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Abstract

Over the past 20 years, markets have become increasingly concentrated and have been more intangible-intense. These market conditions have enabled a handful of very large firms, known as 'superstar firms' such as Google, Apple, Facebook, Amazon, and Microsoft (GAFAM), to exert excessive market power and generate massively abnormal profits. Although this winner-takes-all market has clearly generated extraordinary returns for shareholders, other stakeholders have growing concerns. Recent studies show that the increased market power of superstar firms has significantly reduced market competition. As a result, this lack of competition could not only harm consumers from a higher price markup, but also exacerbate income inequality due to lower income share of employees. Lastly, the rise of superstar firms can raise another geopolitical concern for governments. We argue that governments should put more effort into strengthening market competition to deal with these challenges rather than promoting political-driven national champions to compete with superstar firms.

Keywords: Market concentration; Competition; Superstar firms; Inequality

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Challenges with the rise of superstar firms

I. Introduction

Globalization has changed the basis for competition. Nowadays, most firms compete in global markets. Firms implement global strategies to sell their products, acquire raw materials and intermediate products or services, allocate resources, and optimize costs in global markets to be more efficient. Also, governments, under the premise of improving competition, have implemented reforms, including tariff reductions, industry deregulation, and antitrust prosecution. Two trends are currently attracting the attention of stakeholders (investors, governments, and consumers): 1) The increase in market concentration across industries; and 2) the move to a more intangible-intense type of economy (Autor et al., 2020; Ayyagari et al., 2019; Crouzet and Eberly, 2019; Grullon et al., 2019; Lev, 2017).

Both trends are highly observable in the U.S. economy. Over the past two decades, there has been evidence of a significant increase in market concentration with adverse effects on competition. Grullon et al. (2019) analyze whether U.S. industries are becoming more concentrated and find that the Herfindahl-Hirschman index (HHI[1]) between the late 90s and 2014 has increased in more than 75% of the industries, with an average increase in the concentration of 90%. The authors find a positive correlation between the increase in concentration and profitability, mainly driven by firms' ability to extract higher operating margins through higher markups.

The second trend is related to technological change. Technology has become one of the main factors in many industries to achieve competitive advantages. Lev (2017) finds that the association between financial variables and market values was increasingly lower starting in the 1990s. One of the reasons for this dis-association is that intangible assets such as information technologies, R&D, or brands play a significant role in firms' operations but with little presence in accounting. Corrado and Hulten (2010) show the increasing relevance of innovation-related intangibles in recent years as drivers of the growth of the U.S. economy.

This environment has been favorable for the rise of the so-called superstar firm. Superstar firms are those firms that dominate their markets in terms of sales, profits, and returns. Researchers have used alternative definitions of superstar firms. Autor et al. (2020) define superstar firms as the most productive firms in each sector, with above-average markups and below-average labor share. In line with this definition, Ayyagari et al. (2019) distinguish between star and superstar firms. They define star firms in a given year as those firms classified in the top 10% in terms of ROIC, and superstar firms as those firms able to keep these top performances over a long period of time (5 or more years). Other researchers define superstar firms based on market values (Gutierrez and Philippon, 2019; Tambe et al., 2020). Superstar is the appropriate term for Apple, Google (Alphabet), Facebook (Meta), Amazon, and Microsoft. Today, most consumers have an iPhone and use Apple mobile software, use google as their search engine on the internet, Microsoft Windows operating system to run their computers, Facebook for social media, and buy products online with

[1] HHI is commonly used to measure market concentration. It is calculated as the sum of the squares of the market shares of the companies in an industry.

Amazon. Figure 1 presents the evolution of the market to book ratio of the superstar firms compared with the market median.

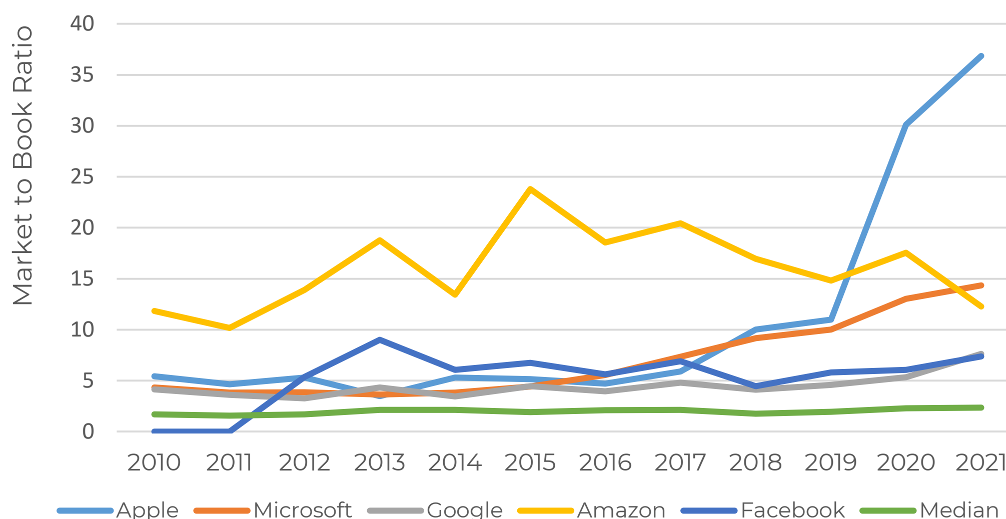

Figure 1. Market to Book ratio for U.S. Superstar Firms – 2010-2021

Source: Compustat. The market to book ratio is calculated as the market capitalization at year-end (Compustat items prcc_f*csho) divided by the book value of common equity (Compustat item ceq). The Median is calculated as the median of the market to book ratio of all listed firms in the NYSE, Amex, and NASDAQ stock markets in a given year. We have deleted firm-year observations with negative sales, total assets, and the book value of equity.

These tech superstars have combined annual revenues of $1.4 trillion, a market cap of $9.2 trillion, total assets of $1.6 trillion, and 2.17 million employees (Amazon has a workforce of 1.6 million, and the remaining four companies 560,000 employees) [2]. Figure 2 shows the dominant positions of these corporate giants in their respective markets. To reference the size of these superstars, the aggregated market capitalization of the Spanish Stock Market is $1.2 trillion[3] (7.7 times lower than the superstars' capitalization), and the Euronext, with a pan-European presence operating the regulated exchanges of Belgium, France, Ireland, Italy, the Netherlands, Norway, and Portugal with around 2,000 listed companies, has an aggregated market capitalization of $7.3 trillion [4]. As an additional reference, the last available estimate for worldwide market capitalization for listed domestic firms (year-end 2020) from the World Bank is $93.7 trillion[5].

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[2] Source: U.S. firms Accounting and market data are obtained from Compustat at end of March, 2022. Employee figures are obtained from the 10-K at year-end 2021.

[3] Source: https://www.bolsasymercados.es/esp/Estudios-Publicaciones/Estadisticas. The stock market capitalization includes SIBE , Outcry System, BME Growth, and Latibex.

[4] Source : https://www.euronext.com/en/about/media/euronext-press-releases/euronext-announces-volumes-for-april-2022. Market capitalization at end of March 2022.

[5] Source: https://data.worldbank.org/indicator/CM.MKT.LCAP.CD?end=2020&start=2000&view=chart Market value is calculated as the number of shares outstanding multiplied by price per share. The sample includes shares of listed domestic companies; shares of foreign companies which are exclusively listed on an exchange (i.e., the foreign company is not listed on any other exchange); common and preferred shares of domestic companies; and shares without voting rights.

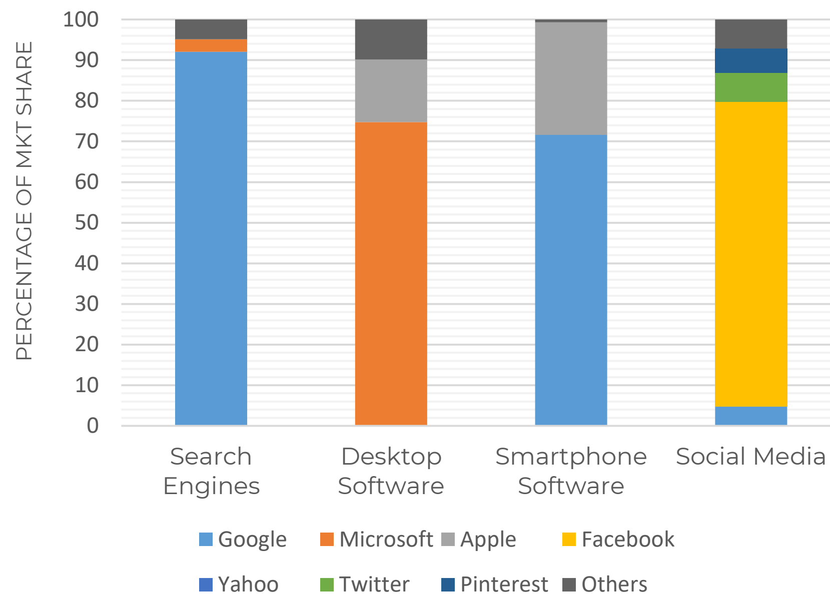

Figure 2. Worldwide Market Share of Selected Markets - %
Source: Statcounter. Market share at April 2022.

There are potential adverse effects associated with a high market concentration in a small number of firms. Bae et al. (2021) analyze three decades of data from 47 countries to study whether stock market concentration negatively affects the economy. The authors find that stock market concentration disincentivizes firms' innovation and slows economic growth. The extreme case is the superstar firms, in which one company or a few control almost the whole market. The extreme market concentration and the growth of revenues at a much higher level than their workforce generate an increase in inequality. In addition, firms with market power search to maintain it in the long term. The interaction between economic and political power creates an additional risk in which superstar firms modify the rules of the game to keep performing as monopolies. Governments need to implement new mechanisms and increase supervision to generate higher competition in those markets.

II. The effects of the superstar firms

a. Superstar firms and market concentration

Superstar firms are an extreme phenomenon of market concentration, dominating their markets almost as monopolies. Market dominance is not new, and there have been previous concentration waves in the economy. The main concern of market concentration is that those firms exercise their bargaining power with customers, suppliers, and employees to obtain extraordinary profits. An additional effect of high concentration is the reduction of investments in innovation. In industries strongly dominated by a leader, laggard firms have low incentives to invest in innovation due to the higher risk of failure (Aghion et al., 2005). Those giant corporates disproportionally dominate the stock market and make it difficult for young start-ups to raise funds. This situation stops the ideal

Investment funds, unit trusts, and companies whose only business goal is to hold shares of other listed companies are excluded.

competition cycle, in which firms search for competitive advantages through innovation and generate sustainable economic growth.

This massive market concentration, which is almost a monopoly in each market segment, has generated extraordinary returns for shareholders of the winners rather than enhancing the whole economy. Blonigen and Pierce (2016) analyze whether the net effect of M&A activity generates a welfare gain or loss. In M&A transactions, there is a tradeoff between improvement in efficiencies that generate a welfare gain and market concentration, which produces a welfare loss. They find that M&A manufacturing transactions in the U.S. increase markups but find little evidence of efficiency improvements. Grullon et al. (2019) study whether U.S. industries are becoming more concentrated. They find that higher profits in concentrated markets are attributable to higher markups instead of efficiency improvements. Gutierrez and Philippon (2019) analyze the evolution of the superstar firms in the U.S. economy over the last 60 years. They find that superstar firms have been less productive since 2000 and argue that decreased competition and rising barriers have cut investments and innovation.

Overall, the evidence shows that concentration has increased in the last three decades with an increase in markups, resulting in a reduction in investment in innovation. The superstar effect is widening this gap.

b. Superstar firms and the labor market

Extreme market concentration also affects labor markets. As firms become larger, they increase their bargaining power and can push wages down. Employees have fewer options to move onto other companies when market concentration increases. Powerful firms can also impose restrictions on free labor movements, such as non-compete agreements in which employees have to wait for a specific period before moving to another firm considered a competitor. In recent decades, it is well documented that there has been a fall in the labor share of GDP in many countries. This labor share reduction has interacted with the emergence of superstar firms. Barkai (2020) analyzes the decline of labor and capital shares in the U.S. market. He finds that, since the 1980s, firms have decreased both labor and capital costs and increased pure profits, and this decline is due to market concentration. The decline in labor share and the increase in pure profits, increase income inequality in society, and superstar firms are exacerbating this situation. An alternative explanation of the reduction of labor share is that superstar firms achieve their size through efficiencies, technological improvements, and innovation. The rise of the dominance of superstar firms generates a redistribution of income from employees to shareholders due to these efficiencies (Autor et al., 2020).

c. Superstar firms and political power

The revenues of these superstar firms can rival governments. With the emergence of superstar firms, a massive concentration of economic and political power is in a few people's hands. Zingales (2017) argues that these large firms have enough power to affect the rules of the game, and the interaction of economic and political power is a threat to the well functioning of the free market economy. The interactions between economic and political power are not so harmful when markets are fragmented and competitive, while it is a concern with a massive concentration of market power in a few firms. Superstars have strong incentives to exert their power to obtain long-term abnormal profits by influencing the rules of the game through the political system, suppressing new businesses, and limiting their access to funding to perpetuate their advantages (Braun and Raddatz, 2008; Rajan and Zingales, 2003). Firms can find several ways to exercise their political power.

Companies lobby government officials to obtain benefits such as more favorable regulations to allow them to continue exercising their market power or receive government contracts. Lambert (2019) analyzes the relationship between lobbying and regulatory enforcement actions in the U.S. financial sector. He finds that banks obtain a relational power with the regulator through lobbying and benefit from a preferential treatment: Lobbying reduces the probability of being subject to severe enforcement regulatory actions by 44.7%.

d. Summary

Superstar firms have achieved a dominant market position obtaining competitive advantages through innovation and efficiency improvements. For example, Apple has innovated and improved the iPhone's functions and launched the iPad, Microsoft has added new functionalities and made the Office software more friendly, while Facebook has improved users' experience. Once they achieve almost monopolistic positions in their markets, they are incentivized to exercise their monopolistic power with customers, suppliers, and employees to maintain their extraordinary profits. The adverse effects of such a high market concentration are decreased investment in innovation in their industries and lower economic growth. These corporate giants have incentives to employ their political power to perpetuate their dominance at a high cost to society. It is hard for start-ups to emerge, raise funds, and compete with the leaders in these unleveled industries. The concentration of power in a few firms has produced a rise in income inequality, with a high return for shareholders at the cost of a decrease in labor share.

III. Challenges with the rise of superstar firms

a. Risk of extreme concentration

Competition pressure and the threat from new entrants lead firms to set prices with low markups, improving welfare. In markets with no competition, profit-maximization firms with high market power set prices to obtain extraordinary profits. In addition, market power increases firms' bargaining power with employees, reducing the labor share, dampening capital investments, discouraging laggard firms from investing in innovation, and making start-up fundraising difficult. De Loecker et al. (2020) study the evolution of market power in the U.S. economy and its implications. Consistent with the superstar firm evidence, they find that the upper-tail U.S. listed firms experienced an increase in both markups and profitability between 1980 and 2016, while most firms in the market did not raise markups. They also find evidence that profits and market values of upper-tail firms have gone up with markups, providing support for the argument that market power is the cause of the reallocation of the economic activity toward larger firms with low labor shares, resulting in a net negative welfare effect.

Under this framework of increased market concentration, there is an intense debate about protecting local businesses by creating national champions. In order to facilitate the emergence of national champions to compete with superstar firms, governments may use state aid or subsidies, give them preference in government contract biddings, or create artificial barriers, making it difficult for international companies to enter the local markets. These national champions can even be state-owned companies. The final goal of creating national champions is to promote innovation and economic growth, but it can generate adverse effects related to lack of competition. Examples of these national champions are the Chinese companies Huawei, the top global player in telecom equipment, and CRRC, the

largest rolling stock manufacturer worldwide. In Europe, there is a debate on whether state policy should be more flexible to allow the creation of European champions. So far, the antitrust regulation in the E.U. has been strict. One example of this, is the opposition to Siemens' proposed acquisition of Alstom. The merger would have created a European champion in the railway industry, but the E.C. supported the idea that this merger would harm competition in the signalling and high-speed markets, as both companies were dominant players in these segments.

Companies with market power use their bargaining power to extract rents by increasing markups and reducing labor share. The increase in markups severely affects the poor, who overpay for the goods without benefitting from these extra profits and capital gains. The increase in market concentration is generating greater inequality. Ennis et al. (2019) analyze whether market power contributes to increasing wealth inequality using a sample of eight OECD countries by comparing the current levels of market power with an alternative scenario of competition enhanced. They find that market power can contribute significantly to inequality by increasing the wealth of the 10% richest group by an average between 12% and 21% and reducing the income of the 20% poorest group by 11% or more.

The lack of competition in markets where the winner-takes-all exacerbates income inequality due to extraordinary capital gains to shareholders at the cost of employees and the concentration of those capital gains in the wealthiest compared to the poor groups.

b. Risk of an increase in political power

The main concern associated with superstar firms is monopolistic power. Supersize firms can generate artificial barriers to entry, limiting competition to maintain extraordinary profits. Zingales (2017) highlights that three factors make the market power problem worse: 1) the dominant position of superstar firms is larger, increasing their bargaining power with consumers; 2) regulation is too complex, which allows powerful firms to shape the rules of the game to their benefit; and 3) the anti-big business Democrat party's ideology has floundered so that you are no longer castigated being close to supersize firms. In economic terms, political power is affected by firm size and market concentration. Corporate giants are the main driver of the cities where they are located and are one of the central employers in the area. These firms are in an optimal position to receive tax subsidies and other benefits and are able to pressure governments in obtaining their corporate goals. Superstar firms are extreme cases of market concentration and firm size.

One example of the monopolistic power exerted by superstar firms is described in the European Commission ("E.C.") antitrust filing against Google. In 2016, its search engine's share in almost all EAA markets was above 90%. The E.C. concluded that Google abused its dominant position by providing an anti-competitive advantage over competing services to another Google product, the Google comparison shopping service. The Commission imposed a record fine of $2.7 billion. In May 2018, the La Quadrature du Net initiated a collective legal action against Amazon, arguing that the targeted ad system uses personal information without free consent. In July 2021, the Luxembourg National Commission for Data Protection ("CNPD") imposed a fine of $887 million on Amazon for breaching the E.U. General Data Protection Regulation ("GDPR"). Amazon disclosed the information in its quarterly financial statement report ("10-Q")[6].

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[6] See https://www.sec.gov/ix?doc=/Archives/edgar/data/0001018724/000101872421000020/amzn-20210630.htm

IV. Conclusion

During the last twenty years, most industries have experienced higher concentration. In this environment, superstar firms have emerged in industries where the winners take all (or most), resulting in a few companies with an extremely high market share, high markups, and high profitability. Superstar firms have developed their competitive advantages levered in technological improvement and innovation, augmenting sales at a much higher rate in relation to workforce increase. This effect has generated wealth creation for superstars' shareholders at the cost of the labor force, increasing inequality. This unequal structure in which superstar firms are far from the laggard firms will continue penalizing labor share and generating inequality. Regulators need to look for tools to improve competition within these industries, such as facilitating access to funding for start-ups and reducing regulatory and artificial barriers to competition. Otherwise, inequality will continue to increase.

In order to encourage market competition, governments need to break down barriers artificially created by firms with such economic and political power. Powerful firms can seek to maintain their dominant position through acquisitions. They can also wedge on market dominance to extend their power to other markets. The antitrust objective is the protection of competition to benefit consumers. Antitrust enforcement must be strict about disincentivizing powerful firms from searching for market power. A necessary condition for antitrust bodies to properly monitor market power is to have access to transparent disclosure of corporate activities.

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