ECONSTOR
Make Your Publications Visible.

A Service of
ZBW
Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Gans, Joshua; Leigh, Andrew; Schmalz, Martin C.; Triggs, Adam

Working Paper

Inequality and Market Concentration, when Shareholding is more Skewed than Consumption

CESifo Working Paper, No. 7402

Provided in Cooperation with:
Ifo Institute – Leibniz Institute for Economic Research at the University of Munich

Suggested Citation: Gans, Joshua; Leigh, Andrew; Schmalz, Martin C.; Triggs, Adam (2018) : Inequality and Market Concentration, when Shareholding is more Skewed than Consumption, CESifo Working Paper, No. 7402, Center for Economic Studies and ifo Institute (CESifo), Munich

This Version is available at:
https://hdl.handle.net/10419/191427

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

CESifo WORKING PAPERS

7402
2018

December 2018

Inequality and Market Concentration, when Shareholding is more Skewed than Consumption

Joshua Gans, Andrew Leigh, Martin Schmalz, Adam Triggs

CESifo

Impressum:

CESifo Working Papers
ISSN 2364-1428 (electronic version)
Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH
The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute
Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de
Editors: Clemens Fuest, Oliver Falck, Jasmin Gröschl
www.cesifo-group.org/wp

An electronic version of the paper may be downloaded
· from the SSRN website: www.SSRN.com
· from the RePEc website: www.RePEc.org
· from the CESifo website: www.CESifo-group.org/wp

CESifo *Working Paper No. 7402*
Category 11: Industrial Organisation

Inequality and Market Concentration, when Shareholding is more Skewed than Consumption

Abstract

Economic theory suggests that monopoly prices hurt consumers but benefit shareholders. But in a world where individuals or households can be both consumers and shareholders, the impact of market power on inequality depends in part on the relative distribution of consumption and corporate equity ownership across individuals or households. The paper calculates this distribution for the United States, using data from the Survey of Consumer Finances and the Consumer Expenditure Survey, spanning nearly three decades from 1989 to 2016. In 2016, the top 20 percent consumed approximately as much as the bottom 60 percent, but had 13 times as much corporate equity. Because ownership is more skewed than consumption, increased mark-ups increase inequality. Moreover, over time, corporate equity has become even more skewed relative to consumption.

JEL-Codes: D420, D430, D610, D630.

Keywords: monopoly, market power, inequality.

Joshua Gans
Rotman School of Management
105 St George Street
Canada - Toronto ON M5S 3E6
joshua.gans@gmail.com

Andrew Leigh
Australian House of Representatives
Parliament House
Australia - 2600 Canberra ACT
akl@aph.gov.au

Martin Schmalz
Stephen M. Ross School of Business
University of Michigan
1 Tappan Street
USA - R5456 Ann Arbor MI 48109-1234
schmalz@umich.edu

Adam Triggs
Australian National University
College of Asia and the Pacific
Canberra / Australia
adam.triggs@anu.edu.au

1. Introduction[*]

In 2009, Aspen Pharmacare announced its acquisition of five cancer medicines from its competitor GlaxoSmithKline. As the sole producer of those drugs, Aspen didn't just acquire medicines, it also acquired substantial market power. The implications were swift. The price of Busulfan, a medicine used by leukaemia patients, increased 1,100 per cent by 2013: from £5.20 to £65.22 in the United Kingdom. The price of Chlorambucil, another leukaemia drug, rose from £8.36 to £40.51 (Kenber, 2017). But it wasn't just the price of medicines that increased. From the time of the acquisition to after it had increased prices, Aspen Pharmacare's share price increased almost seven-fold (Marketwatch, 2017). The result of increased market power, therefore, was a wealth transfer from consumers to shareholders.

More generally, over the past generation, most advanced nations have seen an increase in inequality (Alvaredo et al 2018). At the same time, a growing body of evidence points to an increase in market power, both in terms of rising market concentration (eg Economist 2016) and increasing markups (De Loecker and Eeckhout 2018). A burgeoning literature suggests that superstar firms are capturing increasingly high market shares, allowing them to use their market position to earn excess profits (Andrews et al 2015; Autor et al. 2017). As the gap between 'frontier firms' and 'laggard firms' widens, shareholders of frontier firms may enjoy larger returns.

Market power has been further increased in some markets through the increased prevalence of horizontal shareholding – where common investors own competing firms (e.g. Azar, Schmalz and Tecu, 2018). Indeed, the rise in economic inequality since 1980 corresponds to a period when institutional investors' share of corporate stock grew to record levels (Elhauge, 2016). In addition to these changes in market structure and indications of reduced competition from increased price-cost margins, other measures of competition also declined. For example, the word 'competition' is used 75 per cent less frequently since 2000 in the annual reports of US companies (The Economist, 2017). These developments have led scholars to ask whether market power may be one of the causes of growing inequality (Posner and Weyl 2015; Furman and Orszag 2015; Barkai, 2016; Ennis et al 2017).

Answering this question is very important, because the purported increases in market power have often been defended on the basis that many citizens own shares in these firms, see e.g. Novick (2017). However, if a large fraction of consumers are systematically less affluent and hold a smaller fraction of shares than more affluent shareholder-consumers, then market concentration may worsen income inequality.

We inform this debate with a formal theoretical argument as well as new empirical facts. Specifically, we explore under which conditions market power can transfer wealth from consumers to shareholders, what impact these mechanics can have on income inequality, whether these conditions are met in practice, and how those facts have changed over the past three decades. The answer to the question whether increases in corporate market power

[*] Thanks to Simon Cowan for valuable comments on an earlier draft, and to Pedro Gonzaga for assistance in implementing the market power adjustment in Ennis et al (2017). A version of this paper is forthcoming in the 2019 *Oxford Review of Economic Policy* issue on inequality.

increase inequality largely depends on where consumers and shareholders are located across the respective distributions of consumption and equity ownership. If all families are identical, increased monopoly power does not change inequality, as all households are treated similarly. Moreover, the loss of families' consumer surplus from monopoly prices is compensated by increased returns on their shareholdings.[1] But if wealthier families are more likely to be shareholders and poorer families are more likely to be consumers, then monopoly pricing can have a direct effect in worsening inequality.[2]

We document that, in the United States, the distribution of corporate equity is skewed towards the top of the distribution, more so than the skewness of consumption. That fact indicates that, to the extent that market power benefits equity holders, these gains flow overwhelmingly from the less to the most affluent.

Our analysis follows the empirical strategy of Ennis et al (2017), but with the difference that we focus on a single country (the United States). This allows us to focus on corporate equity, rather than assuming that the distribution of equity holdings mirrors the distribution of wealth (a potentially problematic assumption, given that residential property constitutes a large share of the wealth of many families). It also permits us to look at changes over time as opposed to a single cross section, since our data span the period 1989 to 2016. Using these data, we are able to document the extent to which holdings of corporate equity have become substantially more unequal over time, and how this magnifies the adverse effect of market power.

The related literature is long and rich. Comanor and Smiley (1975) found that possibly one-half of existing wealth holdings by the richest few per cent of American households was due to monopoly gains. Subsequent empirical research using Australian data found that the welfare loss associated with monopoly power is largest for poor households (Creedy and Dixon 1998, 1999). Others have looked at the industries in which those who populate the rich list made their money (Blitz and Siegfried, 1992). Another strand of research has speculated on the role that increased dividends and capital gains from monopoly pricing can play in increasing wealth at the top (eg Khan and Vaheesan, 2017). Others have shown how imperfect competition contributes to the 'poverty penalty' - the relatively higher cost shouldered by the poor compared to the non-poor in their participation in certain markets (e.g. Mendoza, 2011; Atkinson, 2015).

Perhaps the most similar study to ours is Ennis et al (2017), who analyze data for eight OECD countries. They posit an equation under which the impact of market power on inequality can be estimated from the average mark-up, the labour income share, average savings rates, the marginal propensity to save, and observed income and wealth shares. Their results suggest that market power has a significant impact on increasing the wealth of top groups, and reducing the income of bottom groups.

[1] However monopoly pricing may have effects on inequality through other variables such as reduced output and reduced labour income, and monopoly pricing will still have negative welfare effects through reduced output.

[2] If holders of corporate equity internalize their preferences as consumers, they may use their voting power within the firm to bring about the competitive price. But, as shown by Farrell (1985), this logic also relies on assuming perfect homogeneity of shareholder-consumers.

The paper is structured as follows. Section 2 elaborates the theory on how monopoly pricing can increase inequality and models the circumstances under which the internationalization of consumer preferences by shareholder-consumers could offset this effect. Section 3 introduces the data and methodology used to calculate the distributions. Section 4 explains the results from our distributional analysis. Section 5 concludes with a discussion of what these findings could mean for competition policy.

2. Theory

A critical question in the literature is to what extent shareholder-voting power can defeat the link between market power and higher product market prices. Farrell (1985) considered the situation where a consumer's utility is the sum of their consumer surplus and their share of firm profit in a single-firm economy. He found that consumers will unanimously vote for the competitive pricing only if ownership shares are equal to consumption shares for all consumers.

To see this point formally, consider an economy with a single firm and a continuum of consumers, $i \in [0, n]$. Each consumer has identical utility, $u(x_i)$, a non-decreasing function of their consumption of the firm's output, x_i. The per unit price of the good is p. In addition, consumers receive a fixed (identical) labor income, y. Finally, consumers have an equity share, α_i, in the firm. For simplicity we assume that α_i is non-decreasing in i. Let $X = \int_0^n x_i \, di$. The firm has costs, $C(X)$, that are assumed to be non-decreasing and convex. Therefore, the value of i's shareholding is simply, $\alpha_i \pi = \alpha_i (pX - C(X))$. We consider owner-consumer preferences over p.

First, it is useful to review Farrell's (1985) result in this framework. He assumed that consumers solved: $\max_{x_i} u(x_i) - px_i$. This yields a demand function: $x_i(p) = u'^{-1}(p)$ and a surplus $v(p)$ both of which are, under our symmetry assumptions, the same for all consumers. However, in voting over the firm's pricing policy, a shareholder's preferences are the solution to: $max_p v(p) + \alpha_i (pnx(p) - C(nx(p))$ which gives FOC:

$$-v'(p) = x(p) = \alpha_i (nx(p) + \left(p - C'\left(nx(p)\right)\right) nx'(p)) \qquad (1)$$

where the first equality follows from Roy's identity. If each consumer has a shareholding of $1/n$, then it is clear that (1) becomes $p = C'(nx(p))$; the efficient outcome. In our symmetric case, this corresponds to a proportional allocation of shareholdings.[3]

Farrell's characterisation is only of a unanimity condition: everyone prefers the efficient price. He does not consider the outcome of voting per se (as we would expect to arise amongst shareholders). Of course, for efficiency to be the outcome of voting, only the median voter has to have this preference. To see this, note that i's voting objective, $v(p) + \alpha_i \pi(p)$

[3] When consumers have heterogeneous demands, the proportional allocation would involve $\alpha_i = x_i(p) / \int_0^n x_i(p) di$ for all i.

satisfies the (strict) single crossing property in (p, α_i) as $(v'(p) + \alpha_i \pi'(p))/\pi(p)$ is increasing in α_i for p less than the profit maximising price. This means that if i prefers p' over $p'' < p'$, then so does any $j > i$; i.e., those with more shares prefer higher prices. By Theorem 1 of Gans and Smart (1996), this means that the outcome of majority voting over prices will be the same as the median voters preference ordering. From this it is easy to see that if the median shareholder (i.e., i such that $min \int_i^n \alpha_j dj \geq \frac{1}{2}$) has a shareholding of 1/n, then the efficient price will be the voting outcome amongst shareholders.

In contrast to Farrell (1985), we assume that the consumer chooses consumption to solve: $\max_{x_i} u(x_i)$ subject to $\alpha_i \pi + y \geq p x_i$. This yields indirect utility function, $V(\alpha_i \pi + y, p) = u(\frac{1}{p}(\alpha_i \pi + y))$. That is, at prevailing prices, consumers allocate all of their income to consumption expenditure; i.e., $x_i = \frac{1}{p}(\alpha_i \pi + y))$. Notice that this assumes that, when choosing x_i, i does not take into account its own impact on π. This is reasonable given the infinitesimal nature of consumers.

In this circumstance, equilibrium profits are $\pi = \pi + ny - C(\frac{1}{p}(\pi + ny)) \Rightarrow \pi = pC^{-1}(ny) - ny$. Note that this means that $p \geq \frac{ny}{C^{-1}(ny)}$ for the firm to be financially viable. Note also that if $p = \frac{ny}{C^{-1}(ny)}$ then $x_i = \frac{C^{-1}(ny)}{n}$, for all i, and $ny = C(nx_i)$.

We can equilibrium profits to consider a voter's preferences over p. Note that a voter will seek to maximise their equilibrium consumption subject to the firm's break-even constraint. If shares were allocated proportionately with $\alpha_i = 1/n$, then $x_i = \frac{1}{n} C^{-1}(ny)$. In this situation, no voter has a preference over price with every equilibrium involving all non-profit income allocated to the firm's costs, $C(X)$. Thus, with proportionate allocation, the equilibrium consumption is always socially efficient and p is redundant.

For other share allocations, taking the derivative of consumption with respect to p gives:

$$\frac{\partial x_i}{\partial p} = \frac{1}{p^2}(\alpha_i n - 1)y$$

This means that i will have a preference for a high price if $\alpha_i > 1/n$ but will prefer $p = \frac{ny}{C^{1}(ny)}$ if $\alpha_i < 1/n$. If $\alpha_i = 1/n$, then i is indifferent as to the price level. Note that $x_i(p, \alpha_i)$ has the single crossing property in (p, α_i) as $\frac{1}{p}(\alpha_i n - 1)y/\pi$ is increasing in α_i for all feasible p. Moreover, for this single good model, as individual utility increases in their consumption the single crossing property holds for preferences.[4] Thus, so long as the median voter's share does not equal 1/n, the voting outcome will either be $p = \frac{ny}{C^{-1}(ny)}$ or the monopoly price.[5]

[4] The Farrell (1985) approach that does not make this assumption would require a more complicated analysis to examine whether this property held.

[5] The model assumes that each agent has the same exogenous income, y. We did this to illustrate the main effects of the theory. Simon Cowan usefully points out that we could give individuals different income. In this case, $\frac{\partial x_i}{\partial p} = \frac{1}{p^2}(\alpha_i - s_i)\sum_j y_j$ where $s_i = y_i / \sum_j y_j$ is consumer i's share of total exogenous income. This means

This result extends the domain of share allocations that can achieve an efficient outcome as a voting equilibrium; namely from the median voter having share 1/*n* to this being the upper bound on their share. This arises because of a combination of the break-even condition and the single good nature of the economy. The former condition is one that Farrell (1985) did not explicitly consider as it did not bind in his formulation. Importantly, it also shows that if the distribution of voting shares is more concentrated relative to consumption shares amongst individuals, then there will be a preference amongst shareholders for higher than efficient prices and the exercise of market power.

3. Data and methodology

Our principal data source is the Federal Reserve's Survey of Consumer Finances. The survey conducted triennially, starting in 1989. Our results thus include ten years over a 27-year span, starting in 1989 and ending in 2016. Our measure of corporate equity sums stock holdings and business equity. Analysis is conducted on a family basis, with families ranked on their percentile of income before taxes.

We supplement this with expenditure data from the Consumer Expenditure Survey. Although the Consumer Expenditure Survey is an annual survey that covers a longer timespan than the Survey of Consumer Finances, we restrict our analysis to years in which the Survey of Consumer Finances was conducted. The Consumer Expenditure Survey is conducted on the basis of a 'consumer unit'. In multi-family households, this corresponds to groups of people who make joint expenditure decisions, so conceptually consumer units are closer to families than households. Henceforth we refer to them as 'families' for simplicity. As with the Survey of Consumer Finances, the Consumer Expenditure Survey ranks families on their percentile of income before taxes. We focus our analysis solely on total expenditure.

Following Ennis et al (2017), we estimate the impact of market power on inequality for a given quantile group as a function of the observed share of income and corporate equity in the presence of market power, the average excess mark-up, the income share of labour, the average saving rate, and the marginal propensity to save. Where superscripts *c* and *m* index the competitive and monopolistic cases, subscript *i* indexes quantile groups, *y* denotes income share, *f* denotes wealth share, μ is the excess markup, $\propto_L$ is the labour share, s' is the marginal propensity to save, and $\bar{s}$ is the average saving rate, the counterfactual income share of a quantile group without market power is given by the following formula:

$$y_i^c = y_i^m + \frac{\mu - 1}{1 - \frac{s'}{\bar{s}}(1 - \mu\alpha_L)}(y_i^m - f_i^m)$$

that a consumer's demand increases in price if their share of profit income is larger than their share of exogenous income.

Ennis et al (2017) present three sets of results, for $s' = \bar{s}$ (a conservative scenario), $\frac{s'}{\bar{s}} = 1.5$ (a central scenario), and $\frac{s'}{\bar{s}} = 2$ (an optimistic scenario). For reasons of parsimony, we simply present results for a central scenario, in which $\frac{s'}{\bar{s}} = 1.5$.

4. Distributional analysis

Figure 1 shows the distribution of expenditure by each income quintile. The 20 percent of families with the lowest incomes accounted for 9 percent of all expenditure in 1989, the same figure as in 2016. The 20 percent of families with the highest incomes comprised 38 percent of all expenditure in 1989. By 2016, the expenditure share of the top fifth had risen to (only) 39 percent. In other words, the distribution remained roughly similar.

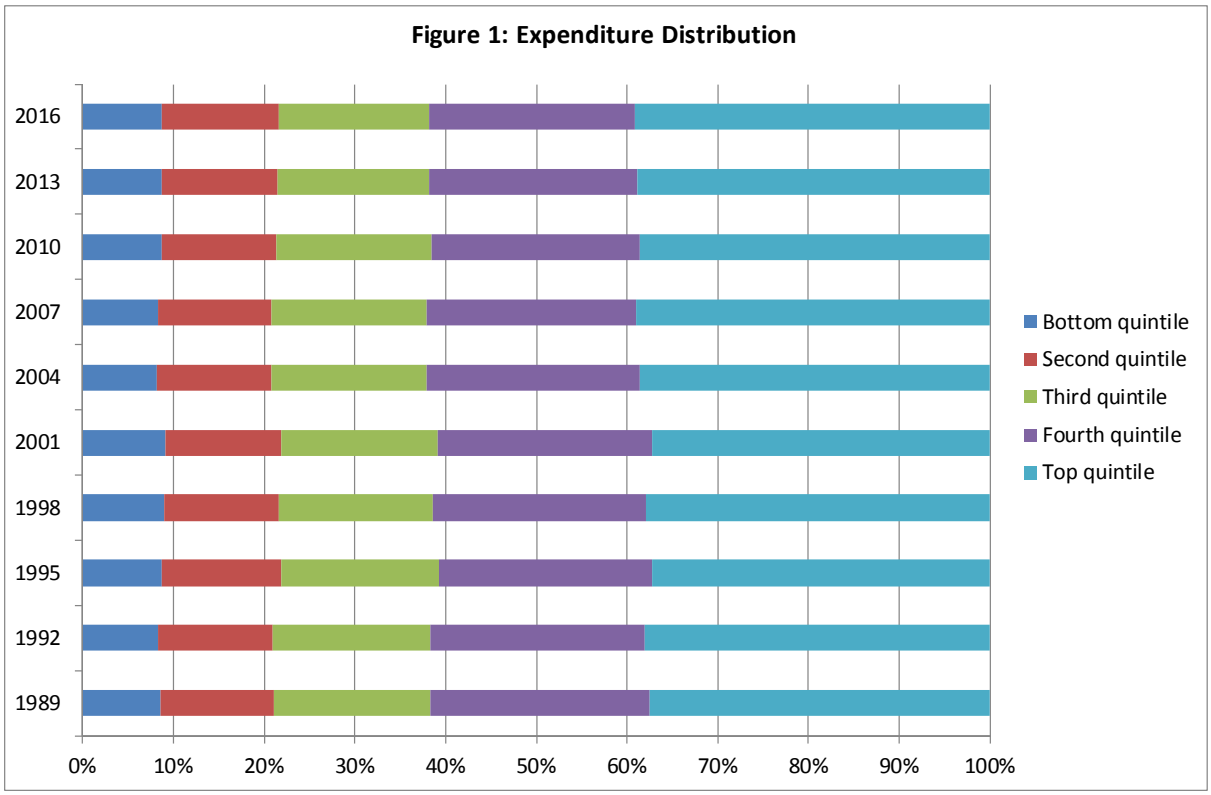


Figure 2 shows the distribution of income across families. Because our analysis is based on pre-tax family income, our income measure is more skewed than in analyses that look at individuals, or at post-tax income. In 1989, the bottom fifth of US families earned 3 percent of national income, and this share was also 3 percent in 2016. However, the top fifth of US families received 57 percent of income in 1989, and 64 percent in 2016. Hence, by contrast to consumption, the distribution of income has become more skewed in the past three decades.

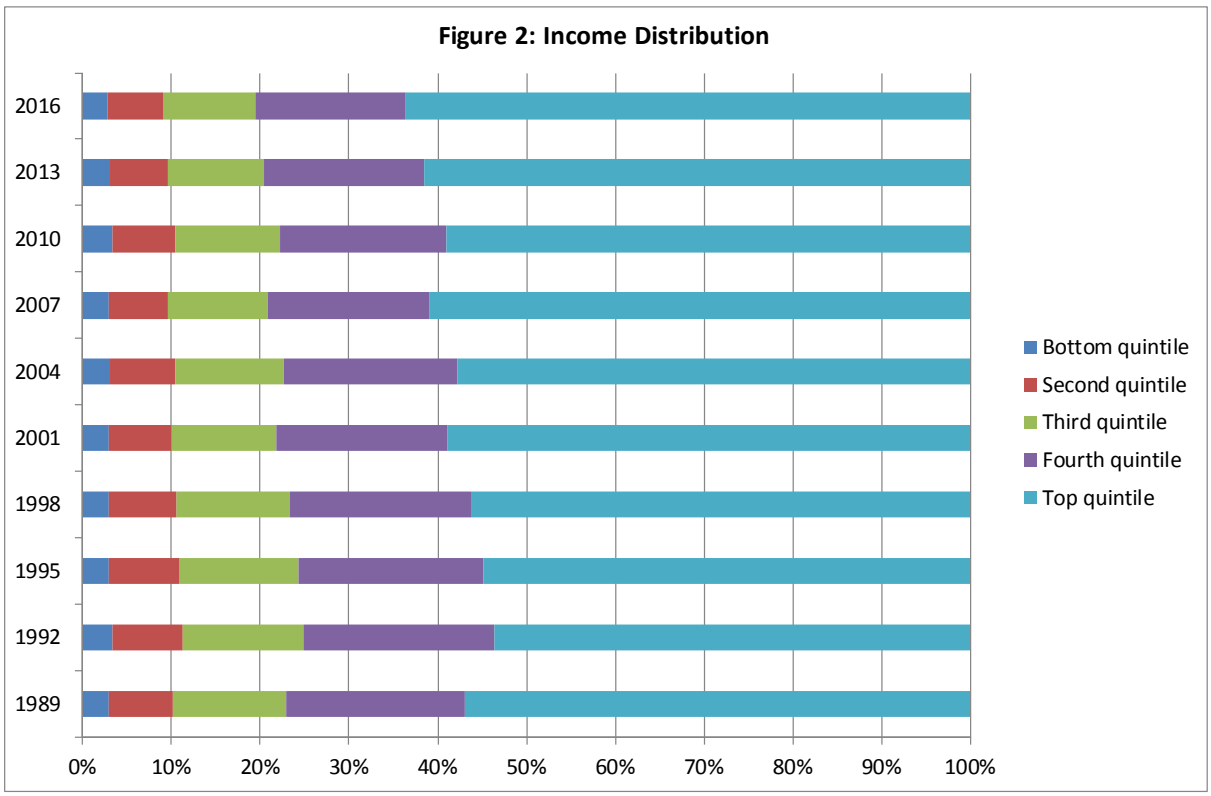
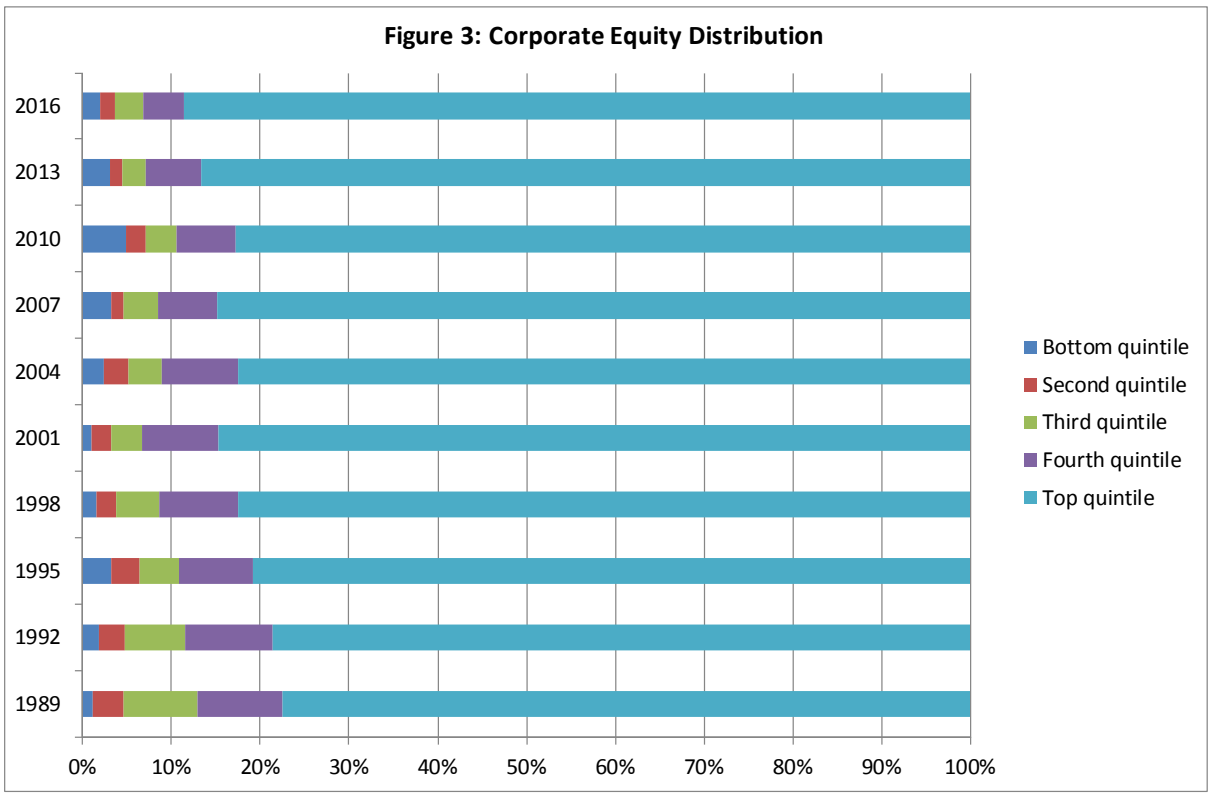


Figure 3 shows the distribution of corporate equity, being the sum of stock holdings and business equity.[6] Note that because we are ranking families by pre-tax income, the corporate equity shares of the population will not necessarily rise monotonically. In fact, we observe that from 2007 onwards, the bottom quintile has a larger share of corporate equity than the second-bottom quintile. These families in the bottom quintile may include those with badly-performing small businesses, or elderly families whose asset holdings are disproportionate to their incomes.

The lowest-income fifth of families had 1.1 percent of corporate equity in 1989, and 2.0 percent in 2016 (over the same timespan, the second-bottom quintile share went from 3.5 percent to 1.6 percent, so the total share of corporate equity of the bottom 40 percent fell). By contrast, the highest-income quintile had 77 percent of corporate equity in 1989, and 89 percent of corporate equity in 2016. Hence, corporate equity is considerably more skewed than expenditure or income, and has become considerably more skewed over the past three decades.

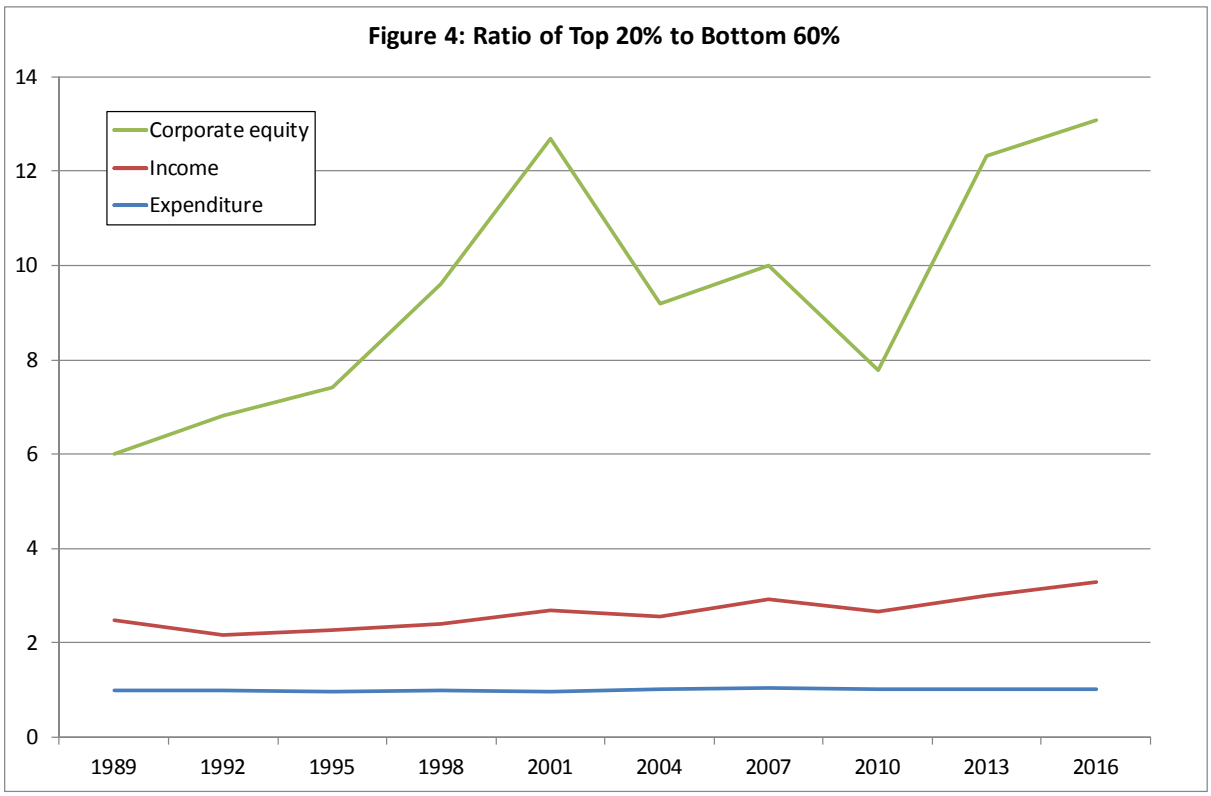
[6] The Survey of Consumer Finances data that we rely upon do not allow us to separately identify stock holdings within retirement accounts.



In Figure 4, we show the ratio of the top 20 percent share to the bottom 60 percent share for each of the three measures: expenditure, income and corporate equity. In 1989, the top 20 percent consumed 0.97 as much as the bottom 60 percent, a ratio that had risen only to 1.02 by 2016.

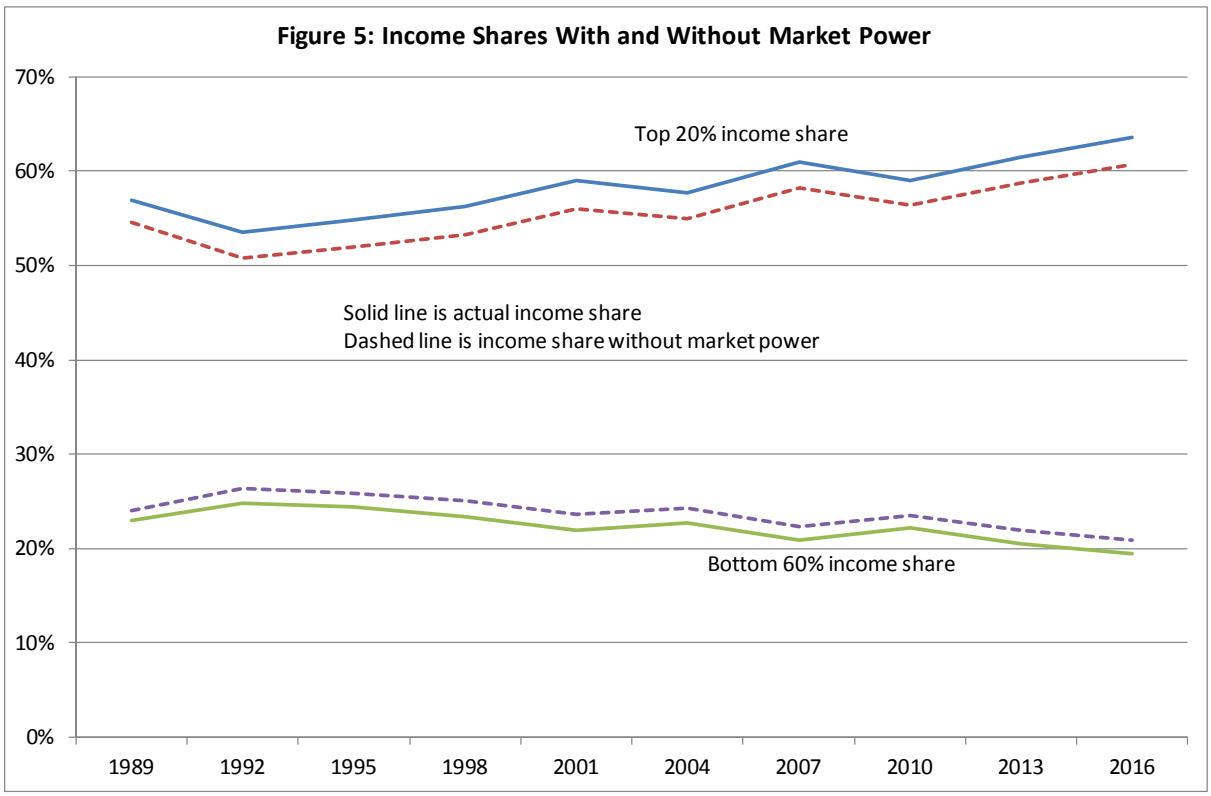
The ratio of income increased more dramatically over this period. In 1989, the top fifth had 2.4 times as much income as the bottom three-fifths. By 2016, this had risen to 3.3 times as much.

The most marked increase is in corporate equity. In 1989, the top 20 percent had 6 times as much corporate equity as the bottom 60 percent. This ratio rose to 13 in 2001, dropped to 8 in 2010, and has since risen back to 13. On this particular metric, corporate equity is 13 times as concentrated as expenditure.



Finally, we calculate the impact of market power on the distribution of income. Figure 5 shows income shares for the top fifth and the bottom three fifths as they are currently measured (solid lines) and in the hypothetical case of fully competitive markets (dashed lines). In 2016, removing market power would cause the bottom 60 percent income share to rise from 19 percent to 21 percent, and would cause the top 20 percent income share to fall from 64 percent to 61 percent.

These results show that the absence of market power would somewhat equalise the distribution of incomes, but also puts into perspective the size of the impact. The rise in income inequality over the period that we study has been considerable, and even in the absence of market power, incomes would be more concentrated in 2016 than they were in 1989.



5. Conclusion

A common rule of thumb in inequality analysis is that wealth is more unequally distributed than income, which is in turn more unequally distributed than consumption. A similar pattern holds true when we narrow our analysis to corporate equity.

Our documentation of this fact corroborates one previously hypothesized channel through which market concentration may increase inequality. By increasing producer surplus and decreasing consumer surplus, monopoly power effectively acts to transfer resources from low-income families to high-income families. Moreover, as our extension of Farrell (1985) shows, the fact that voting shares are more concentrated than consumption leads to a preference amongst shareholders for higher than efficient prices and the exercise of market power, which can exacerbate the problem still further.

This effect is likely to be magnified in capital-intensive industries. For example, the increasing use of industrial robots in a market where firms have significant market power may act to increase equity returns, increase consumer prices, and reduce the labor share. Additionally, it is worth noting that our analysis does not take account of the fact that some 14 percent of equities are held by foreigners (Department of the Treasury, 2018). These non-US stock holders, such as sovereign wealth funds, also benefit from a rise in market power.

This result implies that engendering more competition would not only have efficiency benefits, but attenuate the rise of inequality as well. Whether going down this route is a desirable policy choice is a question beyond the scope of this paper and left for future study and debate.

References

Alvaredo, Facundo, Lucas Chancel, Thomas Piketty, Emmanuel Saez and Gabriel Zucman (2018). *World Inequality Report 2018*. Harvard University Press, Cambridge, Massachusetts.

Andrews, D., Criscuolo, C. and Gal, P., (2015). Frontier firms, technology diffusion and public policy: micro evidence from OECD countries. OECD, Paris.

Atkinson, Anthony (2015). *Inequality: What can be done?* Harvard University Press, Cambridge, Massachusetts.

Autor, David, David Dorn, Lawrence F. Katz, Christina Patterson, and John Van Reenen, 2017, 'The Fall of the Labor Share and the Rise of Superstar Firms', NBER Working Paper 23396, NBER, Cambridge MA.

Azar, Jose, Schmalz, Martin C. and Tecu, Isabel (2018) 'Anticompetitive Effects of Common Ownership' *Journal of Finance*, 73(4), 1513-1565.

Barkai, Simcha (2016). 'Declining Labor and Capital Shares', Working Paper, University of Chicago.

Blitz, Rudolph and John J. Siegfried (1992), 'How did the Wealthiest Americans Get So Rich?' *Quarterly Review of Economics and Finance*, Vol. 32, No 1, pp. 5-26.

Byrne, D. and De Roos, N., (2018). 'Learning to coordinate: A study in retail gasoline'. *American Economic Review*, forthcoming

Comanor, William S. and Robert H. Smiley (1975). Monopoly and the distribution of wealth. *Quarterly Journal of Economics*, vol. 89, pp. 177–94.

Creedy, John and Robert Dixon (1998). The relative burden of monopoly on households with different incomes. *Economica*, vol. 65, pp. 285–93.

De Loecker, Jan and Jan Eeckhout (2018). Global Market Power. NBER Working Paper No. 24768, NBER, Cambridge, MA.

Department of the Treasury, Federal Reserve Bank of New York, and Board of Governors of the Federal Reserve System (2018), *Foreign Portfolio Holdings of U.S. Securities as of June 30, 2017*, Treasury, Washington DC.

Economist (2016). 'Too much of a good thing', *The Economist*. 26 March

Economist (2017). 'What annual reports say, or do not, about competition', *The Economist*. 16 November.

Elhauge, E. (2016). 'Horizontal Shareholding'. *Harvard Law Review*, Vol. 129, No. 5, pp. 1267-1317.

Ennis, S. (2014), ‘Commerce Affected by Cross-Border Private Cartels’, OECD WP3 paper, DAF/COMP/WP3(2014)11.

Ennis, Sean, Pedro Gonzaga and Chris Pike (2017). Inequality: A Hidden Cost of Market Power, OECD Competition Division, Paris.

Farrell, J. (1985), ‘Owner-Consumers and Efficiency,’ *Economics Letters*, 19, pp.303-306.

Furman, J. and P. Orszag (2015). ‘A Firm-Level Perspective on the Role of Rents in the Rise in Inequality’. Presentation at A Just Society Centennial Event in Honor of Joseph Stiglitz at Columbia University.

Gans, J.S. and M. Smart (1996), ‘Majority Voting with Single-Crossing Preferences,’ *Journal of Public Economics*, 59, pp.219-237.

Kenber, Billy (2017). Pharma giant Aspen accused of withholding drugs to force up prices. *Australian Business Review*. 14 April.

Khan, Lina and Sandeep Vaheesan (2017). ‘Market Power and Inequality: The Antitrust Counterrevolution and its Discontents’. *Harvard Law and Policy Review*, Vol. 11, pp.235-294

Mendoza, Ronald U. (2011). ‘Why Do the Poor Pay More? Exploring the Poverty Penalty Concept’. *Journal of International Development*, Vol. 23, No. 1, pp. 1–28

Marketwatch (2017). Aspen Pharmacare Holdings Ltd. Accessed 29 June 2017.

Novick, Barbara (2017) ‘How Index Funds Democratize Investing’, *Wall Street Journal*, 8 January.

Posner, Eric and Weyl, Glen E (2015) ‘Mutual Funds’ Dark Side’. *Slate*. 16 April.

Appendix: Detailed Results

1989				
Percentile of income	Share of income	Share of corporate equity	Share of expenditure	Share of income absent market power
Less than 20	0.029	0.011	0.087	0.031
20–39.9	0.072	0.035	0.127	0.077
40–59.9	0.128	0.083	0.176	0.133
60–79.9	0.201	0.097	0.246	0.213
80-100	0.569	0.774	0.382	0.546
1992				
Percentile of income	Share of income	Share of corporate equity	Share of expenditure	Share of income absent market power
Less than 20	0.033	0.019	0.085	0.035
20–39.9	0.079	0.028	0.129	0.085
40–59.9	0.136	0.068	0.178	0.144
60–79.9	0.216	0.098	0.242	0.229
80-100	0.536	0.786	0.389	0.507
1995				
Percentile of income	Share of income	Share of corporate equity	Share of expenditure	Share of income absent market power
Less than 20	0.030	0.032	0.091	0.029
20–39.9	0.079	0.032	0.137	0.084
40–59.9	0.135	0.045	0.181	0.145
60–79.9	0.208	0.083	0.244	0.222
80-100	0.549	0.808	0.388	0.520
1998				
Percentile of income	Share of income	Share of corporate equity	Share of expenditure	Share of income absent market power
Less than 20	0.030	0.015	0.094	0.031
20–39.9	0.076	0.022	0.133	0.082
40–59.9	0.128	0.049	0.177	0.137
60–79.9	0.204	0.089	0.247	0.217
80-100	0.562	0.825	0.398	0.532
2001				
Percentile of income	Share of income	Share of corporate equity	Share of expenditure	Share of income absent market power
Less than 20	0.029	0.009	0.096	0.032
20–39.9	0.071	0.022	0.134	0.076
40–59.9	0.118	0.035	0.180	0.128
60–79.9	0.192	0.086	0.247	0.204
80-100	0.590	0.848	0.390	0.560

2004				
Percentile of income	Share of income	Share of corporate equity	Share of expenditure	Share of income absent market power
Less than 20	0.031	0.024	0.082	0.031
20–39.9	0.074	0.027	0.126	0.079
40–59.9	0.123	0.038	0.170	0.132
60–79.9	0.196	0.086	0.235	0.208
80-100	0.578	0.824	0.386	0.550
2007				
Percentile of income	Share of income	Share of corporate equity	Share of expenditure	Share of income absent market power
Less than 20	0.029	0.033	0.082	0.029
20–39.9	0.067	0.013	0.126	0.073
40–59.9	0.112	0.039	0.171	0.121
60–79.9	0.182	0.067	0.231	0.195
80-100	0.610	0.848	0.390	0.583
2010				
Percentile of income	Share of income	Share of corporate equity	Share of expenditure	Share of income absent market power
Less than 20	0.033	0.049	0.087	0.031
20–39.9	0.071	0.022	0.126	0.077
40–59.9	0.118	0.036	0.171	0.127
60–79.9	0.188	0.066	0.230	0.201
80-100	0.591	0.828	0.386	0.564
2013				
Percentile of income	Share of income	Share of corporate equity	Share of expenditure	Share of income absent market power
Less than 20	0.031	0.030	0.088	0.031
20–39.9	0.066	0.014	0.127	0.071
40–59.9	0.108	0.026	0.166	0.118
60–79.9	0.180	0.063	0.230	0.193
80-100	0.615	0.866	0.388	0.587
2016				
Percentile of income	Share of income	Share of corporate equity	Share of expenditure	Share of income absent market power
Less than 20	0.028	0.020	0.088	0.029
20–39.9	0.062	0.016	0.128	0.067
40–59.9	0.104	0.031	0.166	0.112
60–79.9	0.170	0.046	0.227	0.184
80-100	0.636	0.886	0.392	0.608