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Abstract: Many analyses of contemporary global and national economies frame their dynamics as a shift from Fordism to a 'Knowledge Economy,' which they define using varying combinations of human capital, winner take all dynamics, and the transition from manufacturing to services. These analyses obscure the degree to which the core dynamics instead reflect shifts in the legal regimes governing intellectual property rights and corporate organizational forms that have increased the salience of the distributional conflict over profits relative to the distributional conflict between capital and labor. De jure but not de facto corporate vertical disintegration has produced, in ideal typical terms, a three-tier economy composed of human capital and intellectual property-intensive firms, physical capitalism-intensive firms, and low-skill labor-intensive firms. I propose Franchise Economy rather than Knowledge Economy as a conceptual frame, as this better captures the legal and organizational dynamics of the contemporary global economy, including the so-called platform firms.

From Fordism to Franchise: Intellectual property and growth models in the Knowledge Economy

> Capitalist interests are interested in the continuous extension of the free market up and until some of them succeed, either through the purchase of privileges from the political authority [politischen Gewalt] or exclusively through the power exerted by their capital [kraft ihrer Kapitalmacht], in obtaining a monopoly for the sale of their products or the acquisition of their means of production, and in this way close the market for themselves alone.
>
> Max Weber, *Economy and Society*, 1978: 638.

What is the Knowledge Economy (KE)? How is slow growth since the 1990s – secular stagnation – related to the KE? In this chapter I argue that 'Franchise economy' is a better label than KE, because it captures the essential elements of the current era: a shift in the key distributional conflict from fights between capital and labor to fights between different firms over profit volumes, and a related shift in corporate organizational structure enabling firms with robust intellectual property rights to capture greater volumes of profit. Those firms have a low marginal propensity to invest, slowing growth.

KE, as a positive description, is conceptually better than 'Post-Fordism.' Post-Fordism, and its class-conflict free cousins 'post-industrial society' and 'service economy,' are Owl of Minerva labels. They

belatedly recognized that growth models characterized by nationally homogeneous mass production by male semi-skilled workers and consumption by female organized households backed by essentially centrist governments funding an ever-growing welfare state were largely gone by the early-1990s. KE correctly points to the growing salience of human rather than physical capital in production but simultaneously obscures how profit arises and which firms capture profit. KE analyses focus too much on Thorstein Veblen's (1904) *industry*, the Schumpeterian increases in productivity that make life better and easier, and not enough on *business*, firms' pursuit of profit maximization or 'pecuniary gain,' through sabotage of productivity increasing processes. KE analyses thus overlook how the concentration of profit into a handful of firms with a low marginal propensity to invest contributes to secular stagnation, and they obscure how knowledge-intensive financial services or social media might actually be value subtracting in the economy.

The Franchise economy label better captures the shifts in corporate strategy and structure generating stagnation and inequality by highlights the sources and uses of profits. A franchise initially meant a royal grant of monopoly rights over trade, land, or some other activity and so encompasses Pagano's (2014) and Durand and Milberg's (2018) intellectual monopoly capitalism. Fordist corporate profit strategy sought oligopoly profit through control over physical capital, producing a dualized structure of large oligopolies and smaller firms with limited market power. Franchise firms seek monopoly profit through control of state-granted robust intellectual property rights (IPRs – patent, copyright, brand, trademark). In *ideal typical* terms, IPR-based strategies have shifted corporate organizational structures away from Fordism's vertically integrated firms toward a three-tier, *de jure* vertically disintegrated structure comprised of IPR-rich human capital-intensive firms, physical capital-intensive firms, and labor-intensive firms. This *de jure* disintegration conceals dominant IPR-based firms' considerable *de facto* operational control over the bottom two layers. The franchise business model originating in the US hospitality sector is patient zero for the Franchise economy.[1] US franchisor firms are legally separate from their franchisees' firms but minutely specify franchisees' operations. *De jure* independent franchisee owners are *de facto* subordinate managers in *de facto* vertically integrated but *de jure* separate firms. *Franchise economy* thus captures both strategy and structure in both national and global commodity chains.

The combination of IPR-based profit strategies with legally disintegrated structures is both novel and a major source of secular stagnation. Knowledge has always been critical for production. But the tacit, uncodified knowledge characterizing pre-1870 competitive capitalism could not easily be sold and thus transformed into financial assets. Likewise, subcontracting arrangements characterized both agriculture (e.g. sharecropping) and industry (Herrigel, 1996) in the 19th century. Chandler's (1977; Lazonick, 1990) managerial revolution was built on the transformation of subcontractors' tacit knowledge into codified scientific and managerial knowledge, and on efforts to construct durable IPRs around that new intellectual property (IP) (Fisk, 2009). Chandler's managerial revolution generated vertically integrated firms controlling both physical capital and IP. Disentangling the contribution of knowledge-related profits from physical capital-related profits was impossible. Moreover, firms that failed to generate or control the physical capital needed for continuous flow production fell into Fordist economies' bottom layer of disorganized, low profit volume firms.

By contrast, the Franchise economy's three tier, disintegrated corporate structure segregates IPR-generated profit streams from most physical capital- and labor-intensive processes. Middle-tier firms resemble shrunken versions of the old Chandlerian firms, possessing a significant physical capital footprint protected either by the scale of investment or considerable tacit knowledge, or both. The bottom tier provides labor-intensive, commoditized manufacturing and service products with limited or

[1] I will use Franchise (capital F) to indicate the broader phenomenon and franchise (lower f) to indicate specific sectors using explicit franchise contracts.

no barriers to entry. While the overall quantity of codified knowledge obviously has increased, the critical break with the past is the new combination of strategy and structure: stronger legal protections for information and its organizational segregation. Without legal protection, codified knowledge would yield no profits (Schwartz, 2016; Pistor, 2019). Without organizational segregation, those profits would be spread over a larger pool of labor and physical capital, as in Fordism. Without *de facto* control, IP based on brand and customer experience would depreciate more rapidly or yield smaller profit volumes.

This new structure contributes significantly to secular stagnation. The monopolies constructed by top tier IPR-firms allow them to capture a volume of global profits approximating that which financial firms capture in the US economy, though less at the global level. Profit volume matters as much or more than profit rates for the macro-economy, though top tier firms often also have high profit rates. IPR-based monopolies have the typical monopolist's low marginal propensity to invest (see below). IPR firms' relatively small employee headcounts also limit redistribution through wages as compared with integrated Fordist firms. Meanwhile, an increasing share of the total labor force finds itself in precarious employment in the bottom layers, decreasing the consumption impulse to growth (Stansbury and Summers, 2020). The concentration of profit and income into firms and households with, respectively, low marginal propensities to invest and consume generates secular stagnation and rising social unrest. Rising household and corporate debt in before 2008 temporarily bridged the gap between supply and demand (Streeck, 2014). Politically, the center of the struggle for profit shifted towards lobbying the state for firm specific regulatory regimes, especially around IPRs. Various forms of bargained capitalism (Piore and Sabel, 1984) gave way to Weber's (1978: 93, 108, 164-166, 638) political capitalism and Culpepper's (2010) quiet politics.

The chapter has five parts. Part one critiques three KE-type analyses. Part two revives Veblen to open a window into the Franchise economy. Part three examines the new organizational structure. Part four presents data on profitability and capital expenditure to back claims about secular stagnation in part five. The conclusion links the argument to the other chapters in this book.

1: From Fordist manufacturing to the knowledge-based service economy?

Most KE analyses transpose the key Fordist distributional issues, namely efforts to control labor and inflation, into the present (Schwartz and Tranøy, 2019), ignoring the sources of and struggles over profit. A handful of early studies of Fordism anticipate aspects of the Franchise economy because they attended to US state policy around 'knowledge' dating back into the 1950s (Galbraith, 1967; Bell, 1973). Indeed, Fritz Machlup coined 'knowledge economy' in Congressional testimony in 1958 (Slobodian, 2020: 73, 80-81). Sustained Federal R&D and procurement spending generated today's core information and communication technologies (ICT) – semiconductor chips, software, connectivity (Flamm, 1988; Block and Keller, 2015; Mazzucato, 2015). ICT determined neither production relations nor corporate structure, however. ICT eased but did not determine emergence of the three-tier Franchise structure, which the US hospitality industry pioneered well before ICT emerged. Firms implemented new technologies in ways designed to control the increasingly militant workforces of the 1960s and 1970s (Noble, 1984; Zuboff, 1988; Brenner et al., 2010) and to reduce the increased cost of capital in the inflationary 1970s. Technology did not determine the income distribution in the Franchise economy (or Financialization plus Franchise economy).

By the 1990s the political economy literature approached the new economy through five different lenses: globalization, financialization, the service economy, reboots of varieties of capitalism, and a focus on intangibles. Each is partly correct but all are 'blind man and elephant' analyses. Schwartz and

Blyth (here) and Ban and Helgadottir (here) respectively deal with globalization and financialization, so I only address the last three.

Service economy arguments

The authors in Wren (2013a; 2013b) built on Iversen and Wren (1998), Esping-Andersen's (1990) welfare state typology, and Varieties of Capitalism (Hall and Soskice, 2001) to understand what they labeled the new service economy. Iversen and Wren (1998) argued that Baumol's (1967) cost disease created a policy trilemma across full employment, fiscal balance and wage equalization, which heterogenous national political economies translated into different outcomes. Wren's authors sketched policy strategies for dealing with Baumol effects and, critically, for generating higher wages and employment via high value exports. The core policy prescription – and conventional wisdom – was greater investment in education to boost human capital and thus promote the expansion of high productivity service sectors (Wren, 2013b: 69).

These analyses focused too much on what was being made rather than how it was made. Services are a residual category, which forced an immediate but useful distinction between dynamic and non-dynamic services. In Baumol's cost disease, dynamic sector (typically manufacturing) productivity increases cause wage increases that are transmitted to less dynamic sectors (typically labor-intensive services), driving wage costs above productivity there. Baumol's model assumes that even if the dynamic sector sheds labor, competition for workers will boost stagnant sector wages. But if high productivity growth sectors do not expand output in a sluggish demand environment then the reverse is likely – labor shedding will crowd workers into the stagnant sector, driving down wages. Baumol's cost disease only operates in the context of the institutionalized, national-level collective bargaining of the Fordist class compromise, which linked wages across multiple sectors through pattern bargaining, concatenation, and wage legislation. Without institutionalized Fordist collective bargaining, dynamic sector productivity growth does not obviously boost employment in a wage-led economy (Baccaro, Blyth, and Pontusson, here).

But a 20 year offensive by employers everywhere, roughly 1975 to 1995, broke the institutional links between dynamic and stagnant sector wages (Pontusson and Swenson, 1996; Brenner et al., 2010; Murray and Schwartz, 2019), producing dual labor markets (Häusermann and Schwander, 2012). Organizational changes allowed employers to segment their labor force, breaking wage transmission mechanisms and weakening labor's bargaining power.

Dualization emerged even inside service economy analyses' paradigmatic dynamic service sector firms. Key software (or in Amazon's case, logistics) firms make widespread use of contract employees even for programming tasks. Microsoft pioneered the use of software engineer 'permatemps'; nearly half of Google's 2018 workforce were temps and contract employees (Bergen and Eidelson, 2018; Wong, 2019). From owners' point of view, the three-tier Franchise economy organizational structure with its legally segmented labor markets and contingent workers is the antibiotic curing Baumol's cost disease.

Finally, as financialization arguments assert, the high-profit, knowledge-intensive financial sector plausibly inhibits rather than enhances growth.

Everything is fine, co-specifically speaking

Iversen and Soskice (2019) rebooted *Varieties of Capitalism*'s emphasis on complementarities and coordination to explain the politics of the KE. They see the KE as a Schumpeterian growth wave centered on ICT and biotechnology (Freeman and Louçã, 2001; Perez, 2009). They assume that production of these requires co-specific assets deployed in face-to-face interactions. This is undoubtedly true for parts

of the biotechnology (but not pharmaceutical), software, and haute finance sectors. The information generating parts of these sectors mostly cluster in a handful of neo-marshallian urban industrial districts.

This argument has two major problems and one minor problem. First, the argument is almost purely deductive and functionalist with respect to state-firm relations. Iversen and Soskice (2019: 10, 24, 47, 190; Christophers, 2016), argue that both the state and small, knowledge-based firms have an objective, functional interest in promoting competition in order to drive innovation. But the Fordist and KE eras both have highly concentrated sales and profits (Table 1) (Davis and Orhangazi, 2021; Philippon, 2019).

Second, like service economy arguments, they focus on industry, not business, reading the politics of the KE off the mechanics of production rather than firms' drive for profits. 'Information' production (including cultural and emotional signifiers) can involve significant 'co-specific' assets and small teams (Kitschelt, 1991). But this fact does not explain why some firms expelled labor and physical capital, while others ended up with large labor or physical asset footprints. Physically separate R&D teams existed under the umbrella of integrated Fordist firms. Pressure for legal disintegration came from financial markets and labor control struggles rather than any technical imperative.

Table 1: Gini index for cumulative gross profit of US listed firms and global ultimate owners, select periods

	Gini index for cumulative profits	N of profitable firms	total N of firms
US listed firms 1950-1980*	0.885	7599	8267
US listed firms 1992-2017*	0.922	11,038	19,678
Global Ultimate Owners 2010-2018**^	0.867	17,844	20,114

^ GUOs with cumulative sales over $0.5 billion and financial data
Source: Author calculations from *WRDS Compustat and **Bureau van Dijk Orbis databases

The third problem makes this clear. If co-specificity characterizes KE production, what explains why leading KE firms have so many essentially disposable contract workers, and rely so heavily on comprehensive non-compete agreements in which workers transfer rights to any ideas they generate, on-site or off-site to the employer? Widespread use of contractors and non-competes shows that control over IPRs matters more than co-specificity. Non-competes would be irrelevant if employees' tacit and codified knowledge were truly firm- and co-specific. Moving to a new employer would gain an employee nothing. Put differently, everyone is co-specific until management decides that they are not.

The unbearable lightness of intangibles?

Haskel and Westlake's (2016) in-aptly titled *Capitalism without Capital* likewise obscures intra-capitalist conflict, and, while noting some aspects of the reduced salience of capital-labor conflict, misses the social organization of production. They argue that intangible capital creates four novel 'S's: *spillovers* (intangibles or knowledge tend to spread to other firms), *scalability* (production can expand without a corresponding increase in physical capital), *sunken-ness* (the difficulties involved in selling 'information' create difficulties extracting capital invested in an intangible), and *synergies* (the ability to combine knowledge to attain greater output).

Haskel and Westlake's technologically determinist argument ignores four important issues. First, they miss how IPRs transform intangibles like information into capital, that is, into a social relation yielding a stream of income. IPRs limit both scalability and synergy. Second, they largely ignore the state's role not

just in establishing IPRs but in determining potential profitability via IPR duration and anti-trust (Christophers, 2016). Third, they exaggerate sunken-ness. IPR-rich firms routinely buy up IPRs to build barriers to entry. Google paid a non-trivial $12.5 billion to acquire bankrupt Motorola Mobility's 17,000 patents; a Microsoft-led consortium paid $4.5 billion to buy bankrupt Nortel Network's 6,000 patents. Less visibly, Microsoft has pre-empted competition by acquiring over 200 start-up firms. Fourth, if intangibles had significant spillovers and synergies, we would expect to see productivity rising across the entire economy, rather than visibly increasing dispersion between high productivity frontier firms and the rest (Andrews et al., 2016). Dispersion suggests – as Veblen would predict – that firms slow technological diffusion to defend their IPR-based monopoly profits. *Capitalism without Capital* actually lacks both capitalism – a system of accumulation driven by profits – and capital in its sense of a social relation, masking the sources of secular stagnation.

2: Understanding the Franchise economy

These analyses all derive social relations of production directly from means of production, or, in Veblen's (1904) terms, they concentrate on Veblen's *industry* to the exclusion of *business*. But *businesses* with robust IPR portfolios strategically repress competition through preemptive *offensive* acquisition of and litigation against potential rivals. Firms without robust IPR portfolios strategically repress competition through traditional *defensive* horizontal mergers and concentration (Philippon, 2019; Davis and Orhangazi, 2021). Firms with neither strategy resort to hyper-exploitation of labor.

Second, these analyses prioritize the conflict between capital and labor over the generation of surplus value (and thus the total pool of profits) while ignoring conflicts among capitals for shares of that profit pool. Inter-class conflict undeniably matters in capitalism. But in the Franchise economy, capitalist intra-class conflict over the profit pool structures how inter-class conflicts play out. Labor market dualization emerges from firm-level profit strategies oriented towards financial markets and rival firms rather than the other way around.

The limiting factor on accumulation drives the shift towards intra-capitalist conflict in the Franchise economy. Capitalist growth requires the ability to access and exploit relatively abundant factors of production. Exploiting those factors requires social and political interventions that transform latently abundant factors into actually available factors, and then restricts access to generate profit. A different limiting factor marked each of the French Regulation school's broad phases of competitive capitalism and Fordism (Harvey, 1982; Perez, 2009). Marketable and mortgage-able land was the limiting factor in the pre-1914 or pre-1945 agricultural era (Schwartz, 2019). Docile semi-skilled labor and cheap oil were the limiting factors in the manufacturing or Fordist era (Piore and Sabel, 1984). The limiting factor in the Franchise economy is the ability to monetize information, attention, and people's inner emotional states because *information doesn't really want to be free* (Doctorow, 2014).

Digitized information theoretically is a public good, non-excludable and non-rivalrous in consumption (Ostrom, 1990). Non-rivalry, an issue of *industry*, should create infinite supply. Digitized information is infinitely reproducible. From a *business* perspective, non-excludability prevents the profitable production and sale of information. For Veblen (1908a; 1908b), like Marx, the essence of capital as a social form was exclusion and preferably monopoly control. Machines simply embody the stock of social knowledge. Owners' control over that physical capital gave them the ability to simply hire proletarians who possessed the residual tacit knowledge needed to operate those machines (Veblen, 1908a: 516-8).

The Franchise economy is built on information, per the unintentionally revealing KE mantra 'data is the new oil.' Yet the central problem in the Franchise economy is not data shortages, any more than land was in short supply relative to population in C19, or workers and oil in short supply in C20. Oil was

central to Fordist growth, but hardly physically scarce. Rather, the central public and private problems around oil from 1920 to the early 1970s were using political violence to secure access to oil and then managing an over-abundant supply to prevent price collapses. Cartelization – exclusion – secured steady, substantial profits for oil firms (Blair, 1976). Firms' central problem in the Franchise economy similarly is creating exclusion around information generated by consumers and workers. Political and legal processes generate exclusion, transforming otherwise free public goods into club (non-rival but excludable) goods, enabling monetization of information. That income stream then backs marketable assets.

The IPR based-firms now capturing the largest profit volumes all shield their data / knowledge from easy appropriation with some legal wrapper. Thus the entertainment complex lobbied for infinitely renewable copyright, pharmaceutical firms 'evergreen' – extend – their patents with small formulary changes, software firms deploy patents, copyright, and end user license agreements (EULAs), haute finance increasingly uses patents, and a large variety of consumer goods and experiences are branded. Absent IPRs, profits from Disney's Mickey Mouse, Nike's Swoosh, Microsoft Office, Pfizer's Viagra, or Morgan Stanley's MSCI indices would drop. The key issues defining the Franchise economy are thus primarily legal ones about (re-)defining property rights around information.

This has four aspects. The first three relate to strategy and the last to structure. First, most important, the creation and expansion of legally constituted domestic and international monopolies through IPRs. Second, the decay of buyers' traditional property rights over both physical and intangible goods. Third, firms' struggles to wrap their otherwise standardized products in an IPR cloak while stripping IPRs off other producers' goods. Fourth, segregating the parts of production with a permanently falling cost curve – usually intellectual property 'products' – into legal entities separate from the parts where marginal and average costs rise from exhaustion of economies of scale and rising costs of coordination.

Intellectual property rights and anti-trust

The US national security state and key IPR firms changed US domestic IP and anti-trust law to create or enhance the profitability of IPRs after the 1960s. 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 (Pistor, 2019). The Supreme Court expanded the scope of IP protection in novel ways, such as *Diamond v. Chakrabarty* (1980), which permitted patenting of genetically modified organisms and *State Street Bank v. Signature Financial Services* (1998) which affirmed business process patents (important in finance). That said, the Supreme Court has also curtailed IPRs, implicitly invalidating some business process patents in *Alice Corp. v. CLS Bank International* (2014).

Beginning with the 1973-1979 Tokyo GATT Round the US state undertook a concerted, 40-year campaign to extend US IPR law globally in order to secure revenue streams for US firms offshoring production and sales (Drahos and Braithwaite, 2002; Sell, 2003). This matured into the Trade-Related Aspects of Intellectual Property Rights (TRIPs) annex to the 1986-1994 World Trade Organization agreement. The now defunct Trans-Pacific Partnership (TPP) and Transatlantic Trade and Investment Partnership (TTIP) trade deals aimed at strengthening global IPRs.

Weaker anti-trust enforcement also enabled emergence of the three-tier Franchise structure. The threat or reality of anti-trust litigation during the Fordist era motivated 'hi-tech' firms like ATT or IBM to restrain their IP licensing fees. Chicago school 'law and economics' arguments justifying monopoly if consumer surplus increased influenced the Justice Department, the Federal Trade Commission, and judges to bless mergers they would have banned in earlier decades (Christophers, 2016; Peinert, 2020). This enabled the emergence of platform giants providing 'free' services to consumers.

Finally Federal Trade Commission and National Labor Relations Board decisions enabled IP-rich franchisors to license brands and trademarks to their franchisees, to tightly control the nature of franchisees' operations, and to supply critical inputs while avoiding both legal responsibility for franchisees' workforces and anti-trust litigation (Callaci, 2018). Franchisors pioneered the three-tier Franchise economy organizational structure.

Non-intellectual property rights erode

Politically created and enhanced IPRs have steadily eroded buyers' traditional property rights. IP 'producers' employ variations on the software EULA to commoditize user data. Clicks, buying and lifestyle habits, searches, credit card-based purchases and equipment usage become the data that platform firms sell to other firms seeking to target ads and that machine makers use to extract maintenance dollars. Users cannot easily retrieve the data they create.

But more subtly, buyers have lost the essentially unlimited property rights over purchased objects that they previously enjoyed. The courts have ruled that the mandatory EULAs accompanying not only software but also, e.g., e-books, DVD video, smart TVs and some capital goods convey only usage and not ownership rights. Producers retain ownership, including rights to discontinue, modify, or selectively withdraw software even when it is embodied in a physical object and even if this would disable the object (Perzanowski and Schultz, 2016).

Firms use IPRs and EULAs to tie consumers to relatively continuous if not permanent streams of revenue via subscription. In the ideal typical case, users adopt some free version of the software (or purchase a closed device like Amazon's *Kindle* e-reader or a John Deere tractor) and then are locked into continuous purchases, providing a stable flow of revenue to the IPR owner. Music and video are now streamed via subscription rather than owned by consumers. Moreover, software enables firms to extend control into previously 'fixed' physical objects. BMW, for example, plans to sell access to heated seats in some models on a subscription basis and proposed making Apple CarPlay a subscription service. Interestingly, Watt and Boulton's initial business plan involved leasing their patented steam engines in return for a percentage of the coal subsequently mined, while acting like a pure IP firm and licensing production. Watt produced few engines in its first 20 years of operation (Hodgson, 2021).

The subscription model extends into conflict among capitals. Microsoft Office 365 is typically used at work. More generally the shift towards Software-as-a-service (SaaS) and storage as a service (the cloud) turns industrial software into a long-term stream of income, in contrast the old 'one and done' sales model. Similarly, users of GMO seeds or chickens essentially rent these, and are contractually banned from retaining or reselling them. 'Owners' of jet engines, agricultural equipment and medical scanners also surrender all data to the producing firm, and are banned by 1998 Digital Millennium Copyright Act (DMCA) from hacking that equipment. In effect, they are on an annual subscription. Long term streams of income are valued more highly in the equity market. This larger market capitalization is a potent form of Max Weber's *Kapitalmacht* that enables IPR-rich firms to pre-emptively buy up rivals and thus maintain their monopoly.

Standardization, commodification, and profit strategies

Third, the nature of fights over standardization has changed. Continually falling real prices are more typical than late Fordist era inflation. As Veblen (1904: 234) observed, "Chronic depression, more or less pronounced, is normal to business under the fully developed regime of the machine industry." Competition drives productivity growth which in turn depresses prices, producing the classic product cycle and transforming bespoke luxuries into standardized commodities. Few firms escape deflationary pressure on profits. A mere 811 firms out of 62,000 listed firms globally from 1990 to 2018 account for all buy and hold net returns over the one-month US Treasury bill – a very permissive proxy for their cost

of capital (Bessembinder et al. 2019). US stock market data from 1926 to 2015 show a similar outcome (Bessembinder, 2018).

Put simply, the more standardized a product is, the more easily buyers can replace any given seller and the lower the barriers to entry for new suppliers. Indeed, the big platform firms – Amazon, Google, Facebook or Uber – are profoundly deflationary by making price discovery relatively frictionless. They split standardized goods into an IP part protected by IPRs, and a generic good or service with low barriers to entry. The former capture profits; the latter see their pricing power and profits evaporate, producing Veblen's deflation. Consider firms like Uber and AirBNB, which approximate economists' utopia of perfect markets by lowering the cost of price discovery and maximizing the use of existing assets. Their price discovery is profoundly deflationary for firms and workers in the bottom two layers. By 2018 Uber brought taxi fares down to levels that neither returned monopoly profits to Uber (Horan, 2019) nor allowed vehicle owners to recoup capital costs and pay some socially minimum wage to drivers. The average US Uber driver earned a 10th percentile American wage in 2019 (EPI, 2019).

Firms seeking excess profits have only three strategies, all observable in the Franchise economy. First, broad sectoral swaths of the US and many European economies use classic Veblenian horizontal concentration to buy up existing rivals and create a physical bottleneck in the flow of commodities (Philippon, 2019). Concentration creates excess capacity, which top producers can use strategically to deter market entry by competitors (Steindl, 1952: 9-13; Bulow et al., 1985). Horizontal concentration is a fundamentally *defensive* strategy to maintain or expand mark-ups (De Loecker and Eekhout, 2018; Davis and Orhangazi, 2020).

IPR-rich firms' *offensive* acquisitions differ. They aim at preempting new entrants, with minimal market share, from disrupting their existing markets. Thus Google acquired Waze to protect the traffic analysis and mapping component of Google maps; Intel acquired Mobileye to prevent a challenge to its automotive chip business; Facebook acquired WhatsApp to preempt a challenge from messaging to its social platform. The pharmaceutical industry exhibits both types of mergers (Cunningham et al., 2019).

Second, a firm can acquire a bottleneck 'platform' position aggregating buyers and sellers in a two-faced market. Amazon and Facebook most obviously and successfully use this strategy, followed by the less successful AirBNB, Uber, or Spotify, and in an even weaker way various restaurant franchises. Here profits arise from matching essentially standardized sellers and buyers and using the dual monopoly position to extract a toll on commerce, much as in finance. In the absence of IPR protection or control over other key elements, this strategy is vulnerable to competitive entry. Uber's centrality, for example, is vulnerable not only to Lyft but also to a whole range of local taxi app competitors backed by local regulators. Likewise Google (search) and the Canadian firm Shopify (ordering and payments) have combined to provide merchants (fulfillment) with an alternative to Amazon's platform. Shopify's 2020 order flow was 40% of Amazon third party merchant flow.[2] Amazon's vulnerability to this kind of competition motivates its forward integration into warehousing and delivery and backward integration into the cloud.

The third, final strategy involves turning a standardized product into a universal standard protected by IPRs and IPR-funded offensive acquisitions. This captures the largest possible addressable market while excluding competition. Everyone is forced to license the standard, giving the producer enormous market power barely tempered by fear of anti-trust authorities or buyer efforts to coordinate around a rival standard. Consider Qualcomm, whose 130,000 patents around the standard CDMA (3G) and LTE (4G) technologies linking cell phones to WIFI and cell phone towers allow it to levy a 3% to 5% royalty on the selling price of nearly every cell phone sold globally. The salience of IPRs here is evident in the tripling of

[2] Benedict Evans, "Shopify." At https://www.ben-evans.com/benedictevans/2021/2/17/shopify.

the number of patents filed for industrial designs and doubling of trademark applications between 2000 and 2015 (Durand and Milberg 2018; Haskel and Westlake 2018).

Generic increasing returns or organizational structure?

IPR-rich firms can reorganize commodity chains into the three-tier Franchise structure. In physical production, costs decline so long as economies of scale (or scope) exceed transaction, coordination, and variable costs. Eventually, though, coordination costs rise and variable costs swamp fixed costs, causing diminishing returns to scale. By contrast, production of IP goods has a continuously falling cost curve because digital (re-)production has falling marginal costs as compared to production of physical goods. Variable costs for the production of the Nth digitized program or unit of a dopamine producing branded good are essentially zero.

Most analysts jump from this to claim that 'network' effects, driven by increasing returns, are the predominant characteristic of the Franchise/IPR economy. This is somewhat true, but misleading for two reasons. First, we still live in a material world (Madonna, 1984) – almost all digitized information resides in or is used through physical goods. The iconic iPhone is quite tangible; Uber cannot function without cars and drivers.

Second, more important, the legal structure surrounding production determines who captures those increasing returns. The critical difference between Fordism and Franchise is the legal split between firms producing information and firms producing physical goods. Knowledge production under Fordism also had increasing returns, as when stock animation cels and patterns were reused across multiple movies. But those returns were largely buried inside firms producing and owning physical goods. Movie production requires massive volumes of equipment and human creative and physical labor. Fordist era movies were produced in studios that owned equipment, sets, and film stock, and employed actors, writers, etc. on a non-contingent basis. Today, all of this is broken up across multiple legal entities (Hozic, 2001). Each additional stream, rental or ticket returns extra revenue to the owners of the IP in movies (including actors' images), but not to equipment or labor providers. In both eras producers retained property rights and consumers 'rented' the experience. But Fordist era information goods were embodied in physical goods with rising average cost curves and produced by firms that internalized those rising average cost curves, while today firms possessing the relevant IPR can monetize the Nth consumer at no marginal cost. This is the organizational side of the standardization fight. Increasing returns thus are only visible because of the fissuring of corporate structures.

3: Strategy drives the three-tier industrial structure

Put simply, the combination of IPRs as strategy and franchising as structure generates the defining characteristics of the Franchise economy: concentrated profits but weak investment, dualized labor markets across all three layers, and slow productivity and GDP growth. Firms' strategic responses to the Fordist labor control crisis produced the Franchise economy's *ideal-typical* three tier production structure. On top are firms that successfully expelled standardized, often unionized, labor and big fixed, often asset specific, physical capital while retaining only IP, critical employees and the absolute minimum of fixed physical capital. The many new software firms were born that way. IPR-based monopoly allows these human capital-intensive firms to extract large volumes of profit from their value chain. These firms typically have a relatively high return on assets, and high revenue and profit per employee, given a large numerator (the IPR profit stream) and a shrunken denominator (labor and physical capital). In the second level are firms with large physical capital footprints. As with the old Fordist firms, investment barriers to entry let them capture moderate profits. Firms deploying low-skill, low-wage labor to produce undifferentiated goods and services populate the bottom. These capture

small volumes of profit despite high rates of exploitation. Where automobile firms and line workers emerged as the iconic firms and labor model in people's imaginary of the Fordist era, tech firms and 'gig work' – the top and bottom layers – constitute the imaginary iconic firms and labor model today. Equally so, the Fordist imaginary ignored poorly paid workers in marginal labor markets and the current imaginary ignores contingent labor across all three layers.

While hybrid firms exist, particularly if design and production are co-specific, and while the distribution of layers is geographically uneven, all advanced economies and the global economy exhibit this three-tier structure. Even in the Fordist economy's iconic automobile sector, core firms have shed production of low and medium value components to concentrate on design and assembly. GM and Ford de-merged their parts production, reducing the share of value produced in-house to about 20% by the 2000s (Klier and Rubenstein, 2008: 47). In turn, newly independent parts suppliers aggressively off-shored production of labor-intensive, low skill parts production in an effort to remain profitable as core firms demanded five percent annual cost reductions (Klier and Rubenstein 2008: 51-2). This generated a global three level structure. Similarly, VW shed 30% of its German work force 1974-75, and 30 to 40% of VW's assembly plant headcount today is 'temporary' workers (Tolliday 1995: 122; Doellgast and Greer, 2007).[3] Difficulty transforming all tacit into codified knowledge accounts for the residual hybridization of the automobile and similar sectors. Nonetheless, the rising importance of software has produced alliances linking Ford with Google, VW with Microsoft, and Hyundai/Kia with Apple, presaging emergence of a purer franchise structure.

Literal franchise sectors, like fast food and hospitality, are closest to the ideal type, and also show that this three-tier structure is not limited to 'tech.' Most hotel brands currently neither own physical buildings nor employ most of the workers therein. Hilton Worldwide Holdings, for example, has 16 brands and 5900 registered trademarks franchised out to building owners across carefully curated and gradated market segments.[4] By 2018, Hilton directly owned or leased only 1% of the properties labelled with some Hilton brand. Private equity firms, family trusts, and real estate investment trusts typically own hotel buildings, which are a large physical asset. A different 'Apple' – Apple Hospitality Real Estate Investment Trust – runs 242 hotels in the USA under various theoretically competing Hilton and Marriott brands.[5] All of Apple Hospitality's buildings are managed under contract by hotel management firms, who in turn contract in labor from firms like Adecco, Hospitality Services Group, or GHJC Group. These jobs can be 'gig'-like but are more often standard, albeit precarious employment relations. As with fast-food and other franchises, the lead hotel 'brand' firm controls the behavior of firms and workers farther down the chain in minute detail. Lead firms thus enjoy all the benefits of vertical integration with few of the legal, administrative, or labor control problems.

The shift to the Franchise economy thus involved a partial resolution of the capital-labor distributional conflict in capital's favor, as labor market dualization and the secularly falling share of wages in OECD GDP shows. This reduced GDP growth by shifting income towards households with a low marginal propensity to consume. But equally important, it redistributed profits among competing capitals towards firms with a low marginal propensity to invest. Uber 'invested' $14 billion as ride subsidies but

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[3] Chris Brooks, 'On eve of union vote, Chattanooga VW workers describe rampant workplace injuries,' *Labor Notes* 11 June 2019 @ https://labornotes.org/2019/06/eve-union-vote-chattanooga-vw-workers-describe-rampant-workplace-injuries.

[4] Hilton Worldwide 2019 US Securities and Exchange Commission Form 10-K filing @ https://otp.tools.investis.com/clients/us/hilton_worldwide2/SEC/sec-show.aspx?FilingId=13217616&Cik=0001585689&Type=PDF&hasPdf=1.

[5] Apple Hospitality REIT 2019 US Securities and Exchange Commission Form 10-K filing @ https://ir.applehospitalityreit.com/SEC_Filings.

only $1.6 billion on physical plant and software (Horan, 2019).[6] Uber's bad math precisely illustrates the institutional shape of the dual axes of conflict in the Franchise economy. Capital-labor conflict is temporarily resolved by pushing workers as far outside the firm as is possible, and transforming workers into miniature capitalists. They are then pitted against the better organized, better capitalized firms in a struggle over 'profit,' with predictable outcomes. As Max Weber observed long ago, *kraft ihrer Kapitalmacht* has a quality all of its own in the *preiskampf*.

Finally, consistent with the chapters by Schwartz and Blyth, Tan and Conran, Sierra, and Bohle and Regan (here), the three-tier structure is fractal, and can be found both inside national economies and across the global economy. Apple Computer, for example, has a de facto global three-tier structure involving itself, semiconductor firms like STM (Europe) or Toshiba (Japan), and assembly firms like Hon Hai (a Taiwanese firm operating in China). But it also has a parallel domestic structure involving itself, Qualcomm and Corning, and an army of contract service providers and programmers at its headquarters.

4: Who gets what?

Not most workers. The knowledge economy or service economy is heterogeneous across firms within conventionally defined sectors, rather than being heterogeneous across conventionally defined, homogeneous sectors as the service economy, co-specificity, and intangibles arguments assert. Both high- and low-end (dynamic versus stagnant) service sectors have dual labor markets. This seems to runs against the skill-biased technological change arguments for increasing wage dispersion in Wren (2013) and Iversen and Soskice (2019). The key 'tell' here is that inside each sector the real difference is between high and low profit firms. Wages increasingly depend on who you work for in the three-tier economy, not what you do, as firms with bigger profits pay higher wages. Wage dispersion across firms rather than within firms accounts for much of rising income inequality in the United States (Barth et al. 2014; Song et al., 2019; Autor, 2019). The higher profitability of IPR-rich firms flows into wages, with workers capturing between 30 and 42 cents of every dollar of patent generated surplus as higher earnings, and with longer serving and higher paid workers benefiting most (Kline et al., 2018: 1, 3; Berger et al., 2018: 3). In the past, unionization, sociological factors, and efficiency wages in continuous flow 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.

And not most firms. Table 2 compares the cumulative shares of sales, gross profit and capital expenditure for the top 100 and 200 publicly listed US firms by cumulative gross profit in the broad Fordist (1950-1980) and Franchise (1992-2018) eras. Their disproportionate share of capital expenditure justifies looking at the top firms by sector to show why IPR-firms' low marginal propensity to invest generates the stagnation characterizing the Franchise economy.

[6] Economist, 'How real-estate barons have ridden the tech boom,' 09 May 2019 https://www.economist.com/business/2019/05/09/how-real-estate-barons-have-ridden-the-tech-boom).

Table 2: Top 100 or 200 US firms' share of cumulative sales, profit, and capital expenditure, 1950-1980 and 1992-2018, %					
	Share of:	Firms	Sales	Profit	Capital expenditure
Top 100	1950-1980	1.2	41.7	45.8	47.8
	1992-2018	0.5	36.3	44.6	34.0
Top 200	1950-1980	2.4	54.6	58.2	59.4
	1992-2018	1.1	47.5	54.9	47.0
Source: Author calculation from WRDS *Compustat*					

Figure 2.1 shows the distribution of gross profit by sector for the top 100 US firms in each era. Figure 2.1 shows the obvious shift towards the hardware and software firms conventionally seen as the heart of the KE. But it also shows the shift towards pharmaceuticals, consumer branded goods (including food franchises), and of course, finance, which appears to be neither high tech nor IPR based but in fact is both. Space constraints prohibit full exposition of the voluminous financialization literature and why finance should be considered as an IPR sector (Schwartz, 2017). A narrow slice of financial firms captures the bulk of profits by selling bespoke derivatives and managing IPOs and investment funds; the gini for financial firms' cumulative profits is .95 for both gross and net income, 1992 to 2017. The production and (limited) reproduction of derivatives exhibits exactly the same characteristics as the canonical three level IPR model. Much like software and biotech, small teams with high human capital produce derivatives in an ICT and software heavy production process (Bernstein, 2008). 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] Finally, the shift to a subscription model for payments enabled an entirely new asset class to emerge. Financial firms securitize subscription revenue streams, linking finance even more closely to IPR based firms. Finance thus fits into the more general pattern whereby firms with robust IPRs are able to extract a disproportionate share of the value created in various commodity chains.

Just the US?

Is this a US-specific phenomena? Data limits prevent a diachronic OECD-wide comparison. But data for the past decade in the Orbis database and in the much more restricted set of firms in the Forbes Global 2000 list corroborate the US data, confirm that the global division of labor also exhibits a three-tier structure, and suggest that the global division of labor conditions national level growth models. The top 200 firms in the Orbis dataset captured 45% of the cumulative profit of the 20114 consolidated entities with cumulative operating revenues over $500 million, 2010 to 2018. The decline of the old Fordist automobile plus oil complex (or autos, oil and integrated manufacturing) in favor of the new IPR plus financial firms is clearly visible in the distribution of those profits (Figure 2.2). Within the top 200, the

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

IPR sectors (tech hardware and software, pharmaceuticals, consumer branded goods and copyrighted goods) and finance each captured one seventh of all profits, while and the autos/oil/manufacturing complex captured only a tenth.

Figure 2.1: Top 100 US firms' share of all gross profits by sector, 1950-1980 versus 1992-2017, (%)

Source: Author calculation from WRDS Compustat

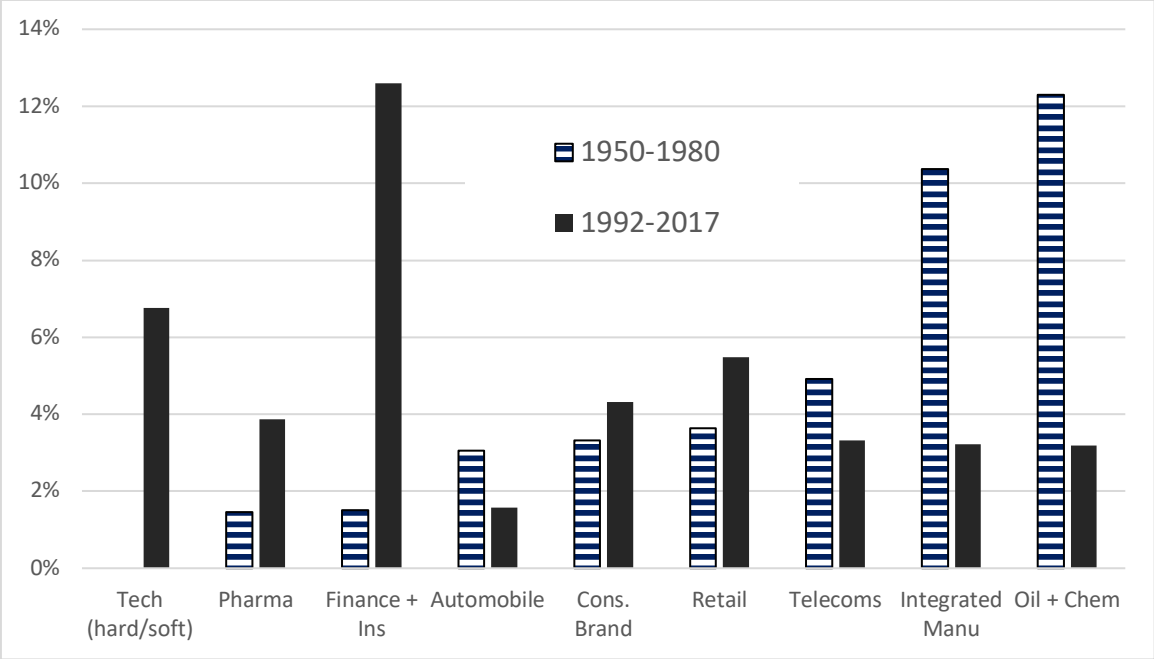
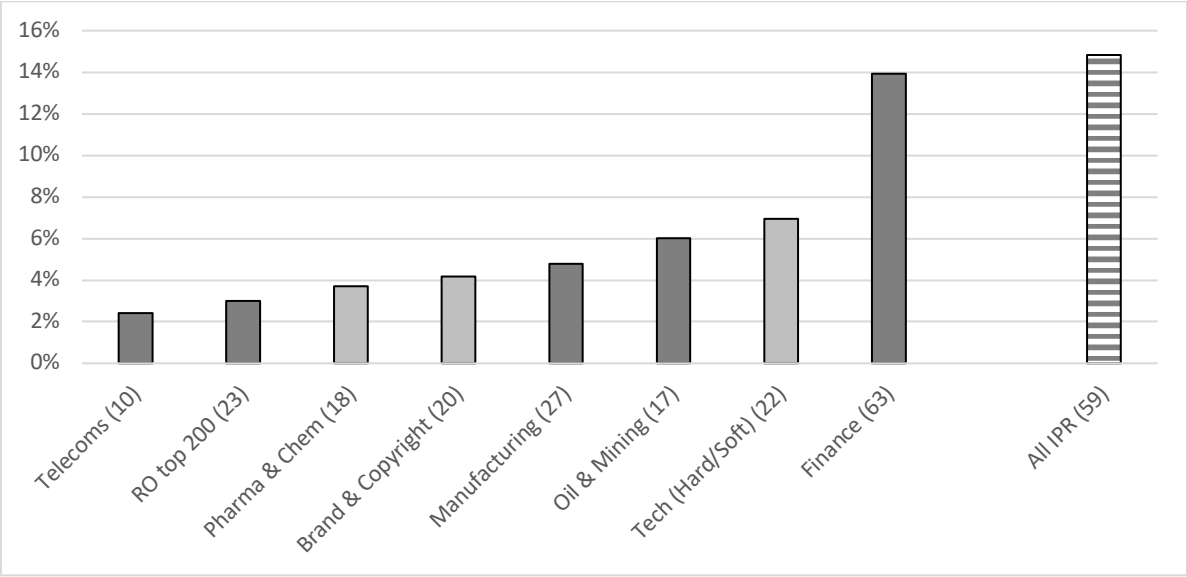


Figure 2.2: Top 200 global firms' share of cumulative profits, 2010-2018, by sector

Memos: (#) = number of firms; All IPR includes all firms in light grey; manufacturing includes automobiles; RO 200 = rest of the Top 200

Source: Author's construction from Bureau van Dijk Orbis Database

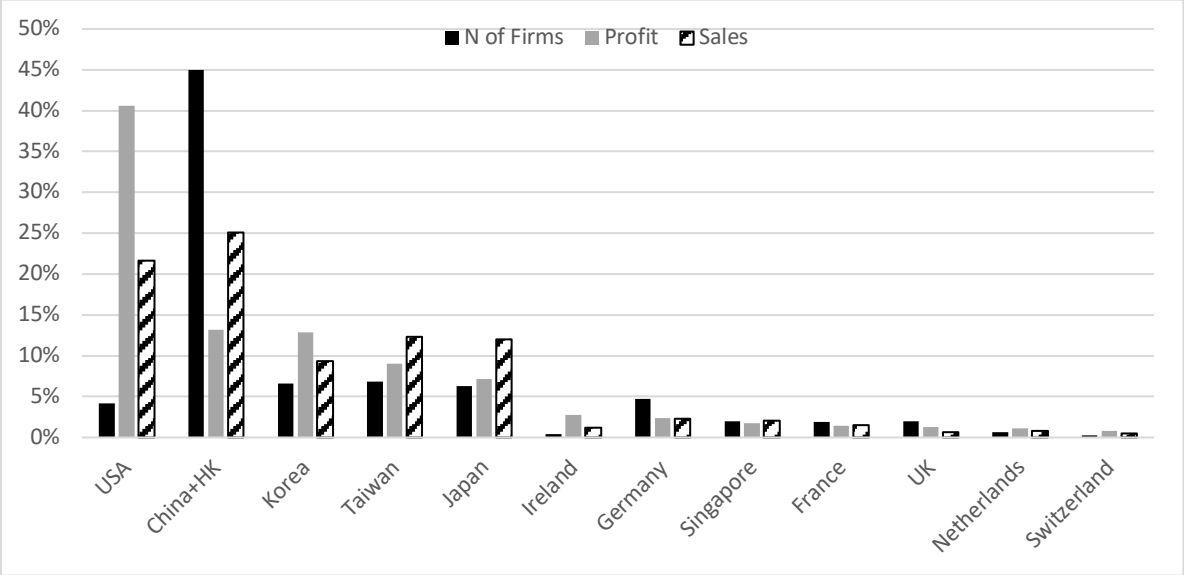


Profits are distributed unequally not only across sectors, but because the global distribution of the three different kinds of firms is uneven, also across countries. Figure 2.3, for example, shows the distribution of profits by nationality of ownership in NACE category 26 (computer, electronic and optical equipment). This category would include firms like Apple, Toshiba, Raytheon, Hon Hai, or Fresenius. This sector accounts for 4.3% of cumulative profit for the Orbis-20114, 2010 to 2018. US firms have disproportionately large profit volumes, while profits relative to sales are disproportionately low for the numerous small Chinese firms doing assembly or making low value components. The salience of US firms' (non-Chinese) Asian collaborators is equally visible. The most profitable Asian firms are physical-capital intensive ones, like Taiwan Semiconductor Manufacturing Company, which accounts for 31.3% of profits attributable to Taiwanese NACE 26 firms, or Samsung, which accounts for 69.7% of Korean profits. Adding 'inverted' US firms, like Seagate, which are technically credited to Ireland, would increase the US shares.

Figure 2.3: Share of firms, cumulative sales, and cumulative profits in NACE category 26 (computer, electronic and optical equipment), 2010-2018, %

Memo: 6507 firms total

Source: Author's construction from Bureau van Dijk Orbis Database



5: Macroeconomic consequences

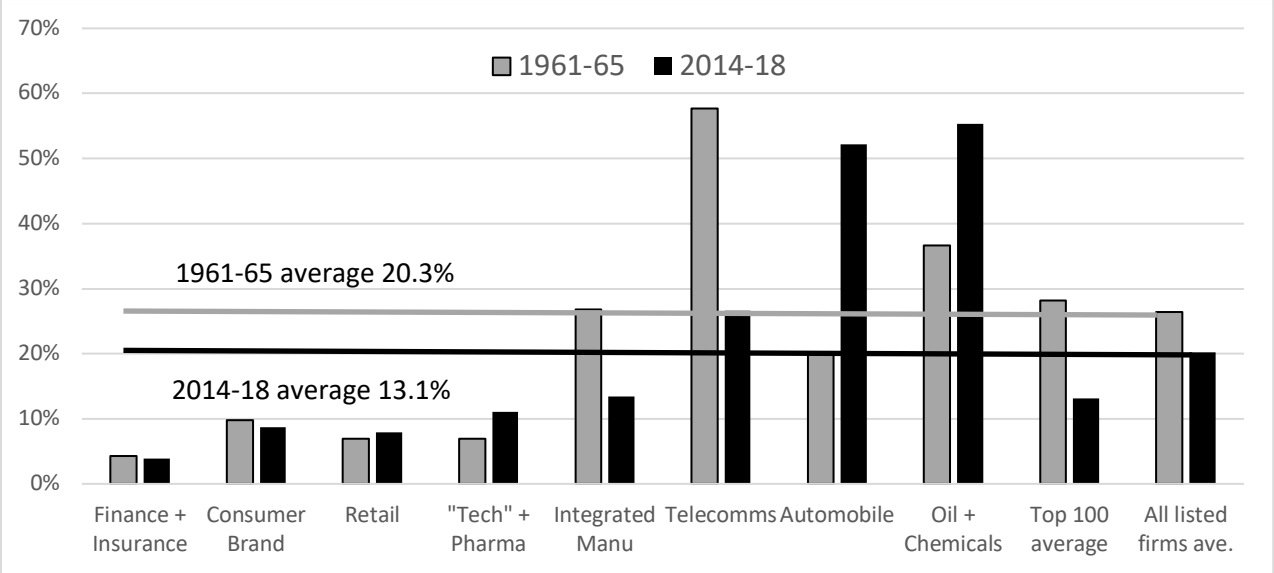
IPR-rich and financial firms in the Franchise economy have a lower marginal propensity to invest, slowing growth across all growth models. Fordist firms' strategy and structure promoted growth, albeit with a firm governmental hand on their back. Firms seeking oligopoly profits did so by expanding their control over physical capital. The natural depreciation of physical capital required reinvestment, sustaining investment levels. Integrated firms combined profit coming from control over IPRs with that coming from physical capital, enabling reinvestment. Efficient management of physical plant in the face of rising labor militancy required redistributing part of those oligopoly profits towards workers, sustaining growth in consumption. And the very physicality of production made it easier for governments to tax firms, enabling the expansion of government spending. Put differently, firms'

strategy and structure generated the institutional base for the post-war wage-led growth models that post-Keynesian analyses posit, expanding all three components of GDP: consumption, investment and government spending net of transfers. (Exports largely net out over the OECD.)

None of this holds in the Franchise economy. Capital expenditure as a percentage of gross profit for all listed US firms fell from peak Fordism, circa 1961 to 1965 versus the most recent comparable Franchise period, 2014 to 2018. Within that general trend, IPR sectors underinvest even more (Figure 2.4). The bulk of capital expenditures continues to come from the older Fordist sectors. Like any monopoly, IPR firms face only modest pressure to invest in order to stay competitive. Instead, IPR firms with large profits prefer to retain cash on hand, to pay out extraordinary dividends, or to acquire potential competitors. US firms collectively held about $1.9 trillion in cash as of 2016, with tech and pharmaceutical firms holding roughly 57% (Manzi et al., 2017). Additionally, Haskell and Westlake (2018) are correct about how scalability affects investment – IPR firms do not have to invest (as much) to produce the Nth unit of output. Much of the spending to upgrade or create software or chip designs takes the form of salaries. This has weak multiplier effects as compared to physical investment, and even that is often offset as the recipients of higher 'tech' salaries bid up real estate prices and rents in prime urban areas.

Figure 2.4: Capital expenditure as a percentage of gross profit for the top 100 US firms by indicated sectors, %, 1961-65 versus 2014-18 (ranked by share of gross profits, 1961-65)

Source: Author construction from WRDS *Compustat* data



Meanwhile, excess capacity deters investment by second tier firms that need investment to scale. Automobile sector excess capacity ranges from about 10% in North America to 50% in China. This understandably makes firms cautious about new *net* investment although they do replace depreciated capacity. Apple's relations with its suppliers illustrate the tensions here. Apple invested US$200 million (from its $5 billion Advanced Manufacturing Fund) in Corning Glass to create a production facility for a new generation of Gorilla Glass™ (for mobile phone screens), because Corning was leery of expanding capacity.

Franchising and other forms of contracting out have broken up the old Fordist intra-firm wage leveling and profit redistribution mechanisms (Weil, 2014). Workers at a given fast food franchise are not technically employees of the franchisor / brand owner. From a firm's point of view, this addresses the problem that at least part of labor-intensive production consists of non-tradable services – 'last mile' jobs that must be done on-site in high-cost urban areas (Autor, 2019). Immigrants often populate this sector, bringing lower wage norms with them. Although this has gone farthest in the United States, temporary and minimum wage jobs have also proliferated in Europe (Häusermann and Schwander, 2012).

Finally, the ease of tax avoidance for firms whose only real asset is IP limits government revenue (Zucman, 2015). IP can be licensed or sold to shell firms in tax havens, which then collect profit by re-licensing that IP back to corporate units that actually make sales in higher tax localities. This has depressed government revenue to the point where it has produced a backlash from usually business friendly finance ministries. US legislation in 2020 will force the unmasking of anonymously held shell corporations, and the OECD's decade-long Base Erosion and Profit Shifting (BEPS) project of course has been pressuring governments to eliminate the more egregious tax avoidance schemes, like the infamous double Irish with a Dutch sandwich that relocated profits to shell companies with no legal tax domicile.

In sum, the three-tier industrial structure Franchise economy has a natural tendency towards secular stagnation. Firms with large profits invest little; firms that might invest lots have smaller profits. Inter-firm wage disparities concentrate income into higher income households with a low marginal propensity to consume, while the other 90% of households resort to varying degrees of debt to maintain a socially acceptable standard of living. That borrowing sustained growth and enabled physical-capital intensive firms to earn profit margins that induced moderate amounts of investment from 2001 to 2007 on the basis of an unsustainable housing boom (Schwartz, 2009; Streeck, 2014).

That said, even without COVID the Franchise economy was plausibly reaching its natural limits. In the core electronics sector, the semiconductor industry was hitting absolute physical limits to increased chip density. The two main end products for those chips, cars and phones, both have hit the top of their logistic growth curves. By 2020, global cellphone penetration was roughly 70% with roughly 46% of the world's population owning a smart phone. And while electrification of the auto fleet will surely increase demand for chips, it equally surely will cause significant employment losses as the parts count for cars drops.

Conclusion

The knowledge economy has little to do with knowledge per se, but rather a lot to do with property rights around knowledge and the usual distributional conflicts in capitalist societies. The core dynamic of the Franchise economy is a shift from corporate strategies centering on a search for oligopoly power based on control over physical capital and instantiated in vertically integrated production structures, towards corporate strategies centering on a search for monopoly power based on control over IPRs and instantiated in legally disintegrated but functionally integrated production structures.

In this dynamic, Fordist era distributional struggles between capital and labor have taken a backseat to the distributional struggle among firms over profits. Not because the first distributional struggle is unimportant, but rather because capital largely won. In this context, the struggle over the enlarged pool of profit that greater exploitation enables has moved to the front. In that distributional struggle, the peculiar nature of the Franchise economy's 'abundant resource' – digitized production, social and personal knowledge – has allowed a handful of firms to capture the lion's share of global profits by locking both data and social knowledge behind IPRs.

In short, it's not just concentration of profits – which characterizes both eras – but concentration into specific kinds of firms subsequent to a politically mediated legal fissuring of production activities and labor forces. Fragmentation reflects political choices made by dominant social blocks (Baccaro and Pontusson, 2018) that control the organizations regulating antitrust enforcement (Christophers, 2016), define what qualifies for patent or copyright protection, and define who is legally the employer. Whether the Franchise economy can persist in its current form is an open question. That said, government responses to COVID19 might generate sustained expansionary fiscal and welfare policy. At the time of writing, the US Biden administration had secured a third, $1.9 trillion COVID19 recovery package (American Rescue Plan, 2021), and was proposing a similarly sized infrastructure and care economy package. This might generate a complementary investment response from second tier firms as excess capacity is absorbed, while limiting labor exploitation by firms in the third tier. And anti-trust authorities are taking increasing aim at the big platform monopolies, though not, at this time, the more general problem of horizontal and preemptive concentration. Much remains uncertain in this politically fragile moment, though.

References:

Andrews, Dan, Chiara Criscuolo, and Peter Gal. (2016). "The Best Versus the Rest: The Global Productivity Slowdown, Divergence Across Firms and the Role of Public Policy." Paris: OECD.

Autor, D. (2019). Work of the past, work of the future. NBER working paper # 25588. Chicago: National Bureau of Economic Research.

Baccaro, L., and Pontusson, J. (2018). Comparative Political Economy and Varieties of Macroeconomics. Max-Planck-Institut für Gesellschaftsforschung Discussion Paper 18/10. Köln: Max Planck Institute.

Barth, E., Bryson, A., Davis, J., and Freeman, R. (2014). It's where you work: Increases in earnings dispersion across establishments and individuals in the US. NBER working paper No. w20447. Chicago: National Bureau of Economic Research.

Baumol, W. (1967). The Macroeconomics of Unbalanced Growth. *American Economic Review*, 52(3): 415–426.

Bell, D. (1973). *The Coming of Post-Industrial Society*. New York, NY: Basic Books.

Bergen, Mark, and Josh Eidelson. (2018). "Inside Google's Shadow Workforce," *Bloomberg* July 25, 2018. https://www.bloomberg.com/news/articles/2018-07-25/inside-google-s-shadow-workforce.

Berger, David W., Kyle Herkenhoff, and Simon Mongey. (2019). "Labor Market Power." *NBER Working Paper No. w25719*. Chicago: National Bureau of Economic Research.

Bernstein, Jeremy. (2008). *Physicists on Wall Street and Other Essays on Science and Society*. New York: Springer Science & Business Media.

Bessembinder, H. (2018). Do Stocks Outperform Treasury Bills? *Journal of Financial Economics*, 129: 440-457.

Bessembinder, H., Chen, T.-F., Choi, G. and Wei, K.-C. (2019). Do Global Stocks Outperform US Treasury Bills? Available at https://ssrn.com/abstract=3415739.

Blair, J. (1976). *Control of Oil*. New York, NY: Pantheon Books.

Block, F. and Keller, M. (eds). (2015). *State of Innovation: The US Government's Role in Technology Development.* London: Routledge.

Brenner, A., Brenner, R., & Winslow, C. (eds). (2010). *Rebel Rank and File: Labor Militancy and Revolt from Below during the Long 1970s*. London: Verso.

Bulow, J., Geanakoplos, J. and Klemperer, P. (1985). Holding idle capacity to deter entry. *The Economic Journal, 95*(377): 178-182.

Callaci, B. (2018). Control without responsibility: The legal creation of franchising 1960–1980. Washington Center for Equitable Growth. Available at: https://equitablegrowth.org/working-papers/control-without-responsibility-the-legal-creation-of-franchising-1960-1980/ (accessed 13 December 2018).

Chandler A. (1977). *The Visible Hand: The Managerial Revolution in American Business*. Cambridge, MA: Harvard University Press.

Christophers, Brett. (2016). *The Great Leveler: Capitalism and Competition in the Court of Law*. Cambridge, MA: Harvard University Press.

Cunningham, C., Ederer, F., and Ma, S. (2019). Killer Acquisitions. Washington Center for Equitable Growth working paper, @ https://equitablegrowth.org/working-papers/killer-acquisitions/.

Davis, L., & Orhangazi, Ö. (2021). Competition and Monopoly in the US economy: What do the Industrial Concentration Data Show? *Competition & Change,* 25(1): 3-30

De Loecker, J., and Eeckhout, J. (2018). Global market power. NBER working paper No. w24768. Chicago: National Bureau of Economic Research.

Doctorow, C. (2014). *Information Doesn't Want to Be Free: Laws for the Internet Age*. San Francisco: McSweeney's.

Doellgast, V. and Greer, I. (2007). Vertical disintegration and the disorganization of German industrial relations. *British Journal of Industrial Relations*, *45*(1): 55-76.

Drahos, P. & J. Braithwaite. (2017). *Information Feudalism: Who Owns the Knowledge Economy?* London: Routledge.

Esping-Andersen, G. (1990). *The Three Worlds of Welfare Capitalism*. Princeton, NJ: Princeton University Press.

Fisk, C. (2009). *Working Knowledge: Employee Innovation and the Rise of Corporate Intellectual Property, 1800-1930*. Chapel Hill, NC: Univ of North Carolina Press.

Flamm, K. (1988). *Creating the Computer: Government, Industry, and High Technology*. Washington, DC: Brookings Institution Press.

Freeman, C. and Louçã, F. (2001). *As Time Goes By: From the Industrial Revolutions to the Information Revolution*. New York, NY: Oxford, University Press.

Galbraith, J. (1967). *New Industrial State*. New York, NY: Houghton Mifflin.

Hall, P., & Soskice, D. (2001). *Varieties of Capitalism*. New York, NY: Oxford University Press.

Harvey, D. (1982). *The Limits to Capital*. London: Verso.

Haskel, J., and Westlake, S. (2017). *Capitalism Without Capital*. Princeton, NJ: Princeton University Press.

Herrigel, G. (1996). *Industrial Constructions: The Sources of German Industrial Power*. Cambridge: Cambridge University Press.

Hodgson, Geoffrey. (2021). Financial Institutions and the British Industrial Revolution: Did Financial Underdevelopment Hold Back Growth? *Journal of Institutional Economics*, 17(3): 429-448.

Horan, H. (2019). Uber's path of Destruction. *American Affairs, 3*(2): 108-133.

Hozic, A. (2001). *Hollyworld: Space, Power, and Fantasy in the American Economy*. Ithaca, NY: Cornell University Press.

Häusermann, S. and Schwander, H. (2012) Varieties of dualization? Labor market segmentation and insider-outsider divides across regimes. pp. 27-52 in Emmenegger, P., Häusermann, S., Palier, B. and Seeleib-Kaiser, M. (eds), *The Age of Dualization.* New York: Oxford University Press.

Iversen, T. and Soskice, D. (2019). *Democracy and Prosperity: Reinventing Capitalism through a Turbulent Century*. Princeton: Princeton University Press.

Iversen, T. and Wren, A. (1998). Equality, employment, and budgetary restraint: the trilemma of the service economy. *World Politics*, 50(4): 507-546.

Kitschelt, H. (1991). Industrial governance structures, innovation strategies, and the case of Japan. *International Organization*, 45(4): 453-493.

Klier, T. and Rubenstein, J. (2008). *Who Really Made Your Car? Restructuring and Geographic Change in the Auto Industry*. Kalamazoo, MI: WE Upjohn Institute.

Kline, P., N. Petkova, H. Williams, and O. Zidar. (2019). Who Profits from Patents? Rent-Sharing at Innovative Firms. *The Quarterly Journal of Economics*, 134(3): 1343-1404.

Lazonick, W. (1990). *Competitive Advantage on the Shop Floor*. Cambridge, MA: Harvard University Press.

Madonna. (1984). Material Girl. *Like a Virgin*. London: Sire Records. https://www.youtube.com/watch?v=6p-lDYPR2P8.

Manzi, J., D. Tesher, G. Wilson, L. Grimaldo, A. Wong, F. Khan. (2017). U.S. Corporate Cash Reaches $1.9 Trillion but Rising Debt and Tax reform Pose Risk. S&P Global, May 25, 2017. https://www.spglobal.com/en/research-insights/articles/us-corporate-cash-reaches-19-trillion-but-rising-debt-and-tax-reform-pose-risk.

Mazzucato, M. (2015). *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*, London: Anthem Press.

Mishel, Lawrence. (2018). Uber and the Labor Market. Economic Policy Institute. https://www.epi.org/publication/uber-and-the-labor-market-uber-drivers-compensation-wages-and-the-scale-of-uber-and-the-gig-economy/.

Murray, J. and Schwartz, M. (2019). *Wrecked: How the American Automobile Industry Destroyed Its Capacity to Compete*. New York, NY: Russell Sage Foundation.

Noble, D. (1984). *Forces of Production: A Social History of Automation*. New York, NY: Knopf.

Ostrom, Elinor. (2019). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

Pagano, U. (2014). The crisis of intellectual monopoly capitalism. *Cambridge Journal of Economics*, 38(6): 1409-1429.

Peinert, Erik. (2021). Cartels, Competition, and Coalitions: The Domestic Drivers of International Orders. *Review of International Political Economy* 28(6): 1652-1676.

Perez, C. (2009). The double bubble at the turn of the century: technological roots and structural implications. *Cambridge Journal of Economics*, *32*: 779-805.

Perzanowski, A., & Schultz, J. (2016). *The End of Ownership: Personal Property in the Digital Economy*. Cambridge, MA: MIT Press.

Philippon, T. (2019). *The Great Reversal: How America Gave Up on Free Markets*. Cambridge, MA: Harvard University Press.

Pistor, K. (2019). *The Code of Capital: How the Law Creates Wealth and Inequality*. Princeton NJ: Princeton University Press.

Pontusson, J. and Swenson, P. (1996). Labor markets, production strategies, and wage bargaining institutions. *Comparative Political Studies*, 29(2): 223-250.

Schwartz, H. (2009). *Subprime Nation: American Power, Global Capital, and the Housing Bubble*. Ithaca, NY: Cornell University Press.

Schwartz, H. (2017). Club goods, intellectual property rights, and profitability in the information economy. *Business and Politics,* 19(2): 191-214

Schwartz, H. (2019). *States Versus Markets: Understanding the Global Economy*. London: Macmillan International Higher Education.

Schwartz H. and Tranøy, B. (2019). Thinking about Thinking about Comparative Political Economy. *Politics & Society,* 47(1): 23-54.

Sell, Susan. (2003). *Private Power, Public Law: The Globalization of Intellectual Property Rights*. Cambridge: Cambridge University Press.

Slobodian, Quinn. (2020). The Law of the Sea of Ignorance: FA Hayek, Fritz Machlup, and other Neoliberals Confront the Intellectual Property Problem. In *Nine Lives of Neoliberalism*, edited by Philip Mirowski, Dieter Plehwe, and Quinn Slobodian, 70-90. London: Verso Books

Song, J., Price, D., Guvenen, F., Bloom, N. and von Wachter, T. (2019). Firming up Inequality. *Quarterly Journal of Economics* 134(1): 1-50.

Stansbury, A., & Summers, L. (2020). The declining worker power hypothesis: An explanation for the recent evolution of the American economy. Working Paper No. w27193. Chicago: National Bureau of Economic Research.

Steindl, J. (1952). *Maturity and Stagnation in American Capitalism*. New York, NY: Monthly Review.

Streeck, Wolfgang (2014). *Buying Time: The Delayed Crisis of Democratic Capitalism*. London: Verso Books.

Tolliday, S. (1995). From “Beetle Monoculture” to the “German Model”: The Transformation of Volkswagen, 1967-1991. *Business and Economic History*, 24(2): 111-132.

Veblen, T. (1904). *The Theory of Business Enterprise*, Clifton, N. J.: A. M. Kelley.

Veblen, T. (1908a). On the nature of capital. *The Quarterly Journal of Economics*, 22(4): 517-542.

Veblen, T. (1908b). On the nature of capital: Investment, intangible assets, and the pecuniary magnate. *The Quarterly Journal of Economics*, 23(1): 104-136.

Weber, M. (1978). *Economy and Society*, G. Roth & C. Wittich (eds). Berkeley, CA: University of California Press.

Wong, Julia. (2019). 'A White Collar Sweatshop': Google Assistant Contractors Allege Wage Theft. *The Guardian* May 28, 2019. https://www.theguardian.com/technology/2019/may/28/a-white-collar-sweatshop-google-assistant-contractors-allege-wage-theft.

Wren, A. (ed.). (2013a). *The Political Economy of the Service Transition*. New York, NY: Oxford University Press.

Wren, A. (2013b). The political economy of the service transition. *Renewal: A Journal of Labour Politics*, 21(1): 67-76.

Zuboff, S. (1988). *In the Age of the Smart Machine*. New York, NY: Basic Books.

Zucman, G. (2015). *The Hidden Wealth of Nations*. Chicago: University of Chicago Press.