Bridgewater®
Daily Observations
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Taking a Look at the Cyclical Influences on the US Tech Sector

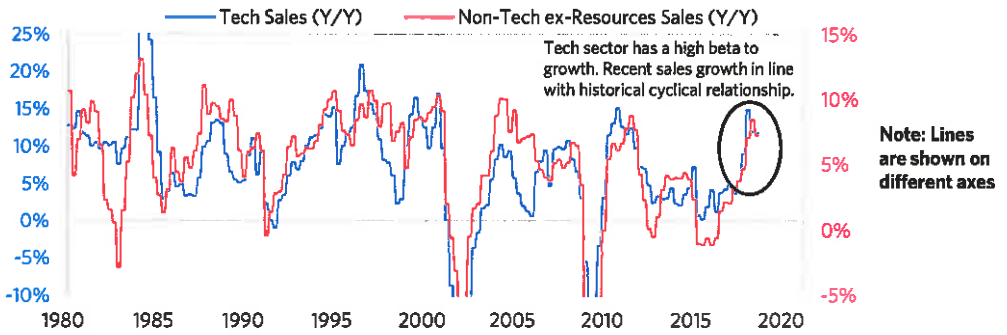
It is clear and well-known that the US tech sector has played a dominant role in the outperformance of the US equity market. What is not so clear are the dynamics behind that and the related sustainability going forward. Along these lines, we recognize three important questions that we are working our way through:

- To what extent is this outperformance mostly just a reflection of cyclical strength, where the dramatic outperformance of a few key companies and sectors is occurring at the cost of share losses in others, and the overriding force is simply that demand has been strong?
- To what extent is the unique success of the US tech sector globally an important causal influence on this cyclical strength?
- To what extent are technology advancements, some of which are manifest in the outperforming companies, an important influence on the sustainability of the cyclical advance by holding down cyclical inflation pressures and moderating the pace of Fed tightening?

As we consider these questions, we are reminded of a similar set of questions that we grappled with in 1999-2000, when the common thought was that we were in a productivity miracle. At that time, we first dug down into straightforward accounting attributions of growth, earnings, and pricing and found that the more normal influences explained most of what was happening. Below, we take a look at the recent cyclical influences on tech sales and profits, which appear to be significant.

While There Are Secular Forces and Competitive Forces at Work, There Are Also Significant Cyclical Forces at Work That Should Be Accounted For

The US equity market has been supported by earnings growth, and at this aggregate level, aggregate demand plays an important role. Then, within the market you have companies that are more and less sensitive to swings in demand, and you have some companies that take market share from others. At the level of prices and returns, you have the investing and issuance, which may or may not deviate from sales and earnings. Looking at sales of the US tech sector, shown below, there have been both higher average growth over time and a higher beta to cycles in demand than the rest of the equity market. This makes some sense because a significant portion of tech sales comes from business fixed investment, which is also more volatile than overall demand.



Looking down a level to the specific product areas, including both fast-growing and disruptive segments like the cloud, e-commerce, and online advertising, and older tech segments like semiconductors and computer hardware, we find businesses that are impacted by cyclical swings in demand. For example:

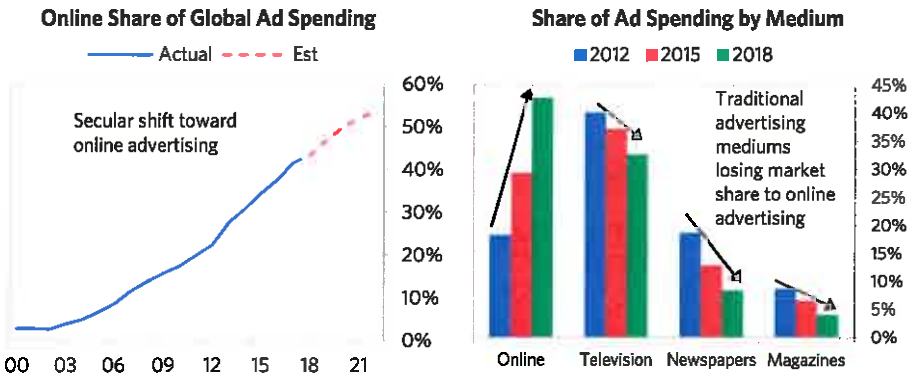
- Corporate America spends on cloud computing services to meet its needs for computational power capacity, which is in large part driven by end-customer demand.
- Spending on online advertising will depend on the corporate sector's overall advertisement spending—both the ability and the desire of corporations to spend are a function of the end-user demand they are seeing and expecting.
- E-commerce is a subset of overall retail sales and is sensitive to changes in household spending on discretionary products.
- Similarly, the traditional technology businesses (e.g., semiconductors, hardware) are also in large part driven by capex spending, depending on macro conditions.

While these companies may continue to benefit from the trend toward a more high-tech and digitized economy (with online versions of advertising, retail sales, etc.), they are highly sensitive to changes in aggregate demand.

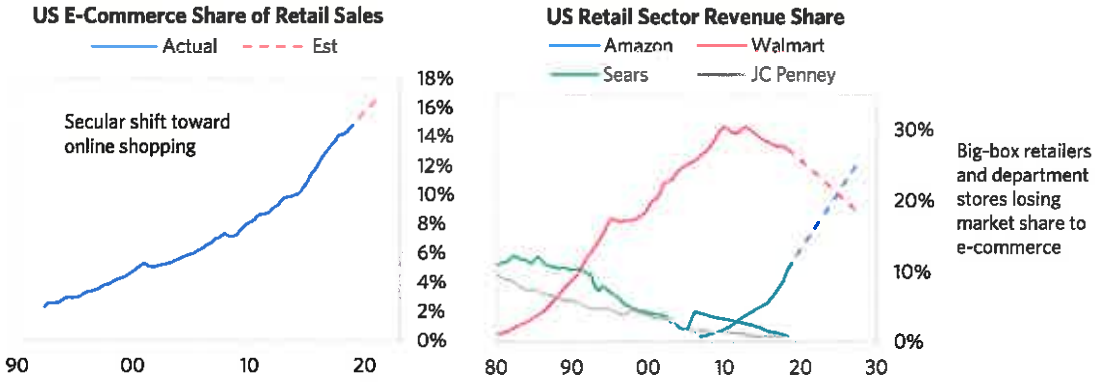
The Secular Shift Toward Technology

The nature of technology businesses is that through innovation they gradually substitute other goods and services in the economy. Looking at the new high-growth business segments, each of them is receiving a secular support to sales growth by capturing market share in major industries at a rapid rate. Many of the losers are other listed US corporates, so investors that are exposed to a diversified set of US corporate cash flows are less affected by these secular trends, since they hold both the winners and the losers.

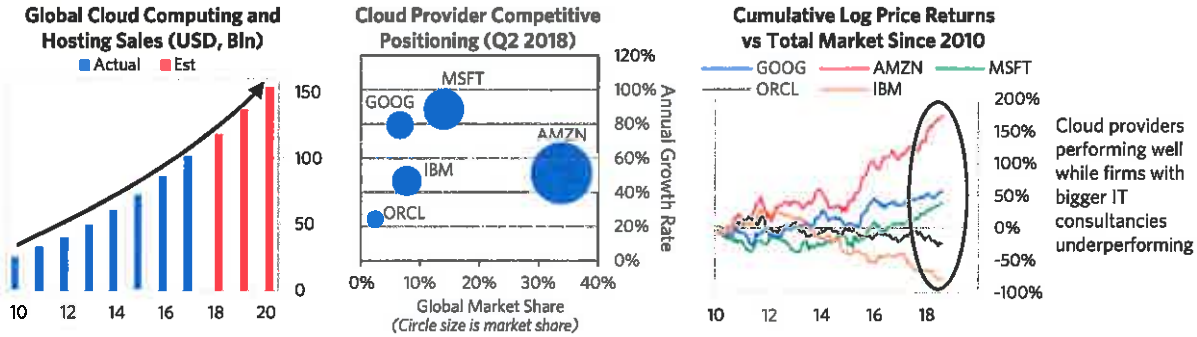
The rise of online advertising is a continuing secular shift that has come at the expense of publishers/broadcasters from the traditional advertising mediums. Newspapers and magazines have seen their share of advertising spending cut in half over the past six years, and even television ads have seen a 10% cut in market share.



Similarly, we are in the middle of a major shift toward online shopping, with Amazon gaining market share from both listed and non-listed companies. We saw a similar phenomenon in the '90s, with Walmart stealing share from other retailers like Sears and JC Penney.

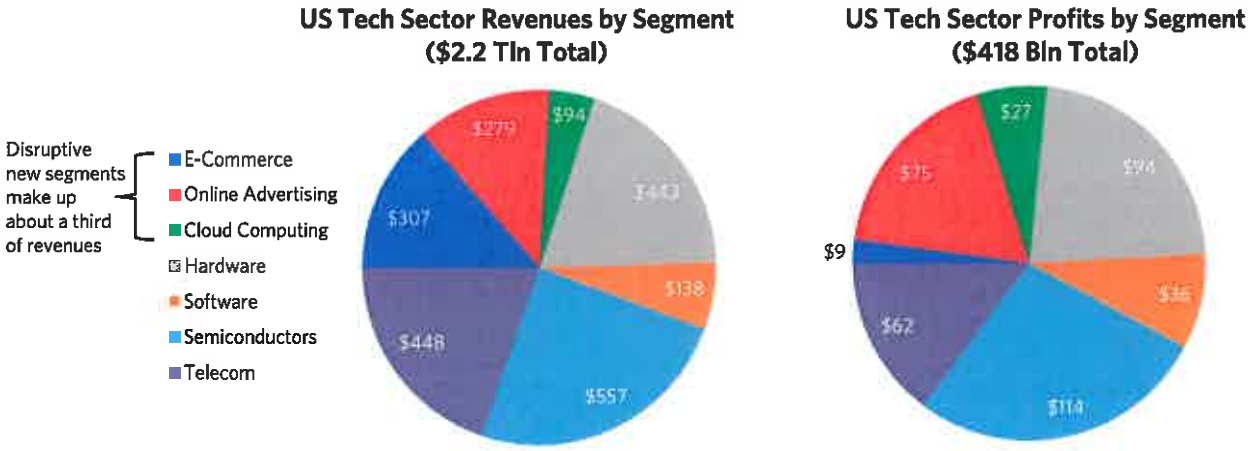


Over the last few years, we have seen an acceleration in the adoption of the cloud computing business model, which accounts for some of the relative performance of the companies within the tech sector. As shown below, companies that have so far positioned themselves well with the switch to cloud computing (Amazon, Microsoft) are performing better, while companies that are losing their consulting revenues and aren't yet as competitive in the cloud world (IBM, Oracle) have been underperforming.

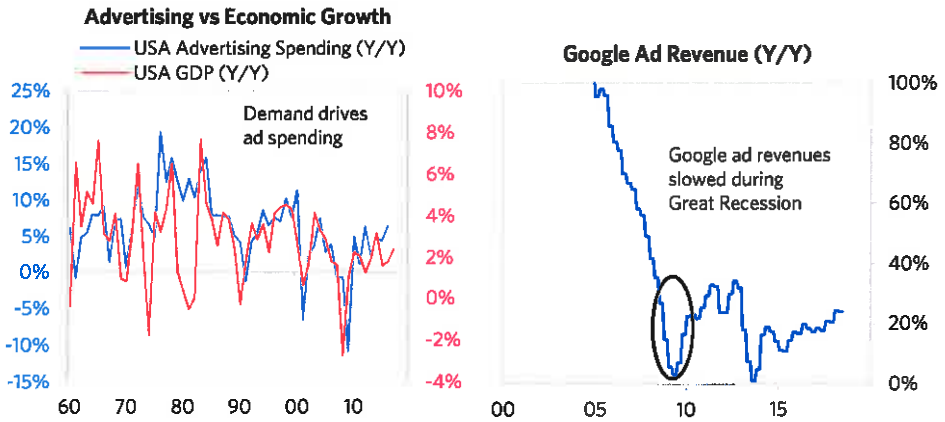


There Is a Cyclical Influence Across Business Segments

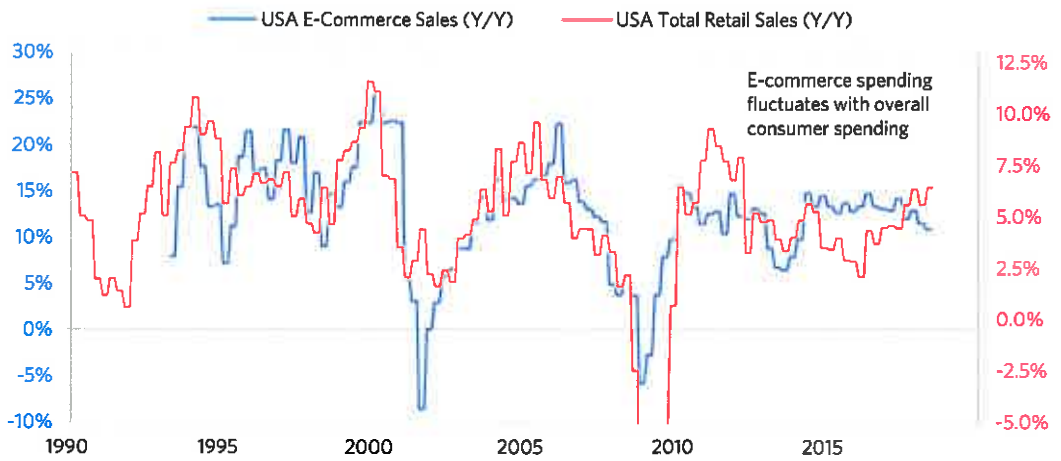
Before digging into the cyclical aspects of the different business segments, we note their relative sizes in the pie charts below. New disruptive business segments like e-commerce, online advertising, and cloud computing are smaller but growing rapidly and already make up about a third of tech sector revenues and about a quarter of profits. More traditional tech sectors (semiconductors, hardware) are large and still relevant.



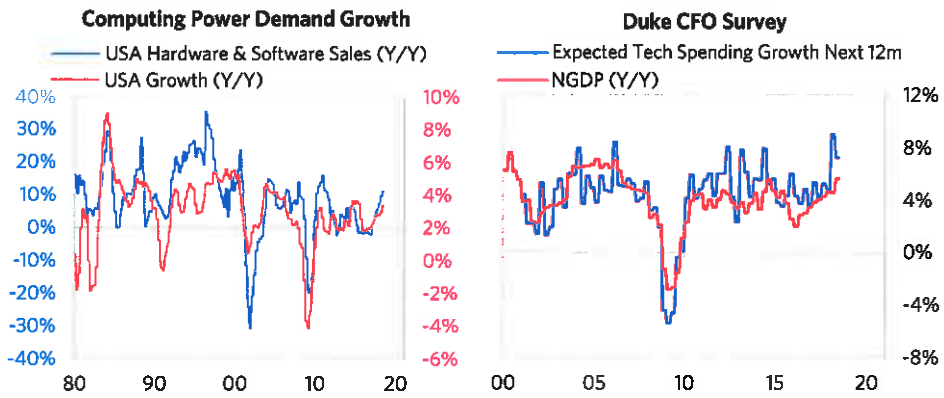
Online Advertising (~10% of revenues and ~15% of tech profits): In general, spending on advertising is very cyclical because the willingness and the ability for businesses to spend on advertising are a function of the end demand they are seeing. Since the rise of Google and the online advertising channel, there is evidence that online ad spending is likewise sensitive to cyclical conditions. The chart on the right shows the fluctuations in ad revenues for Google. While online ad revenue growth did not outright decline during the 2009 recession, it did slow to a halt.



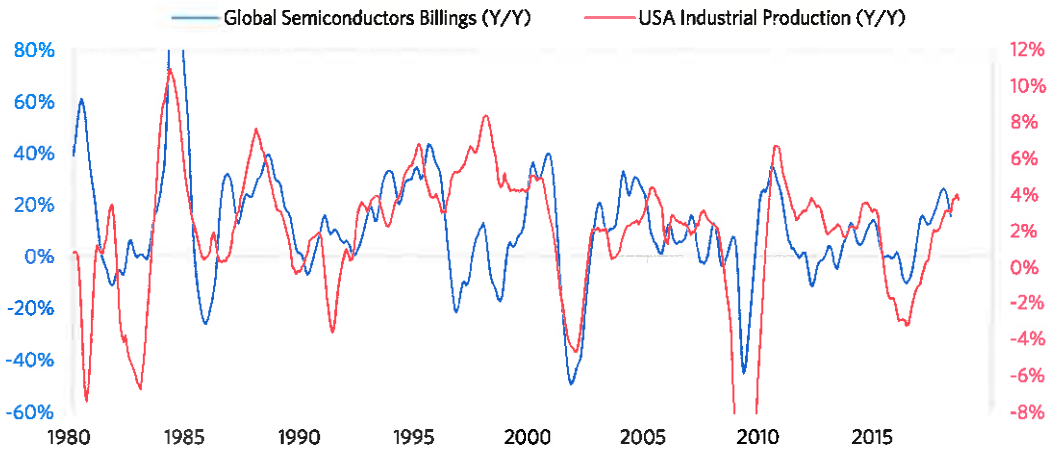
E-Commerce (~15% of revenues and 2% of tech profits): Though e-commerce giants like Amazon are gaining market share due to a continued rapid move toward online shopping, they also share in the cyclical influence of total retail spending. The chart below shows that since Amazon and eBay were founded in the mid-'90s, there has been a high correlation between changes in e-commerce sales and aggregate retail sales, even though e-commerce has on average grown faster than the overall market as it gained share.



Cloud Computing (~4% of revenues and 6% of tech profits): While the actual scope and range of services offered by cloud computing is quite complex, in essence cloud computing is an evolution in the way computing power is delivered to businesses, i.e., instead of purchasing hardware and software licenses and hiring IT staff in house, the cloud computing model allows businesses to outsource much of this to a provider. The demand for computing power in large part will be driven by the volume of business and end-customer demand, which will vary according to the normal cyclical influences. The chart on the left shows how sales for computer hardware and software is sensitive to overall economic growth. Surveys also demonstrate that corporate executives plan their spending on technology investment based on their end-customer demand.



Semiconductors (~25% of tech revenues and profits): The semiconductor sector is an example of an industry that has been around for a while and has been shown to be highly sensitive to the cyclical demand for chips. At the same time, it continues to benefit from secular tech trends (e.g., investment in AI, cloud infrastructure, mobile devices, internet of things, autonomous vehicles).



Logically, one would expect the tech sector to have a significant exposure to aggregate demand, in particular swings in business fixed investment. Based on a look across these segments, cyclical influences look to be a significant influence through history and up through today.