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Spencer Glendon, PhD
Macroanalyst

Spencer helps lead the firm's analysis and discussion of economic, thematic, and social issues around the world. He pursues an active, idiosyncratic research agenda on topics ranging from climate change to the relationships between data, markets, and society.

How scale, slow growth, MBAs, and regulation are shrinking the stock market

ONE OF THE CHALLENGES OF BEING A BOTTOM-UP INVESTOR IS THAT THERE ARE ALWAYS MORE COMPANIES THAN YOU CAN POSSIBLY RESEARCH. This is why, in an attempt to help my colleagues, I have tried to straddle micro and macro (call it mezza), keeping an eye on the aggregate equity markets and their dynamics as a subject on their own to see if there are things happening that are strange or noteworthy. For the last 15 or more years in the US, the answer has been yes: While the economy grew much larger and the addressable market increased substantially with globalization, the number of listed companies in the US went down steadily and precipitously, only barely arresting its fall in the last couple of years, and the concentration in nearly every industry went up.

I have been interested in why this has happened and how it relates to investing and to the economy as a whole. What follows is a set of facts, hunches, and hypotheses that I think are worth sharing, as well as the investment implications, a few of which I'll preview here:

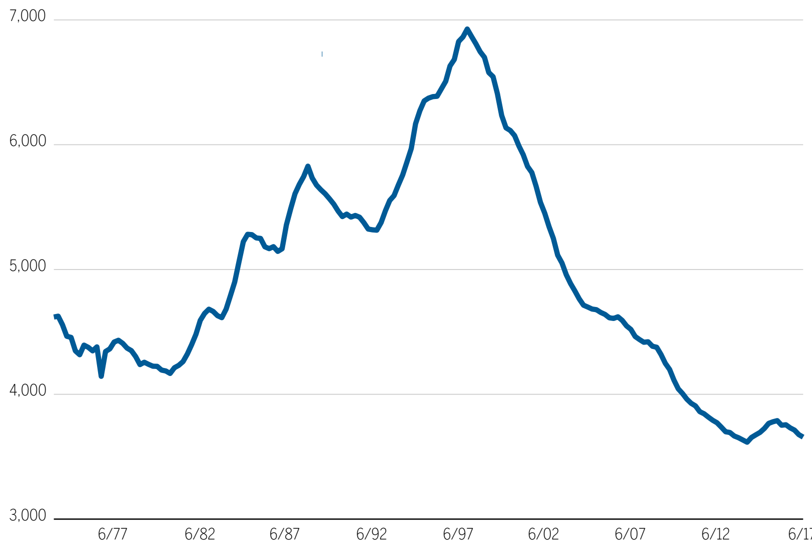
1. Profits of big companies in consolidated industries may remain higher and more stable than they used to be because of technology, scale in bargaining with employees and suppliers, and political power.
2. The consolidated/ing economy may continue to have lower levels of investment than past indicators would suggest, partly because shareholders don't want company managements to invest.
3. It may be wise to look for industries where consolidation can run further, because it appears that consolidation is likely to be more profitable than before. It may be easier for winners to dig deep, wide moats.

Is this just a case of a bunch of frothy late-'90s tech firms going under?

The interesting facts about consolidation

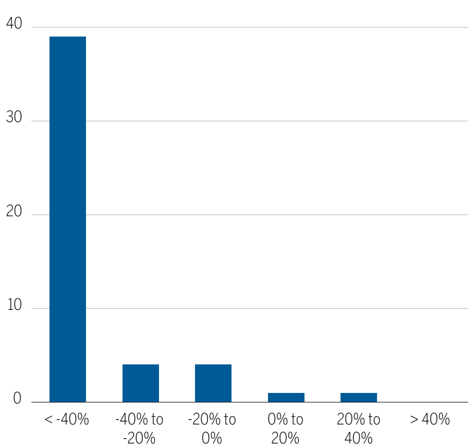
Figure 1 shows that the total number of listed companies in the US rose 30% in the 1980s and was about flat in the 1990s following an Internet round-trip. It then fell by roughly half from its peak before a tepid recovery in the last couple of years to a level still well below where it was in 1980, when the economy was 40% its current size in real terms. There are now fewer than 4,000 listed companies in the US, not enough to fill out the Wilshire 5000 Total Market Index.

Figure 1
Where have all the public companies gone?
Number of US publicly listed companies



Data from 31 December 1973 to 30 June 2017. | Source: Wellington Management

Figure 2
Nearly all US industries have experienced consolidation
Number of industries, grouped by percent change in number of publicly listed companies

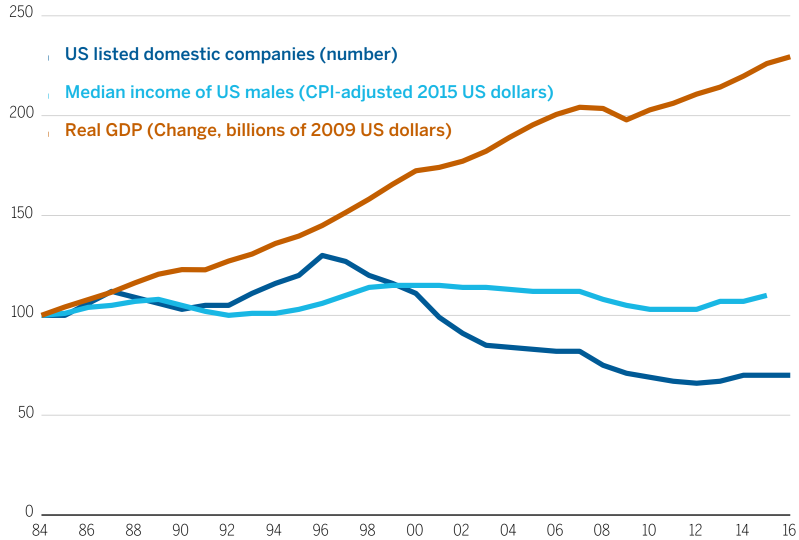


Data shows change from December 1997 to June 2017. | Sources: Kenneth French, Wellington Management

Is this just a case of a bunch of frothy late-'90s tech firms going under? No. **Figure 2** shows the change in the number of listed firms by broad industry category from December 1997 to June 2017. The first bar shows that nearly 40 industries had a reduction of more than 40% in the number of listed firms. Another four industries had reductions of 20% – 40%. Only two industries had more listed companies in 2017 than they did in 1997.

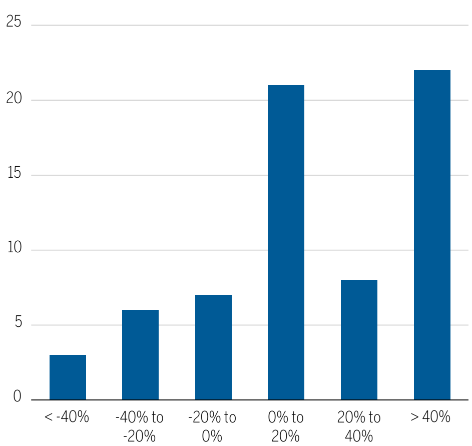
To put this in the context of a topic that I think is related, here is a graph of real GDP, median male income, and the number of listed companies in the US (**Figure 3**). The economy more than doubled, wages stagnated, and the number of companies fell. The top line behaved roughly as expected and the bottom two are pretty shocking.

Figure 3
Fewer companies and lower wages, even as the economy grows



Data through year-end 2016. | Sources: World Bank, US Census Bureau, Bureau of Economic Analysis

Figure 4
Greater concentration across the US economy, not just public companies
Number of industries, grouped by change in market share of largest four firms (public and private)



Market share represented by revenue of firms as percent of total industry revenue | Sources: US Census Bureau, Wellington Management

But perhaps this is just about publicly listed companies. Maybe regulation has made it more onerous for companies to list and private markets have found ways to provide more funding more cheaply. To address this, I have looked at whether the economy as a whole has seen similar increases in concentration. Every five years the US Census Bureau counts every business in the country and measures concentration for every industry. **Figure 4** shows the change in market share held by the top four firms by industry. The results are less extreme than the publicly listed numbers in **Figure 2**, but they are directionally consistent: Most industries are more consolidated today than they were in 1997. The right-most bar on this graph shows that in 22 industries, the top four companies gained more than 40% market share between 1997 and 2014. In total, 51 industries saw the top four firms gain share and only 16 industries saw the top four firms lose share.

Scale and the tools of consolidation that Silicon Valley sells

Data technology is most valuable for big companies — they have more data, make more decisions, and can benefit from marginal insight because of the scale of their operations. Historically, companies would enjoy the benefits of operating leverage up to a certain point at which the economics would start to go the other way, as coordination, efficiency, consistency, oversight, and culture got bogged down. But thanks to better data tools and services, the world has become easier for companies that can achieve scale. Distribution, branding, standardization, financing, reporting, and monitoring are all now massively scalable in many industries. So despite the hype about lots of fun, new small businesses, the main story is one of consolidation. In the US, for example, there are thousands of beers and more every day thanks to the craft beer boom, yet a small number of companies have come to dominate the industry, selling 90% of the beer in the US.

The big data tools that will enable further scaling are still being adopted and massively improved, so I believe this tailwind for consolidation and high returns should be enduring.

One economist whose work I highly recommend on this topic is Luigi Zingales from the University of Chicago. In a discussion at George Mason University, he made two points that are relevant: 1) Monitoring of employees, organizing of supply chains, and accounting are all automated and scalable. So a company like Starbucks can be worse than the average Italian coffee shop at everything related to coffee but can dominate because while the Italian business relies on family relationships and individuals caring and trusting one another, Starbucks relies on systems that allow anyone to work almost any job in any store. 2) The US has a lot of these companies and Italy has had few. I think it's important to note that the two countries in the world that are creating really large, dynamic new companies are the US and China, the only truly continental economies. Their companies are built for scale from the beginning.

Technology has enabled scale and newer technology has enabled even more. When I started in asset management, there was a common understanding that mergers rarely succeed. Now, however, synergy is no longer a euphemism for "hand waving to make the numbers work" and cost savings really do seem to materialize when companies combine.

When I look at the aggregate and micro data, there are still many industries that are not super-concentrated but that could be. The big data tools that will enable further scaling are still being adopted and massively improved, so I believe this tailwind for consolidation and high returns should be enduring. The most obvious investment theme here is staying long the companies that enable scale, including technology and consulting companies. Since stocks of many concentrated, near-monopolists are low-volatility stocks that have already been bid up, I would be looking for industries that can consolidate further, and since consolidation has been a boost to margins, I would be less confident that already-concentrated industry leaders could further increase margins.

Low growth and high profits go together

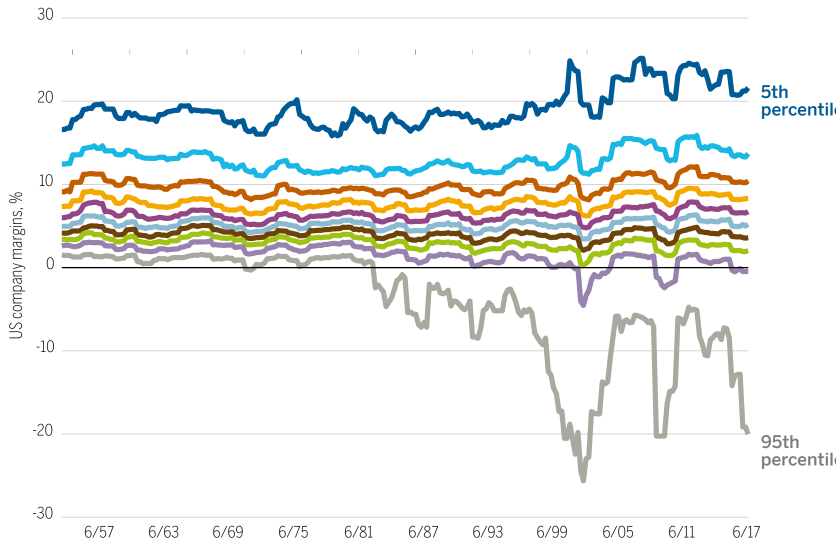
This may seem counterintuitive, but low growth is ideal for profits, especially if growth is expected to be bad and then turns out not so bad. At the beginning of the year, the employer says, "The coming year looks very uncertain, so we are planning for zero cost growth and we can't give you a raise." When growth then turns out to be modest, all of the positive surprise drops to the bottom line. The cycle can be repeated the next year, with labor not gaining bargaining power so long as there is slack in the market and low expectations. This has been a good description of the US economy in non-recessionary years since 2001.

With less slack in the labor market, profits may now be starting to weaken, a trend that is confirmed by work our quant team put together for me. **Figure 5** shows margins of US companies sorted by percentile, from the 5th percentile to the 95th percentile. Margins have come down, but you can see that the truly profitable are meaningfully different than in the past (this chart goes back to the 1950s).

Figure 5

Profits helped by low growth?

US company margins, by percentile



Margin breakpoints start at the 5th percentile and then are shown in increments of 10 (5th, 15th, 25th, etc.). Financials and REITs excluded. The breakout of the 95th percentile value is a result of the expansion of the class of firms that obtained public equity financing in the 1980s and 1990s. There was a decline in the cost of equity capital that allowed weaker firms and firms with more distant expected payoffs to become viable candidates for public equity financing. | Source: Wellington Management

Consolidated industries also enable a kind of soft collusion: The competitors are few and their plans are public. As a result, companies can tacitly agree to an equilibrium of not investing much. If the expectation of low growth is commonly held, competitors will say, "The coming year looks very uncertain, so we aren't going to invest much." This means that there is less competition, and low market sentiment discourages new entrants. Whatever growth in economic activity there is disproportionately goes to shareholders (and management).

Lastly, modest growth has also led to a continual surprise of lower interest rates, which further rewards capital.

Investors say they want growth, but they don't really

Over the last 10 years, I have seen institutional investment tastes move toward more stable, low-volatility, durable, enduring, compounding, quality companies. This has been consistent with what the market has rewarded: Low rates have pushed investors out on the risk curve to value future cash flows more, so predictability has grown more valuable. These steady firms are usually in industries with less competition — and where there has been less competition, returns have been higher. At the same time, companies that have not been the consolidators or big winners have gotten killed.

I suspect that these changing preferences of investors represent a business zeitgeist and are actually partly responsible for low growth. Specifically, corporate managements are getting a strong signal from investors — and their own training — that the companies with the highest valuations are the ones that return capital to shareholders, not the ones that actually invest. For perspective, **Figure 6** shows net US equity issuance going back to the 1980s. There has continually been less stock to buy.

Figure 6

Lower equity issuance reflects shifting investor priorities

Net issuance as a percentage of market capitalization

Data aggregated over trailing four quarters, sampled quarterly. | Source: Wellington Management

One of the best books about finance I have read is Donald MacKenzie's *An Engine, Not a Camera*. MacKenzie is a sociologist who has studied the evolution of finance and found that the ideas that came out of empirical finance and modern finance theory were intended to describe the markets (like a camera bringing the world into focus), but once those ideas were more mainstream in the financial community, they started to shape the markets they were meant to describe and create markets they hypothesized should exist (thus becoming an engine). The logical next step in this process is that firms run for the benefit of shareholders will continue to internalize the messages of modern finance, including the idea that stock market returns are best for firms that don't invest capital or take new risks but that instead return money to shareholders.

In the 1970s, the largest industry in the US was a consolidated oligopolistic industry that had innovated enormously, led by engineers. From that point on, it was run by MBAs with backgrounds in finance and its innovation essentially stopped. That was the US auto industry (meanwhile Japanese and German automakers continued to be run by engineers). Over time, MBAs, inculcated with the ideals of shareholder value, have taken over the leadership of most companies. (For the last three decades, about a quarter of graduate degrees have been in business.[1]) These folks are ambitious but reasonable. The unreasonable ones don't bother with an MBA. I can't prove causality here, but the most powerful, productive businesses in the last 30 years have come from the US West Coast and China, and few of them have been led by MBAs during their dynamic phases.

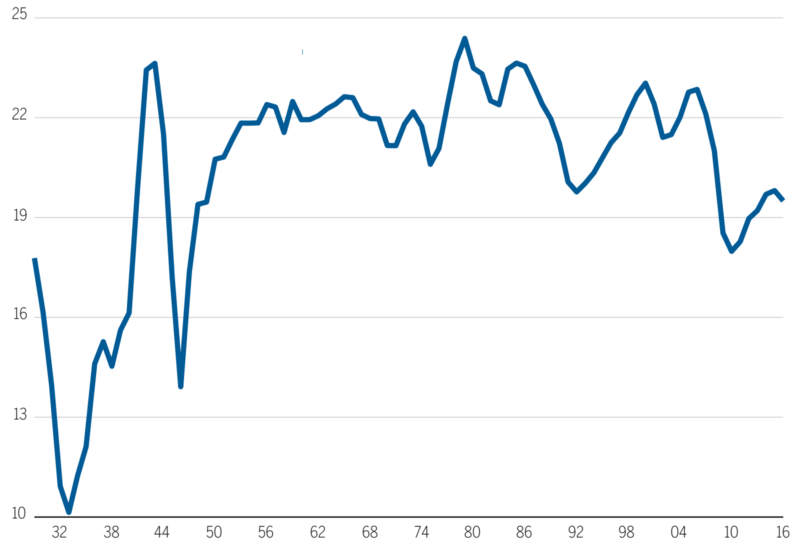
[1]National Center for Education Statistics

Big companies are better off if they and their competitors don't invest in more capacity but keep capex low relative to sales; return money to shareholders (or management); and either let pessimism, market forces, or regulatory power keep competitors at bay. While this makes sense from the individual company perspective, it is consistent with a low-growth equilibrium. We are seven years into a recovery and investment as a share of GDP is still below recessionary troughs (**Figure 7**).

Figure 7

Investment spending slow to bounce back

Total nonresidential investment spending, % of GDP



Data through year-end 2016. | Source: Bureau of Economic Analysis

> **The economy is a bit more sluggish than it feels like it should be, investment is a bit lower than it feels like it should be, profits are higher as a share of GDP than they have ever been, wages are lower, and investors are rewarding companies with stable earnings and low volatility.**

I'm not trying to propose a "theory of everything" here. For example, low levels of investment might be partly attributable to equipment lasting longer or fewer opportunities in the world. What I am trying to do is put some pieces together that may make the mosaic more clear and informative. The economy is a bit more sluggish than it feels like it should be, investment is a bit lower than it feels like it should be, profits are higher as a share of GDP than they have ever been, wages are lower, and investors are rewarding companies with stable earnings and low volatility. To me, these all fit together so long as there is some stability to this equilibrium. The concentration of industries might be a binding agent that can hold the mosaic in place.

It's not income inequality exclusively, but rather a sense that the world is getting harder for most people to under-stand and navigate, while some, including large corporations, are flourishing.

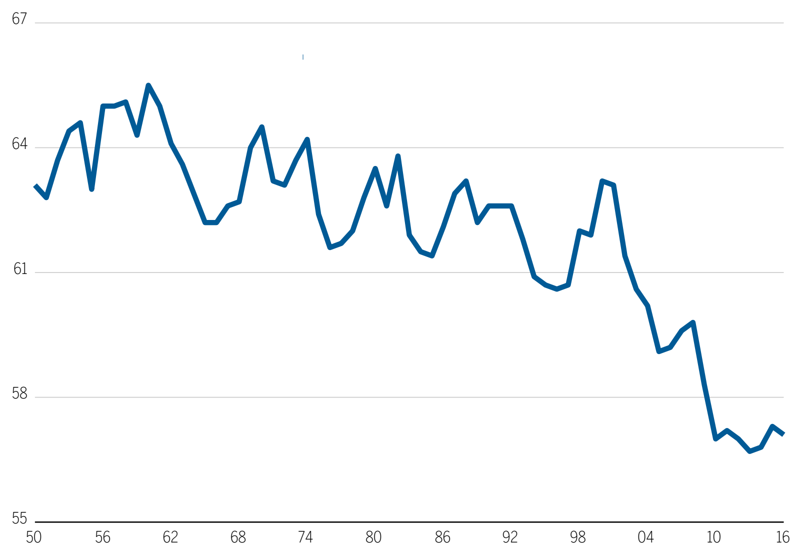
The lonely worker and the resulting power of big companies

If profits are going up as a share of GDP, what's going down? Labor share (the percentage of economic output that accrues to workers in the form of compensation) has perked up lately and the case for rising wages from here makes sense to me. But labor share is still historically low (**Figure 8**), and although unions got wiped out in the 1970s, '80s, and '90s, the big drop actually happened in the 2000s, the same time that industry concentration really accelerated.

Figure 8

As industries consolidate, workers benefit less from economic output

Labor share %, non-farm US businesses



Data through year-end 2016. | Source: Bureau of Labor Statistics

This is an underappreciated part of the inequality issue that I continue to believe is at the heart of much of the discontent in the developed world. It's not income inequality exclusively, but rather a sense that the world is getting harder for most people to understand and navigate, while some, including large corporations, are flourishing, with consequences for employment, income, culture, and politics. The most obvious causes of weak wage growth are globalization and technological change, and indeed these two forces account for many of the wage dynamics. But there remain some big mysteries. In following my interest in concentration, I discovered its likely role in inequality.

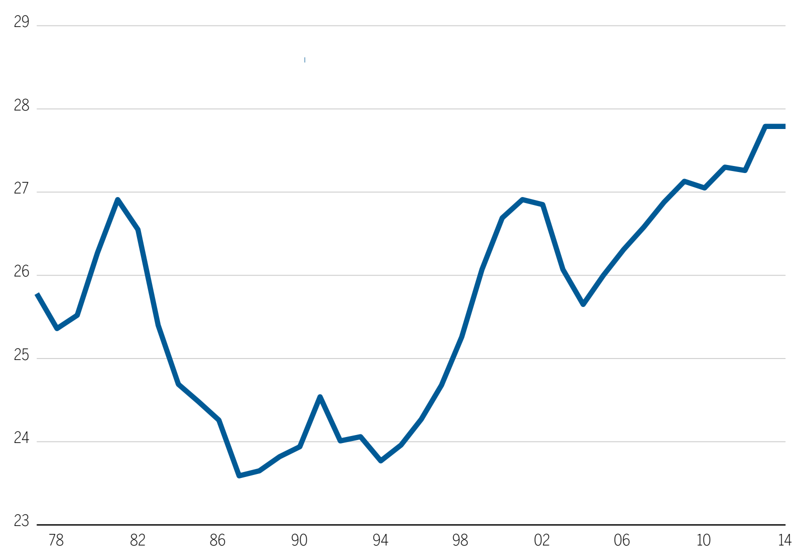
Employers have differentiated between high-skill, high-pay workers whom they want in their companies and lower-skill workers from whom they only want labor. Lower-skill workers have become more likely to be part-time and to be employed by companies that almost exclusively employ lower-paid workers as contractors. The result is that "flexible work arrange-ments" have risen enormously in the last decade. Indeed, as documented by economists Lawrence Katz and Alan Krueger, "…all of the net employment growth in the US economy from 2005 to 2015 appears to have occurred in alternative work arrangements."[2] What they found is not that Uber has grown to be a big part of the workforce (it and things like it are still very small), but that lower-skill workers are employed as contractors, temporary-agency workers, and freelancers more than ever before. This speaks to reduced worker bargaining power.

Individuals have another incentive to seek full-time employment from a large corporation in the US: access to services and community. These services benefit from economies of scale, especially in the US, where health insurance, vacation days, maternity/paternity leave, and retirement planning are all provided by employers. A couple of years ago, one of our analysts asked the CEO of a large US bank why workers there don't leave to work at the local banks closer to home. He didn't say that his bank was a great place to work but rather, "We offer them great health care. We can monitor all of our employees, and 95% of the spouses and families of our employees are on our plans. They don't want to give that up." That is a substantial form of leverage and that leverage increases with scale. The dominant employment narrative of elite urban culture is "Uberization," but the experience of work is actually going the other way (**Figure 9**).

Figure 9

Workers drawn to large companies

Share of employment in firms with 10,000+ employees, %



Data as of year-end 2014; most recent data available. | Sources: US Census Bureau, Wellington Management

[2]Lawrence Katz and Alan Krueger, "The Rise and Nature of Alternative Work Arrangements in the United States, 1995 – 2015," 29 March 2016.

> Companies that are big and have concentrated power may not only have leverage but also have another economy of scale: the ability to lobby to change regulation in their favor.

The suppliers' dilemma and the next wave of trust-busting/anti-monopsony regulation

Increasingly, we are hearing concern about regulatory approval of consolidation, which has long been considered a potential threat to the vigor of the economy. I think it will take a while for regulation to change, but I can see the seeds of a different regulatory future being planted and think it's worthwhile to sketch out a likely shape.

The most common argument for opposition to industry concentration is that it is bad for consumers. Monopolists can use the limited choices available to their customers to raise prices and limit supply. But if Amazon and Home Depot have undercut everyone on price, how are consumers worse off? Generally the courts have found that they aren't. If, however, courts and regulators were to consider concentration from a different perspective, namely that of suppliers, they might come to a different conclusion. The fraternal twin to monopoly is monopsony, whereby a company has power not over the people or firms to whom it sells but the people or firms from whom it buys. The top four firms in the retail US lumber industry account for more than 95% of sales. Put differently, if you're not selling retail lumber products through Home Depot or Lowe's, you're not selling much at all. There is scope for some "platform companies" to be viewed as dominating a marketplace in a way that constitutes monopsony. I see only a few signs of this currently but could imagine it catching on quickly.

Courts and regulators might also decide, as they have in the European Union, that even though there is no clear case for abuse of monopoly or monopsony power, a monopoly on an important industry is in itself risky or otherwise negative. They may "have no case" in the eyes of an analyst focused on the precedent of economic value, but that doesn't mean they won't act to limit such power. I mentioned Luigi Zingales earlier. It's from his book *A Capitalism for the People* that I learned that the ban on interstate banking in the US was imposed despite the common awareness that it would mean forgoing economies of scale and make banking services more costly and less efficient. Congress was comfortable giving up the economic benefit in exchange for two things: a more diverse set of institutions and, most importantly, assurance that there wouldn't be any powerful banks in the country, so finance would be unable to capture government power.

Regulated companies frequently have the most durable, enduring, stable, moat-surrounded businesses. Often they are not only guaranteed monopoly power by regulators, but actually get paid by the government and/or get the government to guarantee the terms on which their customers will pay them. Companies that are big and have concentrated power may not only have leverage but also have another economy of scale: the ability to lobby to change regulation in their favor. There is a strong public perception that big companies have the power to influence government, be it in health care, finance, energy, or other industries. There is also empirical evidence of this. If I were an analyst covering a consolidating sector, I would want to meet with company lawyers to understand their lobbying strategies. I think companies that are good at lobbying are likely to be better investments than those that are not.

The investment implications I see are:

1. Profits of big companies in consolidated industries may remain higher and more stable than they used to be because of technology, scale in bargaining with employees and suppliers, and political power.
2. Bear in mind that the last few years have provided the ideal environment for big companies as slow, positive growth and slack in the labor market are ideal for durable, compounding, steady, disciplined companies.
3. The consolidated/ing economy may continue to have lower levels of investment than past indicators would suggest, partly because shareholders don't want company managements to invest.
4. Consider investing in the companies that make cost cutting and consolidation cheap and convenient, including technology and consulting companies.
5. It may be wise to look for industries where consolidation can run further, because it appears that consolidation is likely to be more profitable than before. It may be easier for winners to dig deep, wide moats.
6. Cheap, smaller companies in industries with big players may be more likely to be value traps than they used to be. Without the resistance of a good moat, marauders have an easier time than ever destroying businesses.
7. Companies that aren't run by MBAs should be evaluated differently from those that are.
8. The quality of large companies' lobbying skills will matter, as the returns to lobbying can be high and there is likely substantial difference between companies in their skill and effort in this area.
9. Look for seeds of new anti-monopoly or anti-monopsony regulation, including government efforts to simply curb the power of big companies even at the expense of economics. Just because the government doesn't have an economic case doesn't mean there isn't an impulse to regulate: Politically powerful corporations can benefit individuals as consumers and threaten their governments simultaneously.
10. Consider opportunities in Asia, where the index might not do as well but there are lots of new companies competing.

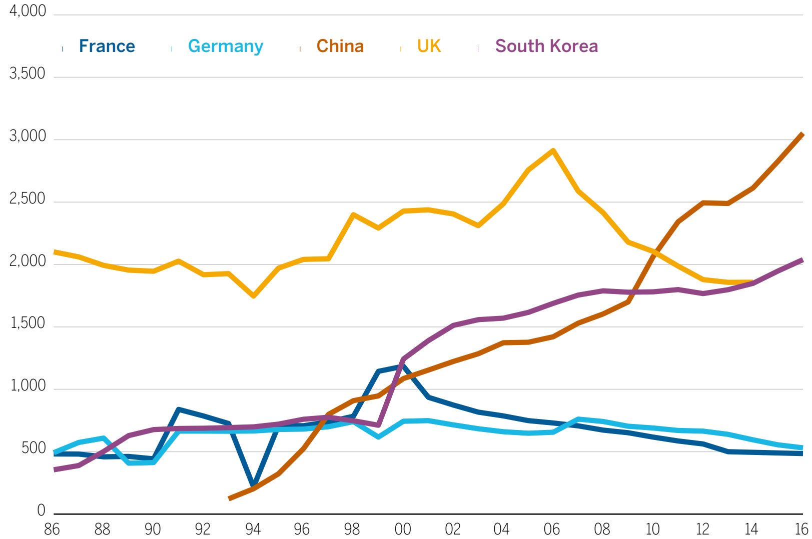
The global picture: Asia is competitive and full of opportunity

I have focused on the US because the trends there are the most striking. There are similarities in other countries (**Figure 10**), but not to the same degree, either in terms of the concentration, the decline in the number of listed companies, or in variables like inequality in the labor market. The US may be the vanguard. Asia, on the other hand, is moving the other way, toward more competition, as shown in the chart lines for China and South Korea.

Figure 10

Some consolidation in Europe, while more companies emerge in Asia

Number of listed companies by country



Source: World Bank

If you have made it to the end, I thank you. At left are my conclusions in their entirety. Hopefully they make more sense than they did at the beginning.

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