

Working Paper

Domestic Outsourcing, Rent Seeking, and Increasing Inequality

By Eileen Appelbaum

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Two Strands of Research on Increasing Inequality

Research by economists into the causes of the increase in inequality in the U.S. has focused on two explanations — an increase in firms' ability to extract monopoly rent, and an increase in the variance of earnings among firms.

Increase in Economic Rents

Economists have documented an increase over the last 30-plus years in the ability of firms to extract economic rents. Three developments in particular have been important: an increase in market concentration, an expansion of the scale and scope of patent and copyright protections, and the adoption of the financial model of the firm by non-financial corporations.

A shift in the framework guiding anti-trust policy following new merger guidelines in 1982 changed the focus of enforcement of anti-trust policy from the effect of mergers on competition to an almost exclusive focus on efficiency (Stoller 2016; Mitchell 2016:11). The welfare effects of mergers depend crucially on whether they lead to higher prices or to increases in efficiency, but these effects have been difficult to disentangle. Recently developed empirical techniques enabled researchers at the Federal Reserve to separate out these effects (Blonigen and Pierce 2016). Using plant-level data for US manufacturing over 1997-2007, they find large and significant increases in the mark-up of prices over production costs for acquired plants relative to those not acquired. But they find no statistically significant effect of mergers and acquisitions (M&As) on the productivity of plants or the efficiency of firms. Similar results for a broader set of industries were found by Barkai (2016). Another study found concentration increased in over 90 percent of U.S. industries since 2000 as the number of publicly-traded companies declined (Grullon, Larkin, and Michaely 2015). The researchers found an increase in the return on assets, mainly driven by the ability of firms to raise profit margins, not due to improvements in operational efficiency, but to an increase in market power.

Patents and copyrights give their holders a temporary monopoly that enables them to charge higher prices. This serves as a mechanism for financing innovation, research, and creative endeavors. But they also provide incentives for rent-seeking behaviors. Extending the period of the monopoly and expanding the scope of patent and copyright protections lets companies collect monopoly rents far in excess of incentives for innovation and creativity. Changes in laws and court rulings since 1980 allow life forms, business methods, and software to be patented. Copyright protection now applies

to a wide range of digital reproductions. In addition, the length of copyright protections has increased from 55 to 95 years (Ravi Katari and Dean Baker 2015).

Less familiar is the shift over the last 30-plus years from a managerial model of the firm to a financial model that has altered the nature of value creation by nonfinancial corporations. In the managerial model, value is mainly created, extracted, and distributed through the labor process. Companies view their purpose as producing goods and services with the goal of making a profit. Business strategy and investment decisions are in the hands of company executives whose goal is to increase production, revenue, and market share. This requires a productive workforce willing to cooperate in meeting company goals, typically elicited by a willingness on the part of management to share productivity gains with workers. Top management reinvests the share of profits retained by the company in worker skills, technology, and research and development. These profit-seeking activities increase the size of the economic pie, allowing both the slice of the pie going to profit and the slice going to labor to increase.

Companies that adopt the financial model of the firm take a different approach to value creation, extraction, allocation, and distribution. Deregulation of financial markets and legal changes since 1980 paved the way for the spread of the financial model of the firm (Appelbaum and Batt 2014: Chapter 2). Acceptance of principal-agent theory (Jensen and Metzger 1976), in which managers – the agents – are charged with single-mindedly serving the interests of the principals – the firm’s shareholders – by maximizing shareholder returns has altered the logic of value creation. Financial actors now dictate business strategy and decisions in many nonfinancial corporations, with an eye on maximizing their own returns. (Froud and Williams 2007; Krippner 2011; Appelbaum and Batt 2014; Gospel, Howard, Pendleton and Vitols 2014).

Rent-seeking behavior is widespread in financialized firms which increasingly undertake financial activities designed to enrich shareholders that have little to do with producing goods and services. The labor process, while important, is less central to the firm’s financial success. The need to invest in and retain employees with firm-specific skills or to pay wages that ensure labor’s cooperation has become less relevant. Cost containment via work intensification, subcontracting, and a range of low-wage alternative work arrangements has become more widespread. Labor contracts – explicit and implicit – have lost their moral content and, like any other contract, can be broken (Appelbaum, Batt and Clark 2013). Management generates revenue that can be distributed to shareholders by selling off company assets, making greater use of debt, increasing the use of junk bonds, making strategic use of bankruptcy, increasing dividend payouts, engaging in share buybacks to manipulate share price, and aggressively using tax arbitrage/tax avoidance to raise after-tax profits. Top management’s interests are aligned with those of shareholders by tying executive pay to share price. The result has

been a dramatic rise in CEO pay (Davis and Mishel 2014). Share buybacks and dividend payouts are advantageous to shareholders and to corporate executives, but they do nothing to increase the size of the economic pie. They have come to replace productivity-enhancing investments in equipment and workers as the main use of retained earnings (Lazonick 2014).

Activist hedge funds that buy up blocks of shares in publicly-traded companies and pressure management to sell off real estate assets and distribute the proceeds to shareholders are collecting rents (Appelbaum 2014). The same is true of private equity firms that take over companies, split them into a property company that owns the real estate and an operating company that operates the business, and then sell the real estate in a sale-lease back deal — pocketing the proceeds and putting the operating company at risk of bankruptcy (Appelbaum 2012). An entire industry has grown up around the aggressive pursuit of tax arbitrage and tax loopholes that allow corporations and the wealthy to avoid paying their fair share taxes and to capture a larger slice of the economic pie at the expense of the tax paying public.

Thus, powerful companies use their dominant position in markets (Krugman 2013) or patent and copyright protections (Ravi and Baker 2015) to earn monopoly rents at the expense of consumers; or they use their wealth to gain favorable regulations and tax breaks at the expense of taxpayers (Bessen 2016). The increase in the income share of the top one percent of households went from about 10 percent in 1980 to about 20 percent in the years 2010 to 2015 and is largely attributable to an increase in economic rents captured by these households (Mishel and Bivens 2013; Baker 2016).

The link between increases in economic rents on the one hand and rising inequality of income and wealth on the other is due to the zero-sum nature of rent-seeking behavior. Since rent-seeking activities do not increase the size of the economic pie, it follows in an accounting sense that if some economic actors gain, others must lose (Stiglitz and Bilmes 2012).

Increase in Earnings Inequality

A second stream of research examines the increase in wage inequality. Careful empirical work confirms informed conjectures made earlier by economists that an increased variance in earnings among firms is a major contributor to the increase in wage inequality among workers with similar skills and characteristics (Furman and Orszag 2015; Handwerker 2015).

Analysis of rising wage inequality by Song, Price, Guvenen, Bloom and von Wachter (2015) over 1971 to 2013 finds that the increase in earnings inequality is mainly due to the rising variance of

earnings between firms. They find that about 75 percent of the rise in earnings inequality is due to the increased variance in between-firm earnings rather than to an increase in earnings inequality within firms. There are two exceptions: the wages of the top 1 percent of earners within firms rose relative to other employees; and there was more increase in within-firm earnings inequality in the largest firms. The increasing variance of earnings between firms was due not to differences in the types of workers employed by firms, but to differences in mean pay levels.

A study by Richard Freeman and colleagues finds an increase in inequality in earnings among firms between 1977 and 2009 that, in turn, is mirrored in the increase in inequality in earnings among workers with similar skills and characteristics (Freeman 2016; Barth, Byson, Davis and Freeman 2016). The researchers find that most of the observed *increase* in inequality among workers occurs not between higher- and lower- skilled workers *within* establishments, but rather is due to an increase in inequality among workers with similar skills employed in *different* establishments. This, they find in their main analysis, accounts for over two-thirds of the increase in earnings inequality between workers. A separate analysis using different data finds that nearly four-fifths of the increase in wage inequality is associated with an increase in between-establishment inequality.

One commonly observed phenomenon is the outsourcing of lower value-added or more easily standardized and monitored activities to subcontractor firms. Increasingly, this has led to workers being sorted into establishments that disproportionately employ higher-skilled workers and those that disproportionately employ lower-skilled workers. This change in the composition of worker skills within organizations leads to an increase in wage inequality between establishments. It does *not*, however, lead to a change in overall wage inequality among workers, and thus cannot explain the *increase* in wage inequality in recent decades.

It is important to be clear that it is the *increase* in inequality over recent decades that is analyzed in these studies of rising wage inequality and that is the focus of this article, not the determinants of the *level* of wage inequality. The level of wage inequality *within* organizations is much larger than *between* organizations.

Freeman (2016: 16) notes that the increase in inequality in earnings among establishments cannot be explained by traditional differences in earnings due to factors such as industry, firm size, labor productivity, or capital per worker. It is instead, he argues, due to “characteristics of employers that standard data sets do not measure.”

This article seeks to draw these two strands of research together and provide an explanation for the widely observed increase in inequality. It seeks to answer two questions:

- *What is the role of rent in the increased variance in earnings among firms?*
- *What is the mechanism that links the increase in rent extraction to the rise in inequality in earnings among workers with similar skills and characteristics?*

Overview of the Argument

An important mechanism linking the increasing rents described above and the rising inequality among firms and workers, I argue, is the increase in domestic outsourcing and the rise in networked forms of production over the past three-and-a-half decades as firms have reorganized production processes to focus on maximizing shareholder value. This has been a multi-dimensional process involving (1) a large and changing role for finance, (2) consolidation of the largest enterprises, and (3) decentralization of the production and provision of goods and services facilitated by new technologies. Consolidation enhances the ability of the lead firm in a production network, and in many cases key subcontractor firms, to raise prices and extract monopoly rents. Consolidation has driven market concentration in many industries, reducing competition. This has been accompanied by the decentralization and outsourcing of goods production, logistics, and service activities. Outsourcing is facilitated by innovations in digital technology and logistics. It results, at least in part, from demands that companies maximize shareholder value, which has provided a rationale for the focus on core competencies. Outsourcing has also been driven by deliberate efforts of firms to circumvent legal constraints, union representation, and internal equity norms that limit their ability to pay different wages to similarly qualified workers. The ‘fissuring’ of employment (Weil 2014) as “firms shed activities to subordinate companies through subcontracting, third party management, and other organizational forms” facilitates differences in pay for similar workers employed in different establishments (Council of Economic Advisers 2016: 3).

The heightened use of production networks has multiplied the contractual relationships among producers and suppliers, conferring on them legal claims to the value produced by the network that extend beyond an organization’s own contributions to production and reflect interfirm power relations. Firms with the greatest financial clout, market power, or patent or copyright protections are able to claim the largest part of the value – rents and profits – created by the network. They may share some of these rents with workers, due perhaps to unions or internal norms (Furman and Orszag 2015). Meanwhile, as the weakest organizations in a production network struggle to remain viable; the wages and employment security of their workers take the largest hit. Negative outcomes

for these workers are limited only by social and political movements such as the Fight for \$15, by employment laws such as the minimum wage, or by the strength of unions (Grimshaw, Willmott and Rubery 2005). The emergence of new financial actors since the late 1970s – activist hedge funds, private equity firms, real estate investment trusts, and increased use of debt by public and private companies – creates another layer of legal claims on value generated in production networks.

Differences in the ability of organizations in a network to extract rents lead, in the first instance, to a *redistribution* of capital claims on value among enterprises; it does not necessarily imply an increase in the share of corporate earnings in GDP (Ravi and Baker 2015). Higher earnings of corporations that are able to extract value may be offset by the lower margins in weaker firms. Other measures, however, do exhibit declines in the share of output going to workers. Labor’s share of sales revenue of U.S. companies has declined (Barkai 2016: 9 and 24-26); as has labor’s share of national income – a broader concept than corporate profits (Council of Economic Advisers 2016: 1). The structure of firms has undergone a major evolution in the past three decades, as vertically integrated companies have focused on core competencies and outsourced many tasks previously performed in-house or by subsidiaries. It is the increasing presence of production networks, and differences in the ability of lead and contractor firms in the network to extract value, that contributes prominently to the rising inequality in earnings among firms and establishments.

This is the means by which rents are extracted at the point of production. Workers experience these effects more directly and more persistently than the effects of rents extracted from them as consumers or taxpayers.

From Vertically Integrated Firms to Domestic Outsourcing and Production Networks¹

For much of the 20th century, a significant part of economic activity took place in vertically integrated corporations in which hierarchical forms of organization replaced the market as the primary form of coordinating production. Economists explain this development in terms of transactions costs (Coase 1937; Williamson 1975; Williamson 1985). Firms and markets, in this framework, are alternative mechanisms for allocating labor and other resources and for coordinating production. When transactions are straightforward, are not repeated, and do not require investments in specific assets in order to be carried out, arms-length transactions governed by prices established in markets are an efficient means of organizing production. However, where outcomes are

1 This section draws heavily on Bernhardt, Batt, Houseman, and Appelbaum (2016) and on Batt and Appelbaum (forthcoming 2017).

uncertain, interactions are repeated, or transaction-specific investments are required, vertically integrated firms are more efficient than markets for coordinating production. Large, vertically integrated corporations emerged early in the 20th century to minimize firms' transactions costs. In particular, it was economically efficient for firms to employ workers and carry out production activities in-house when the costs of bureaucratic monitoring and control of employees were less than the costs of specifying, monitoring, and enforcing contracts with contractors and supplier firms. Hierarchy is also a governance mechanism for managing the conflicting interests of employers and workers (Marglin 1978). In large, hierarchical firms, managers are able to exercise authority over workers and achieve their cooperation in production activities; workers gain the economic security of regular employment, wages, and advancement opportunities (Doeringer and Piore 1971, Jacoby 1985).

In the 1970s and 1980s, technological innovations affecting production, transportation, and monitoring activities began to undermine the rationale for organizing production in vertically integrated firms. The rise of mass production technologies and a mass market for these goods in the early years of the 20th century favored the emergence of large, vertically integrated firms to spread high fixed costs over a large volume of output and raise productivity (Chandler 1977, 1990). Managerial expertise and hierarchical organization proved essential for internal coordination of production processes and for ongoing improvements in productivity (Helper and Sako 2010). The development of new flexible manufacturing technologies that enabled firms to produce a greater variety of goods in small batches (Piore and Sabel 1984) and new management approaches (Jaikumar 1986; MacDuffie 1995; Appelbaum and Batt 1994) undermined this rationale for the vertically integrated firm.

Increased competition as a result of product market deregulation and trade agreements put pressure on firms to reduce costs. Financial deregulation, the rising influence of institutional investors, and the emergence of new financial actors that focused on maximizing shareholder value increased the pressure to sell off assets and reduce headcount (Appelbaum and Batt 2014). Firms responded by focusing on their "core competencies" and outsourcing both peripheral tasks and specialized functions to subcontractors (Prahalad and Hamel 1990; Lepak and Snell 1999; Kogut and Zander 1992). The resulting complex web of inter-firm relationships was facilitated by developments in information and digital technologies that enabled firms to outsource entire functions and to more easily monitor contractors.

Contracting out for goods and services via business-to-business transactions is not new. But the scale and scope of this activity has been transformed in recent decades as large, hierarchical firms

began to lose their organizational advantage, and changes in the mix of firms' "make or buy" decisions altered the structure of the economy in fundamental ways.

Advances in information and communication technologies lowered the cost of information processing and coordination of production across organizational boundaries, reducing the advantages of keeping production in-house. An early example comes from the customer service and sales activities of large telecommunications and financial services firms. Technological advances allowed these firms to consolidate what had been largely small in-house operations and, by the mid-1990s, to outsource some call volume to third-party vendors. Lead firms set terms and conditions of vendor contracts, and vendors faced volatile conditions in terms of demand volume and contract renewal. A major establishment-level survey of call centers in 17 countries found lower pay and worse working conditions at call centers managed by vendors compared to those retained in-house (Batt, Holman, and Holtgrewe 2009; Batt and Nohara 2009).

Digital technologies have increased the ability to codify knowledge and standardize production processes. They have supported the decomposition of complex processes, enabled firms to identify and codify separable parts of the production process, and facilitated standardization of interfaces. Standardization of design features of the production modules reduces the possibilities for contractor opportunism (Helper, MacDuffie, and Sabel 2000). Business functions and customer-facing transactions have also been broken into their components and optimized in this way, leading to the widespread use of business process outsourcing (Deblaere and Osborne 2010).

These technologies have improved the ability of firms to monitor and enforce contracts with external vendors and suppliers, thus reducing the advantage of hierarchy in coordinating production relative to the market (Cappelli 2016). Transaction cost arguments now suggest that market relationships among a complex web of producers may enjoy a cost advantage over vertically integrated firms.

Core competency theory argues that firms can improve their competitive advantage by focusing on what they do best and eliminating other lines of business (Prahalad and Hamel 1990; Lepak and Snell 1999). The shift to the financial model of the firm also increases the likelihood that firms will make greater use of domestic outsourcing. Unlike the managerial model of the firm in which capital assets are viewed as relatively fixed resources and retained earnings are used to expand company assets, in the financial model the corporation's assets are viewed by top management as Lego pieces, to be bought and sold with the goal of increasing shareholder returns. Investment and business strategy decisions are made by economic actors whose only claims on the firm are financial and whose purpose is unlocking value that can be returned to shareholders. The result is deterioration in

wages and working conditions for workers employed by subcontractors in outsourced operations (Weil 2014: 15, 100). Uncertainty over the duration or renewal of the contract translates into greater job insecurity for workers and greater use of nonstandard work arrangements.

Recent empirical studies provide evidence that workers in outsourced operations suffer substantial pay penalties compared to workers in similar jobs that were not outsourced. Goldschmidt and Schmieder (2015) document the dramatic rise since 1980 in outsourcing in logistics, cleaning, security, and food services functions in Germany and the substantial decline in wages relative to similar jobs that were not outsourced. (See also Dube and Kaplan 2010.) Batt and colleagues find systematic differences between union, non-union in-house, and outsourced call center operations, with the latter providing substantially lower pay, benefits, and discretion as well as greater use of part-time and contingent work arrangements (Batt, Holman, and Holtgrewe 2009; Batt, Doellgast, and Kwon 2006; Batt and Nohara 2009).

Labor Market Segmentation

The old labor market segmentation between workers (Gordon, Reich and Edwards 1982) has intensified. The quality of jobs and wages are likely to be worse in outsourced operations with thinner profit margins (Weil 2014). Small employers may bargain contracts with lead firms that set unrealistic performance requirements, leading to further work intensification (Ji and Weil 2015). This has contributed to the increase in contingent and nonstandard work arrangements between 2005 and 2015. The share of workers in these arrangements increased slightly from 10.0 percent in 1995 to 10.7 percent in 2005, but rose sharply to 15.8 percent in the 2005 to 2015 decade (Katz and Kruger 2016).

This is overlaid since 1980 by the new labor market segmentation in which a substantial share of employment is organized into production networks of strong firms that can extract value and weaker firms unable to defend themselves or their workers. While there is an overlap in these two types of labor market segmentation, employment in firms in production networks frequently consists of standard jobs not picked up in contingent worker surveys. **Figure 1** illustrates the relationship between the two types of labor market segmentation.

FIGURE 1

Relationship between Contracting Out and Employment Status

	In-house jobs	Contracted jobs (both on-site and off-site)
Standard jobs	<ul style="list-style-type: none"> ▪ Permanent employees 	<ul style="list-style-type: none"> ▪ Permanent employees
Non-standard jobs	<ul style="list-style-type: none"> ▪ On-call ▪ Direct-hire temporary 	<ul style="list-style-type: none"> ▪ Independent contractors, including on-demand platform workers ▪ Temp agency workers ▪ Leased/professional employer organization workers

Source: Bernhardt, Batt, Houseman, and Appelbaum 2016.

The increasing importance of networked production complicates the labor process. In a production network, the labor process is fragmented and engages workers employed in different organizations that occupy different positions in the network. Their labor is combined and their work coordinated via contracting relationships among more and less powerful employers that directly affect pay and working conditions.

The workers themselves are separated by where in the supply chain or production network their jobs fall as well as by geographic distance. They have no organic relationships with each other that promote solidarity – common lunchrooms, common managers, common access to opportunities, common problems and irritants – and generally do not recognize their common interests, much less join together to defend them. The wages of workers with similar skills and demographic characteristics will vary depending on whether they are employed in a more powerful firm in the network and can share in the economic value captured by their employer or work in a less powerful firm in the network and have no such opportunity.

Value Extraction in Production Networks

The inherent conflicts of interest between labor and capital within firms over the distribution of the value created in the labor process have not disappeared. However, they now exist alongside new opportunities for inter-firm cooperation as well as new forms of capital-capital conflict among producers over the distribution of value created by the network (Marchington, Grimshaw, Rubery,

and Willmott 2005; Rubery 2007) as well as between producer and financial interests. As Rubery recognized, networked forms of production ‘complexify’ the capital-labor relationship.

While collaboration among networked firms producing complementary inputs is essential for production, asymmetric power relations push in the opposite direction. Rent seeking is about conflict over distribution with results largely determined by differences in bargaining power (Folbre 2016: 28). Production networks produce goods and services, generate profits, and contribute to the size of the economic pie. Firms in the network may also generate economic rents. Power relations determine the distribution among these firms of the profit and rents created by the network. *The pay of workers in a production network depends not only on their own skills and characteristics, but on their employers’ access to these rents.*

Jobs are often outsourced to weaker subcontractors that lack bargaining power. More powerful lead firms may pit these suppliers against one another, forcing them to bid down prices, undermining their ability to pay living wages. Or they may dictate the terms of service agreements and require short-term contracts. The resulting uncertainty and volatility undermines subcontractors’ ability to offer stable jobs.

Using detailed German administrative data on the universe of workers and firms, Goldschmidt and Schmieder (2015) investigate the effect on wages when jobs are moved from lead firms to contracting firms. They find that wages of employees whose jobs have been outsourced to contractor firms fall by about 10 to 15 percent relative to what these same workers were paid prior to outsourcing. They attribute this to the fact that while the same work is being performed and the contribution to output is the same, the outsourced workers earn less because they no longer have access to the economic rents that are specific to the lead firm. The researchers make an especially strong case that wage loss for workers in jobs outsourced to contractor firms is due to their employment by subcontractors by examining situations in which a large employer outsources a group of workers (e.g., cafeteria workers) to a subcontractor but the outsourced workers continue to perform the same job at the same work site as before, yet earn lower wages. These wage losses stem from being excluded from lead firm rents.

Power Relations vs. Productivity Differences

Some researchers argue that interfirm differences in worker pay among seemingly similar workers reflect differences in the productivity of workers and hence the firms that employ them.² Workers, they argue, are sorted into firms with higher or lower labor productivity. Low productivity employers with workers with below average productivity will have less latitude to pay above market wages (Card, Rute Cardoso, and Kline 2016a, 2016b). The study examined the gender wage gap, and found that women earned lower wages in part because women “tend to be employed at less productive firms that pay low wages to everyone (2016a: 3).”

Like most studies of labor productivity, this study actually estimates labor *revenue* productivity – i.e., the researchers use revenue as a proxy for output. This creates a problem for interpreting their results. When power relations among firms in a network play a role in determining how much revenue each firm receives, it is impossible to determine to what extent higher labor revenue productivity is due to greater productive efficiency of a firms’ workers or to the greater ability of their employer to lay claim to jointly produced value. It is, thus, not possible to conclude that the rise in inter-firm inequality is primarily about high productivity firms leaving the rest behind. In the case of firms in a production network, it is about the ability of the lead firm to set prices that enable it to capture a disproportionate share of the net revenue accruing to the network, to the disadvantage of weaker firms and their employees.

Primary or lead firms may not be the only firms in a network powerful enough to extract rents. An interesting example of the power exercised by contractor firms comes from the pharmaceutical industry. Mylan acquired the company that produces the lifesaving EpiPen in 2007 and has since increased its price 500 percent to \$600 (Thomas 2016). Mylan’s CEO described the supply chain that is involved in getting the EpiPen to patients. She pointed out that of the \$600 price, only \$274 comes to Mylan (Johnson 2016). Two of the companies – Express Scripts and CVS Health – handle prescription benefits for 75 percent of the market and use their market power to capture a substantial share of the monopoly rents from drug producers (Mitchell 2016: 17). Pharmacy benefit managers derive their power vis a vis the drug manufacturers from their ability to choose the drug makers whose products will be stocked by hospital pharmacies and considered ‘in the formulary’ when purchased by insured patients (Livingston 2016).

² For example, Jeanna Smialek (2015) quotes Fatih Guvenah, one of the researchers who documented the increasing variance in earnings between firms, as attributing this to the rise of ‘super firms’ – businesses in which skilled workers with higher productivity are concentrated.

Forms of Networked Production

The archetypal image of firm-to-firm contracting is the linear supply chain. This type of production network is common in manufacturing industries where, beginning in the 1970s and 1980s, deregulation, the focus on maximizing shareholder value, and corporate policies led to the rise of supply chains. Following the emphasis on core competencies, large vertically integrated manufacturers began selling off assets and outsourcing work. Now, they function as the lead firm in a supply chain while production activities are outsourced to multiple tiers of suppliers (Helper and Kreuger 2016).

Despite evidence that collaborative relationships improve the competitiveness of the supply chain's products, relationships of lead firms to third and fourth tier suppliers are generally based on cost considerations (Whitford 2006) and are designed to guarantee that the lead firm and major contractors capture most of the profits and rents and maximize shareholder value. Too often, this leads to a 'race to the bottom' instead of a more collaborative structure (Helper and Kreuger 2016). Competition for a place in the third or fourth tier of supply chains is so intense that these firms frequently experience bankruptcy or are shut down for violating labor laws or health and safety regulations. Both innovation that would benefit the economy and the pay of workers are depressed in these weaker firms.

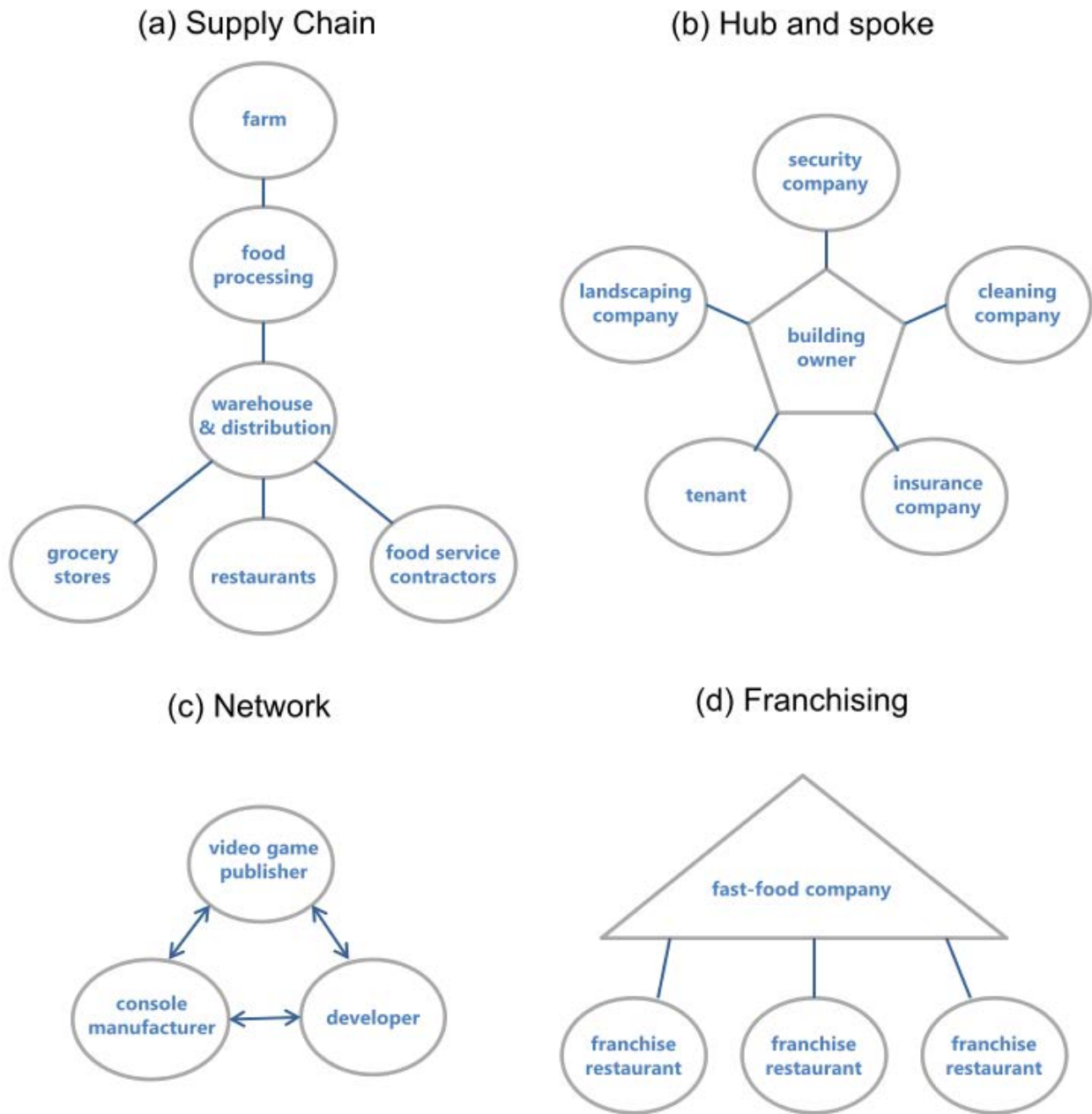
Figure 2a illustrates the food supply chain in the U.S., showing the classic line of contracting from production (agriculture and fisheries) to food processing, warehouse and distribution, and all the way through to firms that sell food to consumers (retailers, restaurants and food service contractors that provide institutional food services to schools, hospitals, cafeterias) (Bernhardt, Batt, Houseman and Appelbaum 2016). While the food supply chain is not new, its nature has changed. Consolidation of customer-facing segments of the supply chain – in retail, restaurants, and food service contractor firms – have placed new pressures on companies and workers in upstream segments of the chain to reduce costs. In the retail segment of the food supply chain, increasing concentration is notable as supermarket chains consolidate in order to compete with Walmart, now the largest grocery chain in the U.S.; its requirement that suppliers keep costs low have reverberated along the food supply chain, depressing wages and unionization rates, and worsening working conditions in upstream companies (Food Chain Workers Alliance and Solidarity Research Cooperative 2016).

The food service contractor segment that serves institutional clients is a highly concentrated part of the food supply chain. The top four companies – Compass, Aramark, Sodexo, and Delaware North – represent nearly 76 percent of total industry revenue (Brennan 2014). This segment of the food

chain has experienced rapid growth: the clients it serves are under pressure from financial markets to focus on their core competencies and outsource nonessential functions.

FIGURE 2

Various Contracting Patterns



Source and notes: Bernhardt, Batt, Houseman, and Appelbaum 2016. Modified from Barenberg 2015.

Interfirm contracting includes a wide array of business-to-business transactions that are not well captured by the supply chain paradigm. **Figure 2b** illustrates what Barenberg (2015) calls the “hub and spoke” model of contracting, where the lead firm contracts with a number of other firms for on-site services. The diagram highlights the case of a building owner that contracts for on-site and off-site services. We can draw on our previous example to provide another illustration by putting any of the food service contractors at the hub and describing the spokes. Capitalizing on their relationships with government, education, business and other institutions, these firms have expanded the services they offer to include uniform rental, laundry and linen services, environmental services, technical support, security, patient transportation, clinical equipment maintenance and repair services, and facilities management services.

The major food contractor service firms also enjoy substantial monopsony power that allows them to dictate wages when hiring workers. Workers employed directly by these firms earn an average of just \$22,568 a year; the large and growing number of contingent workers earn even less. Overall the wage bill in food contractor services fell as a percentage of revenue over 2009 to 2013, raising the average industry profit margin over this period (Brennan 2014).

Figure 2c illustrates a non-hierarchical production network, featuring continuous collaboration between video game publishers, console manufacturers, and software developers and designers (Balland, De Vaan, and Boschma 2013). Here we expect the profits and any rents to be shared more or less equally among firms and outcomes for similar workers to be approximately the same.

Figure 2d shows the classic pyramidal franchising structure that is prevalent in fast food, hotels and other industries (Weil 2014). Franchisors are expected to deliver value to shareholders – whether public market or private equity owners. Financial engineering by these more powerful firms allows them to capture much of the value produced by franchisees via the franchise fee, service fees, licensing fees and rent on the leased facilities (Peterson 2014).

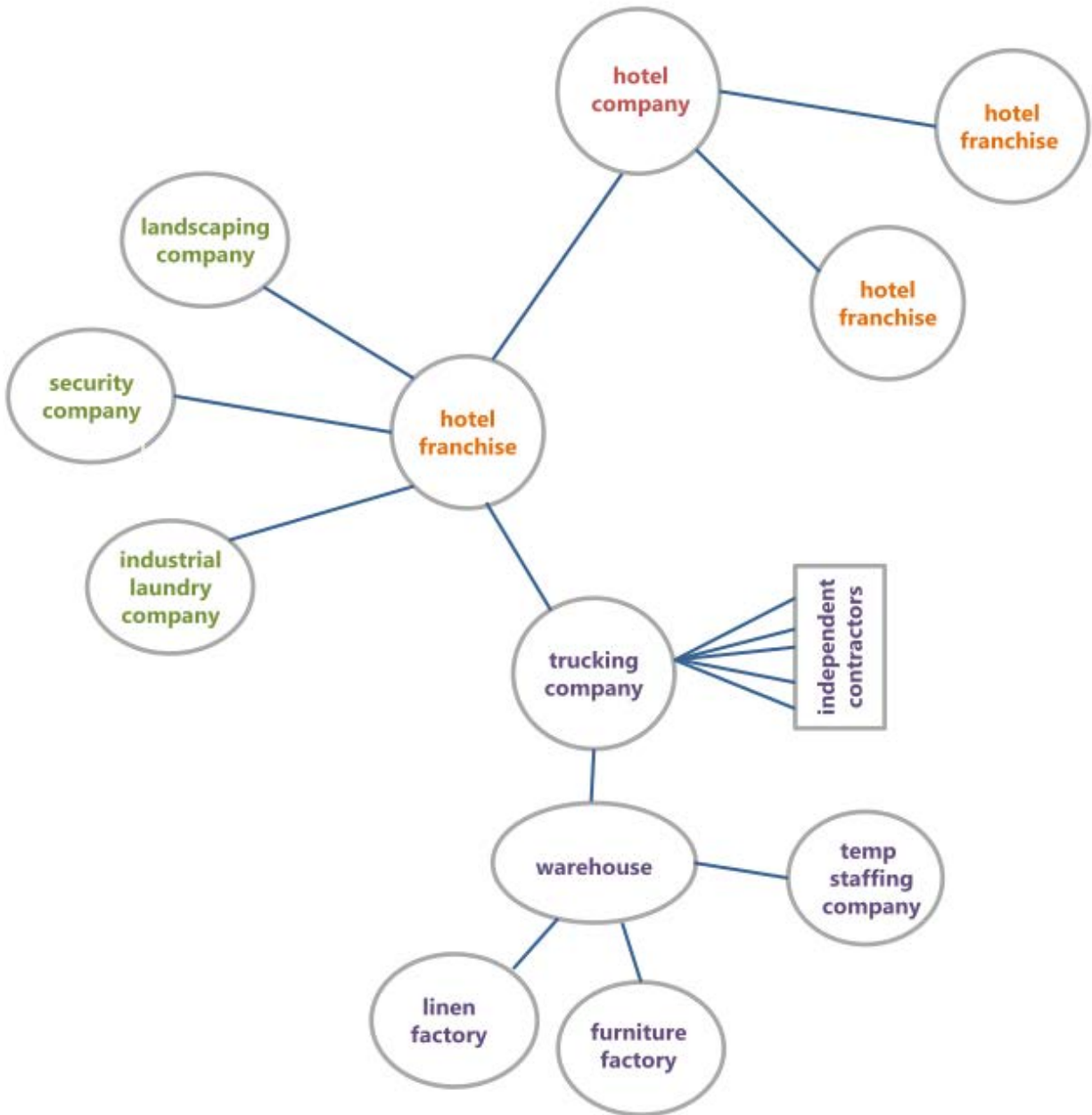
With so much of the value generated at franchisee establishments claimed by the ‘brands,’ franchisees are under pressure to keep wages low and to cut corners on health and safety (Ruckelshaus, Smith, Leberstein, and Cho 2014). Despite strong demand for workers and the Fight for \$15 movement, fast food jobs are among the lowest paid occupations in the economy.

Finally, **Figure 3**, which depicts outsourcing in the hotel industry, illustrates how several different interfirm contracting structures may form a complex network of firms that operate together to deliver a set of final services to the consumer (adapted from Barenberg 2015: Figure 7; see also Weil 2014). The figure shows the franchising structure of a hotel brand, the services contracting of a

particular hotel, the logistics contracting chain for delivering furniture and linens, and the use of independent contractors in trucking and of temp staffing firms in warehouses.

FIGURE 3

Combination of Contractual Patterns



Source and notes: Bernhardt, Batt, Houseman, and Appelbaum 2016. Modified from Barenberg 2015.

Research on the effects of franchising on HR practices and employee earnings in hotel chains is facilitated by the fact that some hotels are owned by the firm that controls the brand (the franchisor)

while others are franchised to independent owners (franchisees). Hotels that are company-owned may benefit from the ability of the franchisor to capture rents accruing to the brand from hotels they own and from franchisee-owned hotels via the array of fees and charges collected from the franchisee. These earnings premia can then be used by the franchisor for employee benefits, training, and higher employee earnings in company-owned hotels. Franchisees may choose to ‘free ride’ on the brand’s reputation by reducing labor costs even at the expense of the quality of the customer experience (Tashlin Lakhani 2016).

In the two ownership structures, Lakhani finds that workers in company-owned hotels fare better when comparing earnings of front of the house hotel employees. Difference in years of education between desk clerks in franchisee-owned and company-owned hotels is small – 13.28 vs. 13.49 years, as is the difference in median wages – \$9.40 in franchisee-owned and \$9.54 in company-owned hotels. However, company-owned hotels typically provide more benefits and higher annual earnings. Annual earnings are \$17,262 in company-owned hotels compared with \$15,558 in franchisees as franchisees employ a far smaller share of full-time workers.

Differences in earnings extend to workers employed by subcontractors. The warehouse and logistics industry has been reshaped by the emergence of third party logistics firms (3PLs), with sharp differences in pay and working conditions depending on whether workers are on the payroll of the firms whose goods are being stored, transferred and shipped or are employees of the 3PLs. The 3PLs contract with temp agencies for workers to staff warehouses as ‘pickers’ who find objects that have been ordered and who unpack, repack, load and ship goods to their destinations and with independent contractors for trucking services. They encourage truck drivers and temp firms to compete for contracts, placing continuous downward pressure on pay (Ruckelshaus, Smith, Leberstein and Cho 2014).

Financial actors, though not depicted in the figure, have been active players in the hotel industry. Private equity firms have acquired hotels and resorts and profited from financial engineering; examples include Blackstone Group’s takeover of Hilton; Apollo Management and TPG’s buyout of Harrah’s Entertainment, now Caesar’s Entertainment; and the checkered history of Extended Stay’s serial takeovers by PE firms. Real estate investment trusts acquire hotel properties in sale-lease back deals that typically involve shareholder payouts. Strategic Hotels & Resorts owns iconic properties as well as hotels belonging to major chains (Ajmera 2015).

Conclusion

The structure of firms has undergone a major evolution over the past 3-plus decades as vertically integrated companies have focused on core competencies and outsourced many tasks. The increase in production networks and differences in the ability of lead and contractor firms to extract jointly produced value – rents and profit – contributes prominently to rising inequality in earnings among establishments and firms. This, in turn, is a major source of differences across employers in the pay of workers with similar skills and characteristics.

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