DISCUSSION NOTE

MONETARY POLICY DIVISION

N°9

Market Power Evolution: Evidence and Potential Implications

Gent Bajraj – Agustín Díaz – Marco Rojas

banco central Chile

PREFACE

The Discussion Notes (DN) seek to examine relevant topics for monetary policy in Chile and the world. Their goal is to present a discussion on the current state of the literature, highlighting the most important implications for the design of monetary policy. For that purpose, the Notes describe the different approaches set forth by frontier research in economics, highlighting the consensus as well as ongoing debates. The DN are prepared by economists from the Monetary Policy Division and do not necessarily reflect the official position of the Board of the Central Bank of Chile.

The ninth issue of the DN addresses the evolution of market power worldwide and its potential implications. Recently, concerns have been raised about a possible increase in the market power of firms in various economies around the world, a phenomenon that could have multiple economic consequences, including effects on efficiency, resource allocation, productivity, the functioning of markets for production factors, and the effectiveness of monetary policy. This document contributes to the debate through a comprehensive and critical review of recent literature on the evolution of market power in different economies. It highlights the heterogeneity measured between countries and sectors. Additionally, it thoroughly analyzes the potential macroeconomic implications derived from the increase in market power, providing clarity on its possible economic effects.

This Discussion Note was prepared by Gent Bajraj, Agustín Díaz, and Marco Rojas. Special thanks are extended to Elías Albagli, Sofía Bauducco, Guillermo Carlomagno, Mariana García, Mario Giarda, Enrique Orellana, and Juan Marcos Wlasiuk for their contributions, comments, and suggestions. Comments from the Board and the staff of the Monetary Policy Division of the Central Bank of Chile during various internal presentations are also appreciated.

CONTENTS

1. INTRODUCTION

Having competitive markets is crucial for enhancing economic efficiency and consumer welfare. Competition in markets ensures that resources are allocated efficiently and prices remain close to their production costs, thus benefiting both end consumers and the economy as a whole. In this sense, a company's market power, i.e., its ability to affect the selling prices of its products, can be a determining factor in whether these benefits are realized.

This discussion note reviews the international evidence on the evolution of market power in various economies. It then examines its potential medium- and long-term effects in several dimensions, including efficiency, productivity, factor markets and the transmission of monetary policy. The analysis reviews recent studies that are considered relevant, highlighting the methodologies used and the main findings, with a special focus on their macroeconomic implications.

The current state of the literature makes it difficult to draw a definitive and comprehensive conclusion regarding the evolution of market power in the world. There is recent evidence suggesting a strong increase in market power in some countries, such as the United States. However, there are also papers that dispute the magnitude of this increase and, therefore, its possible implications. There is also heterogeneity across countries and sectors. While some advanced economies report significant increases in the firms' market power, emerging economies show more modest or even null changes. When comparing sectors across economies, the pharmaceutical, financial and health sectors appear to have strongly increased their market power, while others such as mining and manufacturing have remained constant or have even fallen.

The rise in market power has macroeconomic implications that span multiple dimensions, some of which we emphasize here. In terms of economic efficiency, high markups act as a lump-sum tax that artificially increases the prices of goods, thus undermining consumer welfare and generating distortions in the allocation of resources. Likewise, greater market power alters the firms' demand for inputs and factors of production. A firm with greater market power increases its profits by charging higher prices and reducing its output, resulting in a lower demand for labor and capital.

Innovation and productivity are also affected, ambiguously in this case. While lower competition may reduce incentives to innovate, sectors with low appropriability may benefit from economies of scale and network effects, thus boosting productivity in certain contexts.

Finally, greater market power has an impact on the transmission channels of monetary policy, generating a more gradual but more persistent response of inflation and output to monetary policy.

In summary, this Discussion Note provides a comprehensive overview of the evolution of market power and its implications. The rest of the paper is organized as follows. Section 2 begins with a conceptual discussion of the definition of market power and the different indicators that the literature has developed to measure it. Section 3 reviews the international evidence on the evolution of market power. Most of the literature focuses on the United States, so our review starts there and then examines the evidence from other markets. Section 4 discusses the macroeconomic implications of greater market power, and Section 5 focuses on the implications for the effectiveness of monetary policy. Section 6 concludes.

2. MARKET POWER AND ITS INDICATORS

Market power is defined as "a firm having the ability to influence the price at which it sells its product(s)" (Syverson, 2019). There are several metrics proposed in the literature to measure this ability, which are reviewed and discussed in this section.

A widely used metric is markup, defined as the ratio between prices (P) and marginal costs (MC), that is, markup = P/MC. The higher the markup, the greater the market power. One challenge in measuring it is the need to have access to data on prices and marginal costs, which are often neither publicly available nor easy to calculate.

Another common set of measures are concentration indexes, which quantify the proportion of the market controlled by the largest firms. Among these, the Herfindahl-Hirschmann index (HHI) is the best known. It is calculated by summing across the squares of the market shares of participating firms ($\sum_i s_i^2$, where s_i represents the market share of firm i).

Its main advantage is that it is easy to calculate because only information on the firms' sales is needed. However, it has significant disadvantages. One of the main ones is that it depends on a precise market definition, which is often the subject of debate, in both the industry and its geography. Changes in concentration ratios under broader market definitions may conceal variations in more specific segments[1].

Moreover, the link between concentration ratios and market power is not straightforward. Some models (e.g., Cournot's oligopoly) suggest that there is a positive correlation between concentration and market power, while others (see references cited in Syverson, 2019) imply the opposite. The latter is the case when greater substitutability among competitors implies a more elastic residual demand, and thus lower market power. In this context, more productive firms can lower their prices by capturing a larger share of the market, thus increasing concentration. This

[1] To illustrate this with an example: consider a scenario in which there are ten firms, each operating in one location with no competition. If they were to merge into two firms and both compete in the ten local markets, the concentration measure would show a significant increase nationwide, but a decrease at the local level.

implies a comparative statics result in which greater substitutability reduces market power and increases concentration at the same time.

Interpreting these measures also requires caution, as their implications depend largely on the causes underlying their movements. Although increases in these metrics may suggest a decrease in competition, they could also reflect a change in its dynamics, which does not necessarily mean less competition. Studies such as those by van Reenen (2018) and Covarrubias *et al.* (2020) examine several causes that could explain these phenomena.

Possible explanations attributing the change in market power to diminished competition include the following factors:

- **Increased regulation**, which may impose additional entry barriers to potential new competitors.

- **Reduced enforcement of antitrust laws**, thus allowing the dominant companies to strengthen their positions without being faced with significant legal challenges.

In this scenario, an increase in company profits is observed along with a reduction in innovation.

Among the reasons linking the change in market power with a modification of the dynamics of competition, the following factors are identified:

- **An increase in the elasticity of substitution**, making it easier for consumers to switch between products and services.

- **Economies of scale and network effects**, which favor larger firms, thus making it more difficult for new firms to compete effectively.

- **Lower cost of information and communication technology**, allowing large companies to expand more efficiently.

- **Higher fixed costs**, which may discourage the entry of new firms due to the need for large initial investments. This phenomenon has intensified with the growing importance of intangible assets (De Ridder, 2024).

In this scenario, the more productive firms increase their market share without it resulting in a loss of market competition.

Finally, market power has traditionally been associated with firms' sales. However, it can also be reflected in the demand for inputs or productive factors. Some research has focused on studying the firm's market power when hiring labor, due to the

particular importance of this input for both production and workers' welfare. An indicator designed to capture this power is the markdown, which is defined as the ratio between the marginal labor productivity and the wage received by workers.[2] The rest of the document focuses on markups, concentration indexes and, to a lesser extent, markdowns.

[2] For a recent discussion of the connection between markups and markdowns, see Syverson (2024).

3. MARKET POWER EVOLUTION

We now describe the state of the literature that has analyzed the evolution of market power around the world. This literature has gained increasing significance in the past ten years, mainly due to the emergence of new methodologies and data sources, although the topic has always attracted attention. While evidence has emerged for several economies, most studies focus on the United States. In this section we first discuss the evidence for the US with its various dimensions and nuances, to then look at studies from around the world. We show that drawing general conclusions for the evolution of market power over time is a difficult task, a fact that has also been addressed in the literature (Miller, 2024).

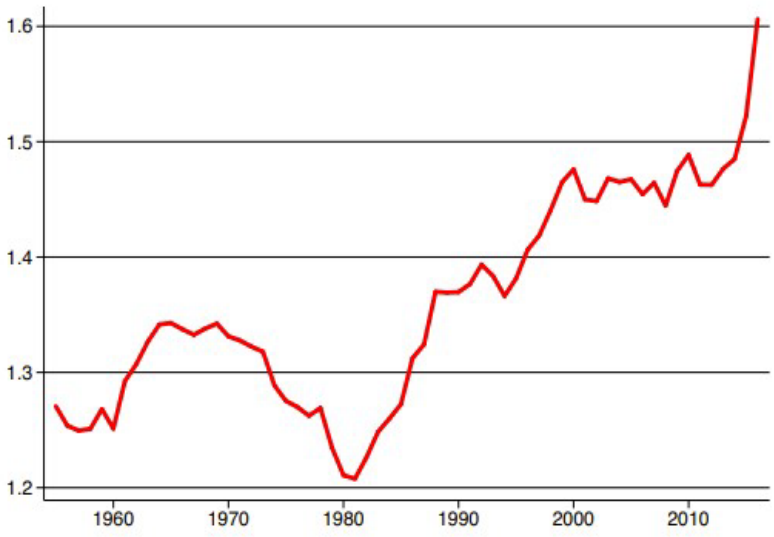
3.1 Market Power Evolution in the United States

One of the seminal works in this literature is De Loecker *et al.* (2020), who study the evolution of markups in the United States between 1955 and 2014. They report a sustained increase, going from 1.25 at the beginning of the sample to 1.60 at the end (Figure 1). That is, initially prices were 25% above their marginal costs and ended 60% above them. This paper uses data from publicly traded companies, using a methodology that exploits the intensity of the purchase of variable inputs over sales.

By using alternative methodologies, other studies also report increases in markups, albeit of different magnitudes and with certain nuances. First, Edmond *et al.* (2023) use the same methodology, but weight each firm's markups by its costs rather than by its sales. This approach finds a more modest increase, from 1.10 to 1.25 between 1980 and 2014. The difference is because weighting by sales includes a term that reflects the misallocation of resources within the economy and not markups per se.

Barkai (2020) estimates markups using company profits. He finds an increase from 1.02 to 1.19 between 1984 and 2014. In turn, Hall (2018) uses a cost minimization methodology, finding a rise from 1.12 in 1988 to 1.38 in 2015. Although in the latter two studies the magnitude of the increase is smaller, both document a sharp spike in the decade spanning roughly from 2006 to 2015.

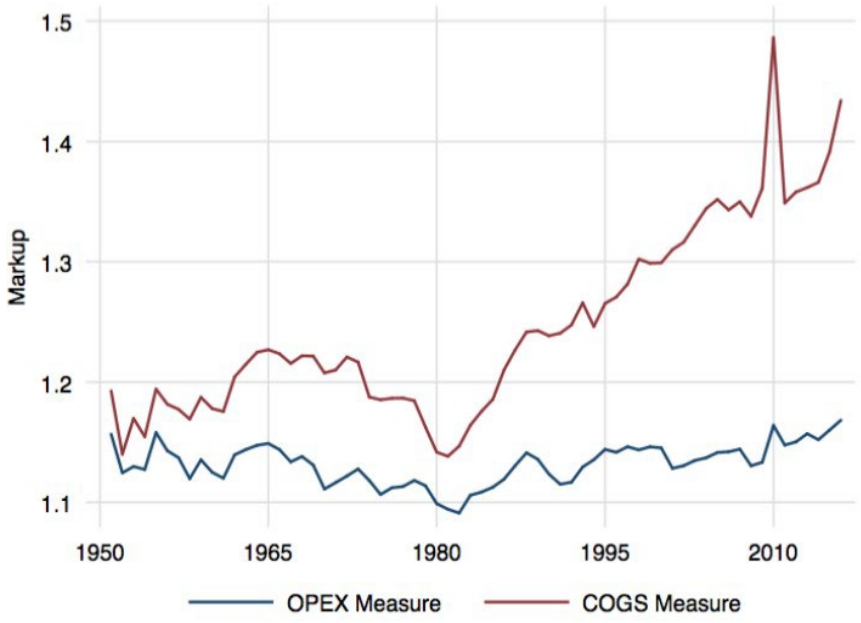
FIGURE 1 AGGREGATE MARKUPS – UNITED STATES (1955—2014)



Source: Figure 1 in De Loecker *et al.* (2020). It uses variable product-input elasticity that changes over time and variable input participation over sales.

In any case, part of the literature questions these increases. Traina (2018), using the same data as De Loecker *et al.* (2020) and applying a similar methodology, includes administration and sales costs along with variable input costs to compute markups. Figure 2 shows the markup estimates when including and excluding administration and sales costs. As can be seen, the increase reported by De Loecker *et al.* (2020) disappears when these additional costs are factored in.

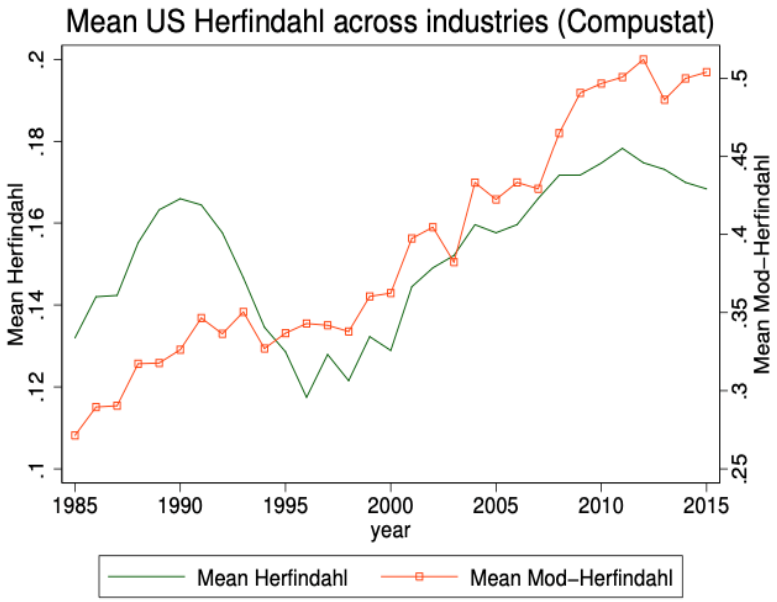
FIGURE 2 AGGREGATE MARKUPS – UNITED STATES (ALTERNATIVE METHODOLOGIES)



Source: Figure 2 in Traina (2018). The red line uses the cost of sold goods while the blue line includes, in addition, administration & sales expenses.

During this period, increases are also reported in concentration levels in the United States. For example, Gutiérrez and Phillippon (2017a) compute HHI, using the same data as De Loecker *et al.* (2020), and find that it almost doubles between 1985 and 2015 (Figure 3). Similarly, Smith and Ocampo (2025) report strong increases in concentration in the retail market between 1992 and 2012, both nationally and locally, the latter being a better reflection of the level of competition as consumers shop locally. In particular, the local HHI increases in 72% of the study areas, accounting for two-thirds of sales in 2012.

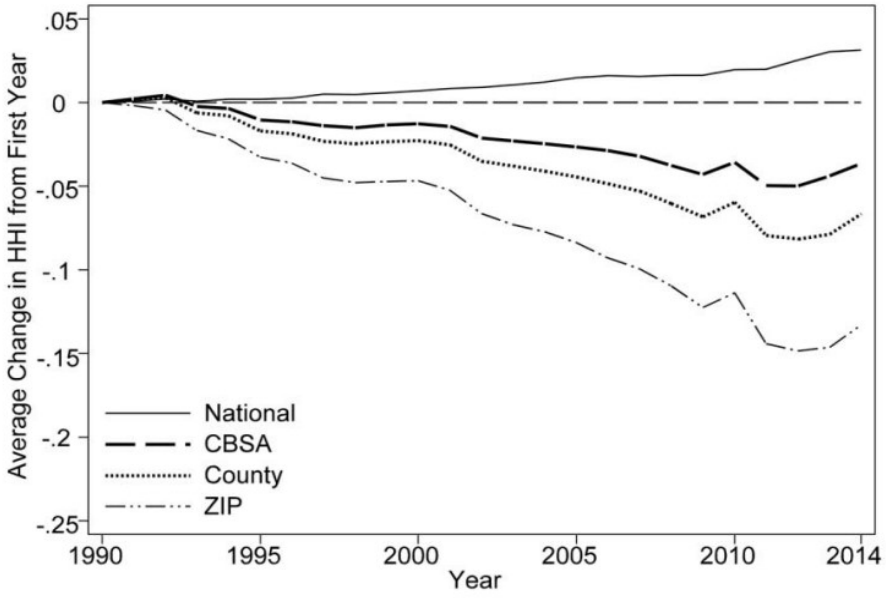
FIGURE 3 THE HERFINDAHL INDEX – UNITED STATES (1985–2015)



Source: Figure 1 in Gutiérrez and Phillippon (2017a). The series show the mean and the median of the concentration index.

This trend is not uniform, however. Rossi-Hansberg *et al.* (2021) present a different perspective, documenting a drop in local concentration despite its increase at the national level. The period of analysis is similar, but the data source is the National Establishment Time Series (NETS) survey. This considers sectors other than retail and includes non-listed firms. The authors find that at the national level, concentration barely increased by 3% between 1990 and 2014, and that local concentration (measured at county level) fell by 5% over the same period (Figure 4). This apparent contradiction is partly explained by the expansion of large firms into new markets. While this increases their market share at the national level, it also reduces local concentration. These dynamics illustrate how the analysis of concentration depends crucially on the geographic level considered.

FIGURE 4 VARIATIONS OF THE HERFINDAHL INDEX (DIFFERENT GEOGRAPHICAL AGGREGATIONS)



Source: Figure 1 in Rossi-Hansberg *et al.* (2021). The series show variations in the concentration index, where the shares vary according to geography.

Thus, in the case of the United States, most studies coincide in finding significant increases in market power over the last few decades, with certain exceptions already mentioned. Although concentration is not synonymous with market power, it has also increased at the national level, albeit with important local nuances.

3.2 Evolution of Market Power in Other Countries and Across Industries

There is also evidence of the behavior of markups around the world. In contrast to the United States, no such evident and steep increase is found, with certain countries showing a slight increase in market power, while others show a rather flat dynamic.

Villegas-Sánchez (2019) studies 27 advanced and emerging economies, finding that, on average, markups increased by 6% between the years 2000 and 2015, although concentration remained constant. Within this increase, there is heterogeneity between advanced economies (United States and Western Europe) and emerging economies (Eastern Europe). In the former, the increase is around 8%, while in the latter it is only 1% in 15 years.

In the same vein, Calligaris *et al.* (2018) analyze 26 OECD member countries and find that markups grew between 2001 and 2014. This is mainly attributed to firms already in the upper tail of the markup distribution, compounded by the sustained growth of the digital sector.

By contrast, Bighelli *et al.* (2023) analyze 15 countries in Europe over a similar period (1999-2017) and find that while markups remained constant, concentration increased. This is explained by the fact that the most efficient firms managed to expand, maintaining the level of competition and, in turn, increasing productivity thanks to a better use of resources. In a similar direction, Ciapanna *et al.* (2024) and Cavalleri *et al.* (2019) also study economies in Europe and find that markups remained virtually constant, despite sectoral heterogeneity.

A number of these papers discuss the contrast with respect to the United States, where markups grew strongly according to several studies. One explanation lies in the representativeness of the sample. While these papers use samples from all the firms in the economy, the work by De Loecker *et al.* (2020) and related papers use data from firms that are traded on the stock exchange and are therefore big.

For Chile, the literature is scarce and limited to only very preliminary evidence on the subject. Huneeus and Martner (2023) use microdata from the country's Internal Revenue Service and find that in 2005 the markups were already high compared to those estimated for other economies. An average value of 1.95 was estimated for that year, which rose to 2.20 in 2020.

Finally, the literature has also reported differences in the evolution of markups among different economic sectors. Pharmaceutical, Financial, Healthcare, and those sectors intensive in intangibles increased their markups the most, both in the United States and in Europe (Villegas-Sánchez 2019; Calligaris *et al.*, 2018; De Loecker *et al.*, 2020). Evidence for the retail sector is mixed, even within the same country. De Loecker *et al.* (2020) find increases; in contrast, Hall (2018) reports declines, but finds increases in concentration. Other sectors such as manufacturing and information technology in the United States, mining in Europe and real estate in both regions had slight increases. Other sectors, such as wholesale in both regions, manufacturing and information technology in Europe and mining in the United States, report declines in markups.

4. MACROECONOMIC IMPLICATIONS

The evolution of market power not only has direct implications for the competitive structure of markets, but also has effects on key aspects such as economic efficiency, the dynamics of factor markets, innovation and productivity. This section examines how these transformations in market power can reshape the macroeconomy.

4.1 Efficiency

Markups generate distortions in the economy, which move the market equilibrium away from the efficient equilibrium. This phenomenon operates through three channels. The first is the direct impact of markups, which act as a lump-sum tax on the entire economy, derived from the market power exercised by firms. In this case, it is the level of markups that generates efficiency losses. Edmond *et al.* (2023) study this effect in a model where, by removing markups, capital accumulation increases, generating a cumulative effect on output over the years. Using data from the US Census of Manufacturers between 1972 and 2012, the authors find that GDP would be 40% higher in the absence of market power as measured through markups.

Similarly, Behrens *et al.* (2020) study France with 2008 data, and the United Kingdom with 2005 data, in a model that includes monopolistic competition, endogenous entry of firms, and markups. Transitioning from the observed equilibrium to an efficient one generates welfare gains of about 6%. The main mechanisms through which this happens are a higher level of reallocation in the labor market, and a greater entry of firms. Although the results from both papers are sensitive to the characteristics of the models and their parameterizations, in both cases the gains from moving to an efficient equilibrium are considerable.

The second channel is related to markup dispersion, which generates inefficiencies in the allocation of resources, thus leading to welfare losses. In a purely theoretical aspect, Epifani and Gancia (2011) construct an open economy model in which, although there are gains when international trade is liberalized, the entry of new foreign competitors with different level of markups compared to domestic firms may result in reduced welfare. This idea dates at least as far back as Lerner (1934), who

stresses that, if all firms have the same markup, relative prices also account for relative costs, which results in optimal allocation. However, when there is markup dispersion, prices are less informative, and inefficiencies are generated.

The empirical impacts of this second channel are evaluated in several studies. Edmond *et al.* (2023) find that markup dispersion would have generated declines in GDP of 2% to 6% between 1972 and 2012. Also, for the United States, Baqaee and Farhi (2020) find that, by removing this distortion, productivity would have accumulated an increase of 15% between 1997 and 2015. Finally, using data on transactions between firms in Chile, Burstein *et al.* (2024) report that there is considerable dispersion in the prices charged for the same product (as defined by barcode). The welfare effect is significant and fluctuates between 2% and 7% depending on the calibration.

The third channel refers to the temporal variation of markups, which can generate welfare losses over time. Temporarily high markups discourage firms from creating new products and varieties, which generates a suboptimal quantity in the market, given consumer preferences. Bilbiie *et al.* (2019) estimate that the effect on consumption is between 2% and 5%.

4.2 The Labor Market

Changes in the structure of the markets where firms sell their products can also alter the way in which they demand intermediate inputs and factors of production, including labor. On the one hand, De Loecker *et al.* (2020) argue that firms with greater market power are more capable of passing on cost shocks to prices, because they face a more inelastic demand. This leads to a smaller adjustment in their demand for intermediate inputs. On the other hand, in the case of a secular increase in market power, firms produce less and therefore demand less inputs, including labor.

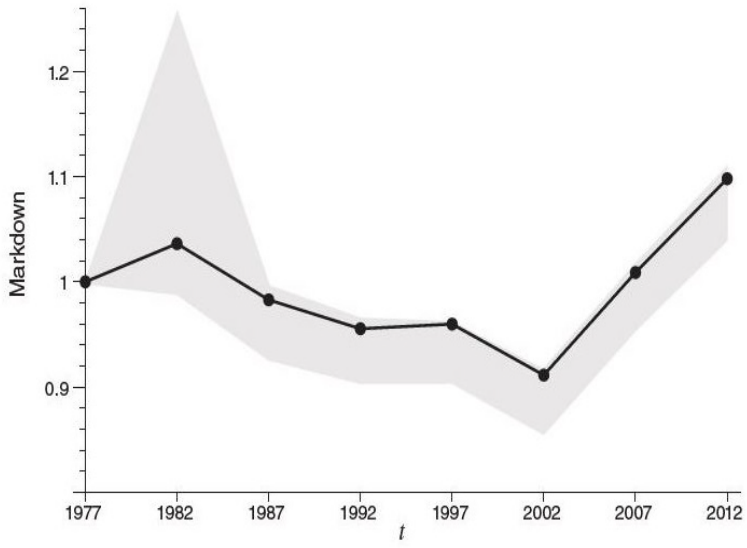
Aside from the amount of labor hired by firms, market power also has an impact on wages. The proportion of income allocated to wages by a firm is inversely proportional to its markup. This implies that an increase in markup resulting from changes in the market structure leads to lower compensation of workers measured as wages over sales.

In addition to the market power that firms have when selling their products, firms may have market power when hiring labor, which is known as monopsonistic power in the labor market. The literature has examined the evolution of this power in the US labor market, yielding mixed results. Rossi-Hansberg *et al.* (2021) report that, while firm concentration has increased at the national level, it has decreased at the local level.

Since labor is a non-tradable input, the relevant market is the local one and therefore the monopsonistic power of firms should have fallen. Accordingly, Berger *et al*. (2022) find that employer concentration at the local level has fallen over the last 35 years and that most markets are more competitive than they were in the 1970s. However, the welfare cost of firms' market power for workers is considerable; in their model they estimate it to be in the order of 4% to 9% of their total consumption.

Yeh *et al*. (2022) estimate that the average markdown in the US economy is 1.35, which implies that workers take only 65 cents of each marginal dollar produced. Figure 5 shows the historical variation of aggregate markdown in the US, which fell between 1970 and the early 2000s, but has risen sharply since. Consistent with the fact that firms in the US have considerable market power, Webber (2015) finds that the average labor supply elasticity faced by firms in the US economy is 1.08, which is far from the perfectly elastic supply predicted by a model with perfect competition.

FIGURE 5 EVOLUTION OF AGGREATE MARKDOWN IN THE UNITED STATES



Source: Figure 4 in Yeh *et al*. (2022). The figure shows the variation of aggregate markdown for the United States between 1977 and 2012.

Another area of particular interest is the evaluation of the effects that changes in the minimum wage have in labor markets where firms with monopsonistic power operate. Here we highlight the study by Azar *et al*. (2024), who find that, in highly concentrated markets in the United States, increases in the minimum wage lead to

an increase in the level of employment, which is consistent with what the monopsony theory predicts.

4.3 Investment

Another market of interest on which market power has an impact is the capital market. When a firm's market power grows, it generally increases its profits, charging a higher price and reducing production. The latter results in lower demand for capital and, therefore, lower investment.

Some studies attribute, at least partially, the reduction of physical capital to the increase in market power. Gutiérrez and Philippon (2017b) document that, in industries with higher concentration, firms invest less than their peers in less concentrated industries. Villegas-Sánchez (2019), on the other hand, estimates that, if markups had remained constant between 2000 and 2019, the capital stock of an average advanced economy would have been 3% higher than it was at the end of that period. However, an alternative explanation within the literature is that investment has not fallen and that this apparent fall is due to the omission of intangible capital – intellectual property; human capital; relationships; reputation – as factors of production (Crouzet and Eberly, 2019; De Ridder, 2024).

4.4 Innovation and Productivity

The dynamics of innovation and its effects on productivity are linked to changes in investment. In this context, market power has an ambiguous effect on the firms' decision to innovate. On the one hand, firms need market power and profits to invest in innovative processes and products. On the other hand, increased competition encourages them to innovate to outperform their competitors.

The empirical literature has found different relationships between market power and innovation. From it, we can conclude that this relationship is non-linear and depends on industry characteristics, technological opportunities and the degree of appropriability of innovation (Shapiro, 2011). On the one hand, Aghion *et al.* (2005) and Villegas-Sánchez (2019) find an inverted-U relationship between competition and innovation, indicating that both very low and very high levels of competition can be detrimental to innovation. On the other hand, Aghion *et al.* (2009) report a positive correlation between patents of incumbent firms and the entry of new firms in technologically advanced industries, which does not occur in lagging industries. In turn, Lee (2005) finds a negative relationship between market power and innovation in industries with low appropriability, i.e., where firms find it difficult to protect and reap the economic benefits of their innovations and knowledge. For Chile, Cusolito *et al.* (2023) find that, in the face of increased competition from China, only 10% of the most productive firms did not reduce their innovation measures.

That said, greater market power may imply higher or lower productivity, depending on its causes. Covarrubias *et al.* (2020) develop a model that explores the impacts of increases in market power on productivity in different scenarios. According to their findings, if the increase in market power is the result of a higher elasticity of substitution (i.e., consumers become more sensitive to prices and quality) or technological changes involving increasing returns to scale, productivity should increase. Conversely, if the increase in market power reflects higher barriers to entry, lower productivity should be observed, as these barriers limit the efficiency of resource allocation.

5. IMPLICATIONS ON MONETARY POLICY EFFECTIVENESS

Changes in market power can alter the mechanisms through which monetary policy influences the economy. In particular, market power affects price dynamics, the response of firms to monetary shocks and the interaction between different economic agents. This section analyzes how changes in market power affect the monetary policy transmission and effectiveness through five channels: i) the pass-through of marginal costs to prices, ii) the strategic interaction between firms when setting prices, iii) the credit channel of monetary policy, iv) the supply channel of monetary policy, and v) the pass-through of monetary policy to wages.

5.1 Transmission of Marginal Costs to Prices

Monetary policy determines the firms' borrowing costs and, in turn, their marginal production cost, thus affecting their production and investment decisions. To facilitate the discussion on how changes in the firms' market power affect the pass-through of monetary policy, we build on the discussion by Aquilante *et al.* (2019), who use the classical New-Keynesian model developed by Galí (2015). In this model, firms operate under monopolistic competition, producing different varieties that are demanded by households. These firms maximize their profits by setting a price $P_t = \mu \cdot \text{MC}_t$, where μ denotes the markup and MC_t is the marginal cost. The markup is constant and equal to $\mu = \epsilon/(1-\epsilon)$, where ϵ is the households' elasticity of substitution between the multiple product varieties.

An increase in market power results in an increase in markup, which implies a decrease in the elasticity of substitution ϵ. This also affects the slope of the Phillips curve, which becomes steeper as markup increases. As a consequence, a secular increase in market power leads to an increase in the pass-through of the output gap to inflation.

In this model, a central bank seeking to maximize household welfare should set $\pi_t = -(1/\epsilon) \cdot x_t$, where π_t represents inflation and x_t is the output gap. This means that,

in a context of greater market power, the monetary authority allows, in the face of a shock, larger fluctuations in inflation with respect to the gap, compared to scenarios of lower market power. The intuition behind this result lies in the fact that greater market power reduces the sacrifice ratio, allowing inflation to decline at a lower cost in output.

From an empirical standpoint, Chiavari *et al*. (2021) find evidence in the US that markups of larger firms respond more countercyclically to monetary policy shocks. This result contradicts the prediction of the New-Keynesian model discussed above, in which markups and the marginal cost pass-through are held constant independently of firm size. To reconcile this discrepancy, the authors develop a model in which markups are endogenous to firm size. In this framework, those firms in a dominant market position face a more inelastic demand curve. This allows them to pass on a smaller proportion of cost changes to their prices, compared to what their smaller competitors would do. As a result, in the face of a contractionary monetary policy shock, compared to their competitors, large firms pass on less of a cost reduction, thereby increasing their relative markups. According to their model calibrated for the United States, this mechanism amplifies the effect of monetary policy on output, increasing its response by 20% following a rise in the monetary policy rate.

5.2 Strategic Interaction

Although a change in market concentration can be thought of as a change in the degree of substitution between varieties, the traditional New Keynesian model is not designed to deal with changes in market concentration. This is because under the assumption of monopolistic competition each firm is infinitely small and does not influence others. To overcome this limitation, Wang and Werning (2022) develop a New-Keynesian model with oligopolistic competition.

Unlike in monopolistic competition, in the oligopolistic model, firms are not only concerned with how their rivals react, but also internalize the effects of their own decisions on them. This strategic interaction has important implications. On the one hand, it flattens the slope of the Phillips curve in the face of less competition because firms adjust their prices less to avoid losing market share. On the other hand, greater concentration increases the persistence of a monetary policy shock, reinforcing the non-neutrality of monetary policy.

5.3 The Credit Channel of Monetary Policy

Another channel through which changes in market power influence the pass-through of monetary policy is credit. Aghion *et al.* (2019) argue that, as firms increase their market power, their profits increase, which reduces their dependence on external financial conditions and, consequently, weakens the credit channel of monetary policy. In line with this argument, the authors find that monetary policy relaxations implemented by the European Central Bank after the European debt crisis generated greater effects in countries with higher levels of competition.

5.4 The Supply Channel of Monetary Policy

Baqaee *et al.* (2024) show that, in an economy with heterogeneous firms and endogenous markups, monetary policy has first-order effects on aggregate productivity, which they term the supply channel of monetary policy. This occurs because, in their model, the bigger firms are the most productive, and at the same time they pass on their cost shocks to prices to a lesser extent. This generates an effect in which positive demand shocks are accompanied by positive supply shocks, because the decrease in the relative prices of the most productive firms generates a reallocation of inputs to these more efficient firms. This heterogeneity in the pass-through of shocks to prices reduces the slope of the Phillips curve and increases the non-neutrality of monetary policy. In the model calibrated for the United States, this channel increases the persistence of monetary policy by 30% and the effect on output by 70%.

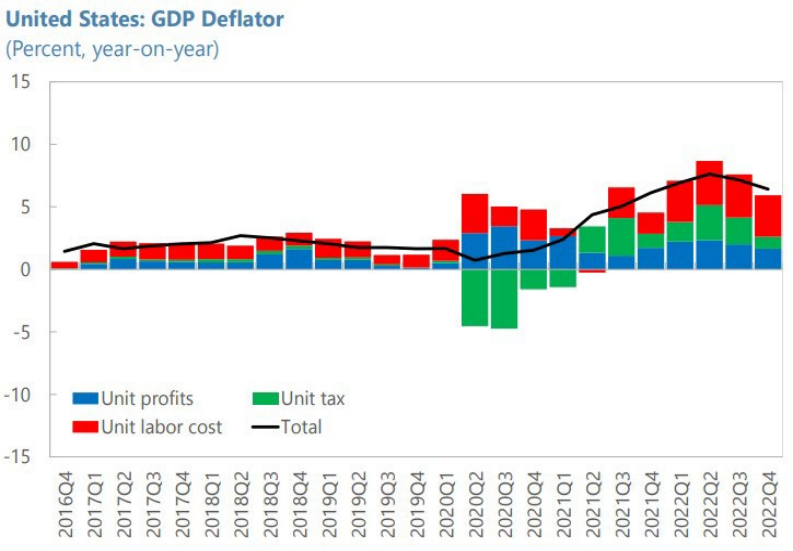
5.5 Monetary Policy Pass-Through to Wages

Finally, market structure also affects how monetary policy shocks are passed on to wages. Studies such as Burya *et al.* (2022), Ratner and Sim (2022), and Lombardi *et al.* (2023) claim that workers' lower market power weakens the pass-through of demand pressures to wages. This occurs because firms can use their market power to hire more workers without offering them higher wages, which prevents increased demand for goods and labor from translating into higher wages. Along these lines, Burya *et al.* (2023) find that, in urban areas with a higher labor market concentration, the relationship between employment and wages is weaker.

Box 1. Market Power and the Global Inflationary Episode of 2021-2023

During the global inflationary episode of 2021-2023, an important debate arose as to whether inflation was being generated by increases in firms' market power or even by their mere existence. This debate gained momentum from the work by Hansen *et al.* (2023), who conducted an accounting exercise decomposing the annual growth of the GDP deflator into three components: changes in corporate profits, labor costs and the tax burden. This analysis was applied to several advanced economies. Figure 6 presents the decomposition for the United States.

FIGURE 6 DECOMPOSITION OF THE GDP DEFLATOR – UNITED STATES (2016.IV—2022.IV)

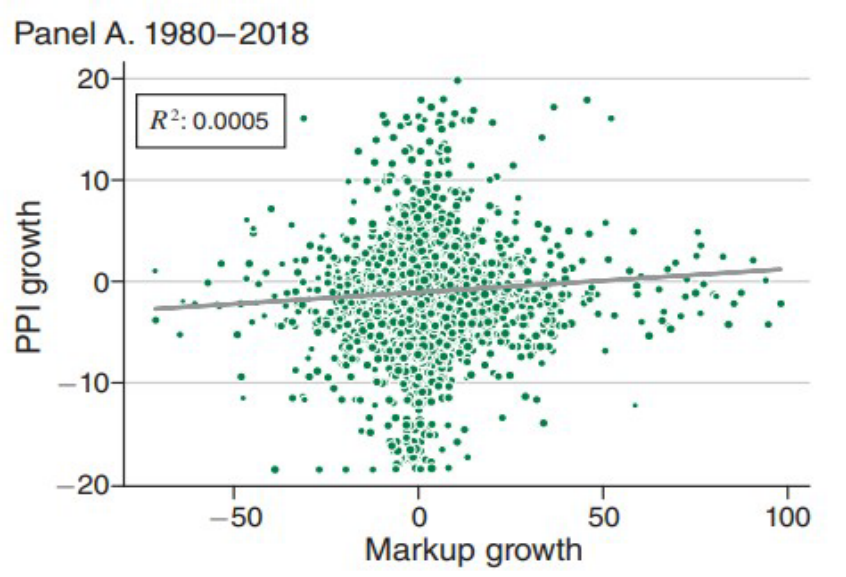


Source: Figure 4 in Hansen *et al.* (2023). The figure shows the decomposition of GDP into profits, labor costs, and taxes.

Although between 2021 and 2022 corporate profits played an important role in inflation, the proportional contribution to total inflation was not very different from that observed during periods of low inflation, such as 2017. Moreover, it is important to recall that this correlation does not imply causality. This evidence is also consistent with a demand shock scenario, where prices and profits increase at the same time, without necessarily implying an increase in the firms' market power. For these reasons, it cannot be concluded that the rise in inflation is attributable to an increase in market power.

Taking a longer time perspective, Conlon *et al.* (2023) examine the relationship between changes in firm markups in the United States and changes in the price level of intermediate goods between 1980 and 2018. Their study finds no evidence to support the idea that increases in market power are associated with higher prices. As Figure 7 illustrates, there is no clear relationship between these two variables.

FIGURE 7 RELATIONSHIP BETWEEN MARKUPS AND INFLATION FOR THE UNITED STATES



Source: Figure 2a in Conlon *et al.* (2023). The figure shows the relationship between changes in the producer price index and changes in markups for the United States between 1980 and 2018.

Despite this, in a completely theoretical aspect, Lorenzoni and Werning (2023) show that market power is a sufficient —but not necessary— condition for the existence of or the increase in inflation. In other words, an economy can experience inflation even in the absence of market power on the firms' side.

6. CONCLUSIONS

This discussion note analyzes the evolution of market power in advanced and emerging economies, a topic that has gained prominence in the past few years due to its impact on various economic dimensions. Numerous studies have documented its trajectory in recent decades, although the results vary considerably depending on the countries, sectors and methodologies employed. The case of the United States, which has been extensively studied, stands out for showing a trend towards a decline in competition in several crucial sectors. However, the magnitude of this decline and its implications are still the subject of debate due to differences in measurement techniques and data interpretation.

Beyond reporting these trends, this note also explores the macroeconomic implications of market power, ranging from its impact on resource allocation and productivity, to its impact on the labor market, to the effectiveness of monetary policy. However, the observed effects depend significantly on the underlying causes that explain the increase in market power. For example, while some increases may be associated with technological progress and economies of scale, others reflect barriers to entry and anti-competitive dynamics.

Despite recent advances, this analysis reveals that important gaps remain in our understanding of market power. Heterogeneity across sectors and regions and interactions with factors such as innovation and labor structures are areas that require further research.

In conclusion, while market power is something that affects multiple dimensions of the economy, its analysis remains a complex challenge. This note provides a basis for future research, stressing the importance of studying not only its evolution, but also its causes and consequences in specific contexts.

REFERENCES

Aghion, Philippe, Nick Bloom, Richard Blundell, Rachel Griffith, and Peter Howitt (2005). "Competition and innovation: An Inverted-U Relationship." *The Quarterly Journal of Economics* 120(2): 701-728.

Aghion, Philippe, Farhi, Emmanuel, and Kharroubi, Enisse (2019). "Monetary policy, product market competition and growth." *Economica 86*(343): 431-470.

Aghion, Philippe, Richard Blundell, Rachel Griffith, Peter Howitt, and Susanne Prantl (2009). "The Effects of Entry on Incumbent Innovation and Productivity." *The Review of Economics and Statistics* 91(1): 20-32.

Aquilante, Tommaso, Shiv Chowla, Nikola Dacic, Andrew Haldane, Riccardo Masolo, Patrick Schneider, Martin Seneca, and Srdan Tatomir (2019). "Market power and monetary policy." Bank of England working papers 798, Bank of England.

Azar, José, Emiliano Huet-Vaughn, Ioana Marinescu, Bledi Taska, and Till Von Wachter (2024). "Minimum Wage Employment Effects and Labour Market Concentration." *Review of Economic Studies* 91(4): 1843-1883.

Baqaee, David R., Emmanuel Farhi, and Kunal Sangani (2024). "The Supply-Side Effects of Monetary Policy." *Journal of Political Economy* 132(4): 1065-1112.

Baqaee, David Rezza, and Emmanuel Farhi (2020). "Productivity and Misallocation in General Equilibrium." *The Quarterly Journal of Economics* 135(1): 105-163.

Barkai, Simcha (2020). "Declining Labor and Capital Shares." *The Journal of Finance* 75 (5): 2421-2463.

Behrens, Kristian, Giordano Mion, Yasusada Murata, and Jens Suedekum (2020). "Quantifying the Gap between Equilibrium and Optimum under Monopolistic Competition." *The Quarterly Journal of Economics* 135(4): 2299-2360.

Berger, David, Kyle Herkenhoff, and Simon Mongey (2022). "Labor Market Power." *American Economic Review* 112(4): 1147-1193.

Bighelli, Tommaso, Filippo Di Mauro, Marc J. Melitz, and Matthias Mertens (2023). "European Firm Concentration and Aggregate Productivity." *Journal of the European Economic Association* 21(2): 455-483.

Bilbiie, Florin O., Fabio Ghironi, and Marc J. Melitz (2019). "Monopoly Power and Endogenous Product Variety: Distortions and Remedies." *American Economic Journal: Macroeconomics* 11(4): 140-174.

Burstein, Ariel, Javier Cravino, and Marco Rojas (2024). "Input Price Dispersion Across Buyers and Misallocation." No. w33128. National Bureau of Economic Research.

Burya, Anastasia, Rui C. Mano, Yannick Timmer, and Anke Weber (2022). "Monetary Policy under Labor Market Power." Working Paper No. 2022-2128. International Monetary Fund.

Burya, Anastasia, Rui Mano, Yannick Timmer, and Anke Weber (2023). "The Wage Phillips Curve under Labor Market power." In *AEA Papers and Proceedings* 113: 110-113.

Calligaris, Sara, Chiara Criscuolo, and Luca Marcolin (2018). "Mark-ups in the Digital Era," OECD Science, Technology and Industry Working Papers 2018/10.

Cavalleri, Maria Chiara, Alice Eliet, Peter McAdam, Filippos Petroulakis, Ana Soares, and Isabel Vansteenkiste (2019). "Concentration, Market Power and Dynamism in the Euro Area," Working Paper Series 2253, European Central Bank.

Chiavari, Andrea, Marta Morazzoni, and Danila Smirnov (2021). "Heterogeneous Markups Cyclicality and Monetary Policy." Technical Report, Pompeu Fabra University.

Ciapanna, Emanuela, Sara Formai, Andrea Linarello, and Gabriele Rovigatti (2024). "Measuring Market Power: Macro-and Micro Evidence from Italy." *Empirical Economics* 67: 2677-2717.

Conlon, Christopher, Nathan H. Miller, Tsolmon Otgon, and Yi Yao (2014). "Rising Markups, Rising Prices?" *AEA Papers and Proceedings* 113: 279-283.

Covarrubias, Matias, Germán Gutiérrez, and Thomas Philippon (2020). "From Good to Bad Concentration? US Industries over the past 30 Years." *NBER Macroeconomics Annual* 34(1): 1-46.

Crouzet, Nicolas, and Janice C. Eberly (2019). "Understanding Weak Capital Investment: The Role of Market Concentration and Intangibles". National Bureau of Economic Research.

Cusolito, Ana Paula, Alvaro Garcia-Marin, and William F. Maloney (2023). "Proximity to the Frontier, Markups, and the Response of Innovation to Foreign Competition: Evidence from Matched Production-Innovation Surveys in Chile." *American Economic Review: Insights* 5(1): 35-53.

De Loecker, Jan, and Frederic Warzynski (2012). "Markups and Firm-level Export Status." *American Economic Review* 102(6): 2437-2471.

De Loecker, Jan, Jan Eeckhout, and Gabriel Unger (2020). "The Rise of Market Power and the Macroeconomic Implications." *The Quarterly Journal of Economics* 135(2): 561-644.

De Ridder, Maarten (2024). "Market Power and Innovation in the Intangible Economy. *American Economic Review* 114(1): 199-251.

Edmond, Chris, Virgiliu Midrigan, and Daniel Yi Xu (2023). "How Costly are Markups?" *Journal of Political Economy* 131(7): 1619-1675.

Epifani, Paolo, and Gino Gancia (2011). "Trade, Markup Heterogeneity and Misallocations." *Journal of International Economics* 83(1): 1-13.

Galí, Jordi (2015). *Monetary Policy, Inflation, and the Business Cycle: an Introduction to the New Keynesian Framework and its Applications*. Princeton University Press, 2015.

Gutiérrez, Germán, and Thomas Philippon (2017a). "Declining Competition and Investment in the US." National Bureau of Economic Research Working Paper N°23583.

Gutiérrez, Germán, and Thomas Philippon (2017b). "Investmentless Growth: an Empirical Investigation." *Brookings Papers on Economic Activity* Fall: 89-169.

Hall, Robert E (2018). "New Evidence on the Markup of Prices over Marginal Costs and the Role of Mega-Firms in the US Economy." National Bureau of Economic Research Working Paper N° 24574.

Hansen, Niels-Jakob H., Niels-Jakob Hansen, Frederik Toscani, Frederik G. Toscani, and Jing Zhou (2023). "Euro Area Inflation after the Pandemic and Energy Shock: Import Prices, Profits and Wages." International Monetary Fund Working Paper 131.

Hunneus, Federico, and Antonio Martner (2023). “Productivity Growth and Market Power: Evidence from Chile.” Mimeo.

Lee, Chang-Yang (2005). “A New Perspective on Industry R&D and Market Structure.” *The Journal of Industrial Economics* 53(1): 101-122.

Lerner, Abba (1934). *The Concept of Monopoly and the Measurement of Monopoly Power*. Macmillan Education UK.

Lombardi, Marco J., Marianna Riggi, and Eliana Viviano (2023). “Workers’ Bargaining Power and the Phillips Curve: A Micro–Macro Analysis.” *Journal of the European Economic Association* 21(5): 1905-1943.

Lorenzoni, Guido, and Iván Werning (2023). “Inflation is Conflict.” National Bureau of Economic Research Working Paper N° 31099.

Miller, Nathan H. (2024). “Industrial Organization and the Rise of Market Power.” National Bureau of Economic Research Working Paper N° 32627.

Ratner, David, and Jae Sim (2022). “Who killed the Phillips curve? A murder mystery.” Mimeo.

Rossi-Hansberg, Esteban, Pierre-Daniel Sarte, and Nicholas Trachter (2021). “Diverging Trends in National and Local Concentration.” *NBER Macroeconomics Annual* 35(1): 115-150.

Villegas-Sanchez, Carolina (2019). “The Rise of Corporate Market Power and its Macroeconomic Effects.” In *World Economic Outlook* April *2019:* 55-76.

Shapiro, Carl (2011). “Competition and Innovation: Did Arrow Hit the Bull's Eye?” *The Rate and Direction of Inventive Activity Revisited*, pp. 361-404. University of Chicago Press.

Smith, Dominic A., and Sergio Ocampo Díaz (2025). “The Evolution of US Retail Concentration.” *American Economic Journal: Macroeconomics* 17(1): 71-101.

Syverson, Chad (2019). “Macroeconomics and market power: Context, Implications, and Open Questions.” *Journal of Economic Perspectives* 33(3): 23-43.

Syverson, Chad (2024). “Markups and Markdowns.” National Bureau of Economic Research Working Paper N° 32871.

Traina, James (2018). “Is Aggregate Market Power Increasing? Production Trends using Financial Statements.” Mimeo.

Van Reenen, John (2018). “Increasing Differences Between Firms: Market Power and the Macro-economy.” *Kansas City Federal Reserve: Jackson Hall Symposium*.

Wang, Olivier, and Iván Werning (2022). “Dynamic Oligopoly and Price Stickiness.” *American Economic Review* 112(8): 2815-2849.

Webber, Douglas A. (2015). “Firm Market Power and the Earnings Distribution.” *Labour Economics* 35: 123-134.

Yeh, Chen, Claudia Macaluso, and Brad Hershbein (2022). “Monopsony in the US Labor Market.” *American Economic Review* 112 (7): 2099-2138.