Herman Mark Schwartz
Politics Department
University of Virginia
PO Box 400787
Charlottesville VA 22904-4787 USA
schwartz@virginia.edu
https://uva.theopenscholar.com/hermanschwartz
http://orcid.org/0000-0002-5571-3644

Accounting for intangibles: power, production and profit in Haskel and Westlake

Abstract

Haskel and Westlake's *Capitalism without Capital* and *Restarting the Future* are among the most influential of policy-oriented books on the 'knowledge' or intangibles economy. *Capitalism without Capital* proposed four 'S's – spillovers, scalability, sunken-ness, and synergies – as unique features of the knowledge economy. *Restarting the Future* built on this to explain secular stagnation since 2008 and highlight barriers to further expansion of the knowledge economy. This paper critiques Haskel and Westlake in order to make a positive argument about the nature of an economy in which firms with robust intellectual property rights (IPRs) disproportionately capture profits. Haskel and Westlake's technologically determinist arguments fetishize intangibility and ignore two important issues. They ignore the actual organization or mode of production, focusing only on firms producing intangibles. They miss how IPRs transform intangibles like information into capital, that is, into a social relation yielding a stream of income. In short, their arguments lack both capitalism – a system of accumulation driven by profits – and capital in its sense of a social relation. I argue instead that 4.5 different 'S's characterize the knowledge economy: Suppression of rivals via lawSuits; Style over substance (hype that diverts capital investment away from the material world); Subscriptions rather than sales; Sabotage in Veblen's sense via strategic buyouts. These explain why a handful of firms capture the bulk of profit in the knowledge economy, inhibiting the usual Schumpeterian transformation leading to renewed growth.

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What's wrong with the knowledge economy or the information economy? What explains slow growth, rising income inequality, and historically high – at least outside of wartime – levels of debt to GDP, to corporate profits, and, to a lesser extent, household income? The usual answers from the left typically focus on changes in the distributional conflict between capital and labor. By contrast, the usual (when serious) answers from the right focus on institutional problems and technological change, so as to avoid discussing distributional conflict. The institutional focus usually directs its gaze to government institutions, regulations, and taxes. Other mainstream approaches assign causality to technological change, as in the skills-biased technological change argument about income inequality. There technology is an independent variable with unvarying consequences for income distribution or corporate structure. The first two approaches are at best only partially correct; the last one is simply wrong as technologies are not univocal with respect to the social organization of production. And all

tend to focus on macro-economic aggregates rather than industrial organization and the distribution of power in commodity chains.

They thus generally fail to explain precisely what is wrong, because they typically overlook a second core conflict in capitalism: the distributional conflict among firms and capitals. With the distributional conflict between capital and labor largely resolved in capital's favor after the 1970s, this conflict has moved to the fore. Arguably, this second conflict now drives both national and global conflicts over the distribution of income across classes. That is, in its weakest form inter-firm distributional conflict is an omitted variable complementing the other arguments; in its strongest form it is a master independent variable driving the outcomes those other arguments observe. The closest that left arguments come to an inter-firm perspective is the blunt counter positioning of 'financial' versus 'productive' capital, generally without consideration as to the actual sources and distribution of profit (Örhangazi 2008, 2019; Stockhammer 2006, 2008). Mainstream arguments tend to homogenize all monopolies into one general phenomenon (Philippon 2019).

Here I concentrate on one of the major mainstream approaches blending institutional and technological arguments to explain secular stagnation, income inequality and three other problems. The flaws in Jonathan Haskel and Stian Westlake's *Restarting the Future* (2022) largely reflect inattention to inter-firm distributional conflict, as does their earlier *Capitalism without Capital* (2016) – the title itself revealing. That said, the subtextual critique here also aims at critics of capitalism for whom the capital-labor distributional conflict always and everywhere explains everything, and thus misdiagnose our economic ailments.

Haskel and Westlake (p. 9) channel Italian Marxist Antonio Gramsci to explain post-2008 western economic stagnation, declaring that "[t]he problems we see are the morbid symptoms of an economy caught between an irrecoverable past and the future that we cannot attain." They point to a massive but incomplete shift away from an economy characterized by investment in 'tangibles' to one characterized by investment in 'intangibles.' Intangibles encompass intellectual property (IP; patents, copyrights, brands, and trademarks), corporate cultures, consumers' emotional attachments to firms or products (often captured in brands), and tacit production knowledge. According to Haskel and Westlake (pp. 4-6), institutional obstacles to a complete transition generate five current dysfunctionalities:

(1) Stagnant income growth per capita relative to pre-2010 growth rates. (2) Rising inequality of wealth, income, and socio-cultural esteem. (3) Dysfunctional, winner-take-all competition inhibiting start-ups and promoting excessive interpersonal competition over positional goods and employment outcomes. (4) Very complex, interconnected international supply chains are fragile and vulnerable to shocks like Covid or wars. (5) And finally, echoing David Graeber's (2018) *Bullshit Jobs* and *Fight Club*, where everything is a copy of a copy of a copy, inauthenticity: the sense that too many jobs and activities are simply fake and detached from reality.

With only the briefest of nods to Joseph Schumpeter's argument about leading sectors and no nod at all to the *Regulation* school (Aglietta 1979; Boyer 1990), they (p. 10 for quote, 112-115) argue that the institutions we *have* don't match the institutions that an economy built on intangibles *needs*. Those "sound institutions have to solve four problems in exchange: ensuring sufficient commitment, solving collective action problems, providing information, and restricting wasteful influence activities." In particular, Haskel and Westlake foreground – again without credit to Schumpeter – Schumpeter's (1934: 142–48, 159) argument that established interests and practices hinder efforts by new leading sectors to mobilize massive volumes of capital for investment. By focusing on exchange this minimal stab at inter-firm conflict fails almost immediately. And it fails fatally by overlooking how major interests *within* their prized intangibles sector currently impede investment and growth under existing legal and economic

arrangements. Problems with growth and income distribution are endogenous to an economy built on intellectual property rights (IPRs) around intangibles.

This oversight reflects a common failing in most studies of the contemporary era, namely a focus on macro-economic aggregates and an inattention to how changes in corporate strategy and structure have caused a shift in the distribution of profit among firms. Much like the capital-labor distributional conflict, the inter-firm distributional conflict has already largely been settled in favor firms whose profits rest on intangibles and in particular the legally constituted monopolies around IPRs. In the absence of comprehensive global data for the earlier era, the US data must suffice: during the height of the monopoly capitalism arguments, 1950 to 1980, 27 automobile assembly or parts firms and oil firms at the core of the Fordist economy accounted for 16.3% of cumulative profits for the over 7700 publicly listed US firms with positive profits. The gini index for all cumulative profit of publicly listed firms was 0.885. From 1992 to 2018, 30 pharmaceutical, software, electronics and branded goods firms at the core of the still inadequately named contemporary era accounted for 11.4 % of cumulative profit for the over 17000 publicly listed firms with positive profits. The gini index was slightly higher at 0.926, largely on account of the 23 core financial firms that accounted for 12% of cumulative profits.[1]

This marginally higher profit share for core financial firms led many analysts to talk about this as a uniform era of 'financialization.' I lack the space to fully parse the strengths and weaknesses of the financialization arguments.[2] Here it suffices to note that disaggregating the nearly thirty years from 1992 to 2018 into three eras defined by expansion phases ending in recession shows a more complicated picture that calls into question arguments that see financialization as the critical feature of the entire post 1992 era (Krippner 2005).

Table 1 summarizes the data for 'core' financial and IPR-based firms, where core means they were in the top 100 publicly listed firms by cumulative gross profits. Three facets are worth calling out. First, the share of core financial firms is higher than core IPR-based firms in only one period, although it does increase from the first to the second sub-period. (Here I use financial firms' profits rather than 'financial profits' because dividends and interest payments by foreign subsidiaries of US TNCs artificially magnify aggregate financial returns because of accounting formalities [Fiebiger 2016; Rabinovich 2021].) Second, in the last sub-period, the re-nationalized US mortgage giants, Fannie Mae and Freddie Mac, accounted for 26.5% of financial firms' 12.9%, suggesting a diminishing share for the financial firms that are the demi-urge in most financialization arguments. Indeed, over the longer 1992 to 2018 era, the Frannies accounted for 20.6% of the 12.0% share of the 23 core financial firms. Third, a very small number of financial firms account for the bulk of financial firm profits, and those firms are profitable largely because of production processes resembling that in software firms, and whose output is patented derivatives and Class 705 business process patents (La Belle and Schooner, 2013). In turn this suggests a need to focus even more on the IPR- or intangibles-rich firms that dominate the US and perforce global economy.

[1] 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 adjusted for inflation using the producer price index, which biases the calculation in favor of manufacturing firms. While Compustat only has data on listed firms, Manyika et al. (2018) suggest similar levels of concentration when privately held firms are included.

[2] But see my 2021 SASE paper which does attempt to dissect the literature.

Table 1: Core IPR and financial firm share of cumulative profits for publicly listed firms							
	N of profitable firms	Gini index	Core IPR count	Core IPR profit %	Core Financial count	Core Financial profit %	Frannies % of core financial profit
1992-2000	12702	.892	38	13.5%	19	9.5%	16.0%
2001-2009	9340	.897	32	10.4%	25	13.0%	10.4%
2010-2018	6776	.882	35	16.7%	21	12.9%	26.5%
Source: Author calculation from WRDS Compustat data							

But the negative and positive arguments Haskel and Westlake make about the barriers to the expansion of intangibles-rich firms and how that inhibits growth miss this concentration of profit. Negatively, Haskel and Westlake correctly dismiss four competing explanations for current dysfunctionality. We are not in an era of technological stagnation. We are not mismeasuring GDP growth on account of the rise of freemium software or internet-based services, even though GDP accounting was built for an era largely characterized by physical output. We might well be in a transitional era as firms struggle to understand and implement production of intangibles and with higher proportions of intangible inputs – just as an earlier generation struggled to implement electrification of production – but if we are, we are more than halfway through that transition. And finally, though much less convincingly, rising monopoly power has not led to rising mark-ups once intangibles are "properly" accounted for – a point I will return to in detail later.

Positively, Haskel and Westlake's argument about institutional incompatibility for an intangibles economy builds on their 2016 book, *Capitalism without Capital*. *Capitalism without Capital* argued that intangible capital generates four novel 'S's: (1) *spillovers*: the fact that intangibles or knowledge tend to spread easily to other firms; (2) *scalability*: the ability to apparently expand production without a corresponding increase in physical capital; (3) *sunken-ness*: the inability to extract capital invested in an intangible because of the difficulties involved in selling "information"; and (4) *synergies*: the ability to combine knowledge to attain greater output (see also Crouzet et al. 2022).

Restarting the Future expands this analysis to argue that institutional failure to deal with spillover effects and sunk costs inhibits growth-generating investment in intangibles. On the demand side for investment capital, firms that cannot capture the majority of the social value their products create because of spillover will shy away from investment. On the supply side for investment capital, the world of debt finance is largely closed to firms dealing in intangibles, as those firms typically have no collateral to back a loan or bond. Haskel and Westlake claim that start-ups ex ante have only vaporware as collateral, and that the already sunk investments of more established intangibles firms cannot be liquidated in case of default. By contrast, normal banking and securities market channels could finance investment in the older, factory-based tangible Fordist economy. Tangibility provided collateral – buildings and machines – and loan covenants largely prevented asset stripping in anticipation of default.

Against this, Haskel and Westlake note that some institutional supports for an intangibles economy already exist, which is why the economic weight of intangibles has been rising. Venture capital funds some intangibles production precisely because of scalability. Scalability enables a successful intangibles firm to rapidly expand its output with little extra investment – the 'production' cost of the *n*th copy of software is essentially zero, while app firms can accommodate extra customers with incremental

increases in rented server space. Likewise, the proliferation of smartphones makes those apps synergistic: mapping apps locate a restaurant, ratings apps tell you if it is any good, delivery or rideshare apps connect you and the food. In many cases, winner-take-all dynamics enable a successful firm to have a global-scale addressable market. But, Haskel and Westlake argue, the volume of intangibles production in the economy has exhausted the available institutional capacity, hobbling further expansion.

Monopoly Matters

The authors are surely correct that the current institutional structure inhibits rapid growth, slows the diffusion of productivity gains, and creates unhealthy winner-take-all dynamics.[3] But legacy institutional structures from the old Fordist era, however, do not cause these problems – on the contrary, firms built on intangibles massively contribute to the four problems the authors identify, because four other 'S's characterize the intangible economy: *suppression* of rival products through lawsuits, *style* (over substance), i.e. hype that diverts capital investment into unicorns rather than physical productive capacity, *subscriptions* that guarantee durable revenue flows while diminishing users' property rights, and *sabotage* of potential rival firms through buyouts. The common thread uniting the four negative 'S's is the handful of firms in Table 1 defending and exercising their monopoly power.

As Thorstein Veblen (1908a, 1908b) argued over a century ago, echoing Marx on primitive accumulation, social knowledge, that is, intangibles, cannot generate profit unless it is wrapped up inside a property right. In Elinor Ostrom's (2019; Pistor 2019) more technical formulation, ideas, images, formulae, etc. are public goods, characterized by non-excludability and non-rivalry (non-subtract-ability) in consumption. IPRs create excludability around those intangible public goods without reducing their non-rivalry in consumption, transforming them into club goods. Critically, IPRs convey monopoly rights, albeit theoretically temporary ones. The intangibles firms which capture most of US and global profit volume are rich in IPRs. Their monopoly rights generate the dysfunctional and predatory behavior that Haskel and Westlake decry in *Restarting the Future* precisely because each of *Capitalism without Capital*'s four 'S's comes with one of the four negative 'S's above.

Spillover versus suppression

Spillovers should in principle lead to the rapid diffusion of higher productivity technologies to new and existing firms. Haskel and Westlake identify incumbents from the old economy and nonpracticing entities (NPEs), pejoratively patent trolls, as the major barrier to spillover. Rather, the most profitable intangibles firms suppress adoption, innovation, and new firm formation through the threat and reality of lawsuits. While NPE patent trolls were a major nuisance in the late 1990s and early 2000s, an alliance of the big firms has much diminished their power. Instead, the biggest IP lawsuits have involved large practicing entities. Apple famously sued Samsung over the physical shape of smartphones, which notionally are covered by a thicket of 250,000 patents. In 2011, Apple and Google spent more on lawsuits than on R&D and product development (Yang 2014: 243).

These patent thickets deter new firm entry and contestation by new firms even when their own intellectual property is copied. Big firms often just copy potential competitors' products, as Meta did when it cloned Snapchat's key features after Snap refused a buyout, or as Amazon is often alleged to do. As Scott Galloway (2018: 131) says, "Stealing is a core competence of high-growth tech firms." The big firms have the resources to wait out or deter lawsuits by smaller start-up firms, or to threaten them

[3] I won't address the 'authenticity' argument – the first rule of *Fight Club* after all is that we don't talk about *Fight Club* – but see Cory Doctorow's copious posts on how digital rights management software impedes cultural innovation at https://pluralistic.net/.

with debilitating countersuits. More and more physical commodities involve (copyrighted) software, and even some notional 'raw materials,' like genetically modified plants, are wrapped with patent protection. As Cecelia Rikap (2022) and collaborators have shown, the typical innovation network these days involves a large, IPR-rich firm subcontracting actual R&D production to smaller firms. These smaller boutique R&D firms make a living, but they are effectively well-paid proletarians, because the large firms file the patents emerging from this R&D. This effectively blocks growth by these smaller firms.

Apparent exceptions prove the rule. Consider the two big COVID vaccines. The Pfizer-BioNTech vaccine is a classic tie-up between the largest of the Big Pharma firms in terms of market capitalization and cumulative profit, 2010-2018, and a boutique R&D firm. Pfizer retained control over manufacturing, distribution and clinical testing. Moderna, by contrast, is the apparent exception, contracting out production to a handful of smaller drug manufacturers. But Moderna originated as a boutique R&D firm subcontractor to AstraZeneca, Merck, and DARPA. While Moderna retained control over its COVID vaccine, it still enlisted help from European pharma giant Sanofi. In effect Moderna, and to a lesser extent BioNTech, can be understood as struggling to overcome the barriers that Big Pharma erects in front of their drive to join Big Pharma's ranks. These barriers include dueling patent lawsuits over the sub-technologies involved in their respective COVID vaccines.

Scalability versus the style/substance trade-off

The easy scalability Haskel and Westlake laud also reinforces IPR-based monopoly, but this in turn generates endogenous limits to that scalability. As the famous American social scientist Madonna pointed out, we are living in a material world.[4] Covid-19, supply chain disruption, backlogs at ports, and volatile petroleum prices are obvious episodic manifestations of that materiality. But quotidian use of intangibles is also highly material, restricting the degree to which scalability can spread outside the world of software and branding; digitized media however are easily scaled. Apps need smart phones; ride-share and delivery needs drivers and vehicles; engine control software needs engine control modules and engines; logos need shirts and shoes. Uber and AirBNB cannot function if physical capital is not forthcoming.

Here scalability runs into limits set by the change in corporate organizational structure from the Fordist to the present era. The classic Fordist firms were vertically integrated firms combining intangible and tangible production. Profit streams notionally attributable to their intangible capital could help finance an expansion of productive physical assets. Fordist firms facing militant unions in the 1970s and financial market pressures in the 1980s coped by expelling as much labor and physical assets as possible. Where successful they became pure IPR-based firms, as with IBM (Lazonick 2009) or Apple. Firms born as pure IPR-based plays eschewed the acquisition of non-core labor and physical assets. The vertically integrated Fordist structure gave way to a de jure vertically disintegrated three-layer industrial organization that nonetheless remained de facto integrated.

Disintegration had two consequences limiting scalability. First, intangibles firms outsourced commoditized material production to the lowest domestic or foreign bidder, while securing the bulk of the profits from the resulting commodity chain. The material shortages behind contemporary supply chain fragility reflect decades of rational underinvestment by tangibles firms trying to maintain profitability in the face of monopoly rent extraction by intangibles-rich firms. It also reflects decades of asset stripping by private equity firms that have reduced socially useful levels of excess productive capacity that once buffered supply chains against various shocks.

[4] Madonna, "Material Girl," *Like a Virgin* (London: Sire Records, 1984).

Second, the decline in tangible producers' profit volumes triggered a search for the potential capital gains from monopoly profits based on IPRs. This hype diverted investment capital away from intangibles firms' necessary physical complements and into 'unicorns' – start-ups with a notional $1 billion market capitalization – whose monopolies and thus long-run profitability proved as illusory as their namesake. Vide WeWork, Uber, fintech firm Klarna, a clutch of delivery apps, and of course crypto. The attractions of style over substance endogenously limited scalability as intangibles firms ran into physical shortages 2020 to 2022. But even before COVID- and war-related supply chain disruptions, key intangibles firms found it necessary to induce tangibles firms to invest in critical components. Apple, for example, loaned Corning Glass a cumulative $450 million 2017 to 2019 to capitalize production of the next generation of Gorilla Glass™.[5]

Sunken-ness versus subscriptions

Haskel and Westlake argue that intangibles firms find it difficult to secure financing because they lack the easy to liquidate collateral that tangibles firms possess. They suggest reforming pension fund regulation to permit more investment in venture capital. Put aside the question of how easy it might be to find a buyer for a paint-shop embedded in a failing car firm's factory, and the fact that formal banks largely finance home mortgages rather than industrial investment. To the extent that intangibles firms create IPRs around anything, they have liquidate-able assets. First, IPRs increasingly create rights to on-going revenues. Second, the larger a firm's collection of IPRs, the more secure it is with respect to litigation. Intangibles- and IPR-rich firms have degraded users' property rights by moving away from the traditional one-and-done sales to on-going subscriptions.

IP 'producers' employ variations on the software EULA (end user license agreement) to remove the essentially unlimited property rights buyers used to enjoy over purchased objects. US 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. In the past a user might loan a copy of her *Star* Wars DVD to a friend; today at best she can share her *Disney+* password, and even that bit of control is disappearing. 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.

Subscription revenue is tied via EULAs to IPRs, making the underlying IPR valuable two ways. First, amassing control over a substantial corpus of digitized information creates a cashflow that translates into market capitalization, adjusted for hype and anti-hype. Generally speaking, a bigger market capitalization enables a firm to withstand takeover attempts and to utilize a large market capitalization to take over existing and potential rivals by trading shares for ownership of potential rivals – what Max Weber (1978: 93, 108, 638) called *kapitalmacht.* Intangibles accounted for 90 percent of S&P 500 and 75 percent of S&P Europe 350 market capitalization in 2020.[6]

Indeed, on the theme of 'excessive influence' operations, firms have repeatedly sought to expand the profitable lifetime of their IP, and hem in technological change threatening that IP. Disney and other beneficiaries of copyright lobbied Congress to extend copyright on works for hire to as long as 120 years.

[5] Joe Rossignol, "Apple Awards iPhone Glass Supplier Corning Additional $250M From Advanced Manufacturing Fund," https://www.macrumors.com/2019/09/17/apple-corning-250m-advanced-manufacturing-fund/.
[6] "Intangible Asset Market Value Study," Ocean Tomo, accessed April 12, 2022.

The 1998 Copyright Extension Act – pejoratively known as the Mickey Mouse Protection Act – not only extended copyright well beyond the life of the human authors whom copyright was intended to protect, but also gave those individual human creators shorter terms than corporate copyright owners. The Recording Industry Association of America similarly lobbied for the 1998 Digital Millennium Copyright Act (DMCA), which criminalized the production and ownership of technologies intended to defeat copy protection software (Boyle 2003; Boyle and Jenkins 2017). DMCA is why you need to buy a special cable to watch high resolution HDCP-protected DVDs that you theoretically own yet cannot watch without the additional cable.

The second reason IPRs are not an irretrievable sunk cost is that a large IPR portfolio creates a defensive moat against litigation by rivals. 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. Google founder and CEO Larry Page called out the litigation value of Motorola's patents in "protect[ing] Android from anti-competitive threats from Microsoft, Apple and other companies."[7] IPR firms are at the heart of the excessive "influence operations" (i.e., lobbying and litigation) about which Haskel and Westlake complain.

So sunken-ness has not dissuaded financial market actors from investing in IPR-based firms, as the list of failed unicorns above shows. Rather, venture capital (VC) is more abundant than ever. VC firms had over a $1 trillion in assets under management, three times the level in 2004, and raised over $200 billion in 2021 (NVCA 2022). Indeed capital has been so abundant during the past decade that firms like Uber and WeWork attracted billions in investment on the strength of implausible promises of future monopoly power. Yet as VC investment and IPR-rich firms' market capitalization have increased, overall investment in the US and other rich country economies has fallen as a share of GDP.

Moreover, the promise of monopoly and on-going subscription revenue has already drawn in what should be the most conservative of investors. US pension funds are the single largest investor in both venture capital funds and private equity firms, supplying roughly one-quarter to one-half of the capital venture capital funds deploy, and about two-fifths of the capital private equity firms deploy.[8] Moreover, these investment vehicles are interdependent: in 2017, private equity firms accounted for nearly a fifth of venture capital fund exits.[9] Arguably, these pension funds should be more conservative given how hype has sucked capital into firms with no hope of creating a durable monopoly.

Synergies versus sabotage

Haskel and Westlake (pp. 113-114) unselfconsciously argue that in the shift to an intangibles-based economy, synergies across intangible assets and information cause some of the inequality they decry. For them, firms enjoying synergies naturally pull away in profit and market share from firms with more limited synergies. Again, put aside the fact that these synergies cannot be monetized in the absence of an IPR. The problems are deeper than they hint at. When synergy works as they predict, it leads to Veblenian sabotage, that is, deliberate suppression of innovation through the buyout of potential rivals.

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[7] Quentin Hardy, "Google buys Motorola for Patent Parts," *Forbes* 15 August 2011, https://www.forbes.com/sites/quentinhardy/2011/08/15/google-buys-motorola-for-patent-parts/?sh=3bc3d4022fff

[8] Gilles Chemla, "Pension Fund Investment in Private Equity and Venture Capital in the U.S. and Canada," *Journal of Private Equity*, 7, no. 2 (Spring 2004):64–71; Antonia López-Villavicencio and Sandra Rigot, "The Determinants of Pension Funds' Allocation to Private Equity," November 2013.

[9] "PE Buyouts Made Up More Than 18% of All VC Exits in 2017," *Pitchbook Data, 2018*.

As Thorstein Veblen (1904, 1908a, 1908b) pointed out more than a hundred years ago, intangibles production is not novel, but rather characterizes all human history. Flint is just another rock without socially transmitted knowledge about knapping. But a lack of exclusion, the easy spillover of socially held and transmitted production knowledge removes the sources of profit. If everyone knows how to make something, no one has any competitive advantage in the market, and as Schumpeter pointed out, profits after depreciation fall to zero. Intangible production knowledge, digitized information, and the emotional content of cultural creations can only be profitable if other producers are excluded from using that knowledge or tapping into those emotions. Information may want to be free, but property rights hold it captive. IPRs and other property rights create exclusion, and exclusion slows spillover and thus economy-wide productivity growth. These barriers to spillover create the great dispersion in productivity that the OECD and others have documented (Andrews et al. 2016). Dispersion suggests – as Veblen (1904) would predict – that firms deliberately slow technological diffusion to defend their IPR-based monopoly profits. Preemption and predation by established firms is now the limiting factor on start-ups. Silicon Valley start-ups all fret about the so-called kill zone around the big firms. For example, Microsoft, Amazon, Google, and Meta have acquired over five hundred start-up firms since 1998.[10]

Here what Max Weber (1978: 93, 108, 638) termed political capitalism matters.

> 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.

Intangibles firms have lobbied for legal changes validating and strengthening the IPRs and organizational changes in behind their greater profitability (Pistor 2014; Sell 2003). Legislation enabled the copyrighting or patenting of software in 1968, 1976, and 1980, strengthened trademark protection in 1988, and as noted, extended copyright protections in 1976 and 1998. The Supreme Court expanded the scope of IP protection in novel ways, such as the 1980 *Diamond v. Chakrabarty* case permitting patenting of genetically modified organisms and the 1998 affirmation of business process patents in *State Street Bank & Trust v. Signature Financial Group*. Global trade deals, meanwhile, formed the global legal infrastructure for outsourcing. Legal reinforcement and expansion of the inherently monopoly power of IPRs has shifted profits from other firms towards IPR-rich firms, but those IPR-rich firms do not reinvest those profits in new production at the same rate as do manufacturing firms (Schwartz 2021).

Summing up, the problem is not that Haskel and Westlake's four 'S' characteristics of intangibles are incompatible with current institutions for financing investment, or assuring returns to the creators of new knowledge. The problem is that a disabling 'S' accompanies each of the enabling 'S's, and that Haskel and Westlake cannot see how the logic of the disabling 'S's operates at the level of individual firms. The uncomfortable antinomy between their condemnation of excessive rent seeking activity and the mostly intangibles-based actors doing that rent seeking partially reveals this. They correctly identify NIMBYs role in blocking new housing, but not IPR-rich firms' inadequate recycling of profit into investment, and the disincentives to investment they create for other firms.

[10] U.S. Congress, House, Committee on the Judiciary, Subcommittee on Antitrust, Commercial, and Administrative Law, *Investigation of Competition in Digital Markets*, October 6, 2020, 116th Cong., 2d sess, 2020, 391.

A macro-economic perspective

Haskel and Westlake are surely correct about the mismatch between contemporary institutions and some "objective" understanding of how to optimize growth in an intangibles economy. But they operate at a level of abstraction so general that they cannot elaborate policy recommendations in any real detail. They overlook existing knowledge – a freely available intangible! – about what kinds of governance structures are conducive to balanced rapid growth. Recall that they cast the core problem as one of exchange – "[S]ound institutions have to solve four problems in exchange" – rather than one of assuring balance between supply and demand, or securing physical rather than financial infrastructure, or mobilizing human and physical resources, or even maximizing human happiness.

These issues are the subject of a rich body of literature stretching from pioneering institutional economists like Thorstein Veblen (1904, 1908a, 1908b) and John Commons (1924, 1950) before World War II through Andrew Shonfield's (1965) magisterial analysis of the "modern economy" (i.e., mass production) and thence to the brilliant collection of "Regulation School" analysts at France's CEPREMAP (*Centre Pour la Recherche Économique et ses Applications*) (Aglietta 1979; Boyer 1990).

All of them point out that facilitating exchange by, for example, lowering transaction costs and creating "perfect markets" is the least important part of economic governance. Rather, these analyses highlight the legal and organizational bases for production, and the social distribution of income that determines whether supply and demand are in balance. Thus, Veblen and Commons looked at corporate organization and unions as forms of collective control over individual decisions. Shonfield and his contemporary John Kenneth Galbraith (1967) looked at the interaction of corporate and state planning and equally importantly the need for this planning to be seen as legitimate. The Regulation School linked these by analyzing how investment and wage formation interacted around supply and demand.

These analyses argued that nothing guaranteed either robust growth or an optimal balance between supply (productive efficiency) and demand (wage formation and the income distribution), because social institutions rather than abstract markets in equilibrium determine both supply and demand. In the tangibles-heavy era preceding our contemporary economy, explicit, often state-backed bargains between mass unions and employer organizations linked productivity growth and wages. This assured firms that reinvested profits would find adequate demand, workers that factory discipline paid off in terms of a rising standard of living, and states that tax revenue would grow in line with increased social welfare expenditure. Furthermore, unions and robust antitrust enforcement tended to equalize incomes not just for workers but also for firms. State planning of and investment in infrastructure added to and stabilized aggregate demand. These institutions managed the conflict and interdependence inherent to any economic order.

Haskel and Westlake are right that the current set of rules generate dysfunctionality. But this dysfunctionality does not stem from a mismatch between the alleged needs of an intangible economy and contemporary institutions. Contemporary institutions serve the interests of IPR-rich firms and a small set of financial firms quite well, if we understand those interests as maximizing the volume of profit that those firms capture, and the diversion of those profits variously to management and private equity insiders. As Commons (1924, 1950; Pistor 2019) argued, property rights are the fundamental starting point for economic analysis, because ownership creates the right to a stream of income and gives control over resources. Contemporary property rights have created IPR-based monopolies and diminished the effective rights of shareholders in public firms. This isn't surprising. Institutions are not the product of disinterested design. They are the outcomes of political and economic struggles among various interested parties with unequal degrees of power. Intangibles-rich firms and the U.S. state constructed the institutions which Haskel and Westlake allege are delaying the blossoming of the intangibles economy.

The authors miss the trees for the forest. Their arguments, while cogent, are general and abstract, and this leads to a blindness to the details, to what is really going on in the economy, behind the spreadsheets and scatter plots. Only an analysis which takes into account the tangible realities of institutions and legal structures can answer these pressing questions of stagnation and growth.

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