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# Intangible Capital

*Dick Bryan, Michael Rafferty, and Duncan Wigan*

Over the last three decades, and with increasing current significance, a historic transformation has been occurring in both the value composition and the institutional and organizational forms of global capital. The rise of intangible capital as a frontier form of global capital and source of accumulation is one such transformation, and is the focus of this chapter. From a small and residual category in corporate balance sheets (then called “goodwill”), intangible capital, like patents, trademarks, brand names, and platforms, now dominates the valuations of leading global corporations. According to a 2019 estimate by UK Treasury economist Charles Price, “the world’s five most valuable companies are worth £3.5 trillion together, but their balance sheets report just £172 billion of tangible assets. 95% of their value is in the form of intangible assets’ (Price, 2019, emphasis added).

Intangible capital is not only large in value terms, it is also changing the nature of production, exchange, and consumption, and relationships between state and capital. The rise of intangible capital has clearly been historic, and it is presenting significant empirical and analytical challenges across a range of disciplinary areas from accounting and finance to law and economics. For instance, how are expenditures and investments in intangible capital accounted for, and how is intangible value measured and capitalized? Many forms of intangible value accrue from activities that exceed the formal factories of the Fordist era, raising the questions of “where” and even “how” intangible value is produced.

A question that immediately arises is how to understand intangible capital within existing conceptual approaches. Recent analytical categories like global production networks (GPN) and global value chains (GVC) were developed when the capital being analyzed was the increasingly internationally unbundled and fluid production of physical commodities, like coffee (on coffee, see recently Grabs & Ponte, 2019). While concepts such as GVC and GPN have provided new and significant insights into

global production, trade, and investment (Gereffi & Korzeniewicz, 1994; Henderson et al., 2002; Humphrey & Schmitz, 2002; Gereffi et al., 2005; Kaplinsky, 2005; Coe & Yeung, 2015), they have not been without their critics. Two weaknesses of GVC/GPN are important for our purposes here. First, these paradigms are based largely on what in an earlier series of debates about the international development of capitalism was characterized as neo-Smithian (Brenner, 1977; Weeks, 1979). Consequently they focus on internationalization largely in terms of a trade-based division of labour, and an expansion of international relations of (unequal) exchange, to the neglect of relations of production and work (Bernstein & Campling, 2006; Bair & Werner, 2011; Selwyn, 2018). Second, internationalization in GVC and GPN is limited and partial. These paradigms focus on internationalization as the actual movement of commodities and MNCs. A more inclusive concept of internationalization includes the movement of commodities *and* money (i.e. capital). Indeed, even actual cross-border movement may be limited because it needs to include the spatial scope of activity that is *subject to* international mobility, even where that movement may remain within the nation (Bryan, 1995; Bryan & Rafferty, 2006). As Bryan notes, “Internationalisation is defined with reference to the space in which capital is free to circulate; it is not a characteristic attributed *ex post* to an individual commodity” (1995, p. 428).

For our purposes here, notions of linear cross-border flows of commodities and networks of exchange between MNCs may be appropriate for linking the growing spatial disaggregation of physical commodity production and the blurring of boundaries between inside and outside of corporations, as well as some aspects of the relations of power across those chains and networks. But these are eclectic frameworks based largely around some stylized and limited facts of internationalization of trade and exchange in the 1980s and 1990s.

Intangible capital presents a different order of empirical and conceptual challenge, in part at least because it involves more abstract and non-linear forms of movement, and in part because it demands an integration of capital in the commodity and money form. One of the propositions developed in this chapter is that integrating intangible capital into many existing frameworks remains an ongoing challenge. While GVC and GPN have led to many of the most significant innovations in the analysis of the growing fluidity of the organization of production on a global scale, these new abstract and intangible forms of capital present as a stark contrast. The implications of intangible capital are still working their way through

international political economy (IPE) research (see Dedrick & Kraemer, 2017; Durand & Milberg, 2020; Schwartz, 2021), and as they do so they are likely to change IPE's conceptual frameworks in some important ways.

To consider the empirical and conceptual challenges of intangible capital for IPE and the GWC framework, and to set that analysis in motion, the next section introduces some background on the changing organization and institutions of international capital before considering the key developments in intangible capital. The chapter does not seek to find conceptual consensus where none exists, but rather lays out the key developments in intangible capital, and the challenges they pose, as a way of scoping out some opportunities for GWC research. The chapter then opens up some of the empirical and conceptual challenges posed by intangible capital, illustrating how they play out in wealth chains articulated for tax minimization. We conclude with reflection on the implications of global intangible capital for trade and exchange focused frameworks such as GVC and GPN, and for the project of global wealth chains.

## **Fordist MNCs to post-industrial factoryless goods producers and platforms**

It is well established that the period from the 1990s to the present has been a historically (and conceptually) transformative one, especially in the spatial unbundling and organizational decentring and fragmentation of global production (Desai, 2008; Baldwin, 2011, 2016). For many years, globalization was widely understood to be driven by, and owned and organized through, the multinational corporation (MNC). The MNC was widely conceptualized as the key ontological and institutional unit of global capital, despite the fact that internationalization in the nineteenth and early twentieth centuries was advanced differently (mercantile family firms and partnerships) (Jones, 1987). But in the 1960s, in the first significant phase of MNC expansion, the MNC was seen largely as “new” and something of an exception, initially an expression of national attributes, or unique ownership attributes, particularly associated with the rise of industrially sophisticated MNCs from the United States. FDI was conceived as a new form of national capital export, and MNCs as a form of national competitive expansion (Servan-Schrieber, 1968; Hymer, 1970, 1976; Knickerbocker, 1973). It is also true in part that attributes of the MNC—especially the size of these firms, their technological advantages, and the

market structure of the industries (oligopoly)—were seen to be crucial determinants of MNC advance.

But by the 1970s and 1980s, as MNCs expanded from many more countries and industries, it also came to be understood that a wider range of attributes were now driving the international expansion of firms. The ownership of production assets and the scale of that production (global Fordism), internal efficiency, as well as market concentration (oligopolistic markets) were seen as key to the international advance of MNCs (Hymer, 1976; Dunning, 1977). The core concepts that bound these approaches to globalization together were the ontological primacy of the MNC as the unit of the global organization of production (these approaches literally were theories *of* the MNC) and the key “advantages” of MNCs being their ownership of production or marketing assets.

Since the 1990s, a different sort of globalization can be observed, with direct implications for the way MNCs are conceptualized. Two of the key developments associated with this phase of globalization have been the much more extended spatial “unbundling” and “fragmentation” of production and the “decentring” of the corporation as the ownership unit of global production (Hagel & Singer, 2000; Desai, 2008; Baldwin 2011). The growth of global production has been extended beyond MNCs setting up new factories or acquiring and expanding existing ones. There is now an extensive use of arrangements such as subcontracting, strategic alliances, and franchising. This has transformed the way global production and trade are organized and how MNCs are integrated into that process. Importantly, it has meant that MNCs often do not need to own many (or any) stages of physical production, but instead locate their activities at key points or nodes in the networks and chains of production, notably in R&D, design, marketing, and after-sales service (Baldwin et al., 2014).

In 1989, Richard Walker presciently forecast the imminent demise of corporate geography, and implicitly all similarly MNC-centric approaches (Walker, 1989). He noted that capital was outgrowing the corporation, with the division of labour increasingly organized across extended spatial processes and new organizational means (virtual across-the-board improvements in the integrative capability of production, facilitating global alliances, joint ventures, subcontracting, and the like), as well as beyond the confines of individual industries.

The GVC and GPN paradigms emerged as important conceptual innovations to understand this growing fluidity and spatial spread of production and trade, and the governance structures that developed to organize them (Gereffi, 1994; Henderson et al., 2002; Gereffi et al., 2005; Gibbon et al.,

2008; Coe et al., 2008; Coe & Yeung, 2015). In their eclectic framings they have permitted an understanding of global capital in terms of flows and networks rather than the institutional fixity and thingness of earlier MNC-centric theories. These frameworks provided researchers with concepts more responsive to the changing roles and importance of nation states and corporations, but set within broader globalized industrial contexts and processes, where firms play a range of coordinating (governance) roles in production chains and networks without necessarily owning production, logistics, or trade activities, and where states attempt to attract and retain. GVC and GPN approaches have been particularly useful in analyzing developments in agricultural, mining, and manufacturing sectors, where physical commodities are produced and traded. With the development of a range of forms of organizing international production and trade, including subcontracting, joint ventures, franchising, licensing, and even factoryless goods producers, firms are now opened up and situated in fluid relations along chains and in networks.

## The rise of intangible capital

Sometime in the early 2000s, in the United States and some other developed countries, investment in intangible assets outgrew investment in tangible assets (Nakamura, 2008). By then also, the value of intangible capital stock had outstripped tangible capital stock in the majority of developed countries, and the growth rate of intangible capital had eclipsed that of tangible capital (Corrado et al., 2016, pp. 10, 19). Between 1975 and 2020 the proportion of market value on the US S&P comprised of intangible capital grew from 17 percent to 90 percent (Ocean Tomo, 2020, p. 2). While the US S&P is an intangible-capital-heavy index, other capital markets show similar growth patterns. With the quantitative increase in the value of intangible capital have come changes in the industrial/sectoral composition of capital. Internet and software, cosmetics and personal care, aerospace and defence, pharma, and healthcare occupy the first five places in a ranking of top industry sectors by total intangible value (Brand Finance, 2020, p. 16). A clearer picture of the current structure of corporate intangible capital and corporate structures can be seen in Table 5.1 showing the top 20 global companies by intangible capital.

The growth of intangible capital has also contributed to changes in the world's leading firms, notably with the increasing prominence in the top firms by market capitalization of those with very high levels of intangible

**Table 5.1** Top 20 companies by total intangible value

Rank (and 2018 position)	Company	Intangible value (\$bn)	Total Intangible value/enterprise value (%)
1 (2)	Microsoft Corp.	904	90%
2 (1)	Amazon	839	93%
3 (3)	Apple Inc.	675	77%
4 (4)	Alphabet Inc.	521	65%
5 (6)	Facebook Inc.	409	79%
6 (9)	AT&T Inc.	371	84%
7 (7)	Tencent Holdings Ltd	365	88%
8 (8)	Johnson & Johnson	361	101%
9 (11)	Visa Inc.	348	100%
10 (5)	Alibaba Group Holding	344	86%
11 (17)	Nestlé SA	313	89%
12 (19)	Proctor & Gamble Co.	305	101%
13 (10)	Anheuser-Busch InBev	304	99%
14 (12)	Verizon Communications Inc.	300	83%
15 (22)	Comcast Corp.	276	92%
16 (20)	Mastercard Inc.	259	99%
17 (29)	Novartis AG	252	101%
18 (-)	Walmart	252	68%
19 (13)	UnitedHealth Group Inc.	245	94%
20 (14)	Pfizer Inc.	235	98%

Source: Brand Finance, 2020, p. 20.

capital. While in the 1970s, there were large firms like IBM and Proctor & Gamble with intangible capital, the proportion of firm value accounted for by it was relatively small (20 percent of firm value), and the largest firms included industrial conglomerates like GE and extractive industry companies like ExxonMobil. By 2018, the largest firms by market capitalization were all intangible-capital-heavy companies; Apple and Microsoft, and even post-industrial firms like Facebook and Amazon (where *tangible*

capital comprises 20 percent and less of firm value) (Ponemon Institute, 2019, p. 1).

There are of course at least two ways of accumulating intangible capital: to invest in R&D, marketing, and brand management, or acquiring those assets from developments occurring elsewhere. Intangible-capital-intensive firms have been very active in accumulating further capital by way of acquisition. Some of the largest have acquired a large part of their intangible assets via acquisition. In the last 30 years just five giant tech firms (Facebook, Amazon, Microsoft, Google, and Apple) made over 800 acquisitions, and in the first half of 2020 alone Apple and Microsoft made nine acquisitions. Since 2000, these companies have completed 32 acquisitions, each valued in excess of exceeding \$1 billion (CB Insight, 2021, p. 4) Indeed, so important is the buying and selling of assets (including intangible capital) as part of the business model of many intangible-capital-rich firms that they might be thought of as part industrial firm and part financial entity. Apart from financial activity in the form of M&A, intangible-capital-rich corporations also manage large sums of money capital (often held offshore). Apple, for instance, has an investment fund entity (Braeburn Capital) larger than the biggest hedge fund in the world (BlackRock). The *Wall Street Journal* has even gone so far as to describe Apple as a “hedge fund that makes phones” (Gilbert & Hrdlicka, 2018).

The emergence, and indeed now the prominence, of forms of abstract and intangible capital is clear. That rise has been quantitatively significant, but poses more than just quantitative conundrums for analysis, beginning with basic definitional issues. The International Accounting Standards Board defines intangible capital as “an identifiable non-monetary asset without physical substance. An asset is a resource that is controlled by the entity as a result of past events (e.g. purchase or self-creation) and from which future economic benefits (inflows of cash or other assets) are expected” [IAS 38.8]. The Brookings Institute defines intangible assets as “non-physical factors that contribute to, or are used in, the production of goods or the provision of services, or that are expected to generate future productive benefits to the individuals or firms that control their deployment” (Brookings Institute, 2001, p. 9). The OECD, on the other hand, defines intellectual assets (a related category to intangible capital in OECD use) as describing trends in advanced economies toward “greater dependence on knowledge, information and high skill levels, and the increasing need for ready access to these” (OECD, 2005).



In addition to definitional issues of what intangible capital is, the identification of different types of intangible capital is still the subject of ongoing research and theoretical speculation. As one OECD report noted, “various categories of intangibles are described and labels applied. Distinctions are sometimes made between trade intangibles and marketing intangibles, between ‘soft’ intangibles and ‘hard’ intangibles, between routine and non-routine intangibles, and between other classes of asset and categories of intangibles” (2015, p. 69). Corrado et al. (2006) identified 13 types of intangible assets. Of these 13 types, only five are recorded in the System of National Accounts. One category of intangible asset, economic competencies—comprised of brand, building, advertisement, market research, training of staff, management consulting, and own organizational investment—is completely absent from national accounts (Corrado, 2009; Haskell & Westlake, 2018). Both business and national income accounts have traditionally treated expenditure on intangibles as intermediate expenditure and not investment (Thum-Thysen et al., 2017, p. 5). Despite that, for many high-tech and pharmaceutical companies, intangible capital represents well over 90 percent of corporate value (Corrado, 2009). The International Accounting Standards Board stopped efforts to incorporate intangibles in measures of firm value some time ago (IASB, 2007), with the OECD noting there was only a “limited possibility to recognize intangible capital in the financial accounts” (OECD, 2006, p. 5). The recording and measurement gap has led to debates on the role of intangibles in the economy. Analyses have suggested slowdowns in growth and productivity can in part be explained by the preponderant role of (under-recorded and often “offshored”) intangible assets (and their cash flows) as a source of both total factor productivity growth and national output levels (Ahmad et al., 2017; Bukht & Heeks, 2017; Thum-Thysen et al., 2017; Haskell & Westlake, 2018).

Problems with definition, identification, and measurement of intangible capital remain persistent. While there are some accepted types of intangible capital, a large proportion of the value of intangible capital and of the firms that hold it is uncategorized and unrecorded on the balance sheet. In many sectors the “undisclosed” value of intangibles exceeds both tangible and intangible capital. “Undisclosed” intangible assets include “internally generated goodwill,” and accounts for the difference between the fair market value of a business and the value of its identifiable tangible and intangible assets (although this is not an intangible asset in the strictest sense—that is, a controlled “resource” expected to provide future economic benefits).

Even with emerging taxonomies that seek to disaggregate intangible capital, there remains a significant residual that is not covered. According to one measure, in 2019 the global value of firms stood at approximately \$110 trillion. Of this \$56.4 trillion were tangible assets and \$35.4 trillion were “undisclosed value,” with the residual accounted for by disclosed intangible assets and disclosed goodwill. In some cases, discrepancies between what is valued and what can be accounted for are extreme. For BAE systems (aerospace) the carrying value of its goodwill recognized because of acquisitions comprises 51 percent of firm value, whereas disclosed intangible assets comprise just 1 percent (Brand Finance, 2020, pp. 10, 19).

One problem that the rise to prominence of intangible capital poses is that there is no consensus about what sort of concept of capital is adequate to analyze the development of intangible forms of capital. A second problem is a related empirical/measurement one. Even changing the concept of intangible value from a residual one (goodwill) to a stand-alone one remains an ongoing challenge. As abstract, non-physical capital has moved beyond the vague catch-all of goodwill, the concept of intangible capital has emerged to replace it. But it too lacks specificity and clarity.

The rapid growth of intangible-rich firms and their acquisitions of rivals in their industries and related sectors has given rise to concerns that these firms are competing by virtue of their sheer size and market power (big tech, big pharma, etc), and that they earn monopolistic-type profits. Similarly, there is concern that these firms are able to use market power, acquisition or undermining of rival firms, and especially patent rights to shield themselves from market competition. Birch has termed these forms of competition and profit-making “techno-science rents” (2019).

As noted earlier, there is also an identifiable financialized logic driving the organization and reorganization of intangible capital, which extends to tax issues, whereby assets, costs, and revenues associated with intangible capital can be and are strategically located in different international jurisdictions so as to arbitrage tax codes. A notable case here is the structuring of entities and rights to intellectual capital revenues known as the double Irish Dutch sandwich. In that tax structure intangible capital takes on a triple life, with intangible capital having one home for legal protection (United States), one for the collection of revenue streams (Ireland), and one for the payment of taxes (Bermuda) (Bryan et al., 2017a, pp. 67–68). Market dominance and the low tax contributions made by these giant tech firms have begun to draw these firms into the regulatory and policy limelight.

While the determinative role of intangibles in economic life is widely recognized, it has already been noted that the concepts we deploy to understand them have not kept up with their growing significance. This inadequacy produces a concept–regulation–corporate form disjuncture where the concepts used to comprehend economic life are inadequate in informing regulation able to build traction in monitoring these innovative forms of capital (Wigan, 2021). This is apparent in the regulatory challenges posed by the digital economy to tax authorities. The traction of national tax laws on the digital economy is an ongoing and pressing policy concern. The European Union’s 2018 digital tax proposal was predicated upon explicit recognition that current rules on the taxation of multinational companies (MNCs), which rest on a (national) physical nexus between the place of value creation and the taxation of profits, had become outdated (EC, 2018). Three conceptual dislocations between firms operating in the digital economy and tax rules designed for an earlier era of “atoms not bites” drive the concept–regulation–corporate form gap and point to where capital is outgrowing the institutional and policy containers previously thought to constrain or harness it.

## Taxing bits not atoms

Nation-based income tax is a critical and conspicuous expression of the challenge of global intangibles to conventional value chain analysis. In intangible forms, capital has taken on a double life expressed in legal and geographical dislocation between the value chain that produces the goods and services which undergird (intangible) capitalization and the onward journey of wealth unfolding in non-linear patterns through the wealth chain. Our position is not that the implications of global intangibles can be reduced to issues of tax (or any other form of) arbitrage, but rather that tax arbitrage provides a useful “window” on the systemic transformations that are becoming apparent in the wake of the emergence of a global political economy dominated by intangible capital. The concept–regulation–corporate form disjuncture provides a means of opening up some of the analytical issues that arise in that context.

The first conceptual dislocation constraining the traction of national tax systems is about the criteria for establishing the regulatory presence of a company or activity within a given territory. Digital economy firms can supply services in a jurisdiction without (taxable) physical presence.

Software can be delivered from a cloud on a server, where the place of that server is an easily moveable feast. That place can then be strategically selected on the basis of legal affordances available, including tax rules and rates, and the interaction of those rules with rules elsewhere (Grasten et al. 2021).

The right to impose tax on an income stream or economic activity is governed by the OECD's Model Tax Convention and encoded in bilateral international treaties (Rixen, 2011). With around 3,000 in force globally, tax treaties apportion, often invidiously, the right to tax between countries on the basis of principles of "source" and "residence" (Hearson, 2018, and Chapter 3 in this volume). "Residence" refers to the home country of the investing entity.<sup>1</sup> "Source" is where the economic activity takes place. The distribution of the right to tax between source and residence is in part determined on the basis of the concept of permanent residence. This relies upon various temporal and substantive thresholds that determine taxable presence in a given jurisdiction, but firms, especially those with intangible revenue streams, can manage that presence to optimize tax exposure. Companies with digitalized business models frequently require neither prolonged nor substantive physical presence in a jurisdiction to maintain significant economic operations there.

Digital firms can structure sales and related activities such as warehousing in source countries as auxiliary and preparatory so these activities do not lead to the determination of permanent establishment status. Amazon, for instance, pursued a legal argument in a UK court that Amazon's UK subsidiary merely executed a trade directed elsewhere. The firm contended that the UK trade executed by the subsidiary was orchestrated by a Luxembourg resident Amazon company. In consequence, Amazon did not consider that it maintained a permanent establishment in the UK (Quentin, 2017, pp. 24–26). Tax systems rely upon stable concepts to identify a nexus between place and economic activity. This assumes a symmetry between the nation and the economic activity. That symmetry is breaking down in the face of the intangible economy.

Second, transfer pricing rules—that regulate accepted prices for exchanges between corporate entities within a firm—rest on analysis of the location of functions, risks, and assets in the value chain of a group (see Christensen, Chapter 11 in this volume). But in global wealth chains,

<sup>1</sup> Home is defined by reference to the "predominant centre of a corporation's economic interest" (OECD Glossary of Foreign Direct Investment Terms and Definitions), which is itself defined by financial calculus; not just the "site" of physical production.

the nominated location may not be readily identifiable when users provide content and data to create value and the (intangible) assets assumed to generate value are themselves not easily measured and valued. Firms with “scale without mass” often eschew the ownership of, and ties to, the physical capital that underpins the value chain analysis that informs the distribution of taxing rights. Launching its base erosion and profit-shifting initiative, the OECD pointed to “fundamental questions as to how enterprises in the digital economy add value and make their profits, and how the digital economy relates to concepts of source and residence or the characterization of income for tax purposes” (OECD, 2013, p. 10).

The allocation of tax burdens across a value chain follows analysis of points of added value and assumptions about risk bearing. Here, a linear economic process runs from financing, sourcing raw materials, through research and development, design, production, to marketing, sales, delivery, and consumption. Each point in the process is considered readily identifiable and discrete. But linearity and compartmentalization are negated by the intangible economy. Questions of “what is production?” and “what is consumption?” are increasingly ambiguous and so, thereby, are questions of the location of value creation. Intangible economy firms target advertising on grounds of information collected from user search history and patterns. Content on platforms such as Facebook, Instagram, and TikTok is “user” generated. In ongoing deliberation over how to tax the digital economy, the OECD reports that a number of member states hold that in

some business models the collection through a digital platform of data and content contributions from users in a jurisdiction and the use of that data to attract other users to the platform and to direct advertising back at the users, are activities integral to the creation of value by the business that effectively take place in that jurisdiction, even if the platform is operated remotely.

(OECD, 2018, p. 25)

Third, firms in the digital economy are disproportionately comprised of intangible assets and intangible assets are readily relocated and hard to value (OECD, 2018). In the intangible economy place is legally often quite fluid and so wealth chain assets can be strategically “placed.” Attributes of intangible assets can be unbundled (into regional licensing entities located in different tax environments or other preferred states) and therefore be in several places (often at the same time), depending on financial and accounting objectives. As US Senator Carl Levin, Chairman of the Permanent Subcommittee on Investigations, remarked, launching hearings into the

use of offshore financial centers by many IP-rich corporations; “High tech is probably the number-one user of offshore entities. That’s because many of their assets are intangible intellectual property, which is hard to value and easy to move” (quoted in Lochhead, 2012).

The elevated mobility of intangible assets has increased along with their recognition and the ability to isolate the assets for strategic financial ends that follows. In this we see the breaking down of the corporation as capital’s institutional container. The “J.Crew trapdoor” refers to what are often private equity firms incorporating into high-yield, increasingly “covenant-lite,” debt contracts clauses that allow assets to be separated from the borrower and placed into a subsidiary that is not susceptible to current bond-holder claims. In 2011 TPG and Leonard Green & Partners bought the US retailer J.Crew in a \$3-billion leveraged buyout. The acquired firm then borrowed a further \$787 million that was largely used to fund returns to the private equity firms. In 2016, these firms used a clause in its debt covenants to strip out the IP assets that had been used as collateral for \$1.5 billion of debt from the acquisition. The IP was then located in a shell company, which was later used as security for new debt that would be paid off first in the event of bankruptcy—a fate that materialized in May 2020 (Rennison, 2020).

The three conceptual dislocations highlighted here allow for heuristic delineations between firm value chains and firm wealth chains. Platform economy firm Uber relies for competitive advantage on its drivers that supply cars, fuel, labor, and rides.<sup>2</sup> This is the economic core of the value chain. Uber, however, does not maintain an economic presence in the vast majority of the jurisdictions in which drivers using its “matching service” operate, claiming it is an information economy firm delivering services at distance. It is on these grounds that the firm accesses the legal affordances that comprise its global wealth chain. While to date Uber has failed to post a profit and is therefore not subject to profit tax, its wealth chain does pose distinct challenges to tax authorities (Wigan, 2021). One of these challenges is the inability of tax authorities to raise value added tax (VAT) on the rides supplied by its “partner” drivers. Another is the liability of Uber to employment benefits and social insurance payments. A case at the UK Supreme Court hinged on whether Uber employs its drivers or provides an information service to them, and relatedly, whether the customer has a contract with the driver ‘partner’ or directly with Uber. If the court

<sup>2</sup> Uber and some other platform ride-sharing firms even have financial services to facilitate purchase of lease of vehicles.

deemed Uber an employer and the contract to be between the customer and Uber, the firm would be liable for as much as a £1.1 billion backdated VAT payment and a 20 percent VAT charge going forward. It would also be obliged to provide a minimum wage and holiday time along with paying 13.2 percent in national insurance contributions on behalf of its then drivers (Dawkins, 2020). The UK Supreme Court decided against Uber and a subsequent challenge to the decision from Uber at the High Court in London failed (Lex 2021). At stake in this on-going confrontation are the competitive advantages enjoyed by the firm on the basis of economic presence through the value chain and the legal mutability of presence (time and space) in the wealth chain.

At base, the issue of tax arbitrage in the intangible economy revolves around that concepts of value production, and the value chain analysis that is informed by them and in turn inform taxing rights, have been undermined by the intangible economy. Tax systems rely on stable concepts of the identity, location, and timing of a transaction, but intangible capital operates in fluid and mutable ways that make identity, location, and timing strategic rather than functional to the geography of firm production. Persistent definitional uncertainties and the absence of conceptual consensus around intangible capital point to a fundamental paradox. Even as the knowledge economy in advanced economies is perceived to be the key driver of growth and competitive position, concepts of capital deployed in economics and accounting (and regulation) are inadequate when faced with the task of capturing and analyzing knowledge in economic life. This is made even more challenging when we consider the way nation states have unbundled aspects of their own sovereignty in ways to get capital in different forms to “spend time” in their jurisdictions. Conceptually and empirically, we are dealing with fluid and moving targets of capital and internationalization.

## **Intangible capital beyond GVC**

The historical question posed by these recent developments is: How generalizable are GVC and GPN across time? While these paradigms have helped researchers analyze more spatially extended and fluid forms of international commodity production and trade, as noted at the outset two developments in particular challenge GVC and GPN as general frameworks in international political economy and economic geography.

The first is the growing global role and movement of money and finance, including the exponential growth of debt in the world economy and on corporate balance sheets, as source of funds for investing in value chains and networks, and the rise of a culture of shareholder value driving corporate cost-cutting and outsourcing. But of special significance here are innovations that helped finance develop a capacity to create exposures to the performance of corporations, to various assets and liabilities of corporations, as well as to events or attributes of wider economic and financial activity, without the necessity to own the underlying bits of capital themselves (Bryan & Rafferty, 2006; Wigan, 2008). This has increased the ability to speculate and hedge increasingly uncertain futures, and in the process price attributes of assets and activities, that has helped facilitate the spatial unbundling of assets and activities that GVC and GPN approaches have attempted to describe and analyze. Financial innovation has also blurred earlier institutional boundaries between different forms of finance (equity and debt), between industry and finance (GE Capital and Apple's Braeburn Capital are notable examples), and between inside and outside of corporations (joint ventures, subcontracting, and private equity are examples here). It also means that money, capital, and finance can now live a sort of "double life," related to, but distinct from, the movement of commodities through physical value chains and production networks.

In decomposing economic activity into bits that can be thought of in terms of risk, finance has also created the capacity to trade and price these attributes. By reconceptualizing activities and assets in terms of risk, finance has provided a means of valuing and pricing (commensurating) these fluid and abstract forms of production and trade. Here, we refer especially to the roles of financial derivatives, shadow banking, offshore finance, special purpose vehicles, and so on that enable companies to decompose or respecify balance sheet items and even cash flows. This occurs in ways that both create the possibility of a different spatial and temporal "journey" for money capital and wealth, and effectively also distinguish them from the physical chains and networks of exchange (Bryan et al., 2016). While there have been a number of attempts to bring finance and money capital into GVC and GPN, these have been limited so far by conceptual limitations, as well as empirical measurement issues.

One response to that conceptual challenge has been the development of a global wealth chains (GWC) concept to supplement GVC-style analysis (Seabrooke & Wigan, 2014, 2017, and Chapters 1 and 14 in this volume). Whether GWC can or will "fill" the conceptual and empirical void, it is too



early to tell. What we can say with certainty is that money and finance has from the outset been a blind spot in GVC/GPN analysis, and perhaps more speculatively, the growing scale and significance of money capital suggests that international capital may be transcending the confines of this type of analysis.

The second development, the focus of this chapter, is the rise of abstract and intangible forms of capital. The growth of intangible capital has been perhaps the most significant development in the industrial asset structure of the last quarter-century. We know that the factoryless goods producers like Apple and Nike own very little in the way of production facilities. Instead, by strategic use of design and marketing, as well as detailed control over outsourced subcontractors and supply chains, they are able to generate large profits. We also know that many companies are able to leverage their brands to earn rents that are disproportionate to the size of physical capital involved. But there are range of other developments, notably including the emergence of platform businesses like Google, Facebook, Uber, and Amazon that provide service hubs for consumers and sellers, and are being valued almost entirely on the basis of their intangible capital. These firms not only do not own factories, but their services often create or more accurately capture value being created outside of the putative factories of the Fordist era, wherever they may be and whoever owns them. This occurs variously in the labor of “affect,” in prosumption and in the generation of new forms of commodification, digital objects, and big data that can then sold in various forms (Hardt, 1999; Martin, 2002; Mayer-Schönberger & Ramge, 2018; Fuchs, 2019). There is often a direct link here between intangibles and finance, where monetization is not just the direct purpose of platforms and the like, but the forms of intangible capital (like big data) are also in large part forms of financial capital (Haiven, 2014). Indeed, a decade ago the World Economic Forum suggested that data was emerging as a new asset class (WEF, 2011).

Many of the firms with large endowments of intangible assets have quite small amounts of fixed assets in buildings, plant, and equipment. For some of these intangible-asset-rich firms, actual commodity production and transfers (chains) are a small part of their turnover. Instead, their asset base is dominated by intellectual property (IP) assets, patents (especially brand names), as well as franchises and other legal affordances. This has raised the question, pace Sawhneh and Parikh (2001), not just of where value lives in a networked world, but of where it lives in abstract commodity networks. Enabled by the spatial and temporal capacities of new

abstract networks, intangible capital is readily instrumentalized to relocate presence and strategically disaggregate the corporation in ways that are not easily captured by production-centered analytical frameworks, and the regulatory architecture that is built upon them.

In the logic of the financial derivative, value chains and production networks can be respecified so as to give lead firms exposure to the (value-generating) performance of extended production, logistical, and consumption processes, without necessarily owning much of the production assets and activities themselves (see Haslam, Leaver, and Tsitsianis, Chapter 2 in this volume, for a related depiction of the firm). Lead firms leverage their ownership or control of key attributes or stages of a value chain, such as design and marketing, via ownership of patents, trademarks, and so on. This permits the unbundling of either the production process and relocation of various activities to maximize the spread between costs and revenues from these activities, or in the case of platforms and so on, the rights to intangible capital and cash flows that accrue to that capital.

As capital becomes more liquid, mutable, financial, and intangible, GVC-type analysis is perhaps not best placed to track its development, either conceptually or empirically. The GVC approach is of course premised on the capacity to follow a commodity as it is exchanged through stages of production, which in spatio-temporal terms are more or less linear, and its imaginary inter-national. This is a value-added (adding up) discourse, familiar in standard national accounting measures of GDP. In the latter context, where data are only ever approximate, it is presumed possible to differentiate how much of the value of final output is created in each stage and each country. Applied to GVCs, it is presumed possible to decompose the value of final outputs to give linear precision to the exact stage of production and the location in which each element of final value is added.

Further, how can value really be “attributed” along a chain or network, any more than value creation along a mass production conveyor belt can be measured at say 10-meter intervals? Unless an “output” at any link in the chain can find a direct price, it is either misleading or trivial to attribute to it a value. Modern portfolio theory might tell us more than price theory here—that if you treat any output as an asset, its value can only be determined by its context—in this case its “place” and strategic importance in the portfolio flow of components and risks in the production process. What we see in the most complex wealth chains is the spatial and temporal linearity of exchange and nationality of capital being broken down

and refigured.<sup>3</sup> Capital, once institutionally coherent inside of MNCs, is increasingly decentered (Desai, 2008), presenting in each nation state as a strategically optioned politico-legal space, where attributes of a partial set of assets engage regulatory conditions to optimize via unbundled state sovereignty, in tax havens, special economic zones and the like. Disaggregated components or attributes of assets engage partially to arbitrage regulatory and jurisdictional differences between and within states, and, as critical legal scholars have termed it, to optimize via “partial lift-off” and “targeted touchdown” (Wai, 2002, 2008; Biggins, 2012).

This process of decentering and spatio-temporal innovation challenges us to consider how to analyze asset forms that have the following sorts of characteristics: they are produced across a corporate calculus of space and time; can express as different forms or magnitudes of capital in different spaces; and can, in a financial and accounting sense, be in more than one place at a time, for different purposes.

## Conclusion

At the outset of this chapter we noted Richard Walker’s comment that the ontological primacy that the field gave to the capitalist firm elided the fact that firms are not the only way that capital as a social relation of production and trade is organized and extended on an international level. “The firm,” Walker noted, “is not the only container for production . . . . It is unfortunate that the corporation was substituted for capital in the lexicon of economics and geography” (1989, p. 61). Walker concluded his review with a historical call, suggesting that recent industrial and financial innovation meant that “perhaps we have come to a time when capital is outgrowing the corporation, as presently constituted” (1989, p. 63). This was a prescient call for economic geography, but that was not the only research area that had privileged the ontological primacy of corporations as discrete units of economic analysis, so the conceptual crisis was felt across several disciplines in the early 1990s. Walker also noted that corporate geography’s concept of capital had been infused with capital in use to the neglect of capital as value in motion (or perhaps as we’d put it in the derivative form, as attributes of risk and value in motion). Walker wanted a project that synthesizes the two, and for us this is the challenge that GWC analyses and

<sup>3</sup> For discussion of transformations in capital’s spatiality and territoriality, see Bryan et al., 2017a, 2017b.

others that seek to respond to the rise of financial and intangible capital must meet.

This chapter has discussed how the challenge now is more than just de-institutionalizing the concept of capital. Developments since the 1990s, especially in the interaction between intangible capital and financial innovation, show that processes of unbundling capital are occurring so as both to give liquidity to capital and to valorize conceptual and locational ambiguity. Capital is not just “flowing” from one physical location to another, or existing somewhere within a network of MNCs. We need to be open to new and emerging forms of blending financial and non-financial attributes of accumulation, which organizationally are seen in firms becoming part industrial firm and part hedge fund manager, and financially can be seen in capital living an increasingly double (or triple) life. Further, we have shown that in commensurating new forms of capital such as intangible assets and giving liquidity to them, earlier spatio-temporal logics are being transcended. These are some of the challenges that this chapter poses for the GWC concept and others that wish to address intangible capital and financialization.

The impacts of these innovatory phenomena are important in their own right, not least because they support inequalities and restrict policy space. They are also important because they are pointing to where the GWC project might be heading. Intangible capital, like value chains and production networks, may exist in networks of flows, but it may not exist in the linear relations of GVC and GPN, where space and time are fixed. Thanks to its abstract nature, and especially when it is inserted into modern finance, its spatial and even temporal properties can be strategically recast. IP developed in one location and over a certain time may, for example, by granting licensing rights to a special purpose vehicle in an offshore jurisdiction, effectively become co-located. And via the ability to transform attributes of the capital via networks of financial transactions (where rights to cash flows are unbundled and reassigned), even the temporality of that capital can be reinscribed.

We have called this development (following Pryke & Allen, 2000) finance’s new space–time (Bryan et al., 2017b). Financial space–time is becoming different because finance has developed the capacity not just to identify spatio-temporal mispricing, but to organize and reorganize on the basis of arbitraging difference. The basis of “difference-making” is leveraged by finance through the notion of risk and through the different exposures and strategic options made possible through finance. If

this observation about new space–time relations of capital, especially intangible capital, is correct, we may need to move our conceptual and even our regulatory agendas beyond linear notions of capital toward more quantum notions of relation and movement. This challenge alone is a serious research agenda for GWC scholars.

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