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China and the changing economic geography of coffee value chains

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For the past three centuries, the economic geography of the global coffee sector has been characterized by the supply of beans from tropical countries for consumption in North America and Europe, with various modes of value chain coordination enacted by lead firms to ensure reliable and affordable supply. This pattern is now fundamentally changing, with growth in coffee consumption in emerging markets, including China, exceeding that in established markets. But China is not only a growing consumer market, it is less well known that rapidly increasing agricultural production in Yunnan province of southwest China has also inserted the country as an important source region for coffee, and this has been pivotal in facilitating the emergence of Chinese lead firms in the sector. This article presents the emergence of China, and Chinese firms, at a critical juncture for the structure and governance of the global value chain for coffee. The processes through which this is occurring are outlined, and the implications for regional development prospects across Southeast Asia are discussed. We argue that the changing economic geography of coffee value chains, and their increasing driven-ness by Chinese actors, is starting to reshape the regional coffee industry in profoundly new ways.

Keywords: Coffee, China, value chains, Southeast Asia, Yunnan, economic geography

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Introduction

The introduction of coffee cultivation by European colonialists to Asia at the close of the 17th century, and then to the Americas in the 18th century, marked an initial globalizing moment for the commodity coffee. For the subsequent three centuries, coffee beans were produced and exported from various tropical countries, often under highly coercive and exploitative colonial regimes, to consumer markets in Europe, North America, and, during the last 50 years, Japan. Despite the effective demise of European colonialism during the twentieth century, the continued inequalities along the global coffee chain have been well-documented (Talbot, 2004; Daviron & Ponte, 2005), as has the pivotal position of coffee roasters in driving and coordinating the entire chain back to farm production (Ponte, 2002). The resulting governance structures along the value chain have been founded on dominant consumption in the North, and the driving role of lead firms based in those countries.

In this article, we adopt and apply a global value chain (GVC) framework to examine the multi-dimensional role of China, and Chinese firms, in the changing economic geography of coffee. The prominence of global production and distribution systems, which bring together diverse economic actors through a complex regime of global corporate governance, widespread outsourcing of productive functions, and new international divisions of labour, has stimulated the rise of corresponding conceptual models to explain these developments (Neilson *et al.*, 2014).

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The dual processes of continued high rates of consumption in the Global North and expanding economic opportunities for value chain participation elsewhere in the world have characterized global economic restructuring in recent decades. While the growth of broad productive capabilities in East Asia has been well-documented, the 2008–09 global financial crisis was widely seen as a turning point in the global economy, where demand for various finished and intermediate goods shifted from North to South (Cattaneo *et al.*, 2010; Fung, 2011). Indeed, Fung (2011) believes that the organization of the global economy is entering a new phase, where we have reached a 'major inflection point', with important implications for the structure of global value chains. These developments are generally analysed in terms of 'shifting end markets', with Kaplinsky and Farooki (2011) identifying the impacts of Chinese demand in particular on other developing country exporters. These consequences include: i) a reversal of the trend toward product differentiation as standard commodities are supplied; ii) a reduced importance of social, environmental and quality standards (refer also to the discussion in Bowles & MacPhail, 2014); and iii) greater competition with other developing countries for capturing the value-added of processing of raw materials. Kaplinsky and Farooki (2011) admitted, however, that this hypothesis required further testing.

A further apparent implication of shifting end markets for GVCs is the increased regionalization of value chains (identified by Kaplinsky & Farooki, 2011, Morris *et al.*, 2011, and Lee & Gereffi, 2015). In the African clothing complex, for example, the rise of South African clothing manufacturers, driven by South African retailers, resulted in new opportunities for suppliers in Lesotho and Swaziland relative to US buyer-driven chains (Morris *et al.*, 2011). Lee and Gereffi (2015) identified the regionalization of value chains as being further driven by the distinct growth strategies of emerging nation lead firms, which include pursuing low-cost innovation strategies and targeting the low and middle income segments in emerging economies rather than competing with large multinationals active at higher price markets. Similarly, Li and Ding (2015) examined China's apparent new role as a market provider for consumer goods from the region, which they suggested would involve increased efforts to develop regional economic cooperation arrangements (discussed also by Cai, 2017, in the context of China's Belt and Road Initiative).

The emergence of China, and Chinese firms, as key actors within the global coffee sector has not been hitherto discussed in the literature. While China's surging coffee consumption receives some attention, there has been very limited, if any, research on the status and the implications of China's concurrent emergence as a coffee producer. In this article we discuss the relatively recent entry of China as a producer (emerging only in the late 2000s), and the subsequent emergence of influential Chinese firms in the sector. As such, this paper attempts to chart emerging industry dynamics in this sector, and to contextualize them within the broader economic geography of the global and regional coffee industries. We argue that the repositioning of Chinese coffee firms reflects a more widespread shift in the organization of the global economy. China is reshaping its role in the GVC of coffee in two ways. On the one hand, large Chinese trading firms are emerging as potential global lead firms by virtue of trading significant volumes of raw coffee globally, but they are also developing their own brands and assuming the functions of roaster lead firms at various scales. Meanwhile, surging domestic production in Yunnan province of southwest China has provided a platform for the emergence of integrated Chinese coffee companies who

are following an alternative path towards lead firm status. Although these latter firms are not yet global in scope, their operations are expanding into neighbouring regions and extending their regional influence. In both ways, state supports are instrumental for fostering these transitional and domestic enterprises into lead firms.

It is not entirely clear in the literature as to what exactly constitutes a 'lead firm'. The term emerged from Gereffi's (1994) articulation of global commodity chains as being either producer-driven or buyer-driven, which seemed to suggest that a particular 'core company' would be responsible for 'governing' the entire commodity chain globally. Gereffi (1999: 38) then emphasizes the role of 'lead firms [as] the primary sources of material inputs, technology transfer, and knowledge in these organizational networks'. The closely-aligned literature on Global Production Networks (GPNs) is particularly forthright about requiring a (single) global lead firm as an integral aspect of defining a GPN. According to Coe and Yeung (2015: 39–40, emphasis in original), 'a global production network necessarily entails the central role of one globally significant *lead firm*', and that 'the necessary presence of a global lead firm differentiates a global production network from a (global) commodity chain because the latter may not be organised around a single lead firm'. In this paper, we do not follow this more restricted GPN definition of a globally significant lead firm, and instead use the term in the broader sense of a firm capable of exerting a meaningful degree of governance elsewhere in the chain irrespective of scale and geographic scope. This follows the earlier work of Fold (2002), who emphasized how more complicated patterns of power relations can exist between (multiple) lead firms in a single global chain, and Lee and Gereffi (2015), who highlight the emergence of bipolar or multi-polar GVC governance, while also making an implicit distinction between 'lead firms' and 'global lead firms'. We can certainly identify a set of large global lead firms (multinational coffee manufacturers) in the GVC for coffee, each of whom could be understood to govern their own GPN. However, large international trading firms could also be considered lead firms in their own right, as they coordinate the actions of actors elsewhere in the chain, and indeed they are capable of exerting a global influence. In the work of Coe and Yeung (2015), however, these firms might be considered 'specialized suppliers' to lead firms, or indeed as 'relational suppliers' by Gereffi *et al*. (2005). Furthermore, smaller coffee roasters located in various consumer markets perform functionally indistinct roles to larger lead firms (value-added manufacturing, supply chain control and coordination, marketing and branding)—albeit at a smaller scale and sometimes confined within a single country. Therefore, we suggest it is not always a straightforward task to identify *the* 'lead firm' in a GVC, or even to clearly set criteria for what constitutes a 'lead firm'.

The research findings presented in this article draw upon a mixed method approach. We conducted a series of 70 interviews with coffee industry stakeholders in Yunnan province and 4 interviews in Chongqing during November 2016, November and December 2017, interviewing farmers, commercial estate managers, migrant labourers, government representatives, and industry actors (small-scale roasters, traders and large corporate firms) and operators of commodity exchanges. The interviewees also included representatives of coffee industries from other Asian countries in Thailand, Myanmar and Indonesia. These interviews were complemented with a detailed analysis of trade data using the UN Comtrade database and a review of media articles on the industry using Factiva searches in both the Chinese and English languages.

The global value chain for coffee

Various applications of a GVC or global commodity chain (GCC) approach to the coffee industry over the last few decades (inter alia Talbot, 1997; Talbot, 2002; Ponte, 2002; Talbot, 2004; Daviron & Ponte, 2005; Neilson, 2008; Neilson & Pritchard, 2009; Grabs, 2018) have consistently identified a range of characteristic chain dynamics. The fundamental geography of coffee production and trade has, until very recently, remained largely consistent with earlier colonial patterns. Coffee has been grown almost entirely within the less developed regions of the tropical Global South, with five countries (Brazil, Vietnam, Colombia, Indonesia, and Ethiopia) estimated to be responsible for 69 per cent of global production in 2016, while the European Union and the USA were responsible for 67 per cent of all imports (FAO, 2017). Talbot's (1997) analysis of the division of total income and surplus along the coffee chain identified a fundamental chain characteristic: producing countries capture very little of the total value-added along the chain, and that their ability to do so has worsened over time. The Hopkins and Wallerstein (1986) approach to commodity chains, inspired by World Systems Analysis, interprets such uneven distribution of benefits as reflecting neo-colonial structural inequalities between core countries (and chain nodes) and periphery countries (and nodes), although we argue that the rise of Chinese firms (and firms in various other producing countries) is challenging the permanence of these designations.

The collapse, in 1989, of a quota system of state-regulated trade under the International Coffee Agreements was a key moment in the evolution of the contemporary GVC for coffee, marking the broader end to the neo-structuralist, UNCTAD-mediated world trade order and the ascendance of neo-liberalism. This deregulation event facilitated the rise and consolidation of the power of transnational coffee companies—primarily coffee manufacturers, also known as roasters—as capable of effectively governing the chain (Ponte, 2002). Grabs (2018) estimated that eight such manufacturers (Nestlé, Jacobs Douwe Egberts, Green Mountain, JM Smuckers, Strauss, Starbucks, Tchibo, Lavazza) held a 53 per cent share of the global coffee retail market in 2014. From their headquarters in the Global North, these manufacturers are quintessential lead firms, ultimately responsible for governing supply chains back to rural producers in the Global South.

Despite a reasonable degree of concentration and recent acquisitions (Grabs, 2018), many smaller specialty roasters persist (in both established and in new emerging markets), and these could also be functionally considered lead firms in their own right due to their role in chain governance. Manufacturers, moreover, tend to rely on large commodity traders to supply them with green beans. Neilson (2008) observed how these commodity traders (dominated by firms such as Neumann Kaffee Gruppe, Ecom Agroindustrial, Louis Dreyfus, and ED&F Man /Volcafe), are increasingly active in sourcing green coffee in producing regions, and in implementing farm-level supply chain sustainability and quality improvement programs on behalf of manufacturers. As will be discussed below, these traditional commodity traders are now competing with a newer global entrant—China's COFCO.

In 2018, the institutional settings of the global value chain for coffee are characterized by limited state intervention, but with an expanding system of private regulation by both corporate firms and NGOs. This is most notable through the expansion of various sustainability programs orchestrated along the value chain between consumers and producers (Jaffee, 2014; Panhuysen & Pierrot, 2014; Levy *et al.*, 2016; Grabs, 2018). Low world coffee prices (especially during the period 2000 to 2004) led to widespread

reports of extreme poverty in coffee-growing communities and what was identified as a 'global coffee crisis' (Osorio, 2002; Vega *et al.*, 2003; Bacon, 2005; Daviron & Ponte, 2005). The fact that this occurred at the same time as consumption was experiencing something of a renaissance in the Global North, through the growth of the specialty coffee sector, shined a spotlight on inequalities along the chain. Daviron and Ponte (2005) referred to this contemporaneous boom in specialty coffee alongside a crisis in producing countries as 'The Coffee Paradox', which they explain in terms of chain governance structures that allow roasters and retailers to extract value from symbolic and in-person attributes of quality. While global prices have recovered somewhat since 2004, it is still reasonable to assert that today's GVC remains characterized by considerable inequality between relatively impoverished growers and relatively profitable roasters who are geographically proximate to affluent consumers. Initiatives to address this inequality are being primarily pursued through private sector governance and the various sustainability labels.

China's entry into the world coffee industry

Twenty years ago, China was essentially excluded from the GVC for coffee. Coffee production in China, Yunnan province more specifically, has increased five-fold since 2001 (Figure 1), making China the 13th largest coffee producer in the world by 2016, rising from 30th in 2006 (Table 1). Yunnan comprises 98 per cent of China's coffee output (Chen, 2013). Annual production levels are difficult to determine with any certainty, but these have been estimated between approximately 120 000 tonnes in 2014 by the International Coffee Organization (ICO, 2015), and up to 158 400 tonnes in 2016/2017 (by Huang *et al.*, 2017). Yunnan grows Arabica coffee—mainly of the Catimor variety—in four major production areas: the prefectures of Dehong, Puer, Lincang

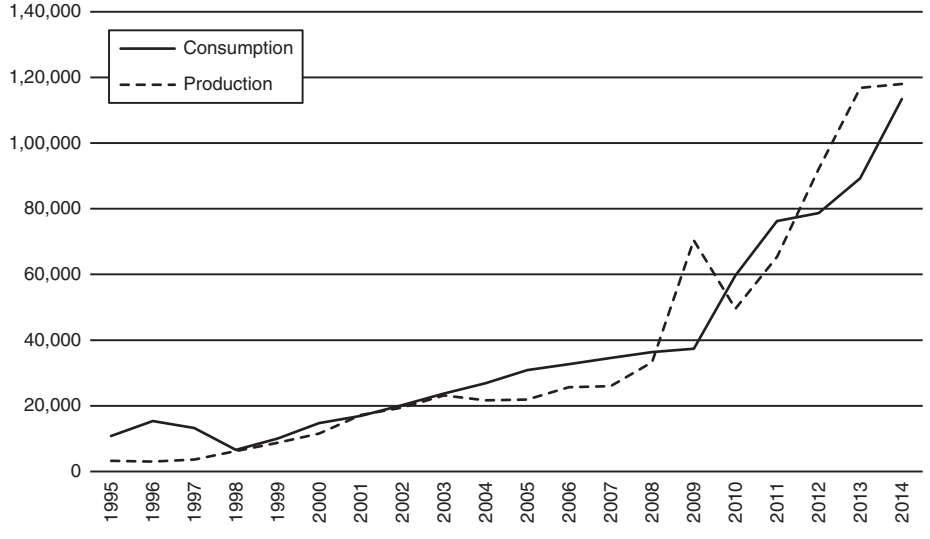

Figure 1. *Estimated coffee production and consumption in China (1995–2014).*
Source: **Figure prepared by authors based on data obtained from FAO, 2017; ICO, 2015. Consumption estimates are based on preceding ICO crop years (ie. 1995 for 1994/95 crop year).**

Table 1. China's contribution to world coffee production (2006 and 2016) alongside other major producing countries.

	2006			2016		
Rank	Country	Production (tonnes)	Global Share	Country	Production (tonnes)	Global Share
1	Brazil	2,573,368	31.6%	Brazil	3,019,051	32.7%
2	Viet Nam	985,300	12.1%	Viet Nam	1,460,800	15.8%
3	Colombia	724,740	8.9%	Colombia	745,084	8.1%
4	Indonesia	682,158	8.4%	Indonesia	639,305	6.9%
5	Mexico	279,635	3.4%	Ethiopia	469,091	5.1%
6	India	274,000	3.4%	Honduras	362,367	3.9%
7	Peru	273,178	3.4%	India	348,000	3.8%
8	Ethiopia	241,482	3.0%	Peru	277,760	3.0%
9	Guatemala	240,331	2.9%	Guatemala	236,145	2.6%
10	Honduras	213,636	2.6%	Uganda	203,535	2.2%
11	Ivory Coast	187,000	2.3%	Mexico	151,714	1.6%
12	Burundi	149,460	1.8%	Laos	136,600	1.5%
13	Uganda	133,310	1.6%	**China**	**114,339**	**1.2%**
14	Philippines	104,093	1.3%	Nicaragua	114,307	1.2%
15	Costa Rica	101,038	1.2%	Ivory Coast	102,960	1.1%
16	El Salvador	85,350	1.0%	Costa Rica	87,490	0.9%
17	Venezuela	74,332	0.9%	Philippines	68,823	0.7%
18	Nicaragua	70,455	0.9%	Papua New Guinea	58,894	0.6%
19	Cameroon	62,300	0.8%	Tanzania	52,257	0.6%
20	Madagascar	61,635	0.8%	Madagascar	46,882	0.5%
30	**China**	**25,655**	**0.3%**			

Source: Table prepared by authors based on data obtained from http://www.fao.org/faostat/.

and Baoshan (Figure 2). Yunnan has a suitable biophysical environment for coffee production: a supportive climate, high altitudes, and the absence of the coffee borer beetle (as of 2017). It has also developed some of the most productive coffee systems in the world (reported by some producers to be as high as three tonnes of green bean equivalent per hectare) based on high input of fertilizers and other high-yielding technologies. Due to the relatively recent history of coffee production in Yunnan, coffee has received much less attention from researchers compared with other cash crops in Yunnan, such as rubber.

Coffee cultivation has, at various times throughout the last century, been promoted as a prospective cash crop in Yunnan. The earliest coffee trees are thought to have been initially introduced to Yunnan from neighbouring colonial regimes in Vietnam in 1892, by a French priest to a Yi village close to Dali city, and in British Burma by ethnic Jingpo (known as Kachin in Burma) to Dehong (Hu, 2014). Coffee cultivation was also suggested as a suitable means of rural development during the era of Republic (Chang, 1942), and during the 1950s and 1960s, when coffee was encouraged for trade with the former Soviet Union. Despite these earlier beginnings, the total area of land planted with coffee was never very significant, achieving a peak of only 4000 *mu* (one hectare is equal to approximately 15 mu) in the 1960s (Hu, 2014).

Contrary to the usual speculation, the increase in production appears to be only indirectly linked to domestic consumption. Instead, the increase was driven by investments made initially by export-oriented international firms, with Nestle being a major player. In 1988, Nestle established an instant coffee factory in Guangdong Province,

Figure 2. *Map of Yunnan coffee areas.*

which was reliant on imported raw coffee beans, prompting the government to encourage Nestle to develop a local supply base. In response, and also driven by corporate desires to diversify its supply source, Nestle established an office in Kunming, capital of Yunnan, in 1991. By 1997, Nestle had established agricultural assistance services across Yunnan and provided training for more than 16 000 farmers (company representative, pers. comm., Puer city, November, 2016), and has since been the largest single buyer, performing a pivotal role in stimulating regional production. Yunnan

produces Arabica coffee, whilst instant coffee manufacturing generally relies on imported Robusta. Another global lead firm, Starbucks, followed Nestle by establishing its own sourcing operation in Yunnan in 2009, through a joint-venture with a local agri-business company, apparently in response to similar encouragement from the Chinese government as the firm expanded its retail presence along China's urbanized eastern seaboard. By 2017, many of the major international trading companies, including Ecom Agroindustrial, Neumann (indirectly), Louis Dreyfuss, and Olam, were actively sourcing coffee from Yunnan for export.

The sourcing strategies of these international firms are relatively similar, although the two manufacturing firms tend to engage more intensely in farmer development initiatives. In 2016, Nestle opened a new Nestle Coffee Centre in Puer, comprising a training centre, a laboratory, a quality control lab and a modern warehouse. Strategically, it is part of a plan to reinforce supply to two manufacturing facilities located in China, while also supplying facilities elsewhere in the world. In 2016–2017, Nestle operated several collection stations across Yunnan, while Starbucks also established a smaller-scale farmer support centre in 2012. Both companies ultimately depend upon supply from small farmers, farmer cooperatives and small to medium domestic enterprises. These international firms tend to enforce relatively strict production and supply standards that require traceability, such as the 4C Coffee code, Starbucks CAFÉ Practices standard and the Nespresso program.

Strong international demand, and the involvement of these global lead firms in encouraging production, has meant that coffee cultivation has exceeded government plans. The Yunnan government planned, in 2010, to expand the plantation area to 1 million mu by 2020 (DRCYP/DAY, 2010), a target that was actually surpassed in 2013 (Puer City Government, 2016). Rapid expansion can be attributed to relatively high market prices from around 2009, coinciding with an outbreak of leaf rust in Colombia that affected global Arabica supply. Although subdued prices have since resulted in some farmers replacing coffee with other cash crops, the expansion of new coffee plantations has exceeded this replacement.

Institutional support for Yunnan's coffee industry is fragmented, and tends to be dominated by the relationship between the state and selected firms. Prefectural level governments have been relatively active in supporting the industry, especially the Puer Government, which welcomed Nestle's initial investment during the 1980s. Puer also established the first official unit (The Office of Coffee Industry) in 2012, and the 'Bureau of Tea Industry' was re-structured into the 'Bureau of Tea and Coffee' in 2015. The Puer government also included the coffee industry in its 5-year master plan during both 12th (2011–2015) and 13th (2016–2020) periods, while allocating 200 million RMB (31 million USD) of funding from various sectors (financial, agricultural, forestry, poverty alleviation and resettlement activities) for developing coffee farms (Zheng, 2015). In contrast, Dehong and Lincang prefecture governments have both supported single large firms to have near-monopoly status as drivers of coffee development in their prefectures (Hogood in Dehong and Linfeng in Lincang, respectively).

While reliable data on domestic coffee consumption in China is difficult to obtain, the ICO (2015) has inferred consumption from available data on production, exports and imports, which indicate that consumption has increased nearly ten-fold between 2007 and 2014 (Figure 1), but at a low annual per capita level of 0.08 kg (ICO, 2015). As is common in many emergent coffee-drinking cultures, Chinese consumers currently prefer instant coffee (commonly produced from Robusta beans), which

constitute 99 per cent of retail sales by volume (ICO, 2015). The Chinese consumer market, still with significant growth potential, is currently supplied by imported raw materials and processed products, while Arabica production is primarily exported as green beans.

Positioning China within the global value chain for coffee: a trade-based analysis

We can generate insights into China's position within the GVC for coffee by more closely examining international trade data. Based on the Harmonized Commodity Description and Coding System (HS codes), the international trade in coffee can, for our purposes, be disaggregated into: i) unprocessed green coffee beans (HS901110); ii) roasted coffee (HS901210); and iii) coffee extracts (soluble or instant coffees, HS210112). Figure 3 shows the growth of China's international trade in these three coffee categories since 1998, and how trade is dominated by movements of green beans. This is not unusual globally, as green beans are generally processed into roasted or soluble coffee near sites of consumption, and China's international trade in processed coffee products is actually quite high comparatively. During the 1990s, China developed a coffee manufacturing base, with exports primarily directed towards Hong Kong, which has absorbed around 70 per cent of China's soluble coffee exports since 1998. In terms of value, moreover, soluble coffee exports are more valuable than green bean exports (Table 2).

The reason for China's active involvement in both the import and export of coffee products becomes evident in Figure 4, which shows how China's trade is oriented towards very different market segments in terms of quality and price, and Table 3, which shows the three major trading partners for each category. China imports higher priced roasted coffees, mainly from the USA and Italy. International coffee brands are well received in China, dominated by Nestlé with a 66 per cent retail value share in 2016, with the market slowly moving towards premium brands (Euromonitor, 2017). China also imports higher priced soluble coffees from regional trading partners in

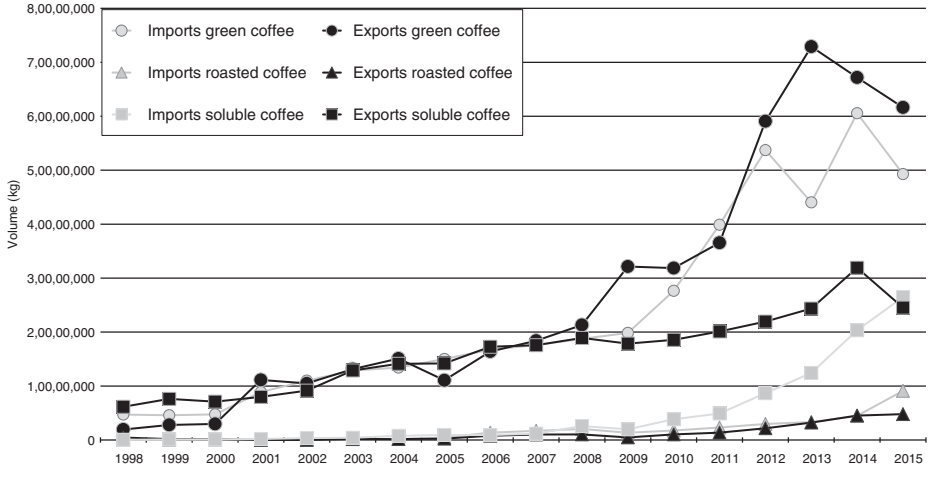

Figure 3. *China's trade in coffee products (volume) from 1998–2015.*
Source: Figure prepared by authors based on data obtained from UN Comtrade, 2017.

Table 2. China's 2015 coffee imports and exports.

Commodity	Imports		Exports	
	Volume (kg)	Value (US$)	Volume (kg)	Value (US$)
Green coffee	49,276,673	119,096,129	61,637,906	179,786,686
Roasted coffee	9,099,861	102,196,668	4,778,155	47,361,317
Soluble coffee	26,488,958	203,125,733	24,527,300	208,244,957

Source: Table prepared by authors based on data obtained from UN Comtrade, 2017.

Indonesia, Malaysia and Korea. In terms of green beans, however, the price level of China's exports has been consistently higher than its imports. Figure 5, furthermore, shows how the price of China's green bean imports follow very closely the prevailing international price for Robusta coffee, and it is this variety that it imports primarily from Vietnam and Indonesia. China's green bean exports are certainly higher priced than its Robusta imports (Figure 4), but Figure 5 shows how Chinese green bean exports are generally traded at a discount to the 'Other Milds'[1] category in the world market. China is an increasingly important source of Arabica coffee for major buyers in North America and Europe, where it appears to enjoy a niche as a somewhat low-cost source of commercial grade Arabica coffee. China, then, has engaged with the global value chain for coffee in a complex myriad of ways.

Nestle's early investment in soluble coffee manufacturing in China provided opportunities for value adding to imported green beans, sourced primarily from regional partners in Southeast Asia. This business model was later adopted by other Chinese companies, including a Yunnan coffee producer, Hogood, which has become one of the three largest soluble coffee manufacturers in China, and is also intimately involved in Yunnan production sites. Strong Chinese demand for instant coffees has also provided further opportunities for upgrading within Indonesia, Malaysia, South Korea and Vietnam, who have all increased their sales of soluble coffee to China over the last five years. Meanwhile, China's coffee trading relationship with countries in North America and Western Europe has, so far, remained a classical north-south one based on green bean exports and imported roasted products.

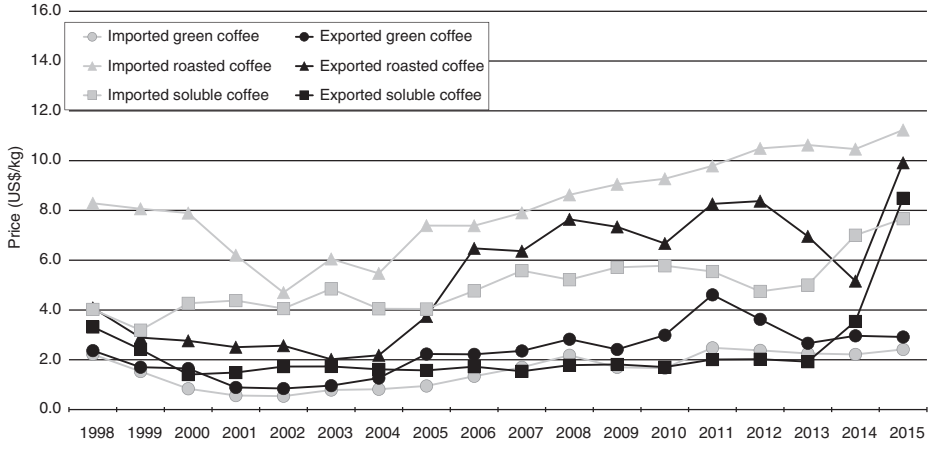

Figure 4. *Average prices of China's trade in coffee products.*
Source: **Figure prepared by authors based on data obtained from UN Comtrade, 2017.**

Table 3. China's major coffee trading partners (based on 2011–2015 average values).

Imports			Exports		
Green Coffee	Roasted Coffee	Soluble coffee	Green Coffee	Roasted Coffee	Soluble coffee
Vietnam	USA	Malaysia	Germany	Philippines	Hong Kong
Indonesia	Malaysia	Indonesia	USA	Hong Kong	Rep. Korea
Brazil	Italy	Rep. Korea	Belgium	Vietnam	Vietnam

Source: Table prepared by authors based on data obtained from UN Comtrade, 2017.

Sourcing strategies by downstream coffee firms

China's emerging position as an important coffee producer, consumer, exporter and importer is beginning to reshape global, and particularly regional, coffee value chains. As coffee production within China develops, Chinese firms are assuming an increasingly strategic role within Yunnan and in neighboring countries, and have begun challenging the prior dominance of international commodity traders and roaster lead firms elsewhere. At the same time, the Chinese state, at various levels, is actively enabling Chinese firms to play increasingly strategic roles within coffee value chains and as a vehicle for achieving broader policy objectives related to both agricultural modernization within China and geopolitically through regional economic integration.

Agriculture within China has been significantly restructured over the past three decades, accelerating rapidly since a series of policy changes under the name of 'agricultural modernization' in the early 2000s, which encouraged land consolidation and the vertical integration of agricultural supply chains. There are many aspects associated with these changes, including: an increase of large farms and agribusinesses (Gong & Zhang, 2017; Zhang & Donaldson, 2008; Schneider, 2017); increasingly heterogeneous land-tenure practices (Krusekopf, 2002); complex and evolving production relations (Guo *et al*., 2007, Zhang & Donaldson, 2008); and the increasing production of cash crops for both domestic and export markets (Lohmar *et al*., 2009).

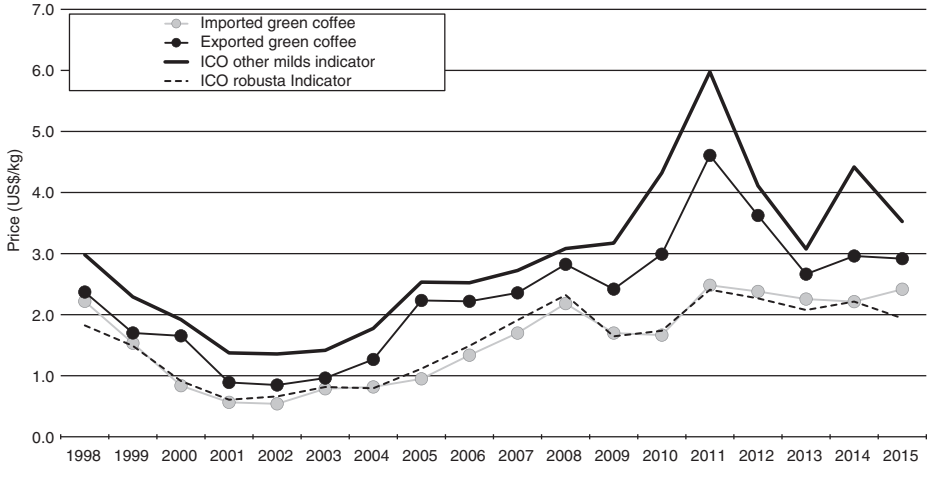

Figure 5. *Average prices of China's trade in green coffee relative to ICO indicator prices.*
Source: **Figure prepared by authors based on data obtained from UN Comrade, 2017; ICO, 2017.**

'Nurturing large transnational agricultural enterprises' was one of the main tasks under China's National Agricultural Modernization Plan (2016–2020). This is in line with its ambitious plans to reshape global patterns of agricultural trade and to increase its influence in global markets (Gooch & Gale, 2018). Perhaps the most significant global player in this area is COFCO, one of the largest state-owned enterprise (SOE) in China. Following its full acquisition of Hong Kong based commodity trader Noble Agri in 2015 and Dutch trader Nidera in 2016 (COFCO Agri, 2016), *Reuters* (2018b) suggest that COFCO's broader strategic aim is to challenge the global dominance of the so-called ABCD quartet of world-leading commodity traders (Archer Daniels Midland, Bunge, Cargill and Louis Dreyfus) and to perform a strategic role in sourcing food commodities for China. COFCO now has extensive logistical capabilities connected with coffee value chains reaching into all major producing countries, including Vietnam, Indonesia, India, Brazil and Colombia (COFCO Agri America, 2016). Annually, COFCO trades a globally significant volume of coffee, with plans to trade five million bags of coffee in 2018 (around 300 thousand tonnes), up from four million bags in 2017 (*Bloomberg*, 2018), an amount roughly equivalent to four per cent of global production. COFCO also claims to supply raw coffee to 95 per cent of all roasters in China, but the quantity is unclear (COFCO Coffee Weibo, 2018). COFCO, however, does not limit itself to the Chinese market, and export data collected from Indonesia suggest that COFCO's key market destinations from Indonesia (at least in 2017) were in the USA, Thailand and the Middle East, and included global lead firm manufacturers.

While COFCO is already a globally-influential trading firm, and could be considered as a lead firm due to this global reach and influence along various supply chains, it also holds further ambitions to establish itself as a leading manufacturer. Such a strategy is consistent with the company's prior involvement in food processing and branding with products that include wines and spirits, tea, Coca-Cola bottling, and ice cream (COFCO, 2018a). It has established its own coffee brand 'Kofno', opened a number of coffee shops under the same name in cities like Beijing and Shanghai, and sells its product online. While the market share of Kofno is difficult to determine, the brand is nevertheless promoted by the Chinese government, and was designated as the 'official coffee brand' for the 2014 APEC Summit and 2015 World Championships in Athletics, both held in Beijing (CCPIT, 2014). Participation in a GVC as a 'strategic supplier' to global lead firms has been demonstrated in other contexts to present a viable upgrading pathway to higher value operations (Gereffi, 1999). Neilson *et al*. (2018) further describe how the Singaporean firm, Delfi, has even abandoned its supplier role (of intermediate chocolate products to global lead firms) to focus on becoming a global lead firm (as a chocolate manufacturer) in its own right.

In addition to supporting large state-owned enterprises such as COFCO, the Chinese government also attempts to scale-up and deepen processes of industrialization of its domestic agriculture enterprises. Since 2008, the government has been promoting New-type Agricultural Operators (NAOs), including dragon-head enterprises (DHE), farmer cooperatives, specialized large farms and family farms, to develop and modernize the rural economy. This policy is especially pertinent to the development of China's domestic lead firms. Modernization is associated with larger economies of scale, and this generally requires merging and transferring rural land use rights from individual or collectively owned farmlands to larger entities. When use rights are transferred, the land remains collectively-owned and the contract rights remain with the farmers. This is a departure from the earlier household responsibility system (HRS) policy in the 1980s, under which land transfer remained illegal, ownership remained with

collectives, and use rights were allocated to households (Ye, 2015). Since 2008, state policies have institutionalized and significantly accelerated the practice. While small farmers have been the most significant producers of coffee in Yunnan, large integrated companies are rapidly catching up and starting to compete directly with the dominant international firms. Not coincidently, these recent policy shifts correspond to the rise of two large domestic coffee companies in Yunnan, Hogood and Linfeng, both of whom have obtained access to large swathes of agricultural land.

Smallholder production dominates in the two prefectures (Baoshan and Puer) where coffee production was first established in Yunnan, with supply chains still predominately linked to global lead firms. In contrast, Hogood and Linfeng dominate production landscapes in Dehong and Lincang prefectures respectively. These firms are seen to be handmaidens for modernization. The domestic firms tend to operate under the model of 'firm + production base + farmer', a model heavily promoted by all levels of government in China as part of an agricultural industrialization agenda. This model refers to the cooperation between company and rural households for agricultural production combined with processing, sales and exporting. The 'firm' can be a private business, a *danwei* (state-associated work units) or a farmer cooperative, which often provides finance, technology and inputs, while recruiting farmers into production. The term 'production base' is somewhat unclear, but generally refers to the land that may be leased or transferred to the firm, in which case it is called a self-owned base. In other cases, there is no contractual arrangement for the land, and the 'base' symbolizes cooperation between farmers and firm. As this model is encouraged by government, a lot of small and medium companies are adopting it. Because the concept of 'base' is often symbolic, many companies tend to exaggerate the extent of their bases (often for the purpose of accessing government subsidies), and a lot of bases appear to be overlapping with each other.

In providing a framework for these approaches, Table 4 presents a practical typology, modified from Zhang and Donaldson (2008), to summarize the observed coffee production relations in Yunnan, presented with decreasing agency for labour. Nestle reported that nearly 90 per cent of their registered suppliers were small farmers cultivating less than 5 hectares (75 mu), but small firms (and cooperatives) comprise 73 per cent of their supply by volume. Individual landholding sizes range from a dozen to several dozen mu of land, which is larger than average landholdings across rural China (less than 10 mu, according to Huang *et al*., 2012). For Type A farmers, Nestle and other international firms have been the most important buyers, and tend to be more active in implementing supply chain sustainability programs, and are able to exert some level of control over otherwise independent farmers through market mechanisms. While formal contracts (Type B) are rare, a domestic coffee chain store based in Shanghai (Seesaw) was piloting its 'commitment purchase' for a second year in 2018, with a dozen co-operatives and small companies following the processing methods requested by this company. The widespread reallocation model (Type C) allows a more direct degree of control by firms over production since they can reallocate production rights from the leased land to more productive or malleable 'contracting households', or *chengbaohu*. Smaller firms (mostly in Puer and Baoshan) may lease dozens of hectares of plantation from fellow villagers or village groups, while large companies (e.g. Hogood or Linfeng) often have formalized land rights transferred to the companies, which eventually control more than 6000 hectares. As land use rights belong to the firms, the harvest must be sold to them, while the *chengbaohu* receives production-based profits. Conventional plantations with labour entirely removed from the means

Table 4. Typology of labour and its relationship with coffee companies in China.

Type	Labour type	Operation	Note	Example of coffee company
A	Independent farmers	Have no obligation to sell to particular buyers.	Farmers may also rent land from fellow villagers.	Nestle, Starbucks, international traders
B	Contract farmers	Farmers enter contracting relationship with agribusiness.	In Yunnan, the contract is rarely maintained if it is not established based on land ownership (see Type C).	Seesaw
C	'Contracting household' (*chengbaohu*) are farmers who contract a plot of land from firms.	The company leases collective or household-contracted land and then re-allocates plots to farmers to work.	This is the most common case across Yunnan, operating at various scales.	Hogood, Linfeng
D	Labourers working on a plantation	The firm leases land and hires labour (smaller independent farmers also frequently hire labourers, especially during harvest season).	This labour may be local, from other regions of Yunnan, China or internationally.	Hogood, Beigui
E	Cross-border production	The company leases land across international borders and hire local workers.	This model moves beyond Chinese labour and land supplies.	Hogood, Manxieba

of production (Type D) have also been established, but are less widespread. Some firms have also leased land across international borders into Myanmar, Vietnam and Laos, although the extent of Chinese involvement and the modes of production in these areas is poorly documented.

International coffee firms, then, are largely restricted to relationships with independent farmers (Type A), or through small firms that contract land through Type C arrangements, while larger domestic firms prioritize having their own controlled production base, where land use rights belong to the business (Type C and D). State support for this mode of operation is a crucial factor reshaping supply chain relations within Yunnan, as exemplified through the operations of Hogood, a national-level dragon-head enterprise.

Dragon-Head Enterprises (DHEs) in the coffee sector

The role of DHEs is crucial to understanding the rising influence of domestic Chinese coffee firms. The discursive framing of DHEs was established by former Premier Wen Jiabao, who stated that 'supporting DHE is supporting agriculture and supporting farmers' (*Xinhua News*, 2000). These are agribusinesses with strong capacity for processing and marketing, and who the state considers likely to contribute to regional economic development. The status of a DHE is officially bestowed by different levels of government, ranging from national to county levels. In the coffee sector, Hogood is a

national-level DHE and Linfeng is a provincial level DHE. Both companies receive significant policy and financial support which enables land transfers, a crucial factor to build extensive production bases, alongside access to capital from state-owned financial institutions. These advantages are enabling the DHEs to become potential lead firms as further opportunities emerge in the growing Chinese coffee market.

DHEs receive direct support in the forms of finance and tax benefits, with state-owned banks required to cap interest rates for DHEs (Ministry of Agriculture, 2000) and even provide zero interest loans. Moreover, financial support from central and local governments is allocated to DHEs to establish their production base (including for land leases). The criteria for a national-level DHE includes the scale of operation, the ability to work across the entire value chain, and their competitive market advantage, but criteria can vary geographically. In a western province like Yunnan, it must own assets over 20 million RMB, generate over 50 million RMB revenue per year, and have a debt ratio of less than 60 per cent (Ministry of Agriculture, 2001). The company should also own its own production base, and be equipped with a complete supply chain including production, processing and marketing, with a stable and strong market share. DHEs have been promoted as key agents for vertical integration in order to achieve the agricultural modernization agenda promoted by the state (Zhang & Donaldson, 2008), while also facilitating competitive roles in higher value nodes of the value chain.

Hogood was founded in 1994 and supplied coffee to Nestle prior to 2007, suggesting a familiar upgrading pathway for Chinese manufacturing firms, whereby access to markets and knowledge was attained through an initial relationship with a global lead firm. Knowledge transfer is critical. Soon after Linfeng secured crucial investment from a Yunnan-based SOE in 2017, it recruited a long-time former senior Nestle employee to source coffee in Yunnan. A similar strategy was adopted by COFCO, who had earlier recruited a chief procurement officer from global beverage and confectionary giant Mars Inc, to head up their coffee division in 2017 (*Reuters*, 2018a).

Hogood's production now covers an area of 18000 ha and involves approximately 60 000 households (Hogood Coffee, 2016a). Unlike international companies who mostly purchase green beans, Hogood generally buys cherries directly from households. While much of its production is currently for export as green beans, Hogood has ambitions to become not only China's largest but also the 'world's largest soluble coffee enterprise' (Hogood Coffee, 2016a). Currently, Hogood is one of the three largest soluble coffee manufacturers in China, alongside two foreign-owned firms: Nestle and Jiangsu Acesfoods (which belongs to Universal Robina Corporation, a Philippine company (COFCO Coffee Weibo, 2018)). The current processing capacity of Hogood's factory is 13 000 tonnes/year, with an additional 20 000 tonnes to come online in the next few years (Hogood Coffee, 2016b).

Hogood's arrangement of capital, land and labour is complex. Eighty per cent of their production area is a 'self-owned base', corresponding to Types C and D, and land transfer is encouraged by the Yunnan government, with specific reference to coffee production (DRCYP/DAY, 2010). Land is usually transferred collectively from village groups, although the land transfer contracts are diverse, with periods ranging from 30 to 70 years. In some instances, we were told of one-off payments for the entire lease, while elsewhere an initial payment was made for the first 10 years, with a promise of a second payment after that. The size of contracted area from Hogood to *chengbaohu* (Type C contracting household) varies, with a typical household without hired labour managing an area of 1 to 2 hectares. Hogood would provide inputs (seedlings

and fertilizers) and monthly management fees in the form of a loan, while the households are responsible for their own labour and receive income from cherry sales. Hogood is able to discipline households with a minimum production of 800 kg/mu required to maintain contracted status. The protected price offered by Hogood is adjusted according to market signals: in 2016/2017, the price was 2.5 RMB/kg which was slightly lower than the market average. Labourers are hired either by *chengbaohu* (for Type C operation), or directly by Hogood (for Type D), and were being paid at a rate of 60–70 RMB per day in 2017, with board provided. The other 20 per cent production base is a 'symbolized' base, where Type A farmers cooperate with Hogood in a loose relationship, tending towards a Type B contract. This occurs when land is limited or too highly fragmented to transfer. Since Hogood is the monopoly buyer in Dehong, the majority of such coffee farmers in the prefecture tend to sell their product to the firm. In reality, the state (often local governments) gives DHEs much more than what is stipulated in formal regulations. They provide permits for opening village-owned forest, mobilize farmers into contracting relationships, and facilitate land transfers (in some cases using coercive measures, see Luo *et al*., 2017; Gong & Zhang, 2017). In the cases of Hogood and Linfeng, it seems likely that both prefectural governments have been actively mobilizing land transfers from farmers, considering the unusually large areas of land transferred, whilst transfer rates in Yunnan are reportedly much lower (18.8 per cent) than the national average of (35 per cent) (Yunnan Agriculture Department, 2017). Indeed, land transfer targets are set by the central government to encourage cooperation between local governments and agribusiness to establish production bases, while the ability to have extensive areas of land transferred has become a criterion for a company to be granted DHE status.

DHEs attract funding from State-Owned Enterprises (SOEs) as a form of indirect 'assistance' from the state, and both Hogood and Linfeng have had significant investment from SOEs. For example, Chongqing Energy Investment Consortium, with 10 billion RMB of registered capital, became a major investor in Hogood in 2016, and Yunnan State-Owned Capital Operation is slated to be the largest shareholder of Linfeng, when we conducted interviews in 2017. In 2012, Hogood announced that COFCO would become a major investor and, although the deal does not seem to have since come into effect, it nevertheless signalled the opportunities for Chinese DHEs to develop value chain opportunities through lead firms like COFCO.

High levels of state support for DHEs was exemplified by an event held subsequent to the 2016 Association of Science and Information on Coffee (ASIC) Conference in Kunming, which itself was strongly supported by the government. After the conference, hundreds of international participants were transported by complimentary flights to Hogood's base in Mangshi city for a 2-day Asia Coffee Annual Conference (ACAC), an event hosted by Hogood. The meeting was held in the 'Hogood Conference Centre', purpose-built for the occasion, and well attended by prefecture government officials, including party leaders and more than 200 officials from various departments, extolling the need for China to lead the global coffee industry. The event promoted the idea that Hogood would be 'the glory of China' by becoming the world's largest coffee company. The 'glory of China' narrative ensures that it is discursively imperative for the government and the public to support the company in order to glorify the country. A second ACAC was subsequently held in 2017, during which an 'Asia Coffee Association' was formed, with Hogood's owner elected chairman, and a new Certificate for Asian high-altitude coffee bean, 'Abody', was announced. Regardless of the minimal impacts of these initiatives to date, they demonstrate the ambitions of Chinese firms and

governments to lead regional coffee supply chains. While the DHE policy is formulated by the central government, local governments are instrumental in making necessary conditions for Chinese lead coffee firms like Hogood to integrate vertically and to develop as a 'national brand' *(minzu pingpai*). Policy supporting agricultural modernization is providing Chinese DHEs, like Hogood and Linfeng, with access to essential assets like capital, land and labour. In addition, the policies are also helping the DHEs to compete with global lead firms such as Nestle and Starbucks.

Internationalization through cross-border trade

State support for Chinese agribusiness is also helping to expand China's influence on the coffee value chain into neighbouring countries through cross-border trade and investment into Myanmar, Laos and Vietnam. This is occurring at a time when China has been actively enrolling these countries through the Belt and Road Initiative (BRI), a geopolitical agenda pursued primarily through economic partnerships. Cai (2017: 5), however, explains how the BRI should also be understood as an attempt to 'create a regional production chain, within which China would be a centre of advanced manufacturing and innovation, and the standard setter'. Enterprises like Hogood, which displays a BRI map at the entrance of its factory, tend to connect with this agenda explicitly in order to benefit from government support.

The extension of coffee supply chains through Chinese capital into Southeast Asia (particularly Vietnam and Indonesia) is already well established with COFCO's recent acquisitions, and cross-border trade in and out of Yunnan appears to be gaining pace. Although these operations remain relatively small-scale at present, they are supported by host governments who grant land concessions. Laos is a key target for coffee investment and, according to data presented by the Food and Agricultural Organization in Table 1, coffee production in Laos has actually increased at a rate similar to that in Yunnan over the last decade, apparently stimulated by Chinese interests. One Yunnan-based company has been investing in coffee production in northern Laos since 2011, ostensibly to eliminate opium production (Zhao, 2017), with plans to establish a total of 12 000 hectares of coffee plantation in Phongsali Province (CSD Coffee, 2018). The company claims that if the entire proposed area is in production, the total output from the company could reach to 160 per cent of the entire country's current coffee production (ibid). While this scale of production has yet to be reached (less than 25 per cent of the proposed area had been developed by 2017), the ambitious plan and its political agenda has put the company in the spotlight. In 2017, the company not only won recognition from the central government as one of 'China's top 100 agriculture enterprises for international collaboration', but China's national TV station also features the company's project as the story exemplifies China's BRI success (CNTV, 2017).

The expansion of coffee into the neighbouring region appears to be following a similar pattern to earlier waves of commodity expansion across these same borders. The development of the rubber industry in recent decades, for example, provides a template for such expansion, and one that has had significant impacts on regional economies, local livelihoods and ecosystems (Ahrends *et al*., 2015). During the 1980s, rubber plantations in Yunnan were initiated and heavily supported by the state in the form of state farms, and were subsequently adopted by Yunnanese farmers. This rubber boom then cascaded across national borders into areas such as northern Laos and Kachin state of Myanmar under the influence of Chinese capital and knowledge (Fox & Castella, 2013). In these areas, Chinese rubber enterprises often established contract

farming or gained state concessions, and both practices are currently being pioneered by Chinese actors in the coffee industry. While the expansion of rubber from Yunnan occurred more or less autonomously, the current expansion of the Chinese coffee industry is taking place in an environment of much stronger state support for nascent lead firms. The platform of an earlier coffee production base in Yunnan appears to have provided an important arena for skill and knowledge development amongst Chinese entrepreneurs that we expect will result in further enrolment of these neighbouring countries into a Chinese-oriented set of coffee value chains. It seems likely that this mode of cross-border internationalization will ensure a pivotal role for Chinese firms in regional coffee chains irrespective of the extent of continued agricultural production within China's borders.

Conclusion: The rise of Chinese lead firms and implications for regional development

Our study of recent developments in the Chinese coffee sector has generated insights into processes reshaping the governance of contemporary GVCs. Chinese firms are emerging to perform a number of functions in the contemporary GVC for coffee. We have examined the rise of Chinese lead firms in GVC contexts where their presence was previously muted, and identified processes through which the Chinese state has facilitated the emergence of these firms, where the state has attempted to reorient value chain governance structures by reshaping the institutional environment both within China and abroad. Shifting end markets towards China are clearly an important factor facilitating the rise of Chinese lead firms. However, in the case of coffee, this process has been further assisted by the concurrent emergence of a substantial agricultural production base within Yunnan, where the state is able to intervene to support the rise of lead firms, especially in the form of Dragon Head Enterprises (DHEs). This suggests a more complicated set of upgrading pathways than is usually considered in the literature.

The early entry of foreign lead firms (particularly Nestle) in both manufacturing and supply chain development in China was instrumental in establishing the industry, and facilitated later firm upgrading, but it may eventually be eclipsed by the prominent role being played by the DHEs (at least in terms of influence on agricultural production in Yunnan if not in terms of consumer market share) and abroad by COFCO. Chinese lead firms are provided with preferential access to agricultural production bases within Yunnan, providing an important platform for the reliable supply of raw materials from which they are then able to upgrade to more profitable chain nodes. The active support of the state has encouraged the expansion of Chinese capital into supply chains and production systems by further favouring large agribusinesses over smallholders, or more commonly through the 'contracting household' model. This is having significant implications for the way land is being assembled as a resource in rural Yunnan, although the environmental and social consequences of this process remain unclear. Similar models of land assemblage are now being pursued through cross-border investments, particularly in Laos.

The dominant role played by the state in the coffee sector is a departure from post-1989 global trends, whereby the GVC for coffee has been deregulated and then effectively re-regulated through private sector governance, including the introduction of sustainability standards. The commitment of Chinese coffee firms to these same sustainability standards is unclear at this stage, although it seems likely (drawing from Cai,

2017) that the state is likely to use standards, including new Chinese-authored standards, as a key vehicle to establish chain governance. A recent sustainability report published by COFCO (2018b), for example, indicates a broad commitment to sustainability, but favours in-house verification codes over existing third party schemes.

The varied supply chain relationships between agribusiness and coffee farmers in Yunnan indicate some of the diverse pathways through which land and labour is being mobilized for accumulation within modern China. The discursive power of state narratives, with respect to agricultural modernization, which effectively limit the possibility of alternative modes of living in rural spaces, has ensured that large areas of land have been assembled for commodity production. Although the specific land tenure and state support structures are peculiar to China, the very forthright involvement in agricultural production by downstream capital appears to reflect a process of rural development that may have implications elsewhere as Chinese agri-capital becomes more influential abroad, as discursively supported by the BRI. Further research, however, is required to examine the specific modes of value chain governance enacted by rising global lead firms such as COFCO, as well as smaller firms active in the cross-border trade, to determine the likely effects on processes of rural development in the region.

China's increased coffee consumption and subsequent import demand has already provided upgrading opportunities not only for firms within China, but also for other regional actors. Roasted and soluble coffee imports have rapidly increased, both in absolute terms and as a proportion of total import volume. To date, Malaysia and Vietnam have been key beneficiaries, where the former relies itself on imports of green beans from Vietnam and Indonesia, while Vietnam is a major producer itself. As a result, the concern that Chinese demand would result in increased competition for manufacturers across the region, and even deindustrialization, has not yet played out in the coffee sector. Indeed, Cai (2017) emphasized how the Chinese states seeks to address the country's excess manufacturing capacity by migrating surplus factories abroad. This may then create further industrial upgrading opportunities in the region. Since soluble coffee products for the Chinese market tend to rely on Robusta beans, which are not currently grown in China at any meaningful scale, these opportunities are expected to persist for some time, or at least until China's ambitions to become the largest instant coffee manufacturer in the world are realized.

The increasing volume of green bean imports into China is also changing the structure of value chains extending back into key regional producers, such as Indonesia and Vietnam. The emergence of lead coffee firms from China (including both roasters and trading companies such as COFCO) is likely to drive new modes of value chain governance back to sites of production, perhaps favouring models similar to those described in Yunnan rather than the certified supply chain model currently preferred by established lead firms from the West. The regionalization of value chains, led by Chinese firms, is likely to offer new opportunities for both regional processors and green bean suppliers across Southeast Asia in particular, although the implications for both livelihoods and natural landscapes of emergent Chinese sourcing practices require further research.

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Endnote

1 China's Arabica coffee production is not officially categorized as 'Other Milds', but this category of Arabica is the most comparable (where categorization is essentially based on processing method).

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