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1. Introduction

There is little doubt that there has been a growing concentration of the global economy in the hands of transnational corporations, the largest of which have bigger revenues than many governments around the world (Zingales, 2017). While this is not unprecedented, given the historical size and reach of companies such as the British East India Company under British colonialism, it comes with increased complexity and the digitalization of economic activity. The importance of these firms mean they have considerable power over their suppliers and customers. Concentration has also been associated with higher levels of inequality of income and wealth (Baker and Salop, 2015; Ennis et al. 2019). Firms with substantial market power can earn returns from the exertion of this power, protect their position by excluding rivals, and weaken economy-wide investment and prevent new business models and products being introduced (Cohen and Levin, 1989; Federico et al. 2019). Stronger competition law is sometimes recommended as the answer (see Stiglitz, 2017; Atkinson, 2015).

In global value chain (GVC) analysis, governance involves a range of relationships through which activities are organized that are not the arms-length market relationships widely assumed in microeconomic models (Gereffi et al. 2005; Gibbon and Ponte, 2005). While power has been central to theorizations of governance in GVCs since the global commodity chain literature emerged in the mid-1990s (Gereffi, 1994), so far developments in the competition economics and GVC literatures have largely taken place in parallel (for an exception, see Davis *et al*, 2018). In this article, we seek to leverage the insights of competition economics (especially in relation to market power, buyer power and vertical arrangements) to further our understanding of *bargaining power* in GVCs– with important implications for upgrading and the development of productive capacities (Staritz and Whitfield, 2019). We draw on two case studies from South Africa to do this.

The rest of the paper is organised as follows. Section 2 examines power in global value chains analysis. Section 3 reviews the concept of market power in competition economics. Section 4 indicates how these two approaches can be usefully combined. Section 5 applies this synthesis to the two case studies from South Africa. Section 6 provides some reflections, conclusions and a future research agenda.

2. Power in global value chain analysis

The term 'Global Value Chain' refers to the full range of activities that firms, farmers and workers carry out to bring a product or service from its conception to its end use, recycling or re-use. These activities can include design, production, processing, assembly, distribution, maintenance, disposal/recycling, marketing, finance and consumer services. In this context, 'lead firms' are those that operate at particular functional positions along the chain and that are able to shape who does what along the chain, at what price, using what standards, to which specifications, and delivering in what form and at what point in time (Gereffi, Humphrey and Sturgeon 2005, Humphrey and Schmitz 2001, Ponte and Sturgeon 2014). The governance of GVC thus refers to the set of concrete practices and organizational forms through which a specific division of labour between lead firms and other actors arise and is managed (Gereffi 1994, Gereffi et al. 2005, Gibbon, Bair and Ponte 2008). From a broader perspective, however, GVC operations are also shaped by actors that do not directly produce, transform, handle or trade products and services – such as civil society organizations, social movements, consumer groups, networks of experts and policy-makers, and multi-stakeholder initiatives for sustainability (Nickow 2015, Ponte and Sturgeon 2014, Bair 2017, Bair and Palpacuer 2015). Finally, states and international organizations play a key role in constructing and maintaining GVCs through facilitative, regulatory and distributive interventions (Nadvi and Raj-Reichert 2015, Mayer and Phillips 2017). States can act as intentional architects of GVCs, regulate (or deregulate) their functioning, and choose to (not) redistribute the extra wealth generated through GVCs. States can also be important direct actors in GVCs, for example through state-owned enterprises and public procurement (Horner, 2017).

In the early days of GVCs, known then as 'Global Commodity Chain' (GCC) analysis, structural and systemic elements of power were the centre of understanding chain dynamics. Hopkins and Wallerstein (1986: 159), for example, pushed for the examination of individual global industries through the lens of how power imbalances shape labour and production processes and thus determine an international division of labour. In Gereffi's (1994, 1999) subsequent work, power in GCCs was specifically linked to the ability of lead firms to 'drive' the organization of international production networks. But other conceptualizations of GVC governance focused on individual links between suppliers and buyers, rather than structural aspects – and identified three key conditions (transactional complexity, codifiability of information and supplier capability) that could explain how lead firms linked to suppliers in various ways (Gereffi et al., 2005). This shifted the conception of power from the notion of 'driving' to an analysis of dyadic inter-firm 'linking' (Gibbon et al., 2008).

The GVC and related literatures have taken two broad turns when it comes to understanding power and inequality: (1) a return to broader, structural approaches (Bair 2009, Quentin and Campling 2018, Selwyn 2019, Suwandi 2019); and (2) a call for a movement away from an exclusive transactional focus (Dallas, Ponte and Sturgeon 2019). In our paper, given the space limits, we contribute to the second approach. To do so, in the rest of this section we explain the main features of the typology of power in GVCs (Dallas, Ponte and Sturgeon, 2019: 674-7) that differentiates two main dimensions of power: a *transmission mechanism* and an *arena of actors* (Ibid.; see Figure 1). The *transmission mechanism* of power is anchored by two ideal types: direct and diffuse. On the one end are circumstances where GVC actors seek to exert direct forms of influence over other actors or actor groups. The actor wielding power and those who are objects of it are relatively easy to identify by all parties. The exertion of direct power is intentional and the goals of powerful actors well-known. On the other end are more diffuse forms of power where the actors and the objects of power are less clearly identifiable, and actions less intentional. This happens when actors follow broad societal trends and transmission is through demonstration or network effects or through, e.g., emergent 'best practices'. The *arena of actors* is the full population of interacting actors or collectives in a specific GVC. Dallas et al. (2019: 676-7; see also Ponte et al, 2019) propose two broad categories – dyads and collectives. The dyadic arena is a common focus in the GVC literature as it examines links and coordination mechanisms between dyads of buyers and suppliers. In collectives of actors, the locus of power is a function of the collective behaviours of multiple players acting simultaneously. Combining these two dimensions, Dallas et al. (2019) offer a four-category typology (see Figure 1): *bargaining*, *demonstrative*, *institutional* and *constitutive.*

Figure 1: A typology of power in global value chains (GVCs)

Arena of Actors		Transmission Mechanisms: Direct	Transmission Mechanisms: Diffuse
	Dyadic	*Bargaining Power* • Operates in firm to firm relations • Can exhibit different degrees of asymmetry in hierarchy, captive, relational, modular, and market linkages • Can also operate when powerful firms interact individually with government agencies to carve out exceptions to rules, etc.	*Demonstrative Power* • Operates through informal 'transmission' mechanisms along value chains between buyers and suppliers, or aspiring value chain actors. • Can be shaped by quality conventions implicitly accepted by parties to a dyadic transaction • Can drive isomorphism among or between lead firms and suppliers, or among non-firm actors
	Collective	*Institutional Power* • Operates through government regulation, multi-stakeholder initiatives and/or other institutionalized forms • Can leverage and be leveraged through industrial standards and codified 'best practices' • Can be "agenda-setting" by removing issues from the bargaining table, as well as *de facto* and *de jure* standards to support platforms and their ecosystems	*Constitutive Power* • Operates through broadly accepted norms, expectations and best practices, e.g., isomorphism at the industry or societal levels. • Can arise through decentralized collaboration among loosely or un-affiliated actors, sometimes engendering new norms and practices (e.g. non-proprietary, collaborative open source software).

Source: Dallas, Ponte and Sturgeon (2019: 673).

Bargaining power (dyadic, direct) is the most common form of power found in the GVC and competition literatures and will be the focus of discussion in the rest of this paper. The arena of actors in this case is normally populated by firms, and the analysis of power is based on a series of firm-to-firm (dyadic) bargaining snapshots. However, in order to understand how bargaining power comes to place and how it is leveraged, other kinds of power need to be considered.

Demonstrative power (dyadic, diffuse) reflects the fact that requirements specified in a dyadic GVC relationship can shape more than the behaviour and choices of the suppliers involved in that specific transaction. It can also create a demonstration effect among competitor suppliers, would-be suppliers and/or second-tier suppliers and beyond. In other words, the outcome of bargaining within particular dyads can subsequently spread along the value chain and in contiguous industries through demonstration effects.

Institutional power (collective, direct) is a form of direct power that is exercised by collectives that are more formally organized (e.g. business associations or the state). While power in dyadic relationships stems from resources controlled by a single organization, in collective arenas it is dependent upon the strategic actions of groups of actors, or upon the rules set by formally organized collectives. The state, including when regulating competition, applies institutional power.

Constitutive power (collective, diffuse) is manifested when collective arenas do not exhibit clear or formal common membership and thus is not embodied in particular actors or an institutionalized locus. Examples of constitutive power include the slow diffusion of outsourcing or financialization as general best practices against which firms came to become progressively structured, broadly accepted conventions of quality and/or the management of labour (see Gibbon and Ponte 2005, Gibbon and Riisgaard, 2014 -- drawing from convention theory) and the normative role exerted by social movements on corporate conduct and transparency (Bair and Palpacuer 2015).

3. Power in competition economics

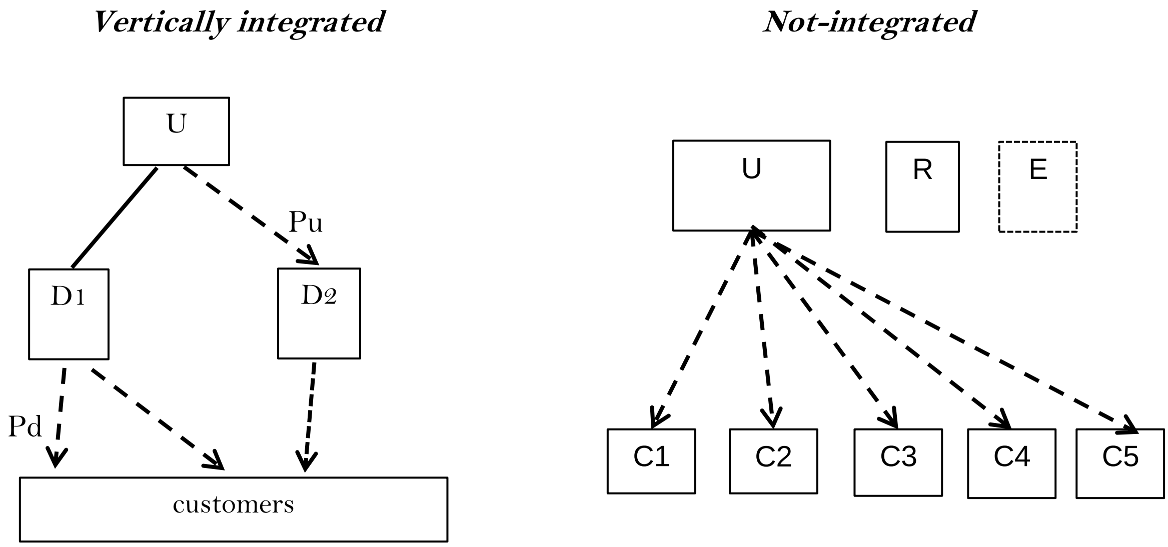
The insights from industrial organisation theory about the mechanisms and arrangements by which market power can be extended and exerted were part of GVC-related theory building (Sturgeon, 2009; Gereffi et al, 2005; Fujita 2011; Durand and Milberg, 2020). 'Market power' is incorporated in the coercive, dyadic power between firms along value chains, defined as 'bargaining power' by Dallas et al. (2019). This understanding can be deepened and extended by drawing on developments in competition economics and insights from real world competition cases and market inquiries, which provide a rich source of material on how power is exerted in practice.

The analysis of market power in competition economics considers how the features of an industry, including economies of scale and scope, network effects and information asymmetries, provide the scope for strategic behaviour on the part of dominant firms (Rey and Tirole, 2007; Vickers, 2005; Fumagalli et al, 2018). For the purposes of a brief overview we compare models where the dominant firm is, or is not, vertically integrated. These are described in the simplified form of two levels of markets in Figure 2. However, in value chains there are naturally many levels with varying extents of integration and degrees of market power.

The typical case of exclusion in competition economics is analysed in relation to a vertically integrated dominant firm engaging in strategies to exclude downstream rivals. The need for coordination to align incentives means a degree of vertical integration supports investment and the competitiveness of the chain as a whole. At the same time, this means that the integrated firm has power over non-integrated rivals where there are no other sources of the input. When Firm 1 owns both essential upstream input (U) and a seller downstream (D_1), it can engage in a number of strategies to undermine non-integrated rivals (see Figure 2). Firm 1 could refuse to sell to D2 (or in constrained quantities undermining scale of D2), charge a high price Pu that means D2 is not profitable given downstream price Pd (a 'margin squeeze'), or supply on worse/degraded terms and quality.

Analogous situations exist in digital platforms where entrants and smaller rivals compete with a platform's offering in one layer (such as providing an online comparative shopping tool) while being dependent on the platform itself, such as for the search to direct potential customers to the online offering (see Furman et al. 2019; Scott-Morton et al. 2019; Cremer et al, 2019).

Figure 2: Exclusion with and without vertical integration



Source: authors

When the dominant firm is not integrated, it can use various means to block its rivals and entrants (R, E) from accessing customers (C1…C5). In circumstances where there are economies of scale and/or imperfect information, U can adopt a number of strategies to induce or restrict customers from dealing with its competitors. This includes inducing customers to sign exclusive dealing arrangements or achieving a similar outcome through loyalty rebates.

The treatment of the range of potentially exclusionary arrangements has evolved both within and across countries. Since the 1970s, and especially in the USA, there was a move to a presumption of efficiency for the arrangements by dominant firms. This was based on the rationale that, while firms might be able to exclude rivals, they lacked incentives to do so – and arrangements between firms were seen as reducing transactions costs and aligning incentives along supply chains (Bork 1978; Fox 2008). The effects of exclusion on final consumers were also questioned in a world where barriers to entry were believed to be low and markets contestable. Developments from the mid-2000s, and especially in Europe and Asia, have recognised that in the real world there is much greater scope for strategic behaviour through exclusionary conduct. Given the existence of economies of scale and scope, imperfect information and network effects A burgeoning set of microeconomic models also identifies situations where dominant firms can have both the incentive and ability to exclude actual or potentially efficient competitors (Vickers, 2005, 2007, Fumagalli et al, 2018; Katsoulacos, Makri and Metsiou, 2019; Roberts, 2012).

Scale economies mean an entrant has to be able to build a sufficient customer base to be competitive, and incumbent firms may have the ability and incentive to exclude smaller rivals before they can become a threat (Fumagalli et al. 2018). Where there is imperfect information, and where branding and reputation are important, customers may not readily switch, and there are likely to be challenges for smaller rivals in raising the necessary finance. Ultimately, the relevance of different analytical frameworks depends on the characteristics of a specific market. The economic models for assessing these arrangements provide useful analytical tools for GVC analysis to assess the mechanisms for exercising control in supply relationships – as they imply that the spread of GVCs does not necessarily reduce barriers to entry for producers in developing countries (Strange and Humphrey, 2018).

How markets are shaped is clearly important in understanding the balance of power at different levels. Buyer power has also been a concern here, for example, on the part of supermarkets where smaller suppliers are squeezed. Competition is also central to the interaction of competition and upgrading of production capabilities in what Amsden and Singh (1994) term 'optimal competition'. This is where firms compete in terms of upgrading productive capabilities to earn higher returns, including through supporting investments along value chains. Conversely, competition can be based on manipulating consumer decisions, or on undermining or avoiding labour or environmental standards (what Stucke and Ezrachi, 2020, term 'toxic competition'). In setting and enforcing rules for markets, competition law and policy can be part of the interaction of public policies and enterprise strategies that can incentivize and support innovative capabilities.

4. Examining competition and power in global value chains

In this section, we draw from the previous theoretical discussions to make two specific contributions that can enrich our understanding of power in global value chains (as reflected in Figure 3). First, we unpack how bargaining power is exercised and how this shapes value chain governance and the development of productive capabilities. Second, we consider how competition authorities as regulators exercise institutional (and constitutive) power to shape accepted norms of 'fair' market conduct.

4.1 Competition and bargaining power

Both GVC analysis and competition economics are concerned with understanding how powerful firms exercise control over a value chain. In GVC theories this control is exerted through contracts, direct coordination by lead firms, and embedded coordination such as standards and strategic alliances (Strange and Humphrey, 2019).[1] Firms with market power can exercise control along a value chain by leveraging dyadic relationships to control rents and shape market outcomes. Relative bargaining power depends on the parties' ability to impose costs on each other which, in turn, depends on the 'outside options' or poorer alternatives which the parties have (Rey and Tirole, 2007). If parties can influence the regulatory and policy framework, this can also change their balance of power in inter-firm negotiations. In the rest of this sub-section, we examine various theories of harm from competition economics that can help us unpack bargaining power in value chains.

Refusal to supply theories of harm explain how a vertically integrated firm can ensure that the downstream competitor does not obtain an input in order to undermine the ability of

[1] In our analysis, we forego a discussion of how these mechanisms can also take place indirectly (and thus pertain to 'demonstrative power') through copying, alluding, implicit threats and assumptions made by the parties of a transactions on what 'everyone else is doing'.

independent downstream firms to grow and counter the upstream monopoly's market power. *Tying and bundling* theories of harm explain how a firm can make the purchase of a product or service in markets which the firm is dominant conditional on the purchase of goods or services in markets where the firm faces competition in order to discourage customers from purchasing from its rivals. This can be viewed as a similar type of exclusionary conduct, though operating across complementary products rather than vertically related ones. The key is still the impact on competition in the complementary products in order to protect market power in the core market.

Inducement theories of harm explain the various mechanisms that a dominant firm employs with regard to customers and suppliers in order to block rivals, which could include long-term exclusive contracts or rebate arrangements. Competition economics analyses the incentives and ability of the firm with market power to engage in such conduct, leveraging on economies of scale and scope, network effects, the ability to segment customers and imperfect information (Fumagalli and Motta, 2008). Scale and scope economies imply that an entrant has to be able to build a sufficient customer base to be competitive. In circumstances where the customer base is fragmented and there is sequential contracting, or different market segments by geography or a product dimension, the incumbent is able to exclude even a more efficient competitor by tying down enough customers with relatively favourable terms (Fumagalli et al., 2018). In the application of this rationale it is important to understand the range of factors which may lead to scale economies, including fixed and sunk costs, learning effects, and the importance of building a platform in two-sided markets. Information imperfections underlie the possible benefit to an incumbent from developing a reputation for fighting entry.

These theories of harm provide tools for assessing incumbent firm conduct where entry is a matter of building production capacity and capabilities, establishing brands and distribution networks, and targeting customer groups. All of these are important for the local dynamics of GVC analysis. Importantly, they are not mutually exclusive and are likely to be reinforcing each other.

Buyer power refers to where powerful buyers exert their influence over suppliers to lower prices below competitive levels and/or to exclude rivals. A powerful buyer may be able to induce suppliers to sign exclusive agreements to rule out selling to an entrant in exchange for a reward today (see Noll, 2005). When a powerful buyer negotiates lower prices from suppliers, the main question is why lower prices are not associated with efficiencies or simply countervailing bargaining to shift rents from suppliers to buyers. If buyer power can be used to capture the difference between suppliers' average total costs and short-run variable costs, redistributing short-term rents undermines the ability and incentives of suppliers to reinvest and improve productive capabilities (Inderst and Mazzarotto, 2008). In addition, smaller buyers without the negotiating power may be charged higher prices by suppliers in a 'waterbed effect' – the low prices required by large buyers are only sustainable if the supplier charges other, smaller, buyers higher prices (Inderst and Valletti, 2011). As small buyers are squeezed as a result, concentration at the buyer level increases. Buyer power in this context entails exploiting an upward sloping supply curve for inputs and withholding demand to obtain lower prices from suppliers, which can yield socially inefficient under-production and deadweight loss (Chen, 2007).

Such considerations have been important in examinations of the power of major retailers in Europe (see i.a. Clarke et al., 2002). The issue of buyer power has most often been examined in the field of competition and antitrust in agricultural value chains around the world – such as dairy and poultry (James, Hendrickson and Howard, 2013; IPES-Food, 2017). This is because, in general, farmers are relatively small and dispersed while there are large buyers in the form of processors and retailers. The ability to do this depends on buyers credibly threatening to hold-up purchases from individual suppliers, where suppliers are dispersed and have committed to production and incurred high fixed costs.

The various arrangements under the heading of bargaining power have competition effects and impact on capability upgrading. The geographic fragmentation of activities and extension of increasingly sophisticated GVCs, coupled with high levels of concentration, means it is necessary to have the appropriate analytical tools to assess various arrangements. This includes moving beyond a false dichotomy of exploitative versus efficiency-enhancing in evaluating arrangements, to understanding the arrangements in terms of their dynamic effects on competitive rivalry in terms of upgrading capabilities and widening economic participation. This is critical for developing countries' involvement in value chains as part of sustained productive capability building, which requires constructive linkages with local industrial clusters of producers of intermediate goods and services (Lee et al., 2018).

4.2 Competition authorities and institutional power

Conceptions of competition influence the diversity in competition rules and their interpretation across countries and over time (Fox, 2003; Budzinski, 2008). In turn, the dominant ideas of competition which inform the rules are influenced by the balance of interests in different countries, as part of constitutive power. As in the previous section, we focus on direct transmission mechanisms here. We identify a number of key, and related, choices to deepen our understanding of *institutional power* – related to the setting and enforcing of the market economy rules through the roles of competition authorities and economic regulation (see Figure 3).

First, we ask whether the rules value participation in the competition process or whether they are set in terms of outcomes. In broad terms, European and most Asian competition law sets a test for unfair competition in terms of whether arrangements lessen, prevent or distort competition (Fox, 2003; Roberts, 2020; Singh, 2016). There is a special obligation on dominant firms not to undermine competition. This allows a broad interpretation, especially of what preventing or distorting competition means. The standards applied can take into account the effects on potentially effective competitors in the form of entrants and smaller firms. This is in contrast to the regimes led by the USA which have emphasised the need for the competition authority to prove that the arrangements lead to higher prices and consumer harm (Baker, 2019). There is no onus on dominant firms to justify their conduct and it is generally difficult for smaller firms to prove what they would bring to the market were they enabled to have fair access.

Figure 3. How competition shapes power in global value chains

	Direct (focus of analysis)	Diffuse (general reflections only)
Dyadic	*Bargaining Power* - Leveraging economies of scale and scope, network effects - Ability to segment customers - Influencing consumer choices and reputation through imperfect information and consumer data - Inducing customers and suppliers not to deal with rivals - Leveraging vertical integration and network effects - Undermining supplier capabilities	*Demonstrative Power* - Same mechanisms as under bargaining power, but transmitted informally in a cascade of demonstrative effects via bilateral relations among value chain actors - Implicit acceptance of these actions by the parties of a dyadic transaction
Collective	*Institutional Power* - Rules and regulations set by competition authorities - Assessments by competition authorities on arrangements that lessen, prevent or distort competition - Deliberations by competition tribunals - Market studies by competition authorities to assess competition and market workings	*Constitutive Power* - General acceptance of rules valuing participation in the competition process and fair competition vis-a-vis rules set in terms of outcomes - Framing of co-operation between firms in the same market as inherently anti-competitive vis a vis potential for building competitive capabilities - General acceptance of competition as a dynamic process of rivalry vis a vis competition as a static market outcome measured in terms consumer welfare

Source: Modified from Figure 1

Second, we ask whether co-operation between firms in the same market is viewed as inherently anti-competitive, or whether the values of co-operation for building competitive capabilities are recognised. If competitive rivalry is viewed as the natural working of the market (in neo-classical economics) then the competition authorities are simply there to play a policing role to detect and punish contraventions in order to deter them. Stakeholder initiatives are viewed with suspicion and may be prevented by competition rules (see Holmes 2020 for examples of environmental initiatives) and require exemptions (as has been the case in responding to COVID-19, Jenny, 2020). In contrast, rule-making allows for co-operation to create competitive capabilities and stimulates initiatives to address sustainability concerns. This can be viewed as a purposive application of competition law.

Third, we need to consider whether competition is evaluated as a dynamic process of rivalry or as a static market outcome measured in terms of consumer welfare. Dynamic conceptions of competition entail taking into account investment and the development of productive capabilities within and across firms, which generates competition and recognizes the creative functions of markets (Arndt 1988; Blaug, 2001; Budzinski and Beigi, 2015).

Fourth, we consider whether competition authorities are independent or whether they are part of the state's institutional framework for managing the economy. The clearest example of the differences here is whether competition rules and industrial policy are viewed as potentially complementary or whether they are viewed as naturally in conflict (Brusick and Evenett, 2009; Singh 2016).

These choices of competition rules and institutions reflect generally accepted norms and values regarding market conduct, which fall under constitutive power in Dallas et al.'s (2019) typology (see Figures 1 and 3). Variation here can mean that German and Korean 'competition values', for example, can be seen as aiming for ideas of 'optimal competition' (Singh, 2016) which balances investment, participation and constraints on market power and explicitly consider the social construction of markets. In contrast, the Anglo-American conception of competition focuses on exchange, privileges allocative efficiency, and remains firmly rooted in neo-classical economic theory.

5. Empirical application to selected value chains in South Africa

In this section, we apply the reflections on competition and power in GVCs highlighted so far to two case studies from South Africa (supermarkets and petrochemicals). These case studies were selected as they represent key value chains in the country, with powerful lead firms that have been subjected to competition cases that attempted to apply institutional power to address these firms' bargaining power. They have also been the subject of extensive research, including by ourselves and colleagues, on which we draw (see Makhaya and Roberts, 2013; das Nair, Mondliwa and Roberts, 2015; das Nair and Mondliwa, 2017; Mondliwa and Roberts, 2017; das Nair, Chisoro, and Ziba 2018; das Nair, 2019; and Mondliwa and Roberts, 2019). The two case studies differ in relation to the position of lead firms in the respective value chains. In the case of supermarkets, economies of scale and scope, coupled with urbanisation and consumption patterns, mean that a few large supermarket chains control much of activity in South Africa and neighbouring countries. In the case of petrochemicals, the position of the single dominant firm derives from control over mineral resources, economies of scale in certain aspects of the value chain and the legacy of industrial policy support under *apartheid*. These two case studies primarily focus on domestic value chains, though in both industries there are international dimensions to the activities of the lead firms. This focus is informed by the nature of competition cases, which tends to have a national focus. However, the insights that are drawn from these case studies have implications for understanding power in broader GVC contexts.

Notwithstanding the obvious South Africa specificities, such as the far-reaching legacy of *apartheid*, the two case studies reflect a picture that is evident in many other countries. In relation to supermarkets, the South African picture aligns with global waves of 'supermarketisation' which have been identified in the literature, where major chains displace independent retailers and 'wet markets' (see, *inter alia*, Reardon, Timmer, and Berdegué 2004; Reardon and Hopkins 2006). Supermarkets effectively control the routes to market for suppliers of food products. In petrochemicals, the major investments made in South Africa under state ownership, and subsequently with state support, are similar to the heavy-industry promotion linked to oil and gas in other industrialising economies, such as Malaysia and Brazil. The dominant company in South Africa was formerly state-owned and through its ongoing state linkages has secured rights to critical hydro-carbon resources – coal and natural gas in South Africa and Mozambique – on very favourable terms.

In each case study, we consider the position and power of the incumbent firms. We then unpack the dynamics of bargaining power and the record of institutional power through competition enforcement and economic regulation. We draw from several major competition cases in South Africa in each of these industries – cases that examined the conduct of powerful firms and its effects. The written decisions of these cases are also helpful for considering the balance between bargaining and institutional power in the South African competition regime.

5.1 Supermarkets[2]

There is extensive consideration of the buyer power of supermarkets in the GVC and competition literatures. However, the two literatures have largely developed separately from each other (see das Nair, 2019; Reardon et al, 2006). The GVC literature has focused on how supermarkets set private standards and requirements for suppliers in terms of costs, quality, packaging, delivery schedules, and quantities as a means of governing the value chain (Gereffi, *et al*, 2005; Humphrey and Schmitz, 2001). These standards require significant investments in capabilities and systems (such as barcoding) for suppliers. As a result, these hurdles increase barriers to entry and exclude smaller suppliers, including local producers in countries such as Zambia (Ziba and Phiri 2017). The bulk of competition economics has analysed supermarkets by focusing on the concentration levels and barriers to entry, and their implications for market power (see das Nair 2019 for a review).

The four main South African chains (Shoprite, Pick n Pay, Spar and Woolworths) have been long established, although they have grown rapidly in the past two decades – domestically and regionally (das Nair 2019; das Nair, Chisoro, and Ziba 2018). The formal grocery retail space is concentrated, with substantial market power on the part of supermarkets which has led to a number of competition matters – including market inquiries in several countries, cases relating to exclusive leases, competition scrutiny of mergers and acquisitions, and examinations of buyer power over suppliers (see Figure 4 for a summary). At the same time, supermarkets have invested heavily in regional distribution centres and logistics to lower the costs of regional sourcing.

Competition and bargaining power

The starting point for understanding the bargaining power of supermarkets is what drives concentration and how the strategies they employ along supply chains bolster their position. There are substantial economies of scale and scope in the distribution, logistics and marketing at the centre of 'supermarketization'. This is evident in their investments in huge distribution centres and the importance of data on consumer demand patterns to deliver variety and convenience.

The bargaining power of supermarkets is, sometimes quite literally, cemented by their influence over urban retail space. Supermarkets are anchor tenants in the large shopping mall developments in South Africa and this enables property developers to raise finance. In return, supermarkets require long-term exclusivity from the property developers. These agreements typically stipulate that no other grocery retailer, including bakeries, butchers and fruit & vegetable retailers, will be allowed as a tenant in the shopping mall (CCSA, 2019). These arrangements exist also in the UK, along with the practice of securing rights to commercially attractive land to block others from developing it.[3]

The bargaining power of the major supermarket chains therefore blocks rivals, including local and specialist stores, from access to prime retail space (Chisoro-Dube and das Nair, 2020; CCSA, 2019). Urban planning decisions are also clearly part of the picture. These are external to the dyadic bargaining over access, but are nevertheless influenced by the collective lobbying of supermarkets seeking to shape the norms of retail developments.

Control over the urban retail space entrenches the main supermarkets as the gatekeepers of the routes to market for suppliers. As such, they are able to exert their bargaining power over suppliers through a raft of practices – including requests to pay for shelf space and promotions, and the application of extended payment terms (das Nair, 2019). These practices extract margins from suppliers which are made up elsewhere – including charging higher prices to other, smaller retailers in a so-called 'waterbed effect' (Inderst and Valletti, 2011). This reinforces the position of the large supermarket chains in the retail space.

In addition, the bargaining power of supermarkets has the effect of undermining smaller suppliers and leading to concentration at the level of food manufacturing. Larger manufacturers with 'must stock' brands have counter-vailing bargaining power, while smaller suppliers are in a weaker position. The squeezed margins of suppliers undermine their ability to invest and improve their capabilities, which in turn undermines their food production capabilities in the medium term.

Competition and institutional power

We now examine the record of competition authorities as regulators in shaping markets and the norms of fair market conduct. The Competition Commission of South Africa (CCSA) has

[3] https://www.gov.uk/government/news/cma-demands-action-after-tesco-blocks-rival-supermarkets

prohibited a number of mergers and acquisitions of supermarkets, such as the proposed acquisition of Fruit n Veg City by Pick n Pay (Chisoro-Dube and Das Nair, 2020). However, other acquisitions of smaller local supermarket chains by the major groupings have been approved as the smaller chains were deemed not to be competitively significant (including the acquisition of Massmart by global retail giant Walmart). Cartel enforcement and merger control operate on the assumption that in the absence of horizontal combinations of firms there will be open and competitive markets. The merger rules which were adopted in South Africa focus on assessing a substantial lessening or prevention of competition in mergers only in static terms – and thus not in relation to the dynamic evolution of large businesses and the different dimensions of their market power. If there are major supermarkets competing with each other, then smaller firms may simply not be competitively relevant.

Figure 4. Competition and power in South Africa (supermarkets and petrochemicals)

	Supermarkets	Petrochemicals
Bargaining Power	- Setting private standards and requirements on suppliers in terms of costs, quality, packaging, delivery schedules, and quantities - Leveraging economies of scale and scope in distribution, logistics and marketing - Requiring payments for shelf space, promotions - Imposing extended payment terms - Long-term exclusivity requirements from property developers (blocking rivals from shopping malls)	- Leveraging vertical integration to withhold supply to other downstream competitors - Leveraging collusive arrangements with competitors to limit bargaining power of customers - Leveraging of market power from one industry to another
Institutional Power	- Collective lobbying by supermarkets shapes the norms of retail developments - Competition Commission of South Africa prohibited some mergers and acquisitions (e.g. proposed acquisition of Fruit n Veg City by Pick n Pay) - Inability of competition law to take into account the vertical relationships with property development and finance, and the arrangements the supermarkets impose on suppliers - Market inquiry in grocery retail led to recommendations, not regulation	- Historical state support and regulation for Sasol - Advantageous fuel regulations - Monopoly supply agreement for natural gas - Competition Commission intervened at discrete levels of the polymers and the fertiliser value chains, but not at the overall group level (profit transfer)

Source: authors

A similar test is required in assessing exclusive leases where smaller independent retailers are not competitively significant in their own right, as consumers may be able to choose between different shopping malls where there are alternative supermarkets.[4] In South Africa, for exclusive leases to be found to be anti-competitive it would have to be demonstrated that the individual shopping mall is a distinct geographic market. This contrasts with competition laws in many other countries, which follow the European Union in placing an onus on dominant firms not to lessen, prevent or distort competition (Roberts, 2020). In addition, competition law in South African does not take into account the vertical relationships with property development and finance, and the arrangements which the supermarkets have imposed on suppliers.

An alternative option is to undertake a wider market inquiry to examine how the market works, which the CCSA undertook in grocery retail over 2016 to 2019. The Grocery Retail Market Inquiry led to recommendations that addressed buyer power and asked for ending the long-term exclusive lease agreements. However, the inquiry recommendations have not had legal force in South Africa and, as of August 2020, the Competition Commission was still to bring consent agreements with the main supermarket chains on ending exclusive leases to the Competition Tribunal for confirmation. The effect of examining the power dynamics only through the lens of competition law is to divert attention away from policy levers. These levers include using urban planning requirements through which to address the power of supermarkets and promoting supplier development initiatives under industrial policies, FDI regimes and licencing requirements.

The South African Competition Amendment Act 18 of 2018 introduced buyer power as a competition concern where, in a designated sector (such as groceries), it exploits small and medium businesses or a firm controlled or owned by historically disadvantaged persons (section 8(4) which came into force on 13 February 2020). The Amendment Act also bolsters the powers of the Commission to conduct market inquiries and to take actions to remedy adverse effects on competition which are identified, although these are yet to be tested.

The potential for institutional power to mitigate bargaining power is illustrated by interventions in countries such as Namibia and Zambia, where rules of conduct for supermarkets are set in the interest of local sourcing. These countries have set expectations that South African supermarkets increase local procurement as part of their right of doing business in the country. For example, Shoprite has made commitments to local procurement and has signed a memorandum of understanding to work together with the Zambian Development Agency and a private enterprise development programme in order to support local suppliers. In Namibia there is also a code of conduct regarding local sourcing.

5.2 Petrochemicals[5]

The petrochemical value chain involves functions ranging from resource extraction (crude oil, coal and natural gas) and refining through various levels of chemicals processing to produce industrial and consumer products (Figure 5). The state typically plays a major role

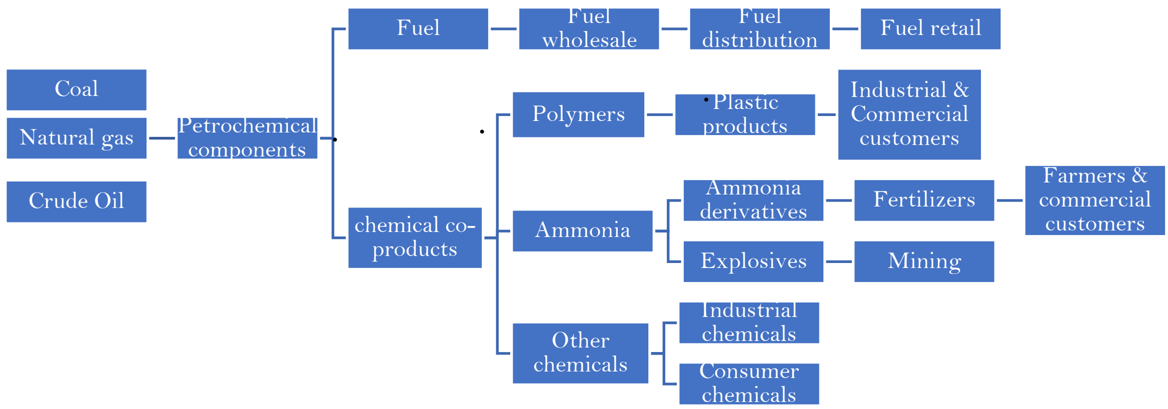
[4] See Massmart vs Pick n Pay Constitutional Court Decision Case Number CCT 242/15.

[5] The case study draws on previous work by Mondliwa and Roberts (2019), das Nair, Mondliwa and Roberts (2013) and Makhaya and Roberts (2013), including references to the competition cases therein.

in these value chains as owner, regulator, producer and/or buyer (Horner and Alford, 2019). In our discussion, we focus on the implications of former state support and regulation on power dynamics in petrochemical value chains, focusing on the lead firm, Sasol. We analyse the ways in which bargaining power plays out in dyadic relationships between firms, and examine how former state support and regulation on energy policy have shaped the power relations in the industry – including through competition rules and the outcomes of competition cases (see summary in Figure 4).

Sasol's position in the petrochemical value chain extends from mining coal and being a monopoly supplier in South Africa of natural gas, to being the supplier of key intermediate chemical inputs, such as polymers and ammonia. Sasol's power was built and in part exercised through its influence over the state (see Mondliwa and Roberts, 2019). South Africa's petrochemical complex was established around Sasol through a succession of policy levers and regulation, originally started under the *apartheid* state. The combined effect of these decisions has entrenched Sasol's market position and skewed bargaining power in dyadic relationships in its favour. The relevant competition and regulation cases illustrate the interplay between exertion of bargaining power and exclusionary conduct at different levels of the value chains. The exertion of this power has shaped the strategies of other value chain participants, including decisions for expansion or technological upgrading.

Figure 5: The petrochemicals value chain in South Africa



Source: Authors

Competition and bargaining power

Sasol's vertical integration allows it to leverage market power at specific points of the value chain to determine the terms of participation for other firms. In polymers, Sasol is both the monopoly supplier of the input and the competitor to Safripol in the supply of polypropylene. Sasol was able to restrain Safripol's ability to expand and colluded with it in the pricing of downstream plastic products. The two firms negotiated a supply agreement whereby the price of the propylene input supplied by Sasol was dependent on the price of polypropylene charged by the two producers. This had the impact of indirectly fixing the polypropylene prices in the country and resulted in prices above competitive levels for the downstream plastic products industry. This has allowed Sasol to control value capture in the value chain and resulted in a vicious cycle of low margins for the downstream industry and limited investment in capability upgrading, thus undermining competitiveness.

In fertilizer, Sasol (which is vertically integrated from ammonia to blending and distribution of fertilizer) made collusive arrangements with its main buyers Omnia and Kynoch (both reliant on Sasol for ammonia while competing in the markets for ammonium nitrate and the blending and distribution of fertilizer) to fix prices and allocate markets. This reduced the bargaining power of independent downstream customers in the blending and distribution of fertiliser. Sasol was potentially subject to bargaining power from buyers as it had few alternatives for its ammonia other than selling it for the production of fertiliser and explosives. However, the collusive arrangement removed Omnia and Kynoch as effective alternative options for independent blending customers and prevented them from expanding and competing effectively.

Sasol's vertical integration from ammonia into ammonia derivative products right through to its own blenders of fertilizer and supply of explosives means it can credibly threaten to withhold supply to other downstream competitors. This threat makes the collusive arrangement attractive for its competitors, Omnia and Kynoch. If this were not possible, Sasol would be subject to the countervailing power (i.e. the hold-up of demand) of buyers as it would have to dispose its ammonia. Though Sasol could outright refuse to supply ammonia or ammonia derivative products, it can also adopt indirect strategies such as charging prices to squeeze the margins of non-integrated rivals or employ terms and conditions which amount to a refusal to supply.

Competition and institutional power

Sasol's market power does not only stem from market conditions and historical state support and regulation between 1950 and 1993. In the post-apartheid period, various arms of government have taken policy and regulatory decisions that have facilitated the firm's further vertical integration and entrenched market power. Analyses of the negotiations of important deals and regulatory outcomes in this period point to a balance of power that lies in Sasol's favour (Mondliwa and Roberts, 2017 and Mondliwa and Roberts, 2019). South Africa's approach to fuel regulation has assumed away the fact that Sasol produces multiple products and that it can leverage market power across different product markets. Fuel regulation has continued to disproportionately advantage Sasol as found by the Windfall Tax Task Team (2007). This advantage has also filtered through to chemical co-products, which are priced at fuel alternative-value. Although this follows international norms, the generous price regulation means that downstream industries pay higher prices for co-products and by-products (see Figure 5).

Sasol's extreme bargaining power over other actors in the value chain was further reinforced by a deal struck with the South African and Mozambican governments, which resulted in Sasol becoming the monopoly supplier of natural gas in South Africa. As a result, there have been limited outside options for customers of natural gas (although other energy sources can substitute it to some degree). Regulation has been focused on pricing with external customers, while the bulk of the gas was converted into fuel (regulated) and chemical products (not regulated), which have limited countervailing power in negotiations with Sasol. Sasol's monopoly position in natural gas also came at the expense of other potential large-scale gas conversion projects, for example an ammonia plant that could compete with Sasol providing outside options for downstream fertilizer and explosives industries.

The competition cases highlight the issues with competition rules which fail to take into account the dynamic returns to scale and the leveraging of market power from one industry to another and along multiple nodes of a value chain. The design and interpretation of the competition law's provisions ignore how path dependency and market conditions such as the size of the economy, concentration levels and extent of barriers to entry themselves shape competitive outcomes. It assumes that anticompetitive conduct such as cartels or abuses of dominance are discrete distortions to otherwise well-functioning markets when, in reality, entrenched market power and strategic interactions between firms are intrinsic features of market economies.

The competition authorities have intervened at separate levels of the polymers and the fertiliser value chains, but these interventions have not been able to curb Sasol's overall bargaining power. In polymers, following the price fixing settlement and an excessive pricing case, profits were transferred to the upstream petroleum components node of the value chain in internal transfer pricing decisions. The excessive pricing case was based on the separation of 'industrial policy' questions from 'competition' questions (das Nair and Mondliwa, 2017). This suggests an interpretation of the law that is concerned with exchange and static market outcomes, in line with a neo-classical conceptualisation of competition. An alternative approach would take production into account and how this relates to competition as a process of rivalry. Decisions would be concerned with whether competition stimulates or undermines investments by firms in building capabilities for technological progress and in engaging in learning by doing and the development of new products. This is the approach adopted in countries such as South Korea (Roberts, 2020). Fortunately, the South African Competition Amendment Act of 2018 makes substantive changes to the tests for excessive pricing along these lines, in that structural characteristics of the market can now be taken into account along with past or current advantages such as state support (section 8(3)). The amendments also allow for the Minister to make regulations regarding the calculation and determination of an excessive price.

6. Discussion and conclusion

This paper has sought to bridge the understanding of power in the GVC literature and the analysis of market power and exclusionary conduct in competition economics, which have largely been developed on parallel tracks. Specifically, we have drawn on competition economics to provide further insights into a recent typology of power in GVCs (Dallas et al. 2019) and earlier reflections on market power and barriers to entry (Sturgeon, 2009; Gereffi et al 2005; Fujita 2011; Ponte and Sturgeon 2014). We have made two contributions to the analysis of power in GVCs through two industry case studies from South Africa. First, we further developed the content of Dallas et al.'s (2019) typology of power in the area of bargaining power of firms, and how they shape value creation and capture. Second, we reflected on the ways that competition rules (a form of institutional power) shape markets and the balance of power in dyadic relationships between firms.

We examined the different mechanisms and arrangements that fuel dyadic bargaining through the ways in which competition economics considers exclusionary conduct. Firms' strategic options mean that they may be able to leverage intrinsic advantages – whether from economies of scale and scope, network effects, or consumers' reluctance to switch – to entrench their positions and continue to accrue rents. This was illustrated in the exclusive leases employed by supermarkets to block rival grocery stores in South Africa, and by Sasol using a combination of collusion with competitors at one node of the value chain and exclusionary strategies to undermine downstream rivals in other nodes of the petrochemical value chain. Supermarkets have also established norms for suppliers which favour larger business and undermine wider participation. Various strategies or 'theories of harm' from competition economics can highlight where firms have sufficient power to execute such strategies – including the nature of incentives, the ability to execute and the benefits of successful execution. These tools should be better incorporated into the analysis of dyadic bargaining power in value chains.

Our case studies also illustrate how firms are able to leverage power in one relationship to shape outcomes in another relationship, with implications for upgrading. This dynamic is often overlooked in GVC analysis. In supermarkets, the power of the major groups to foreclose access to a sufficient customer base in shopping malls to smaller competitors is drawn from their relationships with property developers. In petrochemicals, Sasol is able to collude with competitors to shape value capture from downstream customers.

Our discussion of the ways in which competition rules shape markets and the balance of power in dyadic relationships suggests two main conclusions. First, we observe that the positions of dominant firms owes much to the historical impact of government regulation and industrial policy. In South Africa this is closely related to the ongoing effects of policies pursued under *apartheid* and the closeness of the state to particular interests. In petrochemicals, the effects of Sasol's prior and continued state support has removed outside options for customers and skewed bargaining power in Sasol's favour. Liberalised markets in this context may actually allow incumbents to continue to further entrench their position. This calls for more research on the role that competition authorities should take to shape markets and the norms of fair market conduct.

Second, we highlight the pitfalls of the narrow neoclassical framing of competition for understanding and addressing market conduct in value chains. We argue that it is necessary to locate the analysis of particular markets in the context of the ways in which industries have been shaped over time, including at different nodes of value chains. This recognition is starting to be reflected in competition authorities conducting broader market inquiries that deal with exclusive leases between supermarkets and property developers, rather than just investigating cases of discrete alleged conduct. The Sasol case study also highlights the limitations of addressing entrenched market power separately at various nodes of the value chain through investigations of discrete conduct – as opposed to more holistic regulation of market power along the whole petrochemical value chain.

Thus, we caution that the adoption of competition economics tools in the analysis of bargaining power does not entail adopting a neoclassical competition approach. An alternative and more apt framing is one provided by the concept of 'optimal competition', which considers dynamic rivalry and capability upgrading (Amsden and Singh, 1994). In this framing, competition rules are seen as a complement to industrial policy, which allows for various policy levers to be used to shape market outcomes. For example, in the petrochemicals case study, the key reciprocal mechanisms for the state-created monopoly position in gas and the inland market for fuel, and the rights to access mineral resources, could be used to balance power dynamics between Sasol and other value chain participants (Mondliwa and Roberts, 2019). In the supermarkets case study, municipal zoning regulations could be used to place conditions on exclusive leases or protect space for smaller competitors in new developments. These two case studies highlight how policy and regulatory decisions shape bargaining power dynamics between firms in important ways. Choices about the type of competition rules to be adopted, and whether countries are seeking maximum competition or optimal competition, have important implications for the ability of firms to build capabilities and to upgrade. Further research should thus be directed to better understanding the implications of competition and power for upgrading.

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