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COMPETITION COMMITTEE**

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Market Concentration - Note by Jason Furman**Hearing on Market Concentration**

7 June 2018

This paper by Jason Furman was submitted by the author as part of the background material in support of his presentation for Item 8 of the 129th meeting on the OECD Competition Committee on 6-8 June 2018.

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Prepared Testimony to the Hearing on “Market Concentration”

By Jason Furman*

My testimony makes five points about market concentration, all drawing from data and experience in the United States but in many cases likely generalizing to other OECD economies:

1. Market concentration has increased.
2. The macroeconomic data is consistent with an interpretation that, at least in large part, increased concentration is associated with greater market power.
3. Reduced concentration appears to be playing a role in the reduced fluidity and dynamism of the economy, potentially contributing to both slower productivity growth and higher inequality.
4. Part of the increase in concentration is due to policy changes—whether by omission (e.g., antitrust forbearance) or commission (e.g., greater regulatory barriers).
5. A market-based, pro-competition strategy would include both increased antitrust enforcement and also a broader pro-competition agenda.

The rest of this paper elaborates on these five points.

1. Market Concentration Has Increased

1. At a high level of aggregation, most industries have seen a few large players account for an increasing share of the market, as shown in Table 1 (for further discussion, see CEA 2016 and Grullon, Larkin, and Michaely 2016). This same pattern is also found in more disaggregated data. Autor et al. (2017) show a consistent increase in concentration in both sales and employment. Gutiérrez and Philippon (2017 and 2018) have shown declines in concentration in a wide range of U.S. industries.

2. These summary statistics have significant limitations: they do not account for the relevant markets which may be narrower than the statistics would indicate (e.g., specific regional markets for car dealers) or broader (e.g., firms in some segments competing with firms in others). They do not establish if the increased concentration gives rise to more market power or is, for example, the result of increased competition that weeds out the most inefficient firms. But they do establish a clear pattern.

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Table 1. Change in Market Concentration by sector, 1997-2012

Industry	Revenue earned by 50 Largest Firms, 2012 (billion \$)	Revenue Share earned by 50 Largest Firms. 2012	Percentage point change in revenue share earned by 50 largest firms, 1997-2012
Transportation and warehousing	307.9	42.1	11.4
Retail trade	1555.8	36.9	11.2
Finance and insurance	1762.7	48.5	9.9
Wholesale trade	2183.1	27.6	7.3
Real estate rental and leasing	121.6	24.9	5.4
Utilities	367.7	69.1	4.6
Educational services	12.1	22.7	4.2*
Professional, scientific and technical services	278.2	18.8	2.8*
Arts, entertainment and recreation	39.5	19.6	2.5*
Administrative / support	159.2	23.7	1.6
Health care and assistance	350.2	17.2	0.8*
Accommodation and food services	149.8	21.2	0.1
Other services, non-public admin.	46.7	10.9	-0.2

Source: Council of Economic Advisers (2016).

3. The aggregate evidence is complemented by case studies in a wide range of industries that have found increased concentration in loan shares of major financial institutions (Corbae and D’Erasmus 2013), increased share of revenue in the top firms for eight out of nine agricultural industries (Shields 2010), a 50 percent increase in the average Herfindahl-Hirschman index in the hospital sector (Gaynor, Ho and Town 2015), as well as increases in concentration in wireless (FCC 2015) and railroads (Prater et al. 2012).

4. Moreover, these statistics may understate the degree of consolidation as they only measure the market shares of individual firms. Looking at the market shares of *owners* of firms there has been even more consolidation, as documented in a series of papers by Martin Schmalz and others (Anton et al. 2017; Azar, Raina, and Schmalz 2016; Azar, Schmalz, and Tecu Forthcoming). In particular, common ownership has grown as a small number of large asset managers increasingly own large stakes in all of the major players in an industry, potentially leading them to favor uncompetitive behavior.

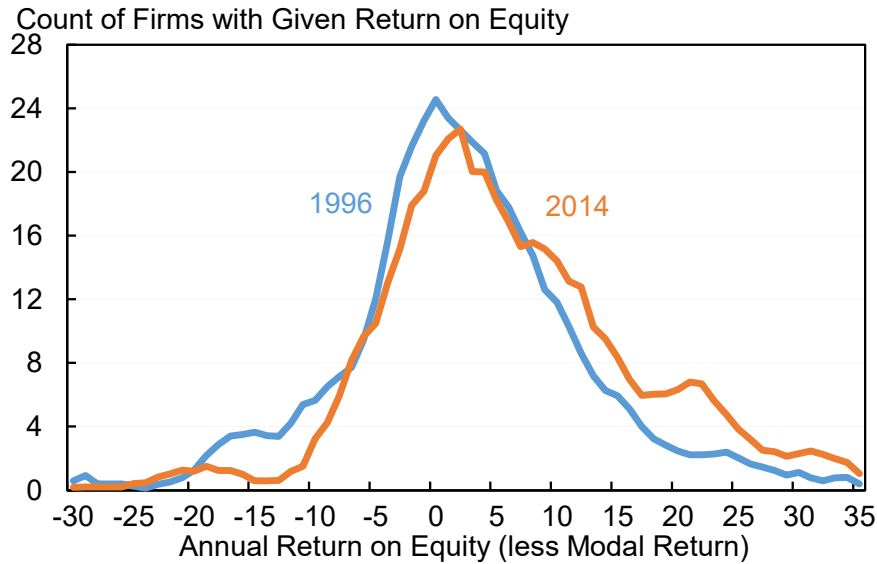
2. The macroeconomic data is consistent with an interpretation that, at least in large part, increased concentration is associated with greater market power

5. Increased concentration appears to have resulted in an increased dispersion of returns. Rates of return on equity across the S&P 500 have become increasingly skewed with more firms earning very high returns as shown in Figure 1. Measures of the return on capital have also become much more skewed. This is particularly evident when excluding goodwill from the definition of capital but even holds when goodwill is included as shown in Figures 2a and 2b.¹ Understanding the growth of the magnitude of

¹ In this context, goodwill refers to a balance sheet item of companies that have been taken part in mergers or acquisitions, namely, the excess of purchase price over the book value of a company.

rents in the economy lies somewhere between these two measures since at least some of what is considered a rent gets counted as goodwill, making the return to that type of capital seem more normal than it really is.

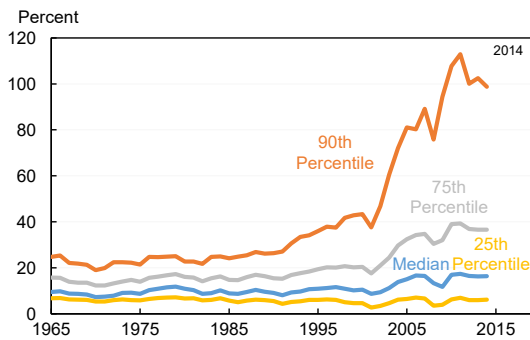
Figure 1. Distribution of Annual Returns on Equity across S&P 500



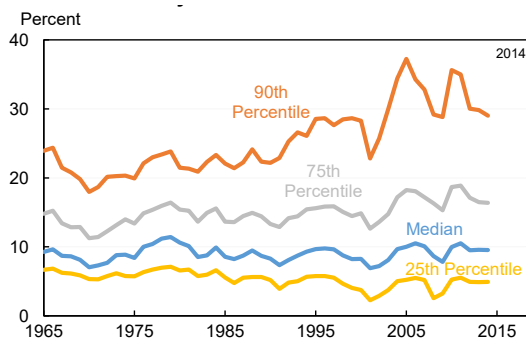
Source: Furman and Orzag (2018).

Figures 2a and 2b

2a. Return on Invested Capital excluding Goodwill, U.S. Publicly-traded Nonfinancial Firms



2b. Return on Invested Capital including Goodwill, U.S. Publicly-traded Nonfinancial Firms



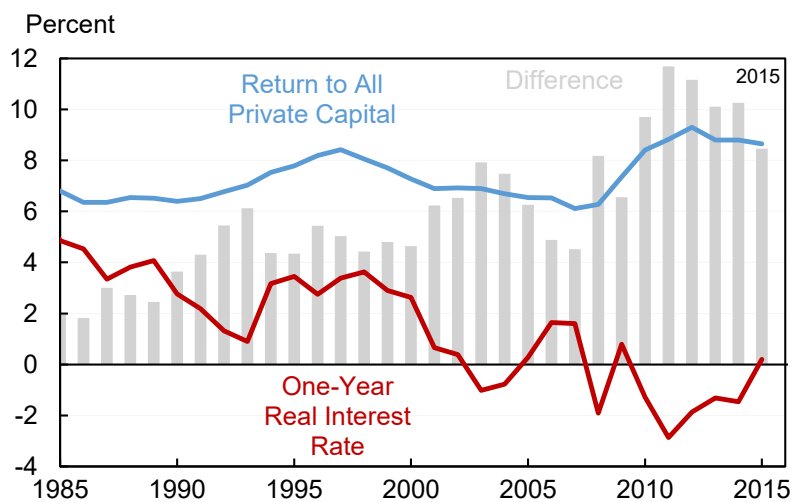
Source: Furmal and Oraszag (2018)

6. The macroeconomic observation that while the rate of return on safe assets has fallen, the rate of return on overall capital has held steady or even risen somewhat, as

For the purposes of computing return on invested capital, this may or may not be considered part of the definition of a company's capital.

shown in Figure 3 is consistent with the interpretation that economic developments reflect increased market power. As a result, the premium on capital over safe assets has risen from around 200 basis points to over 800 basis points. Theoretically, this could reflect the fact that capital is riskier than before, “safe” assets are safer than before, or that rents have risen. At a macroeconomic level the third hypothesis is most consistent with the fact that while prices (i.e., the premium on capital) have risen, quantities (i.e., the rate of investment) have fallen. (The exact relationship between competition and investment depends on the specifics, but in a standard neoclassical model firms facing less competition will raise their markups, reduce output, and reduce factor inputs of both labor and capital.)

Figure 3. Return to Capital vs. Safe Rate of Return, 1985-2015



Note: The rate of return to all private capital was calculated by dividing private capital income in current dollars by the private capital stock in current dollars. Private capital income is defined as the sum of 1) corporate profits ex. federal government tax receipts on corporate income, 2) net interest and miscellaneous payments, 3) rental income of all persons, 4) business current transfer payments, 5) current surpluses of government enterprises, 6) property and severance taxes and 7) the capital share of proprietors' income. The private capital stock is defined as the sum of 1) the net stock of produced private assets for all private enterprises, 2) the value of total private land inferred from the Financial Accounts of the United States and 3) the value of US capital deployed abroad less foreign capital deployed in the United States. The return to nonfinancial corporate capital is that reported by the Bureau of Economic Analysis.

Source: Bureau of Economic Analysis, Federal Reserve Board of Governors, author's calculations.

3. Reduced concentration appears to be playing a role in the reduced fluidity and dynamism of the economy, potentially contributing to both slower productivity growth and higher inequality

7. The most important development in the U.S. economy over the past forty years has been the deceleration in the typical household's income—a trend also experienced by many other advanced economies. From 1948 to 1973, real median family income in the United States rose 3.0 percent annually. Since 1973, the median family has seen its real income grow only 0.4 percent annually, a rate at which it would take over a century to double.

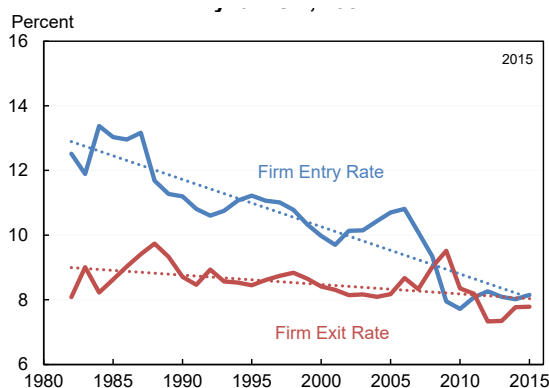
8. The slowdown in income growth can be traced to two simultaneous developments. The first is the decline in productivity growth, with output per hour growing at a 2.8 percent rate in the earlier period and a 1.7 percent rate since 1973. The performance in the past decade has been even worse, with productivity increasing at only a 1.2 percent annual rate. The second development has been the rise of inequality. From 1948 to 1973, the share of income going to the bottom 90 percent of Americans was roughly steady at about two-thirds but has fallen steadily since then, to just over half today. The combination of a slower growing pie that is more unequally divided has posed a double blow to typical families.

9. Furman and Orszag (2018) advanced the thesis that declines in competition and the commensurate increase in rents could be playing a causal role in both slowing productivity growth and increasing inequality. Since Furman and Orszag (2018) was initially released in 2015, further research has corroborated and advanced our broader thesis, including Gutiérrez and Philippon (2017 and 2018) linking the slowdown of investment at the industry level to reduced competition, Barkai (2016) finding evidence that reduced competition and higher markups was reducing the labor share of income, and Autor et al. (2017) linking increased concentration to larger declines in the labor share of income (although in this last case they view the increased concentration as the result of more competition not less).

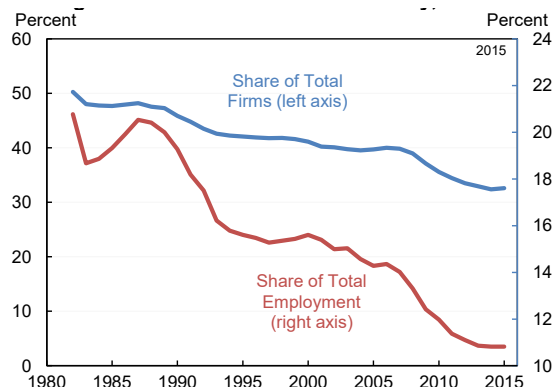
10. One of the links between the reduction in competition and the trends in productivity and possibility inequality is the decline in dynamism that has been documented by Decker et al. (2014, 2018) and many others. This reduction is partly a “natural” reflection of trends like the increased importance of network externalities and partly a “manmade” reflection of policy choices, like increased regulatory barriers to entry. As shown in Figures 4a and 4b, a one-third reduction in the rate of new business formation, together with a steady exit rate, means that, on average, firms are larger and older today while also representing an increased share of employment. Since the early 1980s, the share of firms that are less than five years old has fallen by about a third, while the share of employment accounted for by these firms has fallen by nearly half.

Figures 4a and 4b

4a. Firm Dynamism, 1982-2015



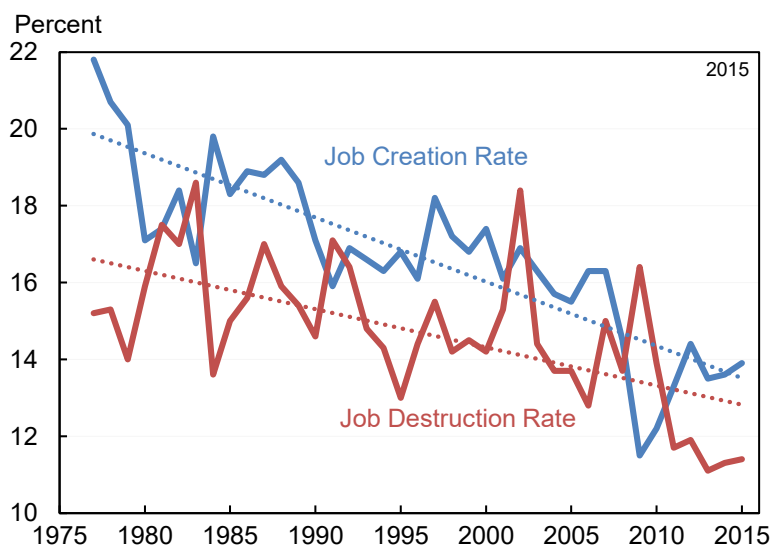
4b. Young Firms as a Share of the Economy, 1982-2015



Source: Census Bureau, Business Dynamics Statistics; author's calculations.

11. Reduced fluidity has also been observed in just about every labor market series. From the perspective of employers, the rates of job creation and job destruction have fallen steadily as shown in Figure 5. Davis and Haltiwanger (2014), Decker et al. (2014), Decker et al (2018), and Hyatt and Spletzer (2013) find that the shift towards older firms is at least one factor related to the decline in labor market fluidity, though the changing age structure of firms appears to account for a small share of the drop. From the perspective of employees, the rates of shifting between different places, industries, occupations, or even just of employment-to-employment transitions have all steadily fallen. Across a range of measures, Molloy et al. (2016) find that labor market fluidity has been declining since at least the 1980s. On average, the decline has been about 10 to 15 percent, with nearly a 25 percent drop in employment-to-employment transitions. Over a longer time period, declines in geographic mobility have been even more dramatic. By 2013, the interstate migration rate was half as large as it was from 1948-1971, while intrastate migrations rates have fallen by around a third (Molloy, Smith, and Wozniak 2014).

Figure 5. Labor Market Dynamism, 1977-2015



Source: Census Bureau, Business Dynamics Statistics; author's calculations.

12. These increased rigidities have contributed to the rise in concentration and increased dispersion of firm-level profitability. The result is less innovation, either through a straightforward channel of less investment or through broader factors such as firms not wanting to cannibalize on their own market shares (Arrow 1962).

13. At the same time, these channels have also contributed to rising inequality in a number of different ways. One is through a “rent sharing” channel as increasingly disparate firm-level success translates into increasingly disparate wages for the workers at these firms (Krueger and Summers 1988). A second mechanism is simply through increased leverage by employers that reduces wages and raises profits, in part because workers with fewer choices and less mobility may have less ability to bargain for wage increases.

4. Part of the increase in concentration is due to policy changes—whether by omission (e.g., antitrust forbearance) or commission (e.g., greater regulatory barriers)

14. There are two stories for explaining rising concentration and falling dynamism. The first, that these factors reflect improvements in efficiency, is benign. Large firms may be the ones that drive the most effective improvements in efficiency. Telecommunications companies, for example, have increasing returns to scale that make it inefficient and hard for many wireless providers to coexist. Network externalities represent a genuine benefit—we are better off with a single social network where we can find all our friends instead of fragmenting into multiple different such networks. Increased price sensitivity on the part of consumers can lead to greater concentration in more efficient firms. And global competition may drive the consolidation of national capacity to meet the larger scale necessary to compete in the international market, although this last factor is only particularly relevant for the 13 percent of the U.S. economy that is exposed to trade. Reductions in fluidity may also have a benign explanation if matching technologies have gotten better so workers are able to more efficiently sort themselves into jobs.

15. All of these explanations have some merit, and in certain cases or sectors may have substantial merit. To the degree that concentration has risen for these reasons there may be a role for policy to address certain undesirable side-effects—natural monopolies, for example, may need various forms of regulated prices—in ways that are distinct from just increasing competition or reducing policy-erected barriers to entry.

16. One thing all of these explanations have in common, however, is that they are consistent with *increasing* productivity growth. This does indeed match the data in certain sectors like retail (Crouzet and Eberly 2018) or earlier time periods (Gutiérrez and Philippon 2017). But it does not match the economy-wide data recently. This motivates the search for other explanations.

17. The second explanation, a reduction in antitrust enforcement, is less benign. The United States experienced a shift in prevailing attitudes towards antitrust from the early 1980s onward, with the growth of Chicago School views that competition is more extensive than previously thought, that the harms of consolidation are smaller than previously thought, and that remedies to promote more competition can bring greater costs than benefits (Posner 2009; Bork 1993; Easterbrook 1984). This intellectual development has affected both the enforcement agencies and also the courts. The result has been a near end to any actions on vertical mergers and a curtailment of actions on horizontal mergers. As Kwoka (2017) has shown, the Federal Trade Commission (FTC) has effectively stopped enforcement actions on mergers down to 5, 6 or 7 competitors and reduced enforcement actions on other mergers. More recently, parts of the anti-trust community have started to revisit whether the pendulum has shifted too far toward the Chicago view.

18. More evidence that this increase in concentration is not the “natural” result of efficiency, but instead reflects deliberate policy choices, comes from the fact that while concentration has risen in the United States, it has fallen in the Eurozone and some European Union members, like the United Kingdom (Döttling, Gutiérrez, and Philippon 2017). Döttling, Gutiérrez, and Philippon suggest that divergent paths in antitrust efforts, which have weakened in the United States and become stronger in Europe, may be one factor contributing to the observed trends in competition.

19. Other policy developments impacting this dynamic have been the increased importance of intellectual property protections, which create a legal form of monopoly, and those, such as the expansion of occupational licensing and land use restrictions, which hamper geographic mobility. The extent of occupational licensing has grown substantially, rising from 5 percent of the workforce in the 1950s to 25 percent of the workforce by 2008, with most of the rise not being explained by the growth of previously licensed occupations like education and medicine (CEA et al. 2015). The expanded prevalence of licensing, combined with state-specific licensing requirements, creates a burden for licensed workers seeking to move across state lines. The growth of land use restrictions, by increasing the cost of housing, has also further curtailed mobility to higher wage areas (Furman 2015). Consistent with increased frictions such as these being a cause of both increased firm-level dispersion and lower productivity growth, Decker et al. (2018) highlight the role of adjustment frictions, as opposed to idiosyncratic firm-level productivity shocks, in driving both wider firm-level variance and a decline in productivity growth since 2000.

5. A market-based, pro-competition strategy would include both increased antitrust enforcement and also a broader pro-competition agenda

20. This analysis has three policy conclusions. First, to the degree that concentration or reduced fluidity is the result of improvements in efficiency, there is no market failure and no need for product market policies. This situation should generally be associated with increased efficiency. Should the efficiency improvements also result in higher-than-desired levels of inequality, the appropriate remedy is in the tax-and-transfer system not in interfering with the functioning of markets themselves.

21. Second, to the degree that concentration or reduced fluidity is the result of policy, then the offending policies should be changed. That could entail more vigorous enforcement of antitrust policies, limits on the ever-expanding scope of intellectual property protections, and an effort to reduce regulations that create barriers to entry or reduce mobility for both workers and firms, like occupational licensing and land use restrictions. Addressing these policy-induced market failures holds out the prospect of both increasing productivity growth and reducing inequality, bringing a wider range instruments to bear on these questions than has often been the case previously.

22. The third set of implications is the toughest and that is where both efficiency and policy contribute to increased concentration. In the case of the technology sector, for example, there are tremendous efficiencies from the innovation associated with leading companies and their scale. But the network effects also create tremendous barriers to entry in areas like online advertising, search, and operating systems for mobile phones and computers. Traditional antitrust remedies would risk these efficiencies, but doing nothing risks a slowdown in innovation accompanied by increased inequality. At a minimum, encouraging greater competition through more individual ownership of data and encouragement of common standards could help set the right balance.

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