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Mo' patents, mo' problems: Corporate strategy, structure and profitability in America's political economy

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Abstract: Changes in corporate strategy and structure between 'high Fordism' (c. 1950-1980) and the 'knowledge economy' (c. 1992-present) drive much of the economic and political problems facing the US and other OECD economies. In each era, firms sought monopoly or oligopoly, producing a highly unequal distribution of cumulative profits. In Fordism, firms used control over asset specific physical capital embedded in vertically integrated firms to establish oligopolies versus smaller, less well capitalized firms. Fordist firms shared rents with a broad base of employees to make this production strategy work. Today, profitable firms use control over intellectual property rights (patent, trademark, brand, copyright – IPRs) embedded in vertically disintegrated commodity chains to establish a monopoly position versus physical capital-intensive and low human capital, but labor-intensive firms. Fordist firms use of franchising, outsourcing, off-shoring, and dispersing production to reduce labor's factory floor power created this tripartite structure. Secular stagnation and populist politics largely flow from this change in strategy and structure. IPR firms share rents over a much narrower employee base, generating income inequality. Meanwhile, intellectual property creation requires much less investment than in the Fordist era. These trends are more advanced in the US but characterize most OECD countries.

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Mo' Patents, Mo' Problems: Corporate Strategy, Structure and Profitability in America's Political Economy

Herman Mark Schwartz

John Spartan (i.e. Sylvester Stallone): "Taco Bell, I thought we were going to a great restaurant. Is this a mistake?"

Lenina Huxley (i.e. Sandra Bullock): "Not at all. Since the great franchise wars, all restaurants are now Taco Bell."

Demolition Man, 1993

How has America's political economy changed from the long post-war 'Fordist' era to the contemporary post-Fordist or knowledge economy? How has this shift affected economic growth and inequality of income and regions? Most analyses focus on specific aspects, like aggregate income inequality, or the rise of a shareholder value model for corporate governance, or increased trade competition (aka globalization), or the financial sector's disproportionate power and profitability (aka financialization).

These explanations are important, and mostly correct. That said, they are also largely incomplete and causally weak because they ignore the sources of profit, even when they discuss the rising share of profits relative to wages or of 'financial sector' profits relative to 'manufacturing sector' profits. Yet the origin of and distributional conflict over profits is as important as the distributional conflict between profits and wages for understanding a capitalist political economy. A unified explanation based on firms' profit strategies and the organizational structures they construct to pursue those strategies better explains the dynamics and malaise of the current US political economy. To steal a phrase, it's like the more patents (copyrights, brands, etc.) we come across the more problems we see.

Put extremely simply, changes in corporate strategy and structure from the Fordist to the current era changed the distribution of profits among and within firms, in turn generating our current economic problems. While the distribution of profits across firms was highly unequal in both eras, changes in corporate strategy and structure have concentrated profits in firms with small labor headcounts, a low marginal propensity to invest, and the ability to avoid taxation. Reduced investment and worsening income inequality in turn slow GDP growth and aggravate social and regional tensions. These changes have gone farthest in the United States but are generic to the rich countries. Per William Gibson, "The future is already here – it's just not evenly distributed."

Broadly, Fordist era firms sought oligopoly profits by controlling asset-specific physical capital. Yet profitability, let alone profit maximization, using asset-specific physical capital required uninterrupted production at near full capacity. In turn this required embedding physical capital in large, vertically integrated firms, and pacifying direct employees by sharing oligopoly profits. Vertical integration insured continuous and stable flows of inputs (Chandler 1990; Piore and Sabel 1984; Davis 2016). Shared rents bought labor peace. Both generated positive macro-economic consequences. Firms' high labor headcounts combined with unionization to flatten the income distribution, boosting aggregate demand. The strategic emphasis on using large fixed investments in physical capital as a barrier to entry generated continuous investment with strong multiplier effects, again bolstering aggregate demand. Firms' desire for stable inputs and demand in largely national markets oriented their political behavior towards seeking macro-economic stability (Shonfield 1965; Aglietta 1979; Fligstein 2002; Swenson 2002).

Yet not all firms succeeded in creating an oligopoly or inserting themselves into government or corporate planning routines. Fordist era economies thus tended to polarize into larger, more highly profitable firms with stable markets, and smaller, less profitable firms in unstable or marginal markets (Galbraith 1967; Piore and Sabel 1984). Markets and employers also sorted workers into two groups: largely male, white workers with stable, higher wage employment, and largely minority, immigrant, and female workers with unstable, lower wage employment.

Equally simply, today's firms seek monopoly profit via control over intellectual property (IP), that is, via intellectual property rights (IPRs) like patent, brand, copyright, and trademark. These convey an exclusive right to extract value from a given production chain. For example, Qualcomm's patents on the technologies linking cell phones to cell towers and WIFI enable it to levy a 2 to 5% royalty on the average selling price of almost all cell phones. Likewise, winners in many non-tech sectors have pursued an IPR-based strategy. The salience of 'tech' today suggests that IP is something new. But integrated firms pursued formal IP even before the Fordist era (Fisk 2009). The key difference is that IPR-based profit strategies combined with pressure from capital markets influenced by the shareholder value model to drive vertical *disintegration* of commodity chains. Firms try to shed the risks inherent in fixed investments and a large labor force while using robust IPRs to extract large shares of the value created in their commodity chain. Thus vertical disintegration has concentrated and segregated IP ownership into a small number of legally distinct and highly profitable firms.

As in the Fordist era, not all firms can succeed in capturing oligopoly or monopoly profits. Strategic interaction among firms has produced three different *ideal typical* firms out of the Fordist-era ideal-typical dual structure: human capital-intensive, low headcount firms whose high profitability stems from robust IPRs; physical capital-intensive firms whose moderate profitability stems from investment barriers to entry or tacit production knowledge; and labor-intensive, high headcount firms producing undifferentiated services and commodities with low volumes of profit. Naturally, some firms blend characteristics of two of the levels, with Intel or Siemens, for example, blending the top two levels (IP and physical capital, as with Intel's semiconductor fabs), and Hon Hai Precision (aka Foxconn) attempting to blend the lower two (labor intensive assembly plus a big physical capital investment in robotics).

This tripartite structure affects the distribution of income, the level of investment, and the state's fiscal base. Firms still redistribute some of their excess profits inside the firm as wages (Kline et al. 2018: 1-3), but the concentration of profit into a small number of firms with low headcounts limits internal redistribution to a smaller slice of the population. Consequently, *inter-firm* rather than *intra-firm* disparities largely drive wage inequality (Barth et al. 2014; Song et al. 2019). The concentration of profit into human-capital intensive firms limits the volume of and multipliers from investment – investment for IP firms generally means hiring more well-paid people with a lower marginal propensity to consume (Schwartz 2016). Meanwhile physical-capital intensive firms with reasonable fears of excess capacity have both limited resources and appetite for new net investment. Finally, IPR-rich firms can easily shift the legal domicile of IP offshore to tax havens, limiting government taxation of corporate profits.

Top tier firms emerge from an *offensive concentration* of IPRs through internal R&D and acquisition of potential rival firms. This creates and enforces an entry barrier their markets (Shapiro 2001; Hall et al. 2015). Second tier firms emerge from a *defensive horizontal* integration through mergers to concentrate control over asset-specific and very expensive physical capital investments. Alternately, significant tacit knowledge can protect a firm from commoditization of its products, as with many German *mittelstand* firms and some US small and medium sized enterprises. The many more

numerous firms without legal, investment, or tacit knowledge barriers sink to the bottom layer. Many firms are called to the IPR faith, but few are chosen, given the exclusivity IPRs convey.

The competitive struggle among firms and between capital and labor also generates different varieties of labor expulsion designed to shore up profitability without losing effective control over the production process. The *ideal typical* form of expulsion is franchising, in which a firm holding IPRs licenses use of that IP to a franchisee who directly controls labor in the production process, but does so in conformity with substantial direction from the IP owner (Schwartz forthc.). Franchisees for fast food restaurants or hotels, for example, are legally bound to follow highly detailed instructions from the franchisor that de facto amount to managerial control. But the expulsion of labor has also occurred via outsourcing, off-shoring, and domestic geographic dispersion.

Manufacturing firms with weaker barriers to entry shifted work to low wage zones overseas through off-shoring, out-sourcing, and dispersing production to rural areas in the United States. This reversed the gradual convergence of US regional and personal incomes characteristic of the Fordist era, aggravating the ‘red-state economy’ pattern Pierson et al. detail (this volume). A large swath of new service sector firms emerged with a conscious strategy of avoiding direct legal responsibilities via the franchise model and contracting. Finally, many of today’s ‘superstar’ tech (usually software) firms were born and persisted with relatively narrow headcounts. Firms engaged in political and legal struggles to enable these transformations, which were neither purely internal organizational matters nor the exogenous effects of new technologies.

The economic transformation described above is a global phenomenon. This chapter concentrates on the US for four reasons. First, these processes are most advanced in the United States. Second, the US state and corporate actors have deeply integrated the US economy with the global economy and structured that economy in ways that comport with their interests, reproducing the US tripartite structure globally. This partially explains the relative concentration of physical capital-intensive production in Germany, Japan and Korea and the corresponding *relative* absence of dominant IPR firms. Third, the United States still possesses a disproportionate global economic weight, comprising about 40% and 24% of OECD and world GDP respectively at 2019 market exchange rates.

Section one of the chapter briefly elaborates and contrasts the two different eras with respect to corporate strategy and structure. Section two provides empirical data on the distribution of profits to sustain immediate claims about the two concentrations and later claims that the tripartite distribution of firms affects the income distribution and investment. Section three discusses labor strategies and their consequences for wage, income and regional inequality. Section four investigates the political and economic implications of the shift towards an ‘IPR-economy,’ including contrasts with other rich economies.

From Fordism to Franchise

Touring an automobile factory in the 1960s or 1970s you would have seen many different people engaged in direct and indirect production tasks. Semi-skilled workers on the assembly line would loom large, both in real life and in the academic imagination. But around them were specialist tool makers, engineers, designers, janitorial staff, and logistics workers. Farther out – caterers, guards, groundskeepers, accountants, white collar management and a second set of logistics workers unloading parts coming from components factories. All these workers were typically legally inside the firm as employees and, white collar workers aside, union members.

Touring in the 2000s reveals a more racially and gender diverse still doing similar jobs. Automation would have replaced many semi-skilled workers, but the logistics personnel, caterers,

security, accountants, designers, engineers, etc. remain. The critical differences are largely legal and organizational: where everyone used to be an employee of the core firm, workers doing logistics now might be legally employees of XPO Logistics, DHL or UPS; security guards legally employees of Securitas or G4S; caterers employees of Aramark or perhaps small local firms. Astoundingly, between 20 and 30% of line workers are typically contracted-in or temporary employees who are technically not employees of the factory owner. The proportion of unionized workers has also shrunk, though much less so in Europe. Where firms once did much component production in-house, they now buy in many parts, some design work, and a considerable volume of the software and electronics that now constitute about 20 % of a vehicle's total cost. From a production point of view these essentially legal changes have not impeded increased productivity. But from a macro-economic point of view, or with an eye towards income inequality, the shift in the legal boundaries around workers is enormously consequential. What explains the shift and why does it matter?

Changes in corporate strategy and structure have fragmented formerly integrated production structures into legally distinct firms. In the Fordist era, firms sought stable oligopolies by concentrating control over physical production, and using trusts and patent pools to limit competition (Veblen 1904; Chandler 1990; Peinert 2020). Investment in large-scale, dedicated production equipment yielded huge productivity increases (Chandler 1990; Lazonick 1990). But profitability rested on the ability to run factories continuously. Continuous production in turn required stable sources of inputs and tractable labor. Vertical integration obtained the first.

But workers unionized in the face of increased assembly line speeds and decreased dignity, interrupting production. State-enforced compromises regulating conflict and enabling unions to claim part of firms' oligopoly profits emerged everywhere after two decades of turmoil and contestation. High and stably growing wages both increased and stabilized demand; stably increasing demand encouraged more investment in productivity enhancing physical capital and provided the profits to do so; more productivity generated fiscal room for expanding the income stabilizing parts of the welfare state; security of life-cycle income encouraged workers to spend more now, generating new demand that supplemented high multiplier effect investment (Aglietta 1979).

A wave of strikes in the late 1960s and 1970s shattered this compromise, lifting the wage share of GDP to unprecedented post-war levels and threatening management's control over the factory floor. The wage share of value added per manufacturing employee in the USA increased by 5.9 percentage points, 1964 to 1974, in Germany 5.3 pp, in France, 7.1 pp, and in Japan, 12.2 pp.¹ Firms responded with public and private political strategies to reduce the wage share and regain control. Privately, consistent with Hertel-Fernandez's (this volume) re-booting of Claus Offe's argument about dual logics of collective action, firms deconcentrated production and shed legal responsibility for their workers by de-merging, moving production offshore, contracting out (both on- and off-shore), dispersing production geographically, and adopting variants of the franchise format. European firms similarly dispersed production, especially to post-1989 Eastern Europe.

In the iconic Fordist automobile industry, employment moved steadily 'south' to non-union 'right-to-work' states in the US, then to Mexico, and finally to low-wage Asia (Murray and Schwartz 2019). This new spatial division of labor tended to leave more IP-intensive design and engineering activity behind in the old corporate locations. Foreign firms largely opened greenfield plants in US rural areas distant from the highly unionized upper Midwest. GM and Ford de-merged parts production into the independent firms Delphi and Visteon in 1999 and 2000. By 2008, both Delphi and Visteon had more

¹ European Commission, DG ECFIN, Ameco database Series ALCD0 at https://ec.europa.eu/economy_finance/ameco/user/serie/SelectSerie.cfm.

Mexican than American employees (Klier and Rubenstein 2008: 51-2). Where the old GM had generated 70% of final value in-house, and Ford 50%, almost all automobile firms were down to 20% by the 2000s (Klier and Rubenstein 2008: 47). The major auto assemblers expelled lower skill, labor-intensive activity into the newly emerging bottom layer of firms, while retaining the top two layers – IP-intensive design and capital-intensive assembly. In Naidu's (this volume) terms, firms retained the workers most responsive to labor discipline or efficiency wages while expelling those that could be exploited via various forms of labor market monopsony.

Finally, franchise firms, initially centered in the restaurant and hospitality sectors, organized a 20-year legal campaign to remove anti-trust laws banning vertical restraints and to establish that franchisees, not franchisors, were the legal employer of the growing pool of low wage labor. The International Franchise Association won court, Federal Trade Commission, and National Labor Relations Board decisions that enabled franchisors to license brands and trademarks to their franchisees, to tightly control the nature of their operations, and to supply critical inputs while avoiding legal responsibility for their workforce (Callaci 2018). The contradictory combination of tight control and zero responsibility created incentives to expand the franchise model from the restaurant and hotel sectors to encompass the whole gamut of service sector industries. By 2017, roughly 3,400 franchisors licensed to 800,000 franchised establishments who directly employed 9 million people and accounted for about 5% of private sector US GDP. On a narrow definition of franchise (which for example excludes the hotel industry), 6% of US employees work in a franchised business. Weil (2014) estimates a much higher third of the labor force. For franchisors, the franchise model combines the profitability and administrative benefits of vertical integration without any of the related costs.

US politicians and the US state abetted these shifts by creating new legal forms and protections for IPRs and the new franchise model, while attacking unions. Ostensibly well-intentioned legal changes like the Employee Retirement Income Security Act 1974 forced firms to move their underfunded pension liabilities onto their books while also reining in union discretion over pension funds. By mandating equivalent benefits for all workers in a firm, ERISA reinforced firms' motivation to massively reduce direct employment of low-wage, low-skill workers in the face of rising health insurance and pension benefit costs. Health insurance for professional employees might amount to 10% of their total cost of employment, but for a \$9 per hour janitor it could easily double their total cost to the employer. Far better to fire the janitor and pay a cleaning service \$10 per hour to bring her back in at \$9 per hour without health insurance coverage. With respect to unionization, the 1947 Taft-Hartley Act had already effectively capped the unionized share of the private workforce. But administrations after 1980 made collective action increasingly difficult and often legally impossible. Combined with geographic dispersion, this gradually decreased union coverage. In the extreme case, anti-trust law actually bans workers for 'gig' economy firms like ride share or delivery services from unionizing because it construes workers as independent firms.

The US state also undertook a concerted, 40-year campaign to create and extend US IPR law globally in order to secure revenue streams for the US firms concentrating on production of information-rich goods while offshoring production (Drahos and Braithwaite 2002; Sell 2003; Hurt 2010). As early as the 1973-1979 Tokyo GATT Round the United States tried to export stronger IPR law to the rest of the world. This matured into the Trade-Related Aspects of Intellectual Property Rights (TRIPs) annex to the World Trade Organization agreement. The proposed, now defunct, Trans-Pacific Partnership (TPP) and Transatlantic Trade and Investment Partnership (TTIP) trade deals would also have strengthened patents and other IPRs. These agreements increased firms' desire to pare themselves down into pure IP holders in pursuit of IP-based monopoly profits.

Changes to US domestic anti-trust and IP law also abetted increased concentration and monopoly power (Christophers 2016; Peinert 2020; Ansell and Gingrich, this volume). During the Fordist era, the reality or threat of anti-trust litigation motivated ‘hi-tech’ firms like ATT or IBM to restrain their IP licensing fees. Chicago school ‘law and economics’ arguments blessing monopoly if consumer surplus increased influenced the Justice Department, the Federal Trade Commission, and some judges to wave through mergers that would have been banned in earlier decades (Christophers 2016; Rahman and Thelen, this volume). Legislation enabled the copyrighting or patenting of software in 1968, 1976 and 1980, strengthened trademark protection in 1988, and extended copyright on works for hire to 105 years in 1998. The Supreme Court expanded the scope of IP protection in novel ways, such as the 1980 *Diamond v. Chakrabarty* decision permitting patenting of genetically modified organisms and the 1998 affirmation of business process patents (important in finance) in *State Street Bank v. Signature Financial Services*.

Weaker antitrust enforcement also opened the door to *defensive*, largely horizontal concentration by second layer firms seeking to preserve their profit streams. Product market concentration has grown markedly in the United States and elsewhere since the 1980s, increasing firms’ mark-up power. This has four aspects, First, fewer firms overall. Second, fewer firms for any given product market. Third, among those firms, market power decisively shifted to those controlling a bottleneck in any given commodity chain or to those with robust IPRs. Finally, though the evidence here is more ambiguous, larger firms in any given sector tended to have larger profits (Autor et al. 2017; Manyika et al. 2018).

De Loecker and Eeckhout (2017; 2018; see also Grullon et al. 2019; Benmelech et al. 2018; Manyika, et al. 2018; Traina 2018 dissents) report that the average markup rose from 18% to 67% for publicly listed firms from 1980 to 2014. The largest increases occurred for the top 10% of firms by profit, and temporally after the 2000 and 2008 recessions. Among them, IPR-based firms loomed largest, with tech firms obtaining margins twice the average level. Nine IPR-rich firms accounted for 47% of the expansion in margins among the S&P500 firms through 2018 (Kostin 2018: 14).

Thus by the 2000s, Fordist era vertically integrated firms had given way to an ideal typical tripartite structure, with significant concentration and skew-ness in profits and wages. Davis (2016) has labeled this process ‘Nikefication,’ arguing that firms were disappearing into a nexus of contracts, while employees in parallel were being ‘Uberized,’ that is turned into independent, on-demand contractors. Davis – for good reasons – concentrates on only one slice of what we should instead envision as a three-layer structure in order to understand macroeconomic dynamics. Nike-fied firms with high human capital, low employee headcount, and low physical capital certainly comprise the highly profitable top layer. But physical capital-intensive firms comprise the less profitable middle layer. High employee headcount, low physical and human capital-intensive firms comprise the bottom layer. And in the messy world of the real, many firms still blend two or even three layers, depending on the precise nature of the production process and lingering legal responsibilities. Where automobile firms and line workers emerged as the iconic firms and labor model of the Fordist era in people’s imaginary, tech firms and ‘gig work’ constitute the imaginary iconic firms and labor model today. And indeed, the tech world does exhibit precisely this structure: consider the relations in the iPhone value chain among software firms Apple and Qualcomm in layer 1, manufacturing firms Intel and Corning in layer 2, and assembly firms like Hon Hai and Pegatron, in layer 3. The first group does nothing but design products, the second group produces parts for those products, and the last group assembles those parts.

But it is wrong to think that this ideal typical three layer structure is limited to or only characterizes tech, and that these changes are caused by technological change exogenous to public and private policy choices. Rather, the three layer structure pervades almost all parts of the US economy,

and most people work for firms that simply do not provide benefits or good pay. Consider the very low-tech world of hotels (on-line booking is hardly high-tech, aside from web analytics). The major hotel brands neither own physical buildings nor directly employ most of the workers there-in. Hilton (Hilton Worldwide Holdings), for example, has 15 carefully gradated and curated brands and 5900 registered trademarks, but directly owned or leased only 71 of the 5685 properties carrying those brands as of December 2018.² In short, it is an IP-rich firm whose major asset is its brands. Europe's largest hotel group, Accor, directly owned only 1.5% of the hotels carrying its brands, leased another 50%, and franchised out the remaining 48.5% in 2019. Globally, only about 20% of hotel buildings by value are owned by the brand adorning their façade.

The hotel buildings themselves are a large physical asset, variously owned by private equity firms, family trusts, and real estate investment trusts, and they constitute the middle layer in the new industrial structure. For example, a different 'Apple' – Apple Hospitality Real Estate Investment Trust – owns 242 hotels in the US, largely under various and nominally competing Hilton and Marriott brands.³ Apple REIT's buildings are managed under contract by hotel management firms. These management firms either directly employ or contract in labor from third layer firms like Hospitality Services Group or the GHJC Group. These jobs can be 'gig'-like but are more often standard employment relations. Thus even a low tech sector like hotels has a tripartite division combining firms specializing in IP production, firms holding physical capital, and firms supplying low-skill labor power, with coordination verging on de facto managerial control coming from the top layer.

Table 1 shows the evolution of Hilton Hotels/ Hilton Worldwide from an owner-operator of hotel rooms whose revenues largely derived from rooms it directly owned or leased towards a brand owner whose revenues derived largely from franchising. The changing balance between intangible assets and fixed assets in the form of property, plant, and equipment – i.e. buildings – shows a sharp rise as of the 1990s (unfortunately there are no data for the 1980s). Similarly, the 1966 annual report does not have data on the relative shares of owned versus franchised rooms. But that report for that year gives the impression that Hilton directly owned or leased the majority of rooms carrying its sole brand at that time. Franchising began in 1966 under the Statler-Hilton label, with nine hotels in operation or under construction, as compared to the 30 hotels Hilton owned outright. The data do show a steady decline in the share of owned as opposed to franchised rooms. That said, franchise revenues were trivial until the end of the 1990s, and the decisive turn towards an 'asset-light' model did not occur until after the Blackstone group took a controlling stake in Hilton when it shifted from private to public ownership. If this is a general phenomenon, it signals a significant consequence of financialization.

Why does this tripartite structure distribute profits across firms in ways that inhibit investment and aggravate income inequality?

² Hilton Worldwide 2019 US Securities and Exchange Commission Form 10k filing @ https://otp.tools.investis.com/clients/us/hilton_worldwide2/SEC/sec-show.aspx?FilingId=13217616&Cik=0001585689&Type=PDF&hasPdf=1. Hilton also managed 689 buildings on a contractual basis.

³ Apple Hospitality REIT 2019 US Securities and Exchange Commission Form 10k filing @ https://ir.applehospitalityreit.com/SEC_Filings. Apple REIT has no relationship to Apple Computer.

Table 1: Owned, managed and franchised shares of rooms and revenues for all Hilton Hotel brands, and ratio of all intangible assets to property, plant and equipment, various dates*

		1966	1978	1988	1999	2006	2013	2018
Rooms	Owned**	--	45.3%	28.5%	21.7%	18.7%	9.1%	2.4%
	Managed	--	11.6%	14.0%	17.3%	19.4%	22.2%	23.6%
	Franchised	--	43.1%	57.5%	61.0%	61.2%	68.8%	74.0%
Revenues	Owned**	99.1%	97.1%	95.4%	85.5%	59.6%	23.7%	16.7%
	Managed	0.8%	1.7%	2.3%	5.6%^	8.4%^	81.8%^	83.0%^
	Franchised	0.1%	1.2%	2.3%				
		1966	1973	1996	1999	2006	2013	2018
Ratio of intangibles to PPE		1.0%	1.4%	22.7%	48.2%	100%	124%	1334%

* May not sum to 100 because of minor omitted revenue sources

** Includes leased buildings and joint ventures

^ Disaggregated data unavailable after 1995

Source: Author calculations from Hilton Hotels / Hilton Worldwide SEC 10k reports and annual reports and from WRDS Compustat data

Who Gets what? Profits in Two Eras

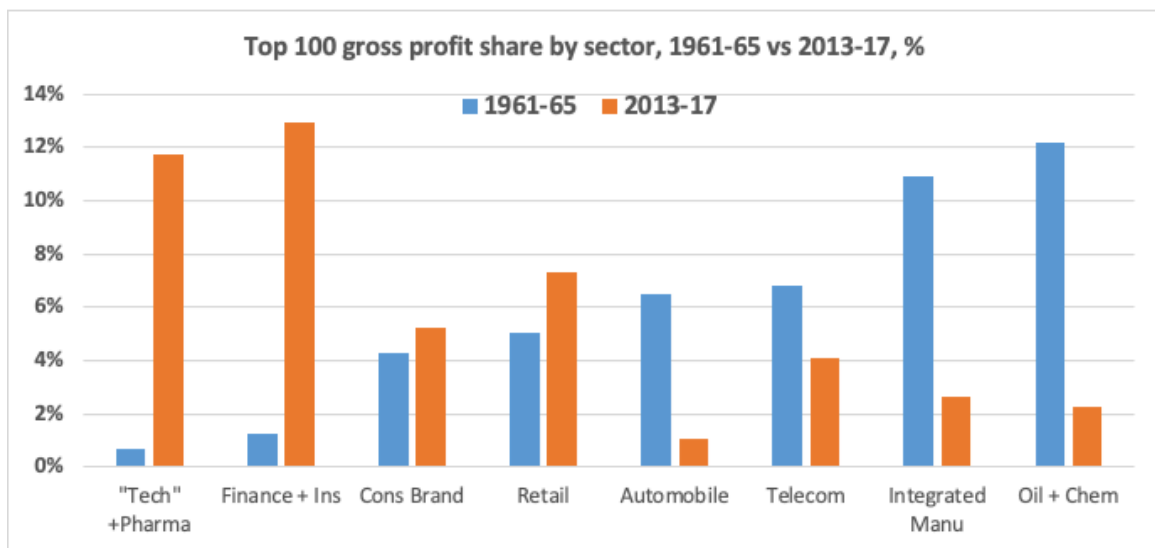
The macro-economic and political significance of this tripartite structure flows from the *kind of firms* capturing the bulk of profit more so than the concentration of profit itself. Profits were highly unequally distributed across publicly listed American firms in both broad eras. The gini index for cumulative gross profits for the 7982 publicly listed US firms existing from 1950 to 1980 was 0.876; the gini for cumulative gross profits for the 19678 publicly listed firms existing 1992 to 2017 was 0.922.⁴ By contrast, the gini index for US household pretax income inequality in 2017 was 0.48. The slight increase in the corporate profit gini in the transition from Fordism matters less than the changing nature of the firms capturing those profits. Top layer, IPR-rich firms with relatively smaller physical capital and employee headcounts capture high profit volumes. Their low marginal propensity to invest and the smaller number of workers to whom they redistribute part of their profits depresses both aggregate investment and wage income (Schwartz 2016; Christophers 2016; Haskel and Westlake 2017). The next paragraphs present data to support the analysis of investment and consumption in subsequent sections.

⁴ All data on profits, employee headcount, and capital expenditure are from WRDS *Compustat* unless otherwise noted. Ginis calculated only for firms with positive net profits. Profitable N = 7756 out of 7982 firms, 1950-1980; N = 11038 out of 19678 firms, 1992-2017. While *Compustat* only has data on listed firms, Manyika et al. (2018) suggest similar levels of concentration including privately held firms.

The figures below highlight three major changes from the Fordist to the current era: profits have dramatically shifted towards sectors characterized by robust IPRs, as well as towards finance, which itself is increasingly an IP sector (**Figure 1**) (Schwartz 2017). Second, even in the context of a general decline in capex as a percent of gross profit, current high profit sectors tend to transform much less of their gross profit into capital expenditure (capex; **Figures 2 and 3**). Third, the concentration of profits into IPR firms means profit is now concentrated into firms that do relatively little capex in relation to their share of profits (**Figure 4**).

The figures show only the top 100 firms among all firms listed in Compustat from 1961 to 1965 and 2013 to 2017. These arguably are the peak of the Fordist and knowledge economy eras⁵ (Appendix A lists firms and sectors). The top 100 matter macro-economically because they capture the bulk of profits – over 40% in each era – and do a significant but diverging share of capex – 40.5% and 34% respectively. Most of the 99% have little in the way of excess profit to invest and thus contribute relatively little to net investment. As Bessembinder (2018) shows, from 1926 to 2016, out of the remaining 99% of listed US firms, half did not cover their cost of capital, defined generously as the return on the one-month Treasury bill, while the other half generated only minimal returns over the Treasury bill. By contrast, the top 1.3% of firms accounted for half of all returns in excess of the one-month Treasury bill.

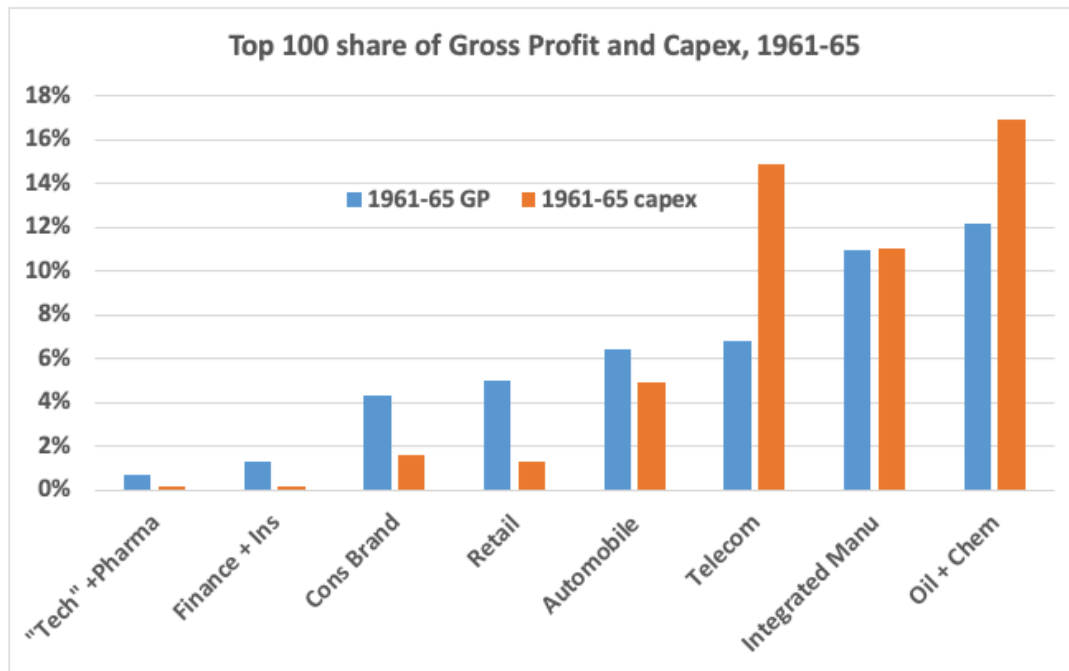
Figure 1: Top 100 Firms' Share of All Firms' Gross Profit in 1961-65 and 2013-2017



Note: By Sector, (%). Ranked by 1961-65 Profit Share. "Tech" = Hardware and software.

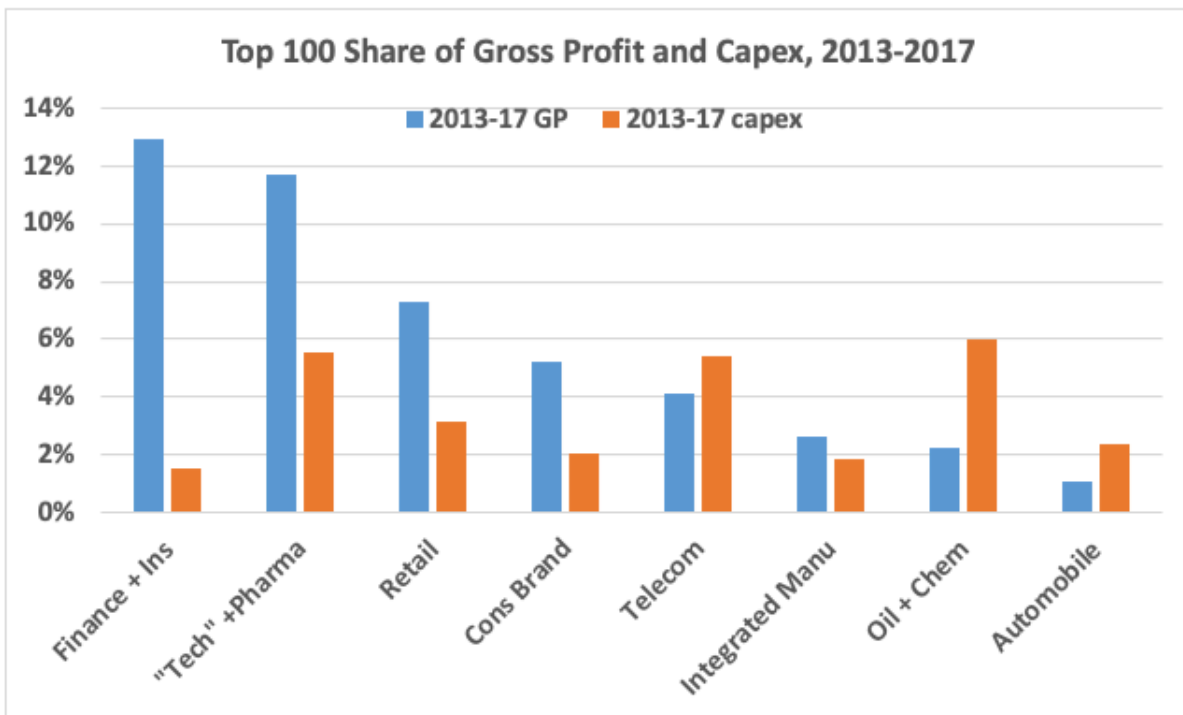
Source: Author calculation from Compustat

⁵ Firms are characterized into sectors by their main activity, with one exception. Integrated manufacturing refers to firms that were 'hi-tech' in the 1950 to 1980 era, like Boeing, Sperry, and RCA. They were and largely remain relatively vertically integrated firms with large physical capital footprints and high head counts. Their 'hi tech' status in the earlier period reflects connections to the defense establishment.

Figure 2: Top 100 Firms' Share of All Firms' Gross Profit and Capital Expenditure, 1961-1965

Note: By Sector (%). "Tech" = Hardware and software.

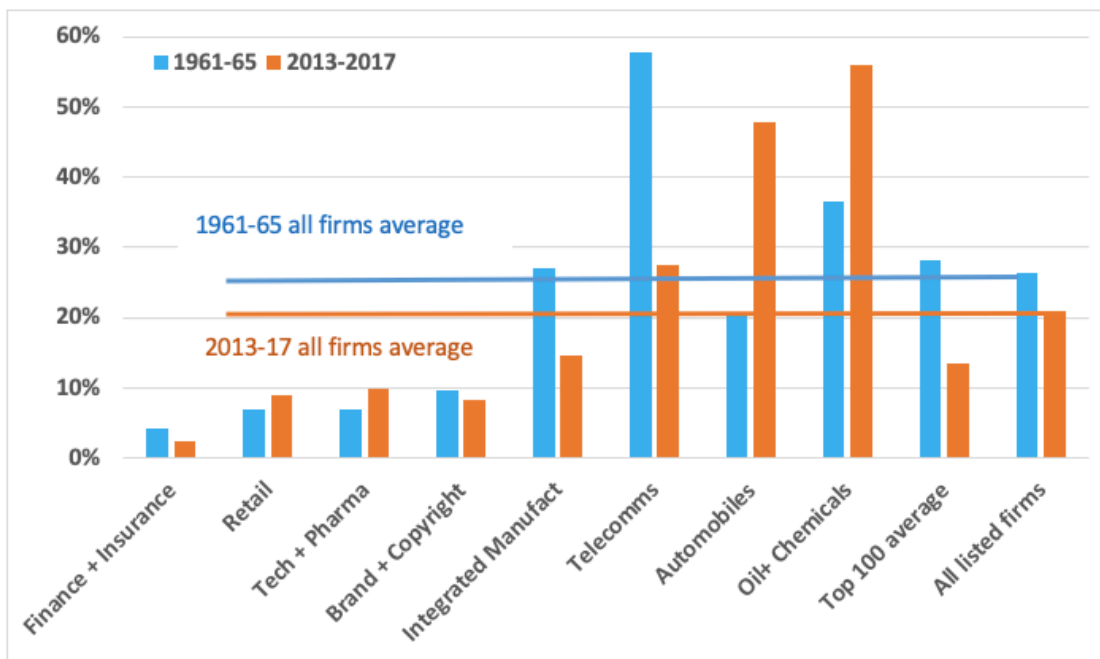
Source: Author calculation from Compustat

Figure 3: Top 100 Firms' Share of All Firms' Gross Profit and Capital Expenditure, 2013-2017

Note: "Tech" = Hardware and software.

Source: Author calculation from Compustat

Figure 4: Top 100 Firms' Capital Expenditure as a Percentage of Gross Profit by Sector, 1961-65 versus 2013-2017, (%)



Note: Ranked by 2013-2017 ratio. “Tech” = Hardware and software.
Source: Author calculation from Compustat.

Figure 1 of course shows the shift in the location of gross profit from the old Fordist oil plus manufacturing complex towards the new IPR plus finance complex. **Figures 2** and **3** show that while the profit share of tech, pharmaceuticals, and finance has risen sharply, their propensity to reinvest those profits as capital expenditures remains low. By contrast, the integrated manufacturing firms surviving to 2013-2017 invest a relatively large share of their reduced profits. **Figure 4** shows that overall, capex as a share of gross profit by the top 100 firms has fallen by roughly half. What is more significant though, is that in the earlier era both the top 100 firms in aggregate and the firms capturing the most profit tended to reinvest that profit as capex at rates above the average listed firm (blue line), while today the top 100 and the firms capturing the most profit do capex at rates below the average firm (orange line). Consequently, the average age of US private fixed capital has gradually risen from 19 to 23 years, 1981 to 2018, despite huge investments in information and communication technology (*Wall Street Journal*, 2019). Why?

While tech firms accounted for 28% of business capex in 2018 (Kostin 2018: 28, 54, 56-57), firms whose profits derive from IPR-based monopolies face less pressure to invest or innovate because competitors are effectively locked out of their markets. Moreover, investment in the form of R&D by these firms largely means hiring more humans. Tech and financial firms – and within that group a very few firms – simultaneously accounted for 40% of 2018 share buybacks, which absolutely exceeded capex; combined, buybacks and dividends exceeded capex plus R&D. Lazonick (2017), and more generally the financialization literature, has criticized firms in the aggregate for prioritizing buybacks over investment, but the problem is actually limited to a narrow slice of firms. Firms without significant profits cannot do significant buybacks.

Meanwhile, profit and demand realities hobble physical capital-based firms that might do investment with high Keynesian multipliers. They are relatively starved of profits, and fear creating excess capacity in a slow growth environment. Consider the world from their point of view: most developed country markets in the 2000s were growing at about the rate of population growth, roughly 1% per year, and even formerly dynamic sectors like smartphones slowed markedly after 2016. The big manufacturing firms in the top 100 or 200 firms can generate about 2 to 3% productivity growth each year simply through process engineering. This lowers the incentive to invest in new capacity. Replace depreciated capital? Yes. Create even greater excess capacity? No. Indeed, in North America, the automobile industry shed about 15% of capacity after 2010 in order to bring supply and demand into rough balance. By contrast, Europe's automobile sector still had roughly 15% excess capacity and China's roughly 25% in 2018. Similarly, major semiconductor firms – one of the most capital-intensive production processes in the world – moderated investment after 2010 to avoid excess capacity.

Figure 1 also shows the massive shift towards finance, which is generally not considered an IPR sector.⁶ Space constraints prohibit full exposition of the voluminous financialization literature and why finance should be considered as an IPR sector (but see Schwartz 2017). The more general trends described here subsume 'financialization' for three reasons. The sector exhibits the same three layer structure as other IPR sectors, with profits highly concentrated at the top; the gini for cumulative profits in the financial sector is .95 for both gross and net income, 1992 to 2017. Those top firms capture the bulk of profits by selling bespoke derivatives and managing IPOs and investment funds (Braun, this volume). Small teams with high human capital and an ICT and software heavy production process generate those derivatives, much as in software and biotech (Bernstein 2008). Second, generic, easily copied derivatives make little money. But subsequent to a 1998 federal court decision permitting patenting of mathematical and business algorithms, investment banks increasingly rely on Class 705 business process patents to protect new derivatives and processes. In 2014, for example, Bank of America filed roughly the same number of successful US patents as Novartis, Rolls Royce, or MIT, and JP Morgan as many as Genentech or Siemens.⁷

Third, finance and the tech world are organically connected. Tech IPOs have been among the largest IPOs in the past two decades. Investment banks typically charge a 7 to 8% commission for IPOs, making tech IPOs a major revenue source (Ghosh 2017). These IPOs, of course, are also how the venture capital slice of finance captures profit and exits its positions. High profit financial firms are also a conduit for other actors' money. The outsized profits that IPR firms capture need to be recycled in some form if they are not committed to productive investment. These funds compose a significant share of the funds translated into rising indebtedness for governments and households, given the inversion of the old pattern where households lent to firms. But even if we separate finance from the IPR sectors, which would be the weaker case, the core macro-economic problem remains: finance underinvests relative to its profit share. The IPR sectors' total gross profit somewhat exceeds that of finance, so if the financial share of profit is a problem, then *pari passu* so is the IPR sectors' share because of their common low marginal propensity for capex.

⁶ Readers might ask why Figure 5 shows a 12.9% cumulative gross profit share for finance when the figure most commonly cited is 40%. First, this is only firms in the top 100. Second, the 40% data point is *net domestic* income as defined in the national accounting statistics. The 12.9% data point is top 100 financial firms' share of *gross global* profits for US firms in the Compustat database. Gross global profits are the relevant metric in relation to investment behavior affecting the global economy.

⁷ US Patent and Trademark Organization, "Patenting by organization, 2014," @ https://www.uspto.gov/web/offices/ac/ido/oeip/taf/topo_14.htm.

The overall point here is not that investment has seen a Great Depression style collapse, but rather that the shift of profits towards firms with a lower propensity to invest drives the secular decline in gross and net fixed capital formation. Gross fixed capital formation in the US fell from 23.2% to 20.6% of GDP, 1980 to 2017. Net investment drives new growth, but private sector *net* domestic investment fell from 29.8% to 15.6% of gross private domestic investment.⁸ Similar trends held in most other advanced economies. These profits have to go somewhere, and the counterpart to this lower propensity to invest is rising corporate cash hoards disproportionately held by IPR-rich firms (Chen et al. 2017). Microsoft, for example, would be the eight largest holder of US Treasury bonds if it were a country; Apple has been described by the *Economist* magazine as an investment bank that also makes phones.

Rising Wage Inequality

The concentration of profits into low-headcount, IPR-rich firms also directly and indirectly affects the income distribution, and through that growth and politics. The top 100 firms by cumulative profit 1961 to 1965 accounted for 49.8% of profits and 42.1% of employment for listed firms, a ratio of 1.18, but in 2013 to 2017 they accounted for 49.4% of profits and at most 32.1% of employment, a ratio of 1.54. IPR firms and finance accounted for 29.8% of total profits but only 11.9% of all employees, a ratio of 2.50.

This matters because firms with bigger profits pay higher wages. Wages increasingly depend on who you work for in the three layer economy, not what you do. Barth et al. (2014; see also Song et al. 2019 and Autor 2019), show that wage dispersion across firms rather than within firms accounts for much of rising income inequality in the United States. The higher profitability of IPR-rich firms flows over into high wages, with workers capturing between 30 and 42 cents of every dollar of patent generated surplus as higher earnings, and with longer serving workers (who are likely to be higher paid) disproportionately benefiting (Kline et al. 2018: 1, 3; Berger et al. 2019: 3). In the past, unionization, sociological factors and the need for continuous production dispersed oligopoly profits across a wider range of employees. The legal trifurcation of employment instead concentrates profit redistribution onto a much smaller employee footprint.

Firms with weak IPRs and weak profits held down wage costs by dispersing production into rural, non-union US labor markets where they could exercise monopsony power, and by moving production to Asia (see Naidu, this volume; van Klaveren and Tjstens 2011; Moretti 2012). Going from a very competitive to a highly concentrated job market is associated with a 15 to 25% decline in wages overall (Azar et al. 2017), while increased concentration in the service sector accounts for roughly a third of the decline of the labor share of revenue after 1982 (Autor et al. 2017). Both geographic shifts blocked part of the old manufacturing path to a stable middle class life (Autor 2019).

Franchising also truncates the old pathways into the lower levels of the bourgeoisie, inhibiting new firm formation (Hathaway and Litan 2014; Akcigit and Ates 2019). While franchising lowers the probability of failure in starting a business, it also removes much of the ‘residual claim’ that owners used to exercise. The franchise phenomenon now encompasses traditional upwardly mobile blue-collar occupations like home repair, plumbing, and electrical work. Franchising effectively turns owners into de facto managers with no stock options.

The franchise phenomenon is both iconic and generic of the new economy. It encompasses the separation of IP from production, the fissuring of legal responsibility, and the decapitation of the small business class. This decapitation turns the old small, local business class into ferocious advocates for a

⁸ Department of Commerce, Bureau of Economic Analysis @ <https://www.bea.gov/data/investment-fixed-assets>.

politics of labor repression and limited welfare, because the only production input they control in a franchise is labor costs. Franchising also abets a fine-grained segmentation of consumer identities that limits collective action. Finally, many franchised brands are at least partially owned by private equity firms. This also limits investment, as private equity is loath to make fixed investments and has a propensity for loading up the firms they own with debt.

The concentration of profits into IPR firms with small headcounts thus helps depress the labor share of GDP. As with investment, this does not cause a complete collapse of consumption. But it dampens growth in consumption. Meanwhile increased precarity and the truncation of upward mobility options for non-college educated and/or entrepreneurial males undoubtedly creates a political opening for anti-establishment politics based on racial and migration-related resentments.

American Exceptionalism?

Is this a uniquely American story reflecting, among other things, its highly racialized politics (Thurston, this volume), the sheer size of its economy, and the weakness of its labor movement (Hertel-Fernandez, this volume)? The United States is simultaneously exceptional and not. Comparative political economy typically sins by studying national political economies as if they existed in isolation aside from homogenous trade or financial flows. The US economy is part of a global division of labor in which the three layer production structure is replicated both internal to national economies and globally. A global division of labor implies heterogeneity across national and regional economies in terms of what kinds of goods are produced, and how they are produced (Schwartz 2007).

The concentration of physical capital-intensive export production in Germany, Japan, and Korea, and of labor-intensive export production in China and South Asia is the global version of the US internal tripartite production structure, complete with the uneven distribution of profits and exploitation of labor found in the United States. **Table 2** shows the internal share of profits by sector for the US, German and Japanese firms that have ever appeared on the Forbes Global 2000 list from 2006 to 2020 (N = 4039), and highlights the salience of automobile and related heavy industrial production in Germany and Japan versus the salience of the IPR and finance sectors in the United States. America is exceptional in this global division of labor because it provides the dominant international currency, and thus necessarily runs a current account deficit. In turn, other countries tolerate this deficit precisely because the extreme concentration of highly profitable IPR-rich firms in the US economy both validates their accumulation of dollar-denominated assets and enables them to export (Schwartz 2019).

The United States also is exceptional in the weakness of its labor movement and stratification of its welfare state. But employment precarity has increased across the rich OECD, with similar political consequences, as firms all try to pursue the same profit strategies. ‘Fissuring’ has happened in Europe via the proliferation of temporary or Hartz 4-type jobs, and through outsourcing to eastern Europe (Goldschmidt and Schmieder 2017). Many of these jobs are what Autor (2019) calls ‘last mile’ jobs – low wage service sector work like delivery, catering, or personal services in urban areas. Immigrants often bring lower wage norms into this sector. The OECD (2015: 144-6) estimates that the share of non-standard jobs in total employment increased from 21 to 34% in France, 25 to 39% in Germany, and 29 to 40% in Italy from 1985 to 2013; Gordon (2017) estimates that non-standard employment rose from 15 % to 38% in Japan, 1982 to 2014. Women, youth, and minorities are typically in non-standard employment in all these countries.

Table 2: Eight largest sectors in Forbes Global 2000 by share of cumulative profits in Germany, Japan, and the USA, 2005 to 2019 (%)

USA		Germany		Japan	
<i>Tech-hardware</i>	14.0%	Autos-heavy	31.4%	Autos-heavy	23.0%
Financials	13.2%	Chemicals	14.3%	Financials	12.1%
<i>Consumer Branded</i>	8.7%	Insurance	11.9%	Retail	9.8%
Oil Sector	8.6%	<i>Tech-hardware*</i>	8.5%	Telecoms	8.0%
<i>Tech-software</i>	7.8%	Utilities	6.1%	Transport	5.4%
<i>Pharma & biotech</i>	7.4%	<i>Tech-software**</i>	4.2%	Financials-misc.	4.9%
Retail	6.7%	Transport	4.0%	<i>Consumer Branded</i>	4.7%
Telecoms	5.0%	<i>Consumer Branded</i>	3.8%	<i>Tech-hardware</i>	4.2%
IPR share of all US firms in the FG2k	37.9	... German...	16.4	... Japanese...	8.9

Note: IPR sectors in italics.
 * Mostly (78%) Siemens ** Entirely SAP
 Sector names are aggregated from FG2k industry labels:
 Tech hardware = Semiconductors, Electronics, Computer Storage Devices, Technology Hardware and Equipment, Computer Hardware (includes Apple)
 Finance = Banks-Major, Banks-Regional, Investment Services
 Tech-software = Software & Programming, Software & Services, Computer Services
 Auto-Heavy = Auto and truck manufacturers and parts producers, and heavy equipment producers
 Source: Author's calculation from Forbes Global 2000 data, various years

All these countries still have broader social protection for non-standard workers though, easing but not eliminating the harshness of precarity. The contrast is sharply visible in the US healthcare sector, which is rife with monopoly, has double the per capita cost of other rich countries' systems, and still does not manage to cover everyone or prevent financial hardship. In short, the US economy looks different because relatively speaking it has a larger proportion of 'apex' firms, a harsher labor relations system, and a stratified welfare state. But it is not unique in terms of general trends.

Conclusion

The US political economy today exhibits slow growth and rising income inequality. These do not directly cause the racial and gender status anxiety that drives much anti-establishment political fervor. They do contribute to and magnify that fervor. Had incomes risen across the entire US population, and had traditional routes to upward mobility persisted, the share of the population willing to engage in nihilistic politics would likely be smaller. The shift in corporate strategy and thus structure from pursuit of oligopoly profits via control over physical capital embedded in large vertically integrated firms to the pursuit of monopoly profit through control over IPRs embedded in a vertically disintegrated production

chain is the main cause for decreased investment, which contributes to slower growth, and for a concentration of excess profits over a smaller employee footprint, which contributes to rising income inequality. Finally, the profits from IPRs are easily transferred to tax havens, limiting fiscal responses to slow growth and stagnant incomes in the bottom 60% of the population. All these features depress aggregate demand. While the peculiar nature of IPRs as intangible assets matters (Haskel and Westlake 2017), so does industrial organization in the deployment of those assets.

Piore and Sabel's (1984) classic argued that rich countries facing a second industrial divide might find both stability and equality by disintegrating production. But Piore and Sable assumed some equality among firms in those chains. Instead, disintegration in the context of the franchise model has generated a less pleasant world of slower growth, rising inequality and recurrent financial crisis. Rising inequality – Piore and Sabel's pessimistic 'Victorian' scenario of a one-third, one-third, one-third society – has emerged from the concentration of profits into low headcount IPR-rich firms. Financial crises themselves reflect the effects of concentrated profit. Profits arriving as cash need to be transformed into assets, fueling speculation and asset bubbles. Moreover, as all financial assets necessarily have corresponding liabilities, the increased debt accrued by income short consumers trying to maintain a given lifestyle, or accrued by states attempting to sustain spending in the face of weak revenue growth creates additional barriers to growth (Streeck 2014). A tsunami of profit chasing limited passive investment channels necessarily produces a backwash of unsustainable debt and overpriced positional goods.

These problems are not intractable, but implementing solutions requires the kind of sustained political movement that might only just be emerging, though only a fool would venture predictions during the COVID19 pandemic and after the 2020 US election produced divided government. Administratively simple but politically difficult solutions like higher minimum wages, stronger anti-trust enforcement, more stringent criteria for granting IPRs with shorter terms, universal access to health care, and recognition that lead firms in commodity chains have some responsibility for workers in the bottom tier would go a long way towards fixing the problems limned above. In the 1930s, some firms seem to have grasped the connection between broader prosperity and their own profitability (Piore and Sabel 1984; van der Pijl 1984; Swenson 2002). The subsequent wartime experience necessitated and validated a massive expansion of state control over the economy and provision of social policy. Today, lead firms' reliance on global rather than national markets and their use of commoditized inputs orients their political behavior towards litigation and lobbying to reinforce their IPRs (Bessen 2016). In short, the major economic problem the US faces today is not just concentration of profits – which characterizes both the Fordist and current era – but concentration into specific kinds of politically powerful firms subsequent to a legal fissuring of production activities and labor forces. It remains to be seen if a COVID-enforced deglobalization reorients their political preferences.

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