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‘Soft-wars’

**The Differential Trajectories of Google and Microsoft
A Capital as Power Analysis**

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**‘Soft-wars’:
The Differential Trajectories of Google and Microsoft – A Capital as Power Analysis¹**

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According to the capital as power framework, pecuniary earnings, or profits, are a symbolic representation of the struggle for power between different capitalist groups (Nitzan and Bichler 2009, 218). In this struggle, capitalists measure their own power differentially – that is, relative to other capitalist entities. The focus on differential power, expressed in differential earnings, leads firms to try to beat an average rate of return. In order for the profits of one firm to beat the average, “others must be prevented from accessing the same earnings” (246-247). In an environment with hundreds, thousands or even millions of similar sized firms, it would be difficult if not impossible to empirically isolate the relationship between shifts in power between any two firms. However, in most industries, only a handful of firms dominate, theoretically making the microanalysis of such a relationship much more feasible. It is my contention that this is largely true for the computer technology industry in the US.

Within the computer technology industry, Microsoft and Google stand out as two of the most profitable and most powerful firms. As such, it is logical to assume that in differential power terms, Google’s rapid rise poses a direct threat to Microsoft’s dominance. Moreover, in recent years both companies have expanded beyond their respective core profitable businesses, coming into more and more direct competition. Google’s Android recently overtook Windows as the most used operating system; applications like Google Chrome, Google Docs, and Gmail provide similar services to Microsoft’s Office suite; Microsoft’s Bing competes with Google Search; and both companies are also pursuing or have recently pursued markets in data analytics, AI, cloud computing and social media (Lovejoy 2017).

The purpose of this paper is to show that, despite the fact that Google and Microsoft currently derive the majority of their profits from separate businesses, competition between them can be empirically observed in the way each firm pursues the differential accumulation of power. As early as 2009, Google’s differential profitability flatlined at the same level as Microsoft’s. Around the same time, the two companies became engaged in mutually antagonistic yet parallel strategies of internal and external “breadth,” in which the firms increased their power by “augmenting the relative size of [their] corporate organs” (Nitzan and Bichler 2009, 334). According to the capital as power framework, internal breadth is undertaken through green field investment, while external breadth is undertaken through mergers and acquisitions (334). Following this logic, the tight correlation between Google and Microsoft’s green field investment and spending on acquisitions suggests that the two companies are engaged in a direct struggle of differential accumulation.

The paper is divided into five sections. Section one explains the logic of the argument that Google and Microsoft are competitors, despite the fact that they draw on different sources of profit. It also outlines why both companies pursue accumulation through breadth rather than depth. Section two shows how, following the convergence of Google’s and Microsoft’s differential profitability, their differential accumulation became negatively correlated. The third section provides data suggesting that Google and Microsoft are engaged in tightly correlated internal and external breadth strategies of accumulation. The fourth section describes a very public patent war

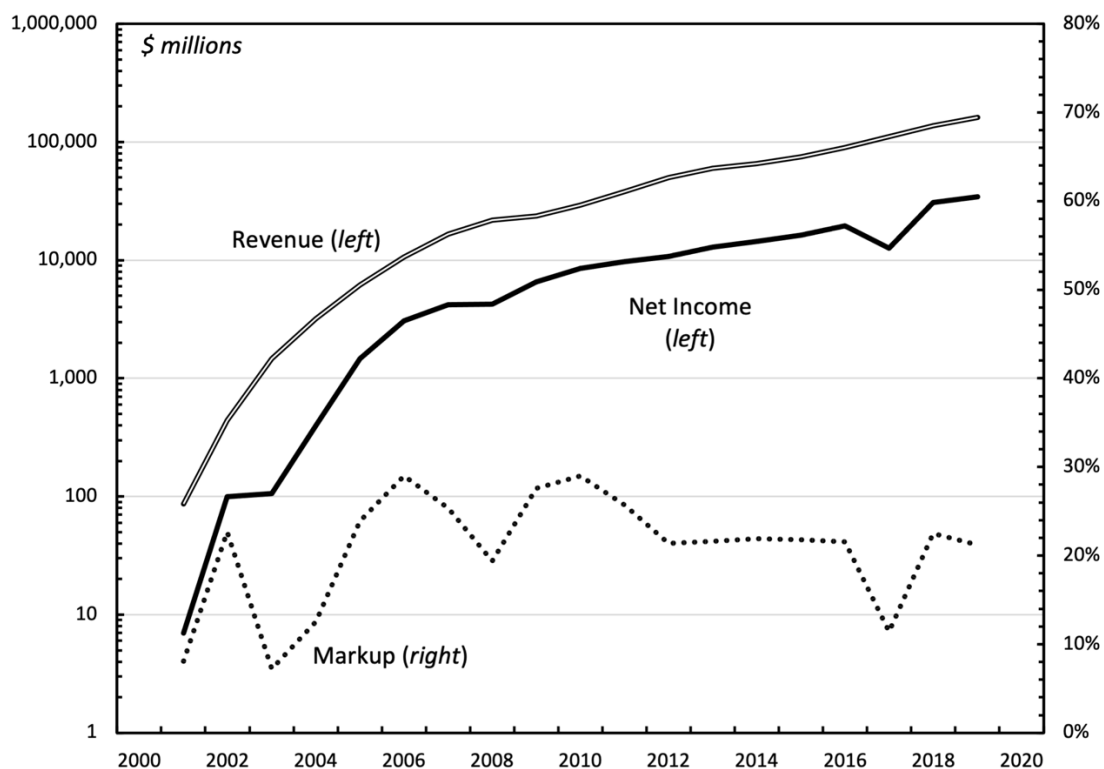
¹ In 2015 Google reorganized its different businesses into new conglomerate, Alphabet. For simplicity, in this paper I use the name “Google” to refer to both Google and Alphabet.

between Google and a consortium of technology firms, including Microsoft and Apple, to illustrate qualitatively how this conflict occurs. Section five concludes with a discussion of some of the limitations of the data, as well as suggestions for further inquiry.

Section 1: new business, old model

Despite different core profitable businesses, Google competes with Microsoft because both firms leverage control over technology, albeit in different ways. Whereas Microsoft sells the software products themselves, Google offers its products ‘for free’, deriving its revenues from selling advertising space embedded in those products. Thus, from the start, Google’s revenue growth has been dependent on a breadth strategy of finding ever expanding avenues for advertising. This process can be seen in Figure 1.1, which shows Google’s total annual revenue, net income and markup (the ratio of net income to total revenue). Income growth has risen with sales, while the markup moved sideways (oscillating around 20-25%), showing that revenue growth, for Google, has been the key driver of income growth. Figure 1.2, which reproduces the same chart with data from Microsoft, shows the same dependence of profit growth on revenue growth over higher profit margin.

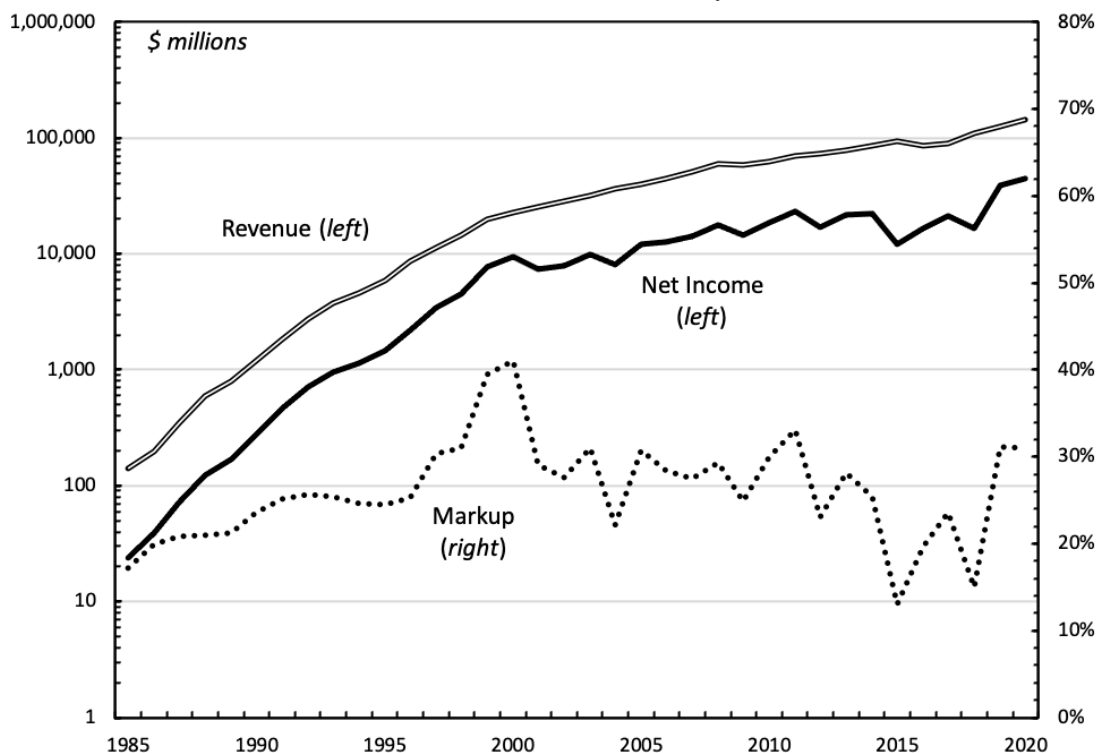
Figure 1.1: Google: Annual Revenue, Net Income, Markup



NOTE: Annual markup is calculated as the ratio of net annual income to total annual revenue.

Source: Financial statements are from *Mergent Online*.

Figure 1.2: Microsoft: Annual Revenue, Net Income, Markup



NOTE: Annual markup is calculated as the ratio of net annual income to total annual revenue.

Source: Financial statements are from *Mergent Online*.

In 2008 and 2009, when advertising revenues made up 97% of Google's total revenue, Google was already warning its investors that it expected revenue growth to slow, as a result of "a number of factors including increasing competition, the inevitable decline in growth rates as our revenues increase to higher levels, and the increasing maturity of the online advertising market" (Alphabet 2009, 37). Yet in 2019, Google still received 83% of its revenue from advertising (Alphabet 2019, 29). This fact suggests that, while Google has increasingly looked outside the ad business for new sources of profit, it has not yet succeeded in profiting differentially from these other businesses.

One of these new businesses is Android. Using its popular mobile operating system, Google is trying to replicate the 'ecosystem' model developed by Microsoft (Bradley 2017). Some euphemistically call it a 'walled garden', but the strategy is one of monopoly: by controlling the underlying operating system, one controls the access point between producers and users of software. In the words of Michael Lewis (2000), the goal is to create "a tollbooth" through which both consumers and producers must pay to access each other (71). For now, however, instead of selling its software, or even its operating system, Google offers those products for free and sells the ad space embedded in the software to advertisers.

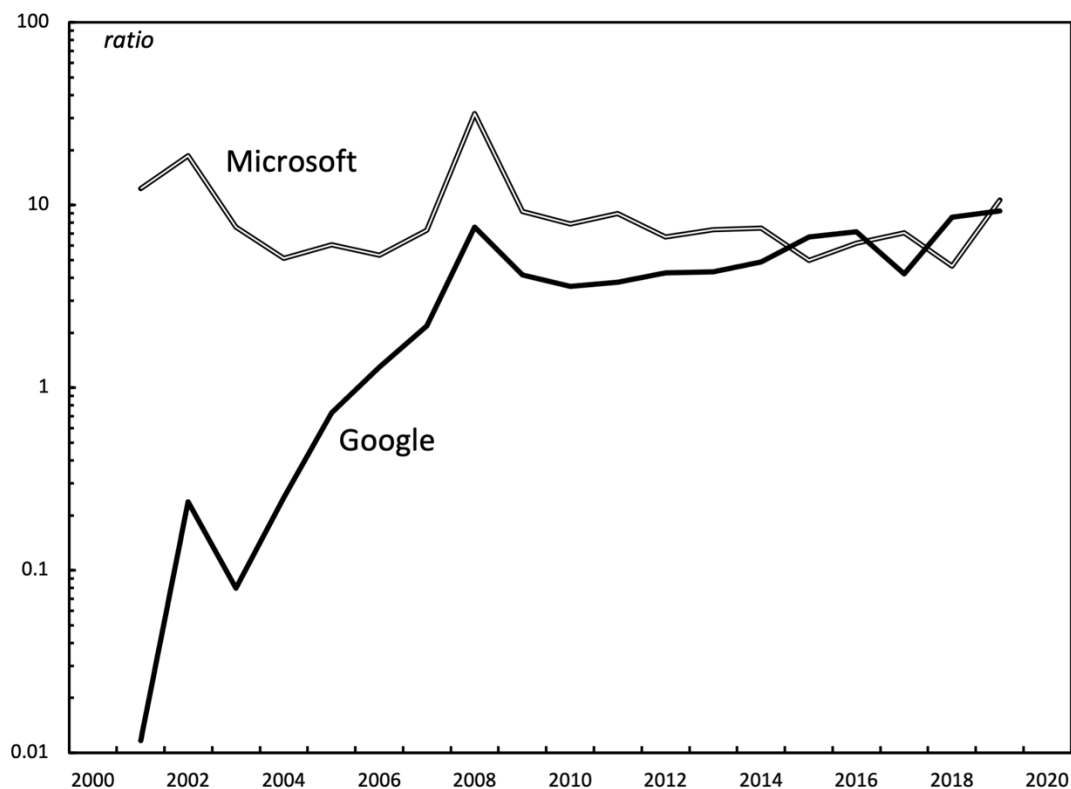
One reason why Microsoft and Google have relied on the expansion of sales rather than on differential price increases is that there are enormous centrifugal forces constantly expanding the world of software development and software companies. While the ecosystem approach attempts to enclose and limit the free use of software, in general software as a technology remains relatively open and inexpensive to develop and transmit. When any Stanford dropout with a computer could create the next ‘game-changing’ piece of software, it is difficult for companies like Microsoft and Google to control the growth of the industry to the extent needed to safely raise prices without being vulnerable to competition. For a dominant company with massive fixed costs and a coterie of expectant stockholders, the safer bet is instead to simply buy new companies as fast as possible, enclosing new ideas behind intellectual property patents and expanding differential power by augmenting one’s own size relative to the average.

A second reason for the reluctance to raise prices may be the costs of resistance to such increases. For instance, one major benefit of Google’s ‘free service’ strategy is that it protects it from antitrust actions. Antitrust cases in the US usually try to prove that there has been harm to consumers, and because Google positions the users of its products as its consumers, it is difficult to show that they are harmed when they use the products for free. This strategy reflects a broad trend in the tech industry, following the high-profile antitrust case against Microsoft at the turn of the millennium, from a focus on monopoly power to so-called ‘monopsony’ power, as a path to differential profitability. While this strategy – followed by companies like Amazon, Uber and GrubHub, among others – often relies on raising prices on the production side, it is characterized by an unwillingness to differentially raise prices on the consumer side. This unwillingness likely informs the choice of both Microsoft and Google to pursue a breadth strategy over one of inflationary and disruptive depth (Nitzan and Bichler 2009, 331).

Section 2: convergence means conflict

As the differential profitability of Microsoft and Google converged, the movement of their accumulation moved from a strongly positive correlation to a moderately negative one. My contention is that the two are causally related because, as stated above, the growth of one large firm in an industry with high concentration can theoretically impact the differential power of other large firms in a significant way. This relation is further strengthened if the two companies were expanding into the same areas, and I argue that this process has become necessary for Google and Microsoft because they have hit limits to differential growth in their core profit areas. In concrete terms, Google reached a high degree of dominance in search very early and has maintained this dominance, controlling the site of over 90% of the world’s internet searches. Google cannot continue to beat the average in this sector, simply because it has *become* the average. Similarly, Microsoft’s dominance in business and productivity software makes its *own profitability* the average to beat. Each firm’s forays into mobile computing, AI and everything in between can thus be seen as attempts to overcome these limitations and restore differential growth.

Figure 2: Annual Differential Profit: Google vs Microsoft

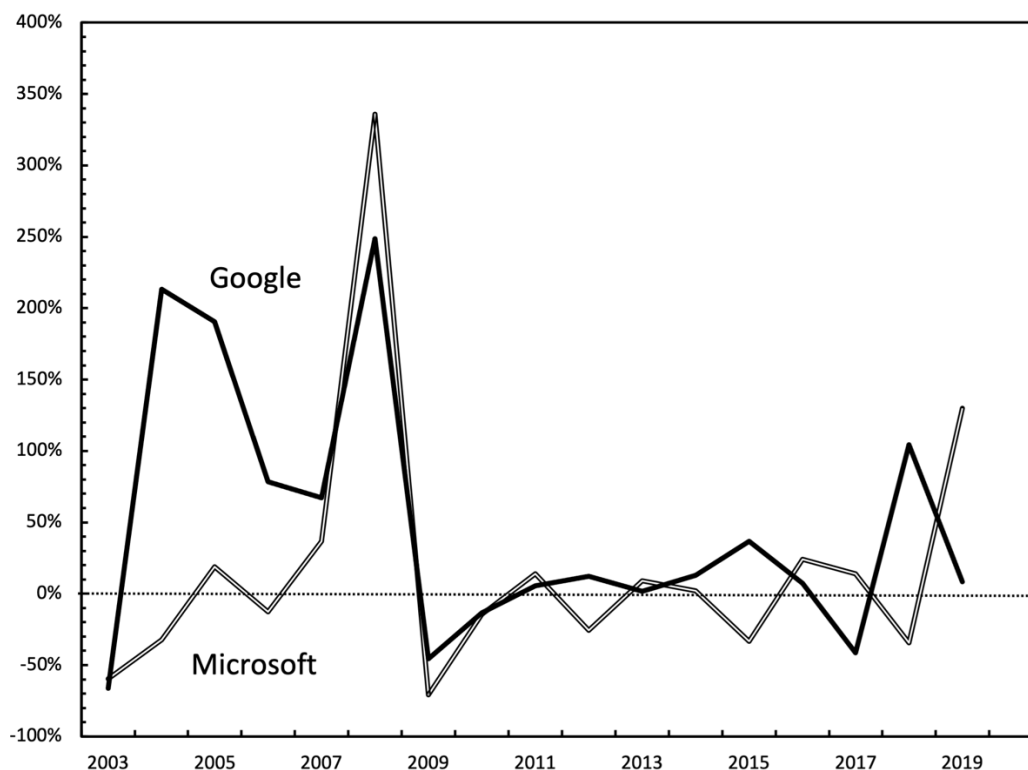


NOTE: Differential profit is calculated by taking the ratio of each firm's annual net income to the net income of the average S&P 500 firm.

Source: Income statements are from *Mergent Online*; S&P 500 net income data from Compustat through WRDS, ticker I0003.

Figure 2 shows the ratio of each firm's net annual income to the net income of the average S&P 500 firm. The explosive growth of Google's differential profitability quickly rises to meet Microsoft's and then sharply levels off by 2009 (note the log. scale). Beyond 2008, neither firm has since been able to break past a differential profitability of 10 to 1. Figure 3 shows the annual rate of change in the two companies' differential profitability. The correlation between the two rates between 2002-2010 is 0.64, while between 2011-2019, the correlation turns negative to -0.39. Furthermore, Google's and Microsoft's changes in differential profitability seem to diverge at around the same point that Google caught up with Microsoft, after which point neither firm has been able to increase its differential profits. This fact suggests that the two phenomena – Google catching up and the divergence in the rate of change – may be related. However, it is also worth noting that Microsoft's differential profitability had stalled as early as 2000, suggesting that its own barrier to differential profitability may be unrelated to Google's. While this may be plausibly explained, as above, by Microsoft becoming a victim of its own differential success, the question remains why the two firms converged on the *same* ratio of differential profitability.

Figure 3: Annual Rate of Change in Differential Profitability: Google vs Microsoft

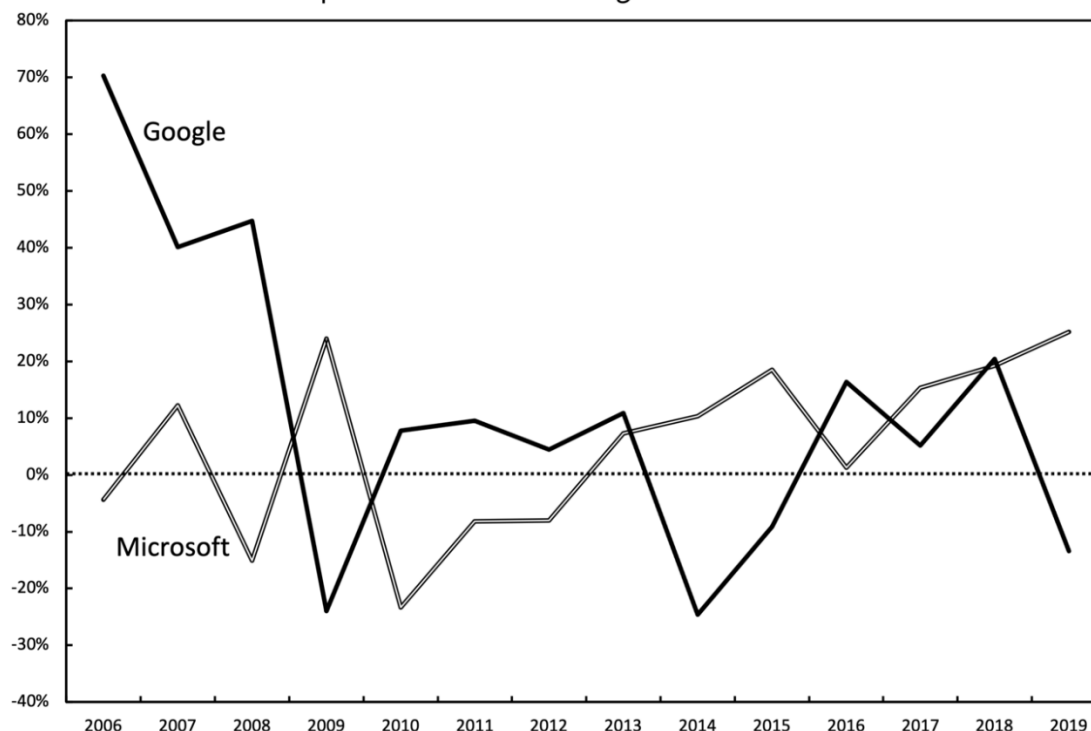


NOTE: Differential profit is calculated by taking the ratio of each firm's net income to the net income of the average S&P 500 firm.

Source: Income statements are from *Mergent Online*; S&P 500 net income data from Compustat through WRDS, ticker I0003.

Figure 4 shows each firm's annual rate of change in differential capitalization, which is the rate of change in the ratio of each firm's capitalization relative to the capitalization of the average S&P 500 firm. This rate is forward looking, in the sense that capitalization represents a prediction about future earnings. If the two firms were in close competition with one another, then, differentially speaking, one firm's increase in predicted future earnings might imply a decrease in the predicted future earnings of the other. On the other hand, both firms can also gain simply because the capitalization of the S&P 500 declined faster or rose more slowly than theirs did. Despite this possibility, the correlation between the two rates of change between 2006-2019 is -0.46 , suggesting that competition between the two may be a significant factor in predictions about each firm's future earnings.

Figure 4: Annual Rate of Change in Differential Capitalization: Google vs Microsoft



NOTE: Differential capitalization is calculated as the ratio of each firm's capitalization to the capitalization of the average S&P 500 firm.

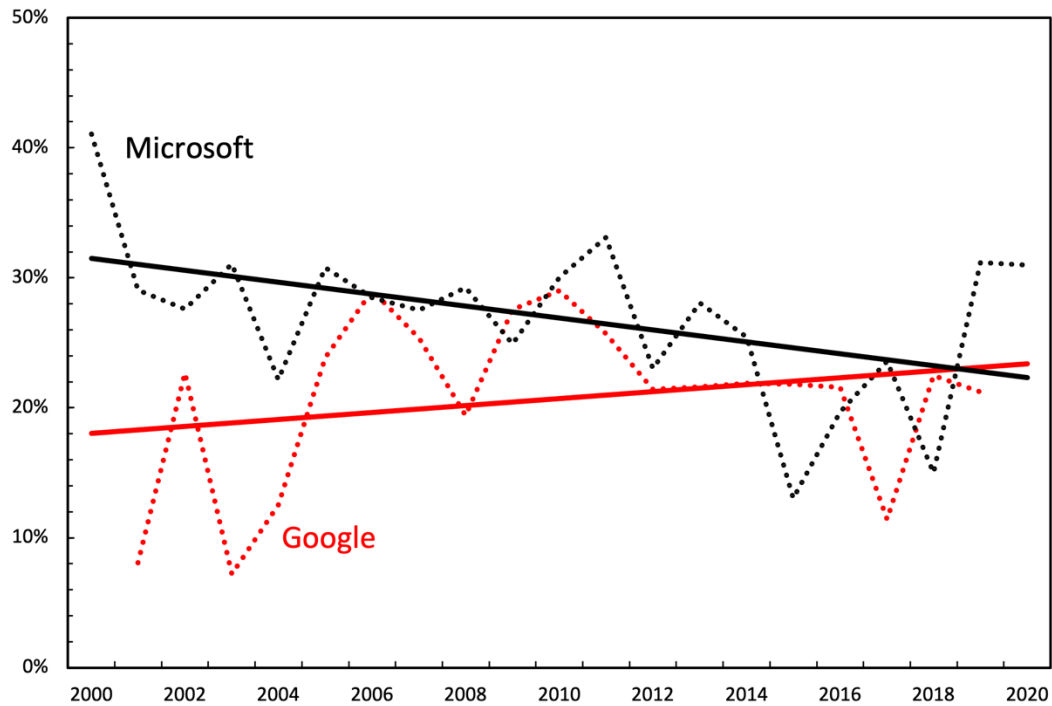
Source: Microsoft's capitalization calculated using data from *Global Financial Data*, ticker MSFT; S&P 500 capitalization data is from *Global Financial Data*, symbol SCSP500D.

Section 3: trading punches

The convergence of Google's and Microsoft's profitability levels coincides with a convergence in the levels of internal and external expansion undertaken by each company. Specifically, green field investment, measured by spending on new property and equipment, and spending on business acquisitions by both firms show a close correspondence. This convergence can also be seen in their relative markup.

Figure 5 shows the ratios of Microsoft and Google's annual net income to revenue. As Figure 5 shows, the two markups have more or less converged. Assuming there is a relation between the two, one explanation might be that competition from Google forced Microsoft to lower prices to remain competitive. However, this is not intuitively plausible, as the two firms' core products do not directly compete with one another. Another hypothesis is that the convergence may also be a result of a convergence of costs. For instance, if Microsoft increases its investments in green field growth and new acquisitions, the commensurate rise in overall costs would result in falling markup.

Figure 5: Annual Markup: Google vs Microsoft

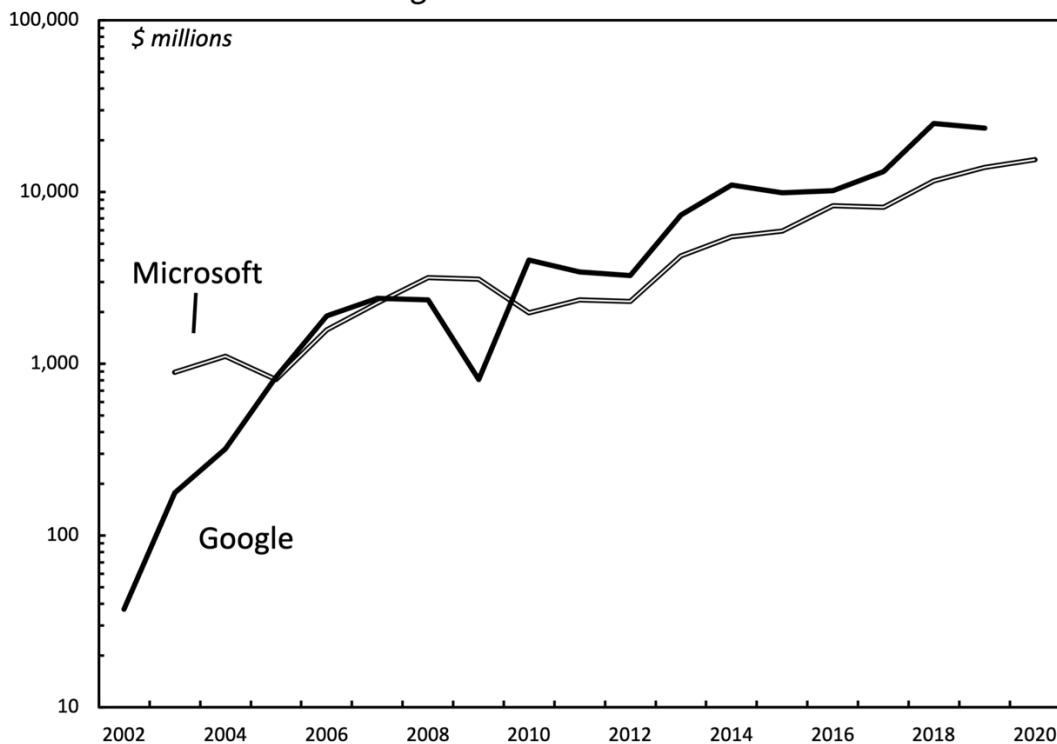


NOTE: Annual markup is calculated as the ratio of annual net income to total annual revenue. Trendlines were drawn using the 'add trendline: linear' tool in MS Excel.

Source: Income statements are from *Mergent Online*.

Figures 6 and 7 provide evidence of this convergence in costs by showing how Microsoft and Google are closely matching each other's expansion. Their green field investments and acquisitions have both risen over time, and at similar rates. Figure 6 shows the net annual purchases of property and equipment for each firm. The correlation between these purchases is 0.96.

Figure 6: Annual Green Field Investment:
Google vs Microsoft

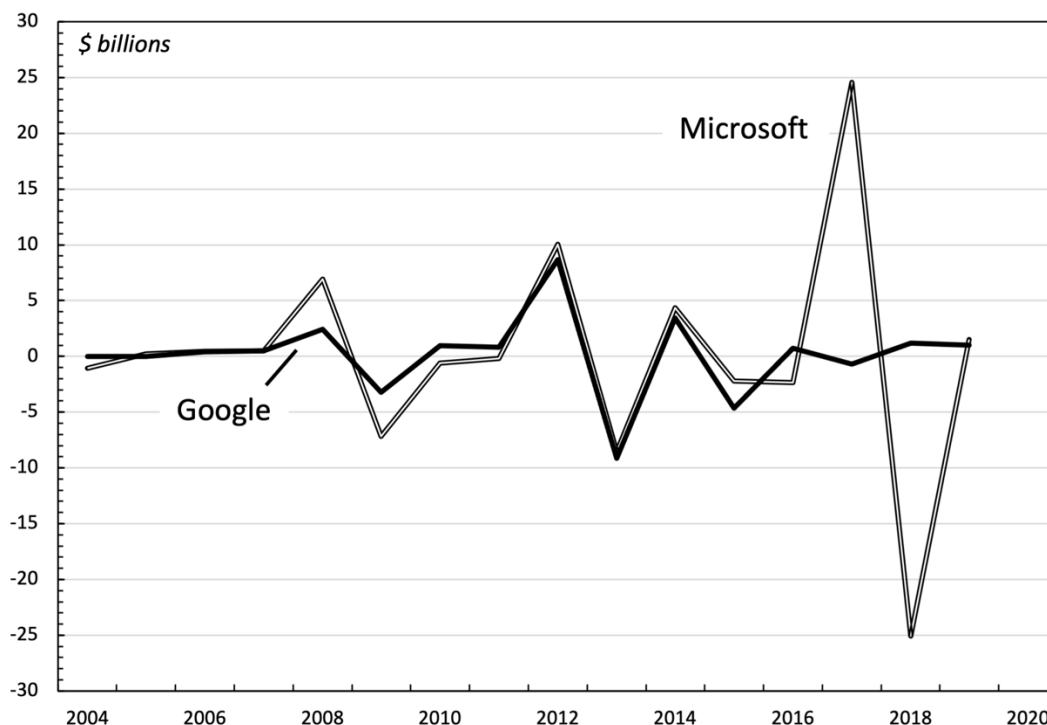


NOTE: Annual spending on purchases of property and equipment are used as a proxy for green field investment.

Source: data are from annual cash flow statements on *Mergent Online*.

Figure 7 shows the absolute annual change in each firm's spending on business acquisitions. By conventional logic, a firm's purchase value represents the current value of discounted future earnings. Thus, by matching the value of another firm's acquisitions, it logically entails at least the expectation of corresponding profitability. However, practically speaking, businesses are often purchased at prices way above what they are valued at in terms of capitalization. Conversely, the acquisition itself often results in a much higher capitalization than can be plausibly derived from the company's valuation. From a capital as power approach, however, this may have a certain logic. In terms of differential power, acquisitions, particularly of other large firms, increase a firm's *share* of the profit without increasing the overall size of the market. Thus, the value of a company's purchase in differential power terms reflects not just the positive value of future profitability, but the negative value of removing that profitability from the market and from the hands of other buyers. What Figure 7 shows is that this process is apparently being undertaken by Google and Microsoft in a remarkably synchronous way.

Figure 7: Annual Absolute Change in Acquisitions:
Google vs Microsoft



Source: Acquisitions data are from annual cash flow statements on *Mergent Online*.

The second reason why this figure is impressive is that while it would be theoretically simple enough to find a certain number of companies whose total value was equivalent to the spending of another company, logistically it would be quite difficult, as neither company has any control over the number and value of the pool of companies available for purchase at any given year. Yet, despite this difficulty, and despite often the extreme fluctuations of company valuations in a historically volatile business, for the years 2004-2016, the correlation between the change in acquisition spending between the two firms is 0.90. The reason I have left off the years 2017-2019 is that if Microsoft's purchase of LinkedIn is included in the data, the correlation drops significantly. I will speak more about why this abrupt divergence may be discounted in the conclusion.

Section 4: the Novell/Nortel/Motorola patent war

On August 3, 2011, David Drummond, Senior Vice President and Chief Legal Officer for Google wrote a blog post claiming that Microsoft was waging "a hostile, organized campaign against" Google's Android operating system by banding together with Apple, Oracle and other companies to purchase two large blocks of patents around mobile technology (Drummond 2011). He was referring to the purchase, by consortiums led by Microsoft and Apple, of a large number of patents from Novell Inc. and from Nortel Networks Corp. The Nortel purchase of more than 6000 patents, which the LA Times reported were "considered crucial to the future of mobile computing," were bought for \$4.5 billion (Olivarez-Giles 2012). In response, Google bought

Motorola Mobility for \$12.9 billion later that year (Page 2013). By 2014, Google had sold off every part of the company but the patents, which Google founder Larry Page claimed it would use to “create a level playing field” and “protect the Android ecosystem” (Page 2013).

This patent war illustrates two things. First, it shows explicitly how Google and Microsoft have increasingly come into competition, not over their current business interests, but over control of what they perceive as an area of future differential earnings. While neither firm’s core profits are directly related to mobile computing, their actions in the patent war show that mobile computing is one area that they are struggling to control (or at least to keep the other firm from controlling). Perhaps it is no coincidence that the year the consortiums signed these two patent deals was the same year that the rate of Google and Microsoft’s differential profitability began to diverge. Second, their actions show how such growth is carried out *against* other firms, in a conflictual and differential manner, and how acquisitions can be used as a form of *strategic sabotage* (Nitzan and Bichler 2009, 231-233). In the case of the Nortel patents, Microsoft sought control over a set of intellectual property rights, potentially with the intention of excluding Google from using them by suing the producers of mobile technologies that run Google’s Android system for patent infringement. The aim was not an absolute increase in Microsoft’s own profitability, but a loss for Google. In differential power terms, this is perfectly logical, because Google’s loss *is* Microsoft’s gain.

Section 5: conclusion

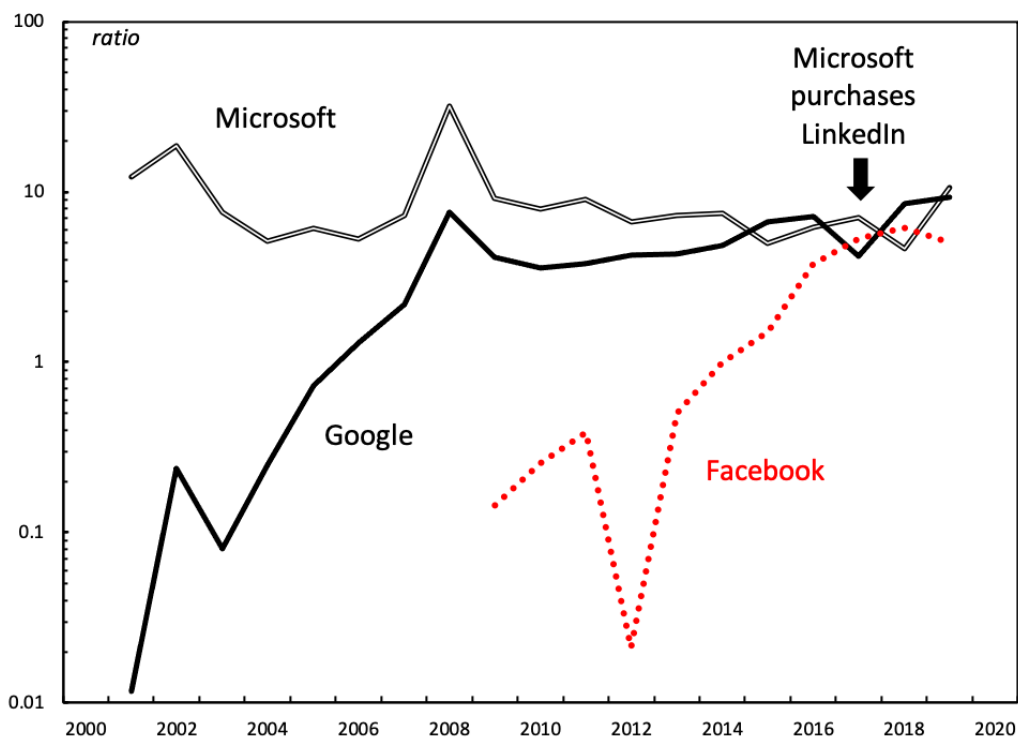
Because differential profitability is an expression of differential power, any expansion of Google’s power comes at a cost to Microsoft. Thus, it is in Microsoft’s interest to curtail that power through *strategic sabotage*. On the one hand, as the Novell/Nortel/Motorola case study shows, Google and Microsoft may both be simply seeking to expand into new areas, as they run up against the breadth envelopes of their particular profit-making businesses. In this respect, mobile computing may be just one of many sites of differential growth. On the other, such expansion is always implicitly and often explicitly made against the growth of others, as beating the average does not necessarily require higher profits: simply maintaining profits in a shrinking market can also increase differential growth (as the spikes in 2001 and 2008 in Figure 1 show, differential growth can be higher in crises than in boom times).

While some interesting patterns can be drawn from this comparison between Microsoft and Google, the data are limited. Other big players – Apple, Facebook, Amazon – play a role in the conflictual struggle for power over new technologies and thus this analysis would benefit from further comparisons like this one, as well as between groupings of different firms at different times. The benefits of such comparisons can be illustrated by a brief look at the anomaly of Microsoft’s purchase of LinkedIn, which diverges from the pattern of acquisitions we saw with Google.

We can see in Figure 8 that by 2017, Facebook was also closing in on Microsoft’s differential profitability (note the log scale). This chart reproduces the differential profit data from figure 2, with the addition of the differential profitability of Facebook. Figure 8 shows what seems to be an emerging pattern. As another large software company’s differential profitability converges on Microsoft’s, Microsoft begins to acquire competing firms in that business. The repetition of this occurrence suggests that it may be Microsoft who is matching Google’s acquisitions and green field investment as a strategy of containment. If this were true, the plateau in Google’s profitability may be a result of resistance by Microsoft than an unrelated structural envelope to the firm’s growth. It is still unclear from the data whether Google’s differential profitability flattened at the

same level as Microsoft by coincidence, because of an interrelated factor, or because, for the time being, resistance from Microsoft *is* the structural barrier to Google's profitability. Further data gathering and analysis may provide more definitive answers.

Figure 8: Differential Profit: Google, Microsoft, Facebook



NOTE: Differential profit is calculated by taking the ratio of each firms net income to the net income of the average S&P 500 firm.

Source: Income statements are from *Mergent Online*; S&P 500 net income data from Compustat through WRDS, ticker I0003.

The data also suffers from being US-centric, while the software industry has become much more global. One could widen the focus to draw in non-US computer technology companies like Tencent or Baidu, which competes with Google on search in China. Mapping the complexities of these highly inter-related and often subterranean struggles is beyond the scope of this paper. Therefore, as it stands, my arguments are of an exploratory nature. However, the close relationship between the accumulation strategies of Google and Microsoft stands out, not in spite of, but *because of* this complexity, which often appears as so much noise. In that sense, my arguments are meant as a step toward achieving greater clarity in the analysis of the differential power trajectories of these massively powerful corporations.

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