September Quarter, 2019

The Supervised Fund: Macroeconomic Outlook

Investing in the intangible economy

Introduction

Intangible assets are increasingly becoming a more important driver of value than tangible assets in today's economy. Intangible assets are generally those that are not physical, and include patents, software, customer lists, training, trade secrets, design, brands and marketing. In the 1990s, investment in intangible assets overtook that in tangible assets, in what appears to be a definitive and irreversible trend (Image 1). This trend has wide-ranging implications for the economy and investors, both of which will be discussed in more depth in this report.

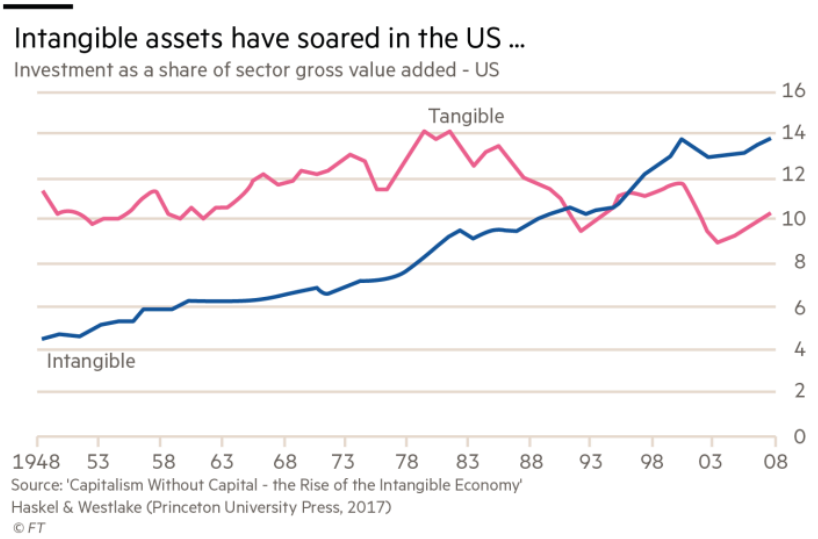

Image 1: Investment in intangible assets in the US over time (source: FT / Haskel & Westlake)

What are intangible assets?

In their 2017 book 'Capitalism without Capital', Haskel & Westlake outlined four properties of intangible assets:

1. Scalability: The product can be used over and over again with little or no additional investment, and without depriving others of its benefits. For example, if Uber wishes to expand geographically, it can use the same software it's already developed.
2. Sunkenness: Investments in intangible assets (e.g. spending on R&D) cannot be recovered; they are sunk costs. By contrast, tangible assets often have a 'recoverable value', or can be sold for at least a portion of their original cost.
3. Spillovers: Much of the benefit of investment in an idea may not accrue to its discoverers. Whereas tangible assets can usually be easily protected, for instance by putting a guard at the factory gate, intangible assets like a design may be more easily 'captured' or taken advantage of by a competitor.

4. Synergies: Intangible assets can often be made more valuable when combined. For instance, multiple technologies, as well as design and branding, have helped to make the iPhone a popular product.

An example of a company that relies almost entirely on intangible assets is Microsoft. Its Office products, including Word and Excel, can be replicated (or scaled) with almost no additional cost after the first unit has been developed and built. The Economist reported a study which found only ~1% of Microsoft's market value was derived from physical assets; more important are the engineers who write its software code. Similarly, of Microsoft's US$26bn purchase of LinkedIn in 2016, only about $4bn was recorded as tangible assets on the balance sheet – the rest as goodwill.

Accounting standards prescribe their own rules about what may be considered an intangible asset on the balance sheet.

Intangible assets can either be purchased or internally-generated. Those that are purchased always appear on a company's balance sheet (typically as goodwill arising from the acquisition of another firm, patent etc.). By contrast, those that are internally-generated will never fully be reflected in a company's balance sheet, but the rules vary depending on the type of accounting system being used[1].

The discrepancy between how purchased intangible assets and internally-generated intangible assets are treated means analysts need to be careful when comparing balance sheets. Companies such as Coca-Cola or McDonald's, which spend huge amounts on advertising to reinforce their branding, have relatively little by way of intangible assets, even though their brands are extremely valuable.

The trend toward intangibles

As illustrated in Image 1, intangible investments have been contributing more and more to the value added in the United States economy. This trend can be easily seen when the largest S&P500 companies today are compared with those of 1991 (Table 1).

Today	**1991**
Microsoft	Exxon
Apple	Philip Morris
Amazon	Wal-Mart Stores
Alphabet	General Electric
Facebook	Merck

Table 1: Five largest S&P500 companies today (by market cap), compared to 1991

Similarly, Image 2 shows how the value composition of the S&P500 has changed drastically over time. Evidently, America's economy is becoming increasingly powered by intangible assets.

[1] GAAP, which is used in the US, records all R&D spending as an expense; i.e. is not recognised as an asset. IFRS, which is used across most of the world including Australia (and excluding the US), records all research spending as an expense, but capitalises most development spending.

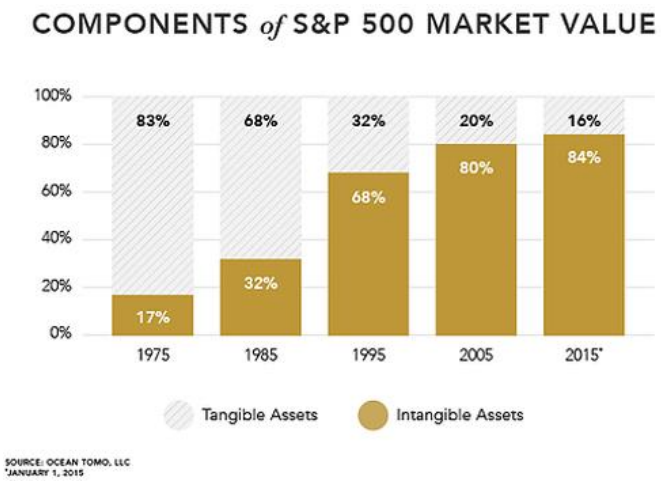

Image 2: Components of S&P500 market value over time (source: Ocean Tomo)

Similar trends have been occurring elsewhere, but are less pronounced than in the US. In Europe, investment in intangibles, although increasing, has not yet overtaken that in tangibles (Image 2). Its largest companies include oil majors like Shell and BP, car manufacturers such as Volkswagen and Daimler, and banks such as HSBC and Santander – all companies that might be considered members of the 'old economy'.

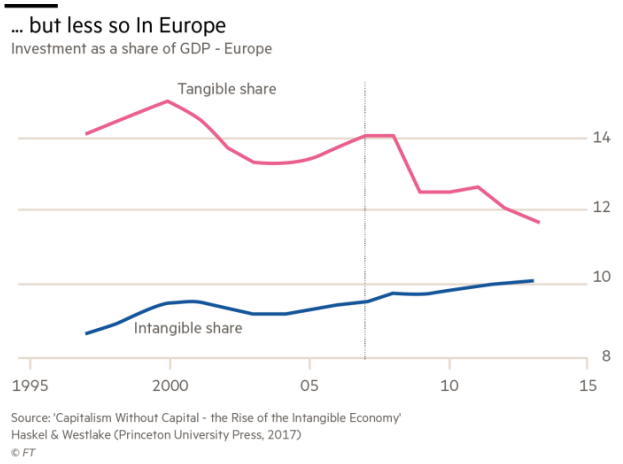

Image 3: Investment in intangible assets in Europe over time (source: FT / Haskel & Westlake)

In Australia, the top 10 companies by market capitalisation are still dominated by the large banks and mining companies. However, much has been made of the 'WAAAX' software stocks[2], which are now all constituents of the ASX200.

The relative decline of tangible-heavy companies appears to coincide with the rise of computers and the internet age. As new technologies were formed, their 'spillovers' and 'synergies' created even more opportunities for investment in intangibles. Other reasons for their rise include the scalability of intangibles (their global market potential makes investment more profitable), and that the labour used in R&D activities can be expensive.

[2] The 'WAAAX' stocks include: Wisetech, Afterpay, Appen, Altium and Xero.

Implications for the economy

One important implication of increasing investment in intangibles is the necessity to protect those assets from competitors. Intellectual property (IP) protection, including patents, is a favoured way to do this – Image 4 shows how the technology boom has resulted in a spike in patents, starting around the early 2000s.

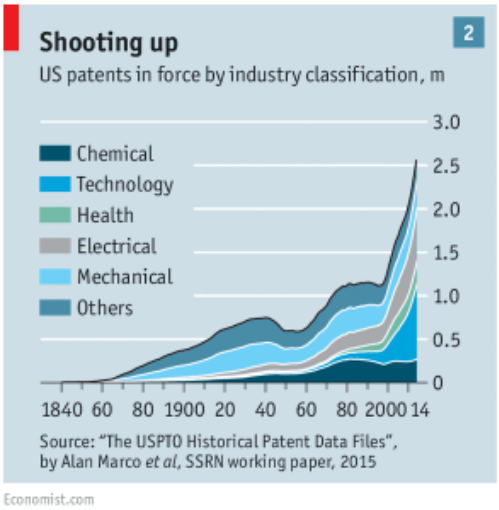

Image 4: US patents in force by industry over time (source: Economist)

In fact, so much is spent on IP protection that some believe this practice has given rise to a 'moated economy', in which a few dominant firms jealously guard their knowledge and data – to the detriment of a broader innovation agenda. It was reported that in 2011, both Apple and Google spent more on lawyers to protect their patents than they did on R&D. Strong IP, along with hoards of cash to protect that IP, can result in an incumbent holding a significant competitive advantage. When operating in a market that exhibits 'winner-takes-all' characteristics and 'network effects', that advantage may become insurmountable.

Haskel & Westlake note that today's economy may be broken into 'leader' and 'laggard' companies, partly as a consequence of the phenomenon described above. Larger companies with access to bigger markets are more likely to see outsized gains from their innovations, and have the resources to adequately protect them. By contrast, smaller firms may not only have insufficient market reach to justify sizeable R&D spend, but they may struggle to protect or appropriate gains from their investment in intangible assets. Their innovations may be 'gobbled up' by frontier firms. These effects tend to entrench the larger, dominant firms in an intangible economy, while disincentivising smaller firms from innovating (observable in Image 5 below). Haskel & Westlake are concerned that a lack of intangible investment spending across small and mid-sized companies may be a cause of 'secular stagnation'; or the slow-down in productivity observed throughout major economies[3].

[3] Other suggested causes include that intangible spending is not included in official data (for instance, branding is not counted towards GDP) or that its benefits are often hidden (for example, GPS usage may reduce time in traffic, freeing up time for more productive purposes).

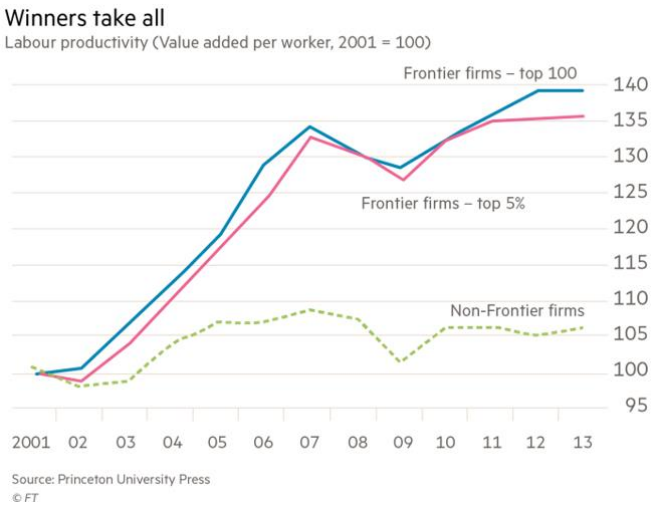

Image 5: Labour productivity of frontier ('leader') firms vs non-frontier ('laggard') firms (source: FT / Princeton University Press)

Inter-firm inequality is not the only consequence of an economy dominated by intangibles; inequality between people may also be an outcome. Workers at prosperous companies inevitably share in their successes, creating a pay gap with those working at laggard firms. Further, as intangible-intensive companies tend to cluster in thriving cities where highly skilled labour can be found, house prices are pushed up, exacerbating the problem. San Francisco is a notable example.

Finally, the changing nature of early-stage companies, which are investing more in intangible assets rather than physical capital, is shifting the financing options available to them. Without recourse to physical assets or existing cash flows, banks will be more reluctant to provide traditional collateral-backed lending. Instead, equity financing and private capital may become their best options. This leaves a niche in the financing market for specialised investment firms that properly understand how intangible-heavy businesses work and the industries in which they operate.

Implications for investors

As alluded, the rise of intangibles leaves less room for investor error. The 'sunk' nature of such investment means that if anything goes wrong, there is not as much recourse to physical assets on the balance sheet. Further, company balance sheets should be examined carefully and with a critical eye, given some of the quirks in accounting standards previously described. A company that pursues an acquisition-led growth strategy will show greater net asset value than one that internally generates its IP. Capitalising the creation of intangible assets, whether through acquisition or conscious decision under the IFRS accounting rules, can actually cause short-term earnings to increase if R&D spending is neglected. That this occurs is far from inconceivable – in fact a 2005 survey of 400 executives by Graham, Harvey and Rajgopal found that 80% of participants would decrease spending on R&D in order to meet an earnings target. In other words, management may take advantage of accounting rules that dictate the way intangible assets should be treated, in order to increase short-term profits.

A panacea to this type of behaviour is to ensure management is aligned with shareholders. This might be through the CEO owning a meaningful number of shares or being party to a well-structured incentive scheme that rewards long-term value creation.

Although a balance sheet laden with intangible assets may be generally uninformative about a company's value, this does not mean accounting statements are totally deficient. A reasonable argument can be made that the rewards of investing in intangible assets will eventually be realised through revenue and profit flows on the Income Statement[4]. Coca Cola, for example, does not disclose the value of its brand on its balance sheet; instead the earnings from the brand flow through its Income Statement (resultantly it trades on a high price/book ratio). Therefore, a discounted cash flow model which predicts future earnings somewhat accurately (effectively counting for the benefit of R&D spend) should still be a useful tool to the investor.

The protection of IP assets is another element for the investor to consider. Management should have thought about the various non-brick and mortar assets they own and have acted to protect them. In some cases, a company with strong IP may not have enough resources to defend itself – through these situations an argument for a new type of investing can be formed. Softbank, a Japanese-headquartered tech investor, dishes out money to entrepreneurs in multiples of the amounts initially demanded. Such generous payments are designed to turbocharge start-ups' IP production and protection, and guard them from predators, including tech giants.

If intangible-based start-ups are given a fair opportunity to succeed, their gains may be outsized. Many operate in 'winner-takes-all' markets, in which only a few companies can ultimately survive. Sometimes this may be due to scale effects or switching costs, but a particularly powerful driver is 'network effects'[5]. Investors may do very well by identifying an emerging technology operating with network effects, and should remember that using traditional valuation techniques – for instance price/earnings ratios – may be misleading. Instead, the investor ought to envisage a scenario in which the business takes sufficient market share and consider what it would trade at under those circumstances. Of course, a lot of work should be done to verify any underpinning assumptions, including the superiority of the product.

Gu and Lev offer another way to assess companies with high levels of intangible assets – by considering their 'strategic assets'. Their characteristics include:

1. That they generate net benefits that are a prequel to earnings (e.g. a growing customer base or a special operating model);
2. They are rare; and
3. They are difficult to imitate.

They contend that strategic assets are a better indicator of a company's future performance than its short-term earnings, which, as already discussed, can be easily gamed. Taking a longer investment timeframe than average (the holding period for a NYSE-traded stock fell from 7 years in the 1950s to 8.3 months in 2016[6]), by considering strategic assets such as a unique or protected product, will more likely result in outsized gains.

[4] As argued by Penman & May from Columbia Business School.
[5] 'Network effects' refers to the value of a product or service expanding disproportionately as more people use it.
[6] Source: Ned Davis Research, December 2016.

Conclusion

Investors need to be aware of the clear trend toward intangible assets, and understand its wide-ranging implications. Traditional valuation techniques, including price/earnings and price/book ratios becomes less relevant amongst certain firms; ascertaining the underlying value an intangible asset may confer to its owner over the longer-term may be a more appropriate approach. Supervised Investments is aware of the trend and has identified some promising companies with strong intangible assets, including ReadCloud, an eReading software for the classroom, and Mesoblast, which develops stem cell treatments.

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30 September 2019