rapid modernization after a period of stagnation marked by the aftermath of the Great Depression and World War II. The process was driven by the application of technologies introduced in the first half of the 20th century. The era of the automobile and large-scale electrification required large investments in highways and structures that allowed society to realize the full potential of the new technologies. Suburbanization, which boosted both residential and nonresidential investment, was one way of how this process worked. At the industrial level, the new practices of mass production of durable goods gave rise to the manufacturing sector, which went hand-in-hand with an increased demand for energy and transportation.

By the 1980s, the infrastructure for the new way of life that started to be rolled out in the 1940s was pretty much in place, so businesses started to invest more heavily in capital goods and services that would allow them to maximize the benefits of technologies that emerged after World War II, such as the microprocessor, robotics, satellite communications, and personal computers. The result was an increased use of electronics, computers and information technology, as well as intellectual property. Over time, work became more flexible, office space in less demand, industries more energy efficient, transportation cheaper, and some manufacturing activity shifted to locations with more competitive cost and regulatory structures—primarily emerging markets. Services became the predominant mode of value creation in the economy, representing currently over 77% of total value added in the U.S. economy.[11] Service firms tend to have a larger share of their balance sheets in current assets compared to manufacturing or utility companies, with some particularly well suited to the new capital-light models.

The current advancement of the knowledge economy requires more investment in intangible assets that depreciate rapidly. The primary reason for this is the immense competitive advantage that intangible assets can quickly and dramatically bestow on successful first-mover companies. The intangible-heavy economy will be different from the one

11 The World Bank. *World Development Indicators*. https://bit.ly/2IcurS8

that we are familiar with, because of what Haskel and Westlake call “the four S’s of intangibles”: scalability (no or low additional cost for reusing an already created intangible asset), sunkennes (inability to recover the investment in an intangible asset if it doesn’t come to fruition), spillovers (ease of benefiting from intangible assets created by other entities), and synergies (intangible assets creating more value when combined with other intangible assets).[12] These four characteristics give rise to three additional effects, which will impact our economy and society: uncertainty, optionality and contentedness[13]. Because of these changes in the economic landscape, and especially because of the increase in uncertainty, a greater need arises for ongoing adjustments by companies and workers, which would have to learn to live with continuous disruption. This in turn requires better societal safety nets, as well as educational, retraining and lifelong learning opportunities and support.

While from a GDP accounting perspective, the dollar-amount of net business investment may seem insufficient relative to the post-World War II modernization era, the economic impact could well turn out to be significantly higher if productivity and efficiency are significantly positively impacted. This would mean that while there is a strong need to modernize some of our existing infrastructure (highways, ports, water supply, etc.), the biggest bang for the buck might come not from replicating the past, but from investing in future technologies such as renewable energy, genomics, robotics, cybersecurity and big data. In the short-term, the transition may appear costly and painful, but if our society and institutions step up to the challenge, the economy will be able to remain competitive and foster new businesses, jobs and industries.

Bottom line

Investment indeed is not what it used to be. It is not necessarily higher or lower, but different. Technological progress and the higher share of services in the economy have resulted in an increased importance of intangible assets, which depreciate at a faster rate than capital assets predominant in the past. Service industries, which now account for the lion share of value creation in the U.S. economy, have by design a higher share of current assets than capital-intensive industries, meaning that less is invested in assets with long lives than in the past. Businesses, as economic agents, continuously seek opportunities to earn profit, so even though net investment might be lower due to the accounting for depreciation, the economic impact of the new types of investments might be the same or larger than in the past.

That said, the new model results in a more disruptive competitive environment, which requires adjustment by companies, workers and institutions. As agriculture replaced the hunter-gatherer economy to become the most important mode of value creation in the Neolithic period, and industry replaced agriculture in the 18th century, services and knowledge took center stage at the end of the 20th century. The new model is here to stay and requires adjustment by companies, individuals, policymakers and institutions. The biggest challenge is not bringing back the benefits of the industrial revolution, but embracing the knowledge-based transformation and adapting to new paradigms.

12 Haskel, J. and Westlake, S. (2018). *Capitalism without capital. The rise of the intangible economy*. Princeton University Press.
13 Ibid