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Upgrading in Primary Commodity Value Chains: the Cases of Cocoa and Coffee

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by Mariangela Parra-Lancourt

ABSTRACT

Despite the growth in specialty markets for some commodities (coffee, organic beef and cereals, to name a few), the bulk of primary commodities traded use as benchmark the prices quoted in international exchanges. The paper shows that the bubble in primary commodity prices observed in the 2000s was relatively short-lived but significant, especially if compared with manufacture export prices from developing countries. The analysis also shows that producers of (mainly) tropical commodities, harvested mostly in developing countries due to their weather requirements, benefitted the most from the boom observed in the 2000s.

The paper explores indicators of trends in the value chains associated with primary commodities, with a focus on (mainly) tropical commodities. The analysis shows that for most products the unit values for developed countries are higher than those for developing country exports. It focuses on the analysis of the cocoa and coffee value chains, given their twin tendency for standardization in the mainstream market and increasing differentiation in the specialty market. The analysis of their value chains shows indications of upgrading in some cocoa related products but not in coffee products. The literature review presented in the paper suggests that the value chains are different, and coffee is less prone than cocoa to upgrading in countries of origin. Upgrading has taken place in cocoa, especially in Africa, and not so much in coffee.

In both cocoa and coffee, the material attributes of the products (the beans) are commoditized, while in-person services and symbolic attributes generated through branding, packaging, retailing and consumption are appropriated downstream in the value chains. Although fair trade began as an attempt to de-commoditize the coffee trade, it is now increasingly driven by large coffee brands as another market-capture tool via a process of 're-commoditization'. In addition, ideas of quality and reputation ("Swiss chocolate is the best") are collective constructs aided by institutional support. The paper suggests that place association through geographical indications may be a promising avenue for de-commoditization of primary products.

1 Introduction

The declining terms of trade of manufactures exported by developing countries relative to developed countries (Parra-Lancourt 2019), together with the boom in commodity prices in the 2000s, invite to reconsider primary commodity exports potential and especially the option of upgrading (strategy of forward integration) in their value chains. The example of the wine industry would suggest that with the right policies, marketing and patience it should be possible to nurture additional value added through processing other products, perhaps especially for (mainly) tropical products that are autochthonous to, and for which harvesting is only commercially viable in, developing countries (Giuluani 2007, Farinelli 2007).

This paper focuses on cocoa and coffee. These two products have been the subject of extensive research in the value chain literature (for an early comparative analysis see Talbot 2002). In addition, the variety of products available for consumption in developed countries seem suggest that demand is not only determined by price but by other aspects that could be captured in the process of adding value in the chain (See Nesto 2010 and the picture below as an illustration in the case of chocolate).

Illustration 1: Specialty chocolate examples

Source: The chocolate journalist blog at thechocolatejournalist.com

The first step in the reconsideration of primary commodity exports is to analyze what happened to primary commodity prices in the 2010s. As Ocampo (2017) shows, the boom observed in the 2000s lasted a decade. The bubble responded largely to the rapid growth of the Chinese economy (Farooki and Kaplinsly 2013, Ocampo 2017), and thus lost steam, and eventually burst, after economic growth in China fell below 8 percent a year in 2012 (see Figure 1 below). In addition, as Ocampo states, "if the pattern of past super-cycles prevails, we may be at the beginning of a long period of weak prices" (Ocampo 2017, p. 13). Section 2 presents further details on commodity prices by type of product.

The second step in reconsidering commodity exports is to put them in the context of their value chains. Besides exporting raw materials at international prices, many developing countries process and export resource-based manufactures. As a rough approximation to their value chain, in **section 3** we analyze export unit values (exports value in US$/exports volume) for the soft (mainly) tropical commodities over all the categories available for each product in international trade statistics. We compare the unit values of exports of developing countries against those of exports from developed economies.

Using traditional export data, we use two very rough measures of upgrading: 1. Higher unit values than developed countries in each echelon of the chain; 2. Faster increases in unit values relative to developed countries. As our main focus is coffee and cocoa, we also include change in total exports. We notice indications of upgrading in some cocoa related products but not in other tropical products. In particular, we notice no upgrading in coffee products using this data in terms of higher unit values for developing countries, or increased participation in processed products.

As we will see, this may be just a reflection of the lack of detail in international trade statistics, that do not reflect the variety of packages and flavors that we have become accustomed to, thanks to the development of specialty coffee (Daviron and Ponte 2005, Roseberry 1996) and pods (Chintagunta and Vitorino, 2018).

It may also be that the value chains are different, and coffee is less prone than cocoa to upgrading in countries of origin. Through a literature review comparing coffee and cocoa, **in section 4** we show that in fact upgrading has taken place in cocoa, especially in Africa, and not so much in coffee, with important exceptions and caveats in both cases that suggest policies to pursue and avoid going forward. The **final section** addresses some of these policies, geographical denomination of origin and intellectual property.

2 Commodity prices in the 21st century

Despite the growth in specialty markets for some commodities (coffee, organic beef and cereals, to name a few), the bulk of primary commodities traded use as benchmark the prices quoted in international exchanges, such as the Chicago Board of Trade, the London International Financial Futures and Options Exchange, the Nairobi Coffee Exchange and the Jakarta Futures Exchange, among others around the world. For example, in the case of coffee the specialty market represents at most 10 percent of total coffee exports (Morris 2019, p. 13), albeit it continues to grow and is already a majority in the retail market. In 2015 the Specialty Coffee Association estimated that specialty coffee comprised 55 percent of the retail value of the U.S. coffee market which was estimated at $48 billion dollars[1].

The international prices of primary commodities are quoted in international exchange markets and thus reflect traditional wholesale transactions in spot and future markets to minimize risk, and further financialization in soft commodities observed in recent decades. Although not the focus of this research, financialization direct impacts on the commodities sectors are significant (Kaplinsky and Farooki 2017, p. 202). The entry of banks and other financial institutions into commodities markets to diversify risk, in a market presumably uncorrelated with stocks and government bonds, gain from arbitrage and speculate (Farooki and Kaplinsky 2013, p. 151) have diluted the relationship between commodities prices, in terms of both their level and their volatility, and the physical fundamentals of demand and supply. This affects the reward structures of key decision-makers, and hence their propensity to invest in the expansion of production (Farooki and Kaplinsky 2013, chapter 7).

[1] https://sca.coffee/research/specialty-coffee-facts-figures

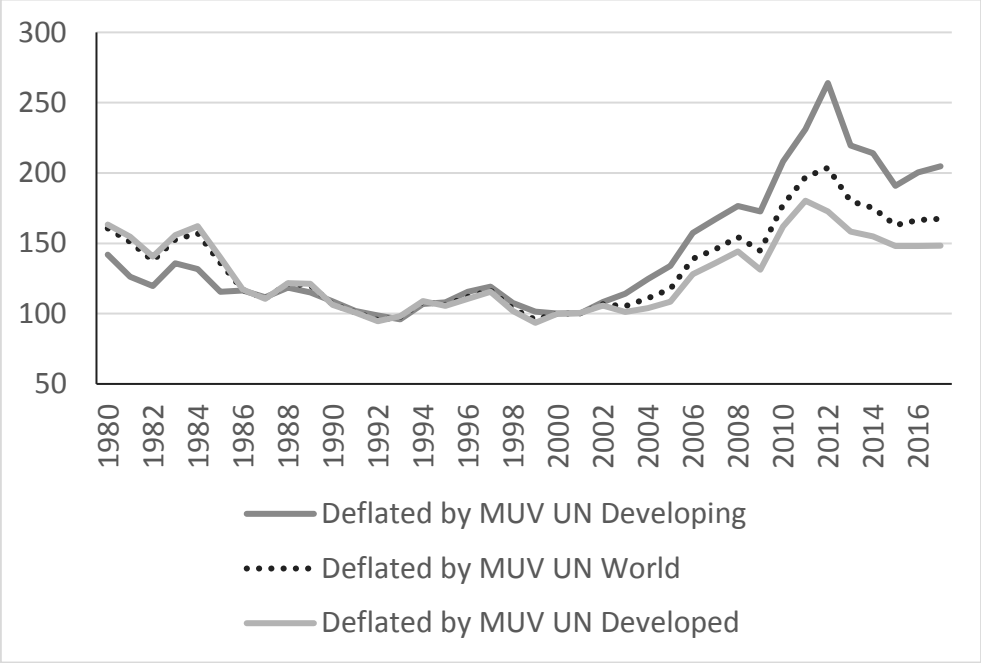
With data until 2009, Ocampo and Parra (2010) suggested that the first decade of the twenty-first century may have seen a positive structural break in commodity prices. Ocampo (2017) and the following analysis shows that the bubble burst in the early 2010s, concurrent with the deceleration of the Chinese economy and the slowdown of the world economy associated with the vestiges of the financial crisis of 2008.

Figure 1 presents real non-fuel commodity prices until 2017.[2]. In the Figure, instead of using the index calculated by the World Bank for the five largest industrialized economies (which was discontinued around 2013), we deflate nominal prices with the three United Nations Manufacture Unit Values (UN MUV) series published in the United Nations International Trade Yearbook.

Using the UN MUV for developed countries, Figure 1 shows that the bubble observed in the 2000s was short-lived and prices had stabilized by 2011 to levels observed in the early 1980s, before the debt crisis in developing countries that caused the "lost decade" in Latin America and also affected Africa. The Figure also shows that, despite being relatively short-lived, the boom was significant, especially if compared with manufacture exports from developing countries. In effect, real prices of commodities relative to manufactures exported by developing countries (see the series deflated by MUV UN developing countries) grew further and seem to have stabilized at a relatively high level.

[2] 2018 data is not available as both the IMF and UNCTAD, primary sources of commodity prices, embarked in a revamping of their websites on the topic.

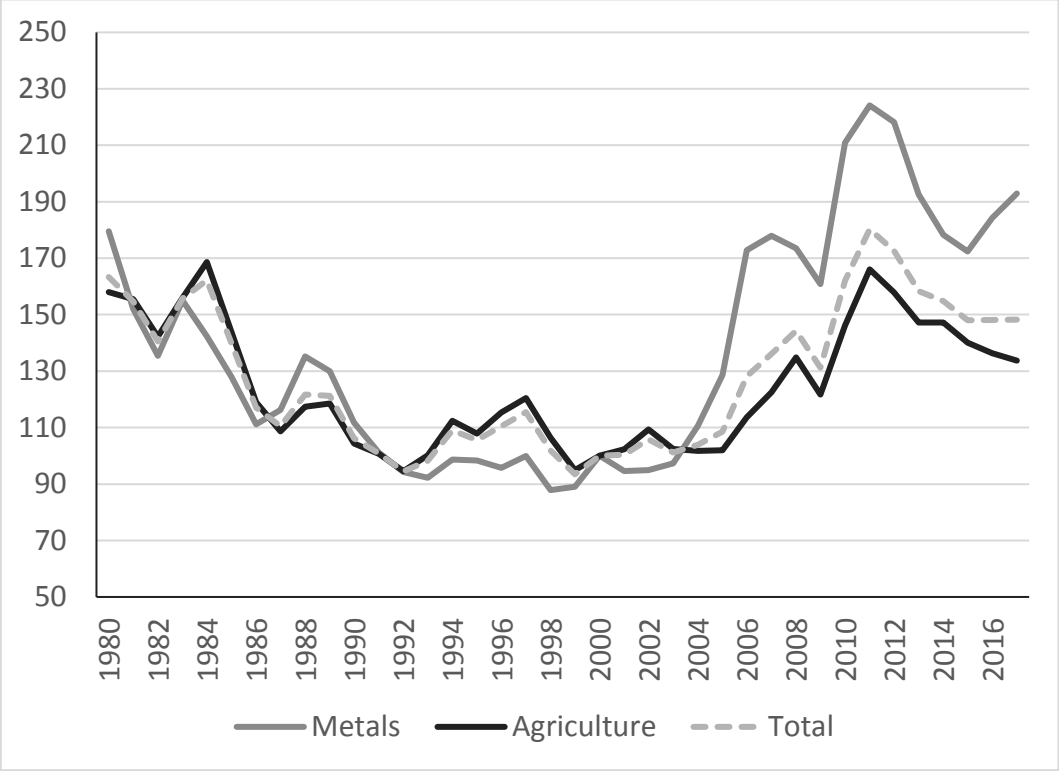
Figure 1: Index of total non-fuel commodity prices, using as alternative deflators three UN Manufacturing Unit Values (MUV) series, base 1980-2017 (2000=100)



Source: Author's calculations based on data from UNCTAD, IMF, World Bank and the United Nations International Trade Yearbook.

Figure 2 presents real commodity prices by type of commodity, using the MUV of developed countries as deflator. It shows that metals experienced a significant boom associated with China's rapid industrialization (Ocampo et. al. 2009, p. 70, Farooki and Kaplinsly 2013). The Figure also shows that agriculture commodity prices have doubled since 2000 and have remained fifty percent higher since the bubble busted in 2011.

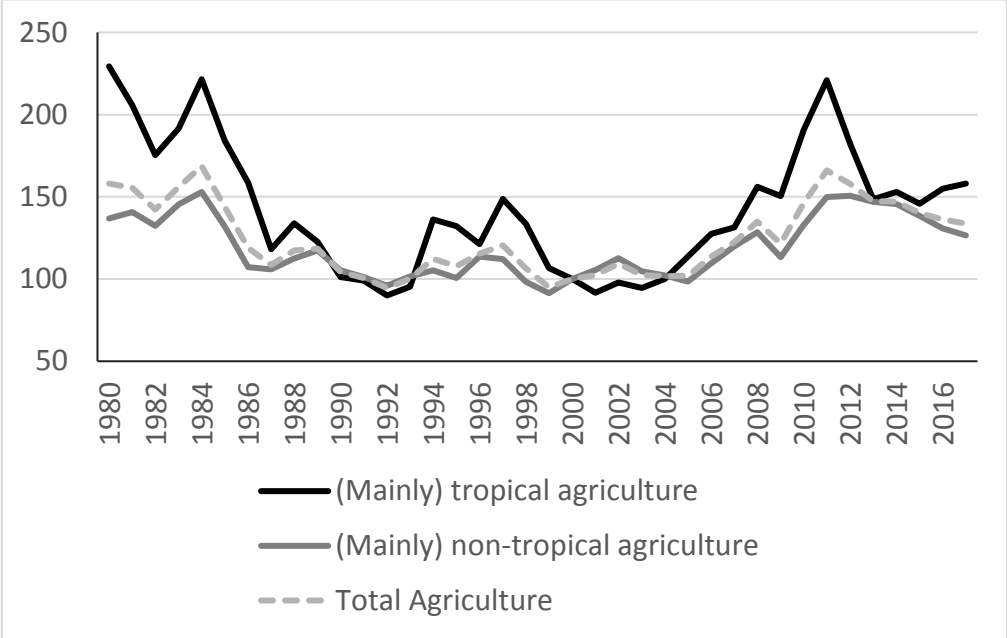
Figure 2: Index of real metals and agriculture prices, deflated with UN MUV for developed countries, 1980-2017, base 2000=100



Source: see Figure 1.

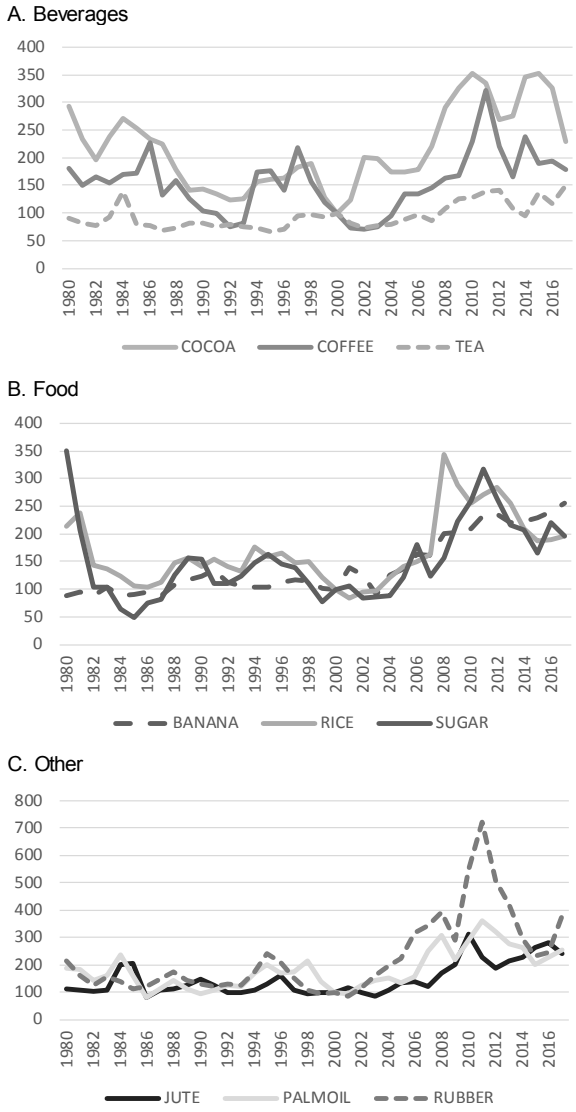
Figure 3, in turn, shows that producers of (mainly) tropical commodities, harvested mostly in developing countries due to their weather requirements (Talbot 2002, p. 702), benefitted the most from the boom observed in the 2000s. After the bubble burst, prices of tropical commodities fell abruptly but still have remained around double the levels observed in 2000. Figures 4 and 5 present the individual nominal prices of the products included in each group.

Figure 3: Index of real (mainly) tropical and (mainly) non-tropical agricultural prices, deflated by UN MUV for developed countries, 1980-2017, base 2000=100



Source: See Figure 1.

Figure 4: Index of nominal (mainly) tropical agricultural prices, nine products, 1980-2017, 2000=100



Source: See Figure 1

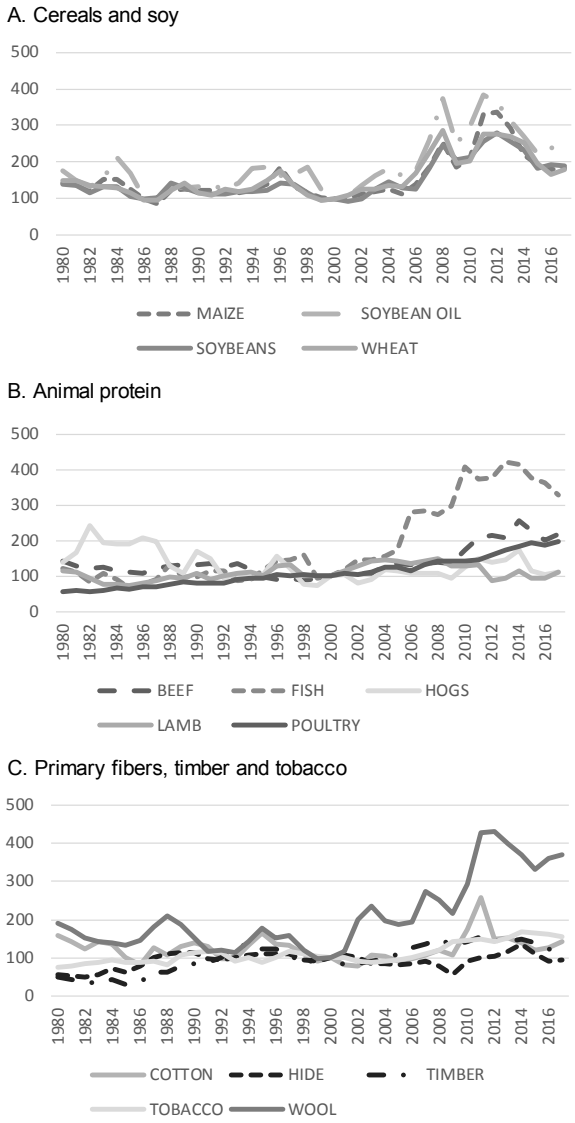
Within (mainly) tropical agriculture commodities (see Figure 4), food and beverages (except tea, which remained relatively stable, and banana which has been slowly growing) recovered during the boom the loses experienced in the 1980s. Agricultural inputs such as rubber and palm oil experienced a sustained increase, tripling in price from 2000 to 2017. The

increase in rubber prices was associated with the global annual production of >1 billion car, truck and aircraft tires (Ahrends et. al. 2015, p. 48). In turn, palm oil prices increased as demand for biofuels increased, before the dramatic drop in oil prices in 2014.

Coffee and cocoa experienced significant nominal increases. The increase in cocoa is exaggerated though, as 2000, the base year, was a particularly low-price level, the lowest since 1971/72 (International Cocoa Association 2010, p. 6). Coffee prices, in turn, doubled until 2009 and bad weather in South America brought them to a peak in 2010[3]. After it, coffee prices stabilized at double what they were in 2000.

[3] https://money.cnn.com/2010/09/10/markets/coffee_prices/index.htm

Figure 5: Index of nominal (mainly) non-tropical agricultural prices, fourteen products, 1980-2017, 2000=100



Source: See Figure 1.

As a reference, Figure 5 shows the price evolution of (mainly) non-tropical commodities. It shows that producers of cereals and soy, fish and wool were also the beneficiaries of the boom. Besides its use in biofuels, soy is a significant component of animal foodstuff and demand for it increased substantially in China in the 2000s. In turn, fish prices have increased significantly due to a relative increase in farmed fish, and damages to ocean

ecosystems that cause scarcity and that may worsen with continued ocean acidification and deterioration in coral reefs.

3 Primary commodities' value chains

This brief update of primary commodity price trends shows that the terms of trade favored primary commodities relative to manufactures exported by developing countries over the period 1980-2017. Strong demand from China and the expansion of biofuels are some of the reasons behind this trend. In this section we proceed to explore indicators of trends in the value chains associated with primary commodities, with a focus on (mainly) tropical commodities. As Bair (2008) highlights, tropical commodity chains "highlight issues of global inequality that may be less obvious in other industry contexts. This is because the ecology of tropical commodities requires them to be grown in the global South, whereas markets for these products are located primarily in the North." (Bair 2008, p. 16).

(Mainly) tropical commodities (such as cocoa and coffee) have been traditionally imported by developed countries for processing, and the tariffs applied on their chain escalated to ensure that processing is disincentivized in producing countries (like in the case of chocolate) (Elamin and Khaira 2003, p. 101).

(Mainly) non-tropical commodities (such as cotton), on the other hand, have traditionally been recipients of tariffs to imports and subsidies in developed countries that put developing countries at considerable disadvantage (Hoekman, Ng and Olarreaga 2004). Non-tariff measures such as health associated requirements and quality certifications also limit the trade prospects of developing countries exports of those products. As our interest is on coffee and cocoa, in what follows, the analysis is restricted to those and other (mainly) tropical commodities, while (mainly) non-tropical commodities may be the subject of future research.

As a rough approximation to their value chain, we analyze export unit values (exports value in US$/exports volume) over all the categories available in international trade statistics for each (mainly) tropical commodity. We compare the unit values of exports of developing countries against those of exports from developed economies.

It is important before starting to acknowledge that the analysis of traditional international trade statistics has very important limitations. One limitation that is especially relevant in this context is the fact that this data doesn't allow for differentiation of products in terms of quality. If a product is of a higher quality, it would be expected to be able to be sold for a higher price. As there is no alternative data source that offers a global overview of quality in international trade, we proceed with the analysis.

As most (mainly) tropical commodities cannot be easily produced in developed countries, most of their exports of those commodities are in fact re-exports. Using data from BACI at a 6 digit-level under the 1992 Harmonized System Codes' classification, we calculate unit values by regions for the primary commodities and the products directly associated with them.

Using traditional export data, we use two very rough measures of upgrading by developing countries: 1. Higher unit values than developed countries in each echelon of the chain; and 2. Faster increases in unit values relative to developed countries.

1.3.A Static value upgrading indicator

The first indicator used is *d*, the difference between the average unit values for developing countries and those for developed countries in a specific period.

$$d = Avg\ (UV_{Developing})\ p - Avg\ (UV_{Developed})\ p$$

Table 1 parts A and B shows the results for *d,* in the cases of beverages, and food and inputs, respectively, for periods *p* = 1995-1997 and *p* = 2014-2016

Table 1: d = Difference in unit value averages between developing and developed countries, 1995-1997 and 2014-2016

$$d = Avg\ (UV_{Developing})\ p - Avg\ (UV_{Developed})\ p$$

A. Beverages

Product	1995-1997	2014-2016
Bananas, including plantains, fresh or dried	(0.37)	(0.23)
Cocoa beans, whole or broken, raw or roasted	(0.20)	**0.05**
Cocoa butter, fat, oil	(0.34)	(0.34)
Cocoa paste not defatted	(0.43)	(0.29)
Cocoa paste wholly or partly defatted	(0.41)	(0.34)
Cocoa powder, sweetened	(0.86)	(0.43)
Cocoa powder, unsweetened	(0.33)	(0.28)
Chocolate and other food preps containing cocoa > 2 k	(0.89)	**0.63**
Chocolate, cocoa prep, block/slab/bar, not filled,>2k	(0.77)	(1.42)
Chocolate, cocoa preps, block, slab, bar, filled, >2k	**0.40**	**0.14**
Chocolate/cocoa food preparations nes	(1.34)	(0.86)
Coffee, not roasted, decaffeinated	(0.17)	**0.74**
Coffee, not roasted, not decaffeinated	(0.64)	(0.33)
Coffee, roasted, decaffeinated	(0.93)	(7.43)
Coffee, roasted, not decaffeinated	(0.04)	(4.53)
Coffee extracts, essences, concentrates, preparations	(3.59)	(2.48)
Coffee substitutes containing coffee	(2.59)	(3.29)
Tea, green (unfermented) in packages < 3 kg	(4.39)	(10.42)
Tea, green (unfermented) in packages > 3 kg	(4.16)	(8.97)
Tea, black (fermented or partly) in packages < 3 kg	(6.00)	(3.89)
Tea, black (fermented or partly) in packages > 3 kg	(2.20)	(1.99)
Tea and mate extracts, essences and concentrates	(0.17)	(3.66)

(Cont.)

Table 1: d = Difference in unit value averages between developing and developed countries, 1995-1997 and 2014-2016 (cont.)

$$d = Avg\ (UV_{Developing})\ p - Avg\ (UV_{Developed})\ p$$

B. Food and inputs

Product	1995-1997	2014-2016
Rice in the husk (paddy or rough)	**0.07**	**0.28**
Rice, broken	(0.08)	(0.11)
Rice, husked (brown)	(0.13)	(0.17)
Rice, semi-milled or wholly milled	(0.25)	(0.22)
Rice flour	**0.01**	(0.28)
Sugar cane	(0.46)	(0.98)
Raw sugar, cane	**0.08**	(0.07)
Sugar confectionery not chewing gum, no cocoa content	(1.33)	(1.33)
Jute and other bast fibres, not spun, nes, tow, waste	(0.32)	(1.15)
Jute and other textile bast fibres, raw or retted	(0.62)	(0.44)
Palm kernel & babassu oil, fractions, simply refined	(0.22)	(0.24)
Palm kernel or babassu oil, crude	(0.17)	(0.15)
Palm nut or kernel oil cake and other solid residues	(0.02)	(0.12)
Palm nuts and kernels	(0.58)	(0.60)
Palm oil or fractions simply refined	(0.22)	(0.25)
Palm oil, crude	(0.20)	(0.13)
Natural rubber in other forms	(0.59)	(2.15)
Natural rubber in smoked sheets	(0.63)	(0.42)
Natural rubber latex, including prevulcanised	(0.25)	(1.49)
Technically specified natural rubber (TSNR)	(0.20)	(0.46)

Source: Author's calculations based on BACI-CEPII database.

An immediate observation is that for most products, the unit values for developed countries are higher than those for developing country exports ($d < 0$). A second observation is that, while still very few of them, there were more products in which developing countries unit values were higher than those of developed countries in 2014-2016 than in 1995-1997. A third observation is that while the unit values are unfavorable for developing countries ($d < 0$) for all tea categories, they are favorable ($d > 0$) only in one coffee category in the last period.

An important difference between cocoa and coffee, on the one hand and tea on the other is that while cocoa and coffee are traded in exchange markets, tea's prices are determined at auctions. The first future contracts in the tea market started only in 2016.[4].

Another important difference is that there are economies of scale in the production and processing of tea, while there are no economies of scale in cocoa or coffee's production (Talbot 2002, p. 713). Accordingly, tea is produced in plantations and has been dominated by transnational corporations. Coffee and cocoa are mostly produced in small plots as harvesting and initial processing is labor intensive. As Figure 4.A showed, the price of tea was not affected in the 2000s boom. Its price has remained relatively stable. Another difference is that a modern specialty market for tea only is just starting.[5], while a market for specialty coffee has been growing in recent decades, as we will see in the next section.

A fourth observation is that there seems to be a change in the cocoa value chain, as the UVs are favorable in 2015-2017 to developing countries ($d > 0$) for 3 products, including 2 manufactured sub-products. This observation makes the comparison of coffee and cocoa's value chains in the next section the more relevant.

For all other products, except rice in the husk, unit values have been unfavorable to developing countries ($d < 0$). These products have lower differentiation possibilities.

[4] See https://www.bloomberg.com/news/articles/2016-06-15/world-s-first-tea-futures-contracts-may-be-introduced-in-kenya

[5] https://thespruceeats.com/specialty-tea-definition-765747

1.3.B Dynamic value upgrading indicator

To complement this static analysis with a dynamic one, we calculate *r*, a relative increase in unit value as follows:

$$r = 1 - \frac{\left[Avg\left(UV\ Developed\ (p1)\right) / Avg\left(UV\ Developed\ (p0)\right)\right)}{[Avg\left(UV\ Developing\ (p1)\right) / Avg(UV\ Developing\ (p0)]}$$

where p1= 2010-2015 and p0= 1995-2000. If $r > 0$ then the increase in unit value for developing countries is higher than that for developed countries.

r is thus the ratio of the change in average unit values for developed countries between 1995-2000 and 2010-2015, relative to the change in unit values for developing countries between the same periods.

Table 2: r = Relative increase in unit value of developing countries vs developed countries comparing 2010-2015 to 1995-2000 for Beverages (and chocolate)

$$r = 1 - \frac{\left[Avg\left(UV\ Developed\ (p1)\right) / Avg\left(UV\ Developed\ (p0)\right)\right]}{\left[Avg\left(UV\ Developing\ (p1)\right) / Avg(UV\ Developing\ (p0)\right]}$$

Group	Classification	Product	Relative increase in unit value= r
Cocoa	Primary products	Cocoa beans, whole or broken, raw or roasted	(0.06)
		Cocoa shells, husks, skins and waste	0.69
		Cocoa paste not defatted	0.13
		Cocoa paste wholly or partly defatted	0.27
		Cocoa butter, fat, oil	0.05
		Cocoa powder, unsweetened	0.16
	Resource based manufactures	Cocoa powder, sweetened	0.12
		Chocolate and other food preps containing cocoa > 2 k	0.33
		Chocolate, cocoa preps, block, slab, bar, filled, >2k	(0.08)
		Chocolate, cocoa prep, block/slab/bar, not filled,>2k	(0.07)
		Chocolate/cocoa food preparations nes	0.07
		Malt extract & limited cocoa pastrycooks products nes	0.05
Coffee	Primary products	Coffee, not roasted, not decaffeinated	0.09
		Coffee, not roasted, decaffeinated	0.17
		Coffee, roasted, not decaffeinated	(0.65)
		Coffee, roasted, decaffeinated	(0.72)
		Coffee substitutes containing coffee	0.43
		Coffee extracts, essences, concentrates, preparations	(0.10)
Tea	Primary products	Tea, green (unfermented) in packages < 3 kg	(0.29)
		Tea, green (unfermented) in packages > 3 kg	(0.44)
		Tea, black (fermented or partly) in packages < 3 kg	0.42
		Tea, black (fermented or partly) in packages > 3 kg	0.20
		Tea and mate extracts, essences and concentrates	(0.35)

Source: Author's calculations based on BACI CEPII International Trade Database.

Note: We use relative changes instead of subtractions to avoid negative numbers that would distract from the purpose of the measure that is to compare developing and developed countries.

Table 2 shows that for most cocoa-related items, including some resource-based manufactures (chocolate), developing countries have experienced a higher increase in unit values than developed countries. In the case of coffee, this has been the case only for non-roasted coffee. This reaffirms the interest understanding the differences between the value chains of cocoa and coffee that will be the subject of section 4

The Table also reveals that while unit values of developed countries are still higher than those of developing countries in the case of tea (See Table 1), developing countries have experienced a higher growth in unit values in the case of black tea.

As reference, Tables 3 and 4 shows the results for *r* for food and inputs categories of (mainly) tropical commodities. They suggest that there have been gains for developing countries in unit values for banana, rice (excluding flour, which according to Table 1.B was favorable to developing countries in 1995-1997) and refined sugar but not for jute, which has been replaced with synthetic materials in international packaging.

Table 3: r = Relative increase in unit value of developing countries vs developed countries comparing 2010-2015 to 1995-2000, food and inputs

Group	Classification	Product	Relative increase in unit value= r
Bananas	Primary	Bananas, including plantains, fresh or dried	0.21
Rice	Primary products	Rice in the husk (paddy or rough)	0.38
		Rice, husked (brown)	0.15
		Rice, semi-milled or wholly milled	0.20
		Rice bran, sharps, other residues	(0.91)
		Rice, broken	0.04
	Resource based manuf	Rice flour	(2.66)
		Communion wafers, rice paper, bakers wares nes	0.09
Sugar	Primary products	Seed, sugar beet, for sowing	0.69
		Sugar beet	(0.52)
		Sugar cane	(1.33)
		Beet-pulp, bagasse & other waste of sugar manufacture	0.14
	Resource based manufactures	Raw sugar, cane	(0.43)
		Raw sugar, beet	0.02
		Refined sugar, in solid form, flavoured or coloured	(0.20)
		Refined sugar, in solid form, nes, pure sucrose	0.13
		Sugar nes, invert sugar, caramel and artificial honey	0.20
		Sugar confectionery not chewing gum, no cocoa content	0.10
		Sugars, chem pure, their ethers, esters, salts in bul	0.36
Jute	Resource based manuf	Jute and other textile bast fibres, raw or retted	0.42
		Jute and other bast fibres, not spun, nes, tow, waste	(0.53)
	Low tech manufactures	Yarn of jute or textile bast fibres nes, single	(0.21)
		Yarn of jute, textile bast fibre nes, multiple, cable	(0.54)
		Woven fabric of jute/bast fibres, unbleached/bleached	0.03
		Woven fabric of jute/bast fibre, not unbleach/bleache	(2.50)
		Twine, cordage, ropes and cables, of jute, bast fibre	0.08
		Sacks & bags, packing, of jute or other bast fibres	(1.06)
Palm oil	Primary products	Palm nuts and kernels	0.22
		Palm nut or kernel oil cake and other solid residues	(0.60)
	Resource based manufactures	Palm oil, crude	(0.10)
		Palm oil or fractions simply refined	0.06
		Palm kernel or babassu oil, crude	0.10
		Palm kernel & babassu oil, fractions, simply refined	0.12
	Medium-tech	Palmitic acid, stearic acid, their salts & esters	0.33

Source: See Table 1

Finally, and as an example of a value chain that could have been replaced with synthetic materials but has instead offered opportunities for upgrading, Table 4 shows the rubber value chain. While only few rubrics are primary commodities, and for those developing countries only surpass developed countries in unprocessed products, there are many rubber sub-products in which developing countries have fared better in terms of unit values in the last 20 years. For

example, developing countries in Asia, such as Thailand with government support[6], dominate the tires market, which is expected to continue expanding[7]. Further analysis could be the subject of future research.

Table 4: r = Relative increase in unit value of developing countries vs developed countries comparing 2010-2015 to 1995-2000, rubber

Classification	Type	Product	Relative increase in unit value= r
Primary products	Natural rubber	Natural rubber in smoked sheets	0.28
		Natural rubber in other forms	0.13
		Natural rubber latex, including prevulcanised	(0.31)
		Technically specified natural rubber (TSNR)	(0.41)
Agriculture resource-based manufactures	Articles of rubber	Rubber tube, pipe, hose textile-reinforced no fitting	0.28
		Floor coverings, mats of rubber except cellular, hard	0.27
		Rubber unvulcanised as rods, tubes, profiles, etc	0.26
		Articles of cellular rubber	0.24
		Erasers (vulcanised rubber)	0.21
		Plate, sheet, strip of vulcanised non-cellular rubber	0.16
		Conveyor belts and belting, rubber, <20cm wide	0.15
		Rubber solutions, dispersions nes	0.15
		Compounded unvulcanised rubber in primary forms nes	0.14
		Rod and profile shapes of vulcanised cellular rubber	0.09
		Boat and dock fenders, of vulcanised rubber	0.05
		Articles of vulcanised rubber nes, except hard rubber	0.05
		Rubber tube, pipe or hose, reinforced nes, no fitting	0.03
		Rubber articles, inflatable nes, vulcanised rubber	0.02
		Rubber tube, pipe or hose not reinforced, no fittings	0.00
		Gaskets, washers and other seals of vulcanised rubber	(0.08)
		Conveyor, transmission belts and belting, rubber nes	(0.11)
		Transmission belts etc, rubber, trapezoidal	(0.12)
		Plate, sheet, strip of vulcanised cellular rubber	(0.12)
		Vulcanised rubber thread and cord	(0.12)
		Compounded (carbon black, silica) unvulcanised rubber	(0.14)
		Rubber hygienic, pharmacy items except contraceptives	(0.17)
		Compounded unvulcanised rubber in plate, sheet, strip	(0.18)
		Rubber tube, pipe, hose, metal reinforced, no fitting	(0.20)
		Rubber tube, pipe or hose with fittings	(0.26)
		Hard rubber (eg ebonite) in all forms, articles,scrap	(0.55)

(Cont.)

[6] See http://www.tractionnews.com/why-thailand-is-the-new-center-of-the-tire-universe/

[7] See http://rubberjournalasia.com/asia-pacific-nations-expected-to-lead-growth-of-global-tyre-industry/

Table 4: r = Relative increase in unit value of developing countries vs developed countries comparing 2010-2015 to 1995-2000 (cont.)

Classification	Type	Product	Relative increase in unit value= r
Agriculture	Tyres	Pneumatic tyres new of rubber for motorcycles	0.38
resource-		Pneumatic tyres new of rubber nes	0.37
based		Inner tubes of rubber for bicycles	0.35
manufactures		Pneumatic tyres new of rubber for bicycles	0.18
		Pneumatic tyres new of rubber for motor cars	0.14
		Pneumatic tyres new of rubber nes, herring-bone tread	0.11
		Camel-back strips for retreading rubber tyres	0.10
		Inner tubes of rubber except bicycle or motor vehicle	0.07
		Inner tubes of rubber for motor vehicles	0.03
		Pneumatic tyres new of rubber for buses or lorries	(0.00)
		Pneumatic tyres new of rubber for aircraft	(0.21)
Low-tech		Gloves other than surgical, of rubber	0.36
textile		Clothing and accessories except gloves, of rubber	(0.13)
manufactures		Rubber surgical gloves	(0.17)

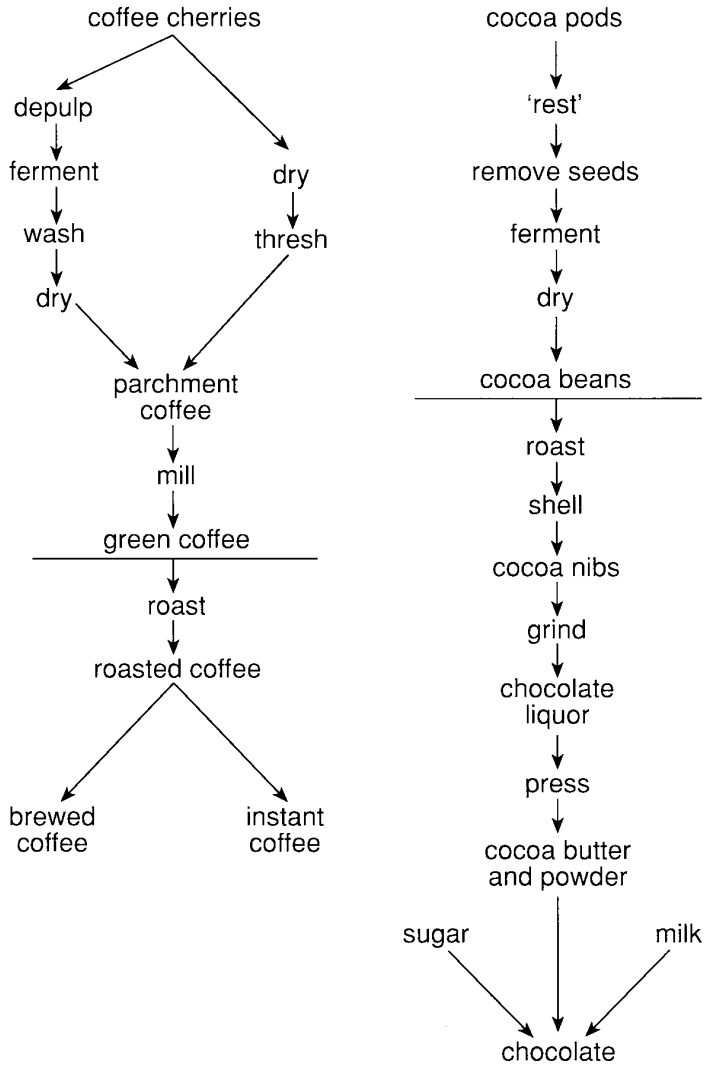
Source: See Table 1

4 Coffee and cocoa's value chains

The value chains of coffee and cocoa have been studied extensively in comparative analysis (Gibbon 2001, Talbot 2002, Blowfield 2003, Kaplinsky 2004, Gilbert 2007). Individually, the literature on the coffee value chain includes The Coffee Paradox (Daviron and Ponte 2005) and Coffee A global History (Morris 2019). In the case of cocoa, recent books include The Economics of Chocolate (Squicciarini and Swinnen, eds. 2016) and Cocoa (Leissle 2018). After a short review of the size of the export market for each commodity, this section reviews this literature, identifying factors that may explain the results observed above and that indicate relative upgrading in the cocoa value chain.

Figure 6 represents the commodity chains of coffee and cocoa from a processing point of view. The Figure shows the steps that would take a coffee cherry (cocoa pod) from the moment it is harvested to the moment it is consumed.

Figure 6: Coffee and cocoa commodity chains, according to Talbot (2002)



Source: Reproduced from Figure 1, Talbot 2002, p. 711.

The horizontal lines represent the first instance in which the product can be transported for international trade (Talbot 2002). An immediate difference between the chains is that there are many more steps in the cocoa chain than in the coffee chain after the product

is ready for export. Moreover, there are markets for intermediate products such cocoa butter which is used for the cosmetic and pharmaceutical industries (Fold and Neilson 2016, p. 197).

While informative, this diagram does not reveal the governance structure in the chains. The following subsections will present statistics and draw from the literature the specific characteristics of the value chains of coffee and cocoa. The last section wraps up and discusses policy options going forward.

1.4.A The coffee value chain(s)

According to COMTRADE data, the total value of exports of coffee not roasted or decaffeinated was US$20 billion in 2015, and around US$12 billion in 1995. Latin America exported around 60 percent of the total, followed by Asia with 23 percent and Africa 10 percent. Interestingly, Europe, where the crop is not grown, (re)exported around 5 percent. In 1995 Latin America had a similar share, while Africa represented 19 percent and Asia 17 percent. Africa has thus been the most affected by the aggressive entry of Asia (particularly Vietnam) in the market and mostly destined to instant coffee[8].

The market for processed (decaffeinated and/or roasted) is smaller but has grown considerably. The total value of exports of coffee roasted not decaffeinated grew from around US$1 billion in 1995 to US$8.5 billion in 2015 (See Table 5). This market was and continues to be dominated by Europe (around 80 percent) and the United Stated (around 9 percent). In 2015, exports for decaffeinated coffee not roasted and roasted amounted to around US$700 million and US$500 million respectively, both dominated by Europe's exports. It was around $500 and US$100 million in 1995, respectively.

Table 5: Total value of exports in US$ billion

[8] https://www.ft.com/content/918cf9aa-4e93-328e-90a9-c3c6e39f5833

Product	1995	2015
Coffee, not roasted, not decaffeinated	12.60	20.10
Coffee, not roasted, decaffeinated	0.48	0.69
Coffee, roasted, not decaffeinated	1.24	8.56
Coffee, roasted, decaffeinated	0.13	0.54
Total coffee exports	14.45	29.89
Coffee substitutes containing coffee	0.03	0.13
Coffee extracts, essences, concentrates, preparations	2.09	6.33

Source: Author's calculations based on COMTRADE.

Expanding the analysis from the previous section, Table 6 shows *r* by regions (see Table 4). A negative number indicate that for that region the change of the unit value between 1995-2000 and 2010-2015 is lower than the change experienced by developed countries in the same period. It shows a relative increase in unit value for developing countries in coffee not roasted. This makes sense as developing countries are the main exporters but could also be taken as a reflection of an increase in quality associated with the growth of the specialty market (see below). This is not the case for Asia, who has inundated the market with lower quality coffee.

Table 6: Relative increase in unit value of developing countries vs developed countries, by regions, 2010-2015 over 1995-2000

Product	Developing	Africa	East Asia	Latin America	South & W Asia
Coffee, not roasted, not decaffeinated	0.09	0.14	0.03	0.12	(0.01)
Coffee, not roasted, decaffeinated	0.17	0.30	0.11	0.16	0.31
Coffee, roasted, not decaffeinated	(0.65)	(0.85)	(0.53)	(0.65)	(1.09)
Coffee, roasted, decaffeinated	(0.72)	(2.56)	(0.97)	(0.26)	(0.75)
Coffee substitutes containing coffee	0.43	0.26	0.19	0.17	0.24
Coffee extracts, essences, concentrates, preparations	(0.10)	(0.08)	(0.21)	0.14	(0.12)

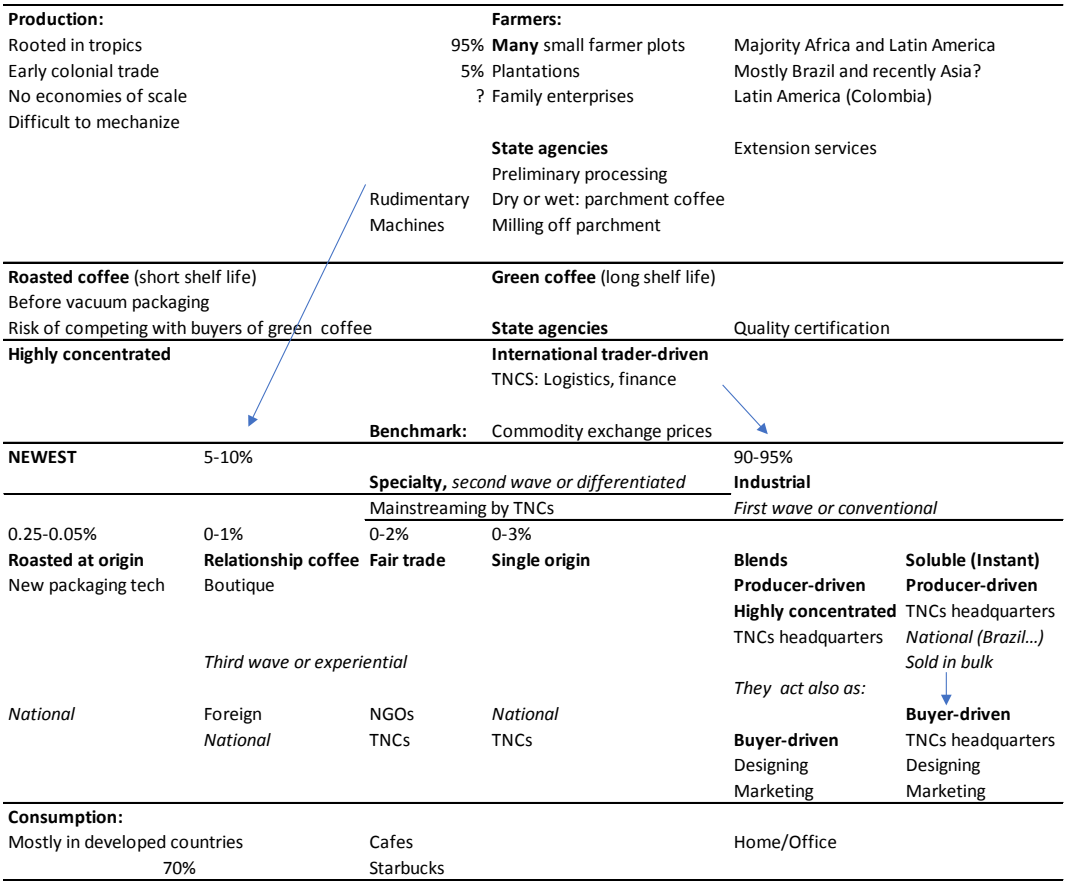
Source: See Table 1

The literature shows that the coffee value chain is complex and has evolved over time. Figure 7 attempts to summarize highlight the complexity of the coffee value chain in the 2010s, acknowledging that it changes over time and that there are important differences between exporter countries and types of consumer. The Figure should be read from top to bottom, describing the actors in each part of the chain.

To begin with, the Figure highlights that coffee is mostly produced in small farms of less than 5 hectares, as there are little economies of scale in cultivation and harvesting (Talbot 2002, Samper et. al 2017, p.5). It is a commodity that has been traded since colonial times (Topik 2004, Daviron and Ponte 2005, Morris 2019). State agencies, who were important players in the International Coffee Agreement that lasted until 1989 (Daviron and Ponte 2005, Hamdan-Livramento et. al 2018) and ensured stable prices for producers, still play a minor role in offering extension services and as reference in terms of quality.

In terms of value chain governance, Bair (2008) and Talbot (2002 and 2008) argue that the coffee value chain cannot be described in its entirety with one form of governance. Bair states that "multiple governance forms more commonly characterize agricultural or other primary commodity chains, which often feature one "local" segment or set of links for the harvesting and initial processing of the product and another segment devoted to transportation, further processing, and eventual marketing; these later links in the chain tend to be located closer to the consumer." (Bair 2008, p. 26).

Figure 7: Coffee value chain(s)



Source: Author's elaboration based on literature review

The Figure shows that green coffee exports (equivalent to coffee not roasted) is facilitated by international traders. Accordingly, that part of the value chain may be characterized as international trader-driven, using the framework developed by Gibbon (2001) to better fit the characteristics of primary commodity value chains. International traders manage the logistics of the physical trade and their transactions use as benchmark the commodity exchanges mentioned before. International traders, nonetheless, are not the core of the chain nowadays. As the literature suggests, "by the 1990s, the major TNC roasters, not the international traders, were clearly driving the coffee chain, and the former had the power to influence the behavior of the latter" (Ponte 2002 cited by Talbot 2008, p.98). "Roasters have complete information on quality when they buy coffee and release next to no information to

their clients. This factor, together with increasing market concentration, has allowed them to gain a driving seat in the global value chain for coffee." (Daviron and Ponte 2005, loc. 3035)

The Figure then moves to show that roasting is concentrated in few large multinational corporations that use high-tech manufacturing for processing, and contract out to large international traders the inputs they need for their manufacturing operation (Talbot 2008, p. 97). These are characteristics of *producer-driven* value chains.

In turn, the Figure shows that these multinational corporations do not focus only on production. Most of their profits come from designing and marketing their products and controlling their final markets through branding and advertising. They also use global sourcing strategies to manage their risk and obtain supplies at the lowest prices, while maintaining the consistent tastes of their proprietary blends (Talbot 2008, p. 98). They do so by mixing and homogenizing different types of coffee and coffees coming from different countries (Morris 2019, p. 12, Daviron and Ponte 2005, loc. 1869). These are characteristics of *buyer-driven* value chains, as some authors describe them (Bitzer et. al. 2008, p. 272, Muradian and Pelupessy 2005).

The Figure shows that another layer of complexity comes from the specialty market that has been growing, in parallel to the industrial coffee market dominated by multinational corporation. Due to changes in demand towards further individualism, fostered as a marketing strategy by multinational corporations (Roseberry 1996), there has been marked differentiation in the coffee markets. Specialty and boutique markets assign value to coffees that are as unique and "unblended" as possible (Wilson and Wilson 2014, p.104).

Specialty coffee represents between 5 and 10 percent of total production (Morris 2019). The specialty market covers a wide range of segments, including ethically based categories such as organic and fair trade (Raynolds, Murray and Taylor 2004) fostered by NGOs (Talbot

2008, p. 102), rainforest certified, eco-certified, bird-friendly (Hernandez-Aguilera et. al. 2018) and sustainable (Daviron and Vagneron 2011), and categories that appeal to a sense of connoisseurship, such as single origin, geographically denominated, boutique, award winning (Daviron and Vagneron 2011, Wilson and Wilson 2014) and roasted at origin (Amor perfecto 2018). According to Talbot (2008), these constitute their own analytically separable chains with different structures and types of governance (p. 102).

According to Talbot (2008) the development of specialty coffees has allowed producing countries to retain more control over product differentiation, although roasters have gained control over differentiation for bulk, industrial coffees, which depend on blends of coffees from several different origins (Talbot 2008, p.105).

Accordingly, the Figure reflects that, while specialty coffee presumably started in the 1960s (romantically associated by some with the hippie culture in San Francisco (Houtman 2018)), by the 2000s the process of mainstreaming by multinationals was evident. As an example, illustration 1 shows a multinational corporation offering organic coffee drinks. Furthermore, the announcement claims that it is fair-trade certified.

Illustration 2: Specialty mainstreamed

Source: fortocoffee.com

A last echelon shown in Figure 7 is that of consumption. Around 70 percent of the demand for it comes from high-income countries while China's consumption growth prospect are large (WIPO 2017). The development of specialty coffee was accompanied with the socialization of coffee consumption. At a local Starbucks people around the world get coffee drinks at prices many times higher than what a pound of coffee would be quoted in commodity exchanges. This is what Daviron and Ponte (2005) refer to as the symbolic and in-person service quality attributes of coffee (loc. 4962). WIPO (2017) calls this the perception of coffee consumption from coffee-as-a-product to a coffee-plus-social-content product and service (p. 45) and associates it to the second wave of coffee[9].

On the other hand, the coffee served at houses and offices has also been transformed by the use of pods. Again, one single serving pod can be sold for US$1 dollar, which is what a pound of coffee is sold for nowadays.

Daviron and Ponte (2005) call this the coffee paradox: "a coffee crisis in producing countries, with international prices at the lowest levels in decades [in early 2000s as shown in Figure 4], and a coffee renaissance (also known as the latte revolution) in consuming countries,

[9] The first wave corresponds to the conventional market. The second wave is that of differentiated products. The third wave is the experiential market. WIPO 2017, p. 45.

with the growth of specialty and sustainable coffee consumption and the fast expansion of coffee bar chains" (loc. 4962).

While international coffee prices have increased since then, as we saw in section 2, the explanation in terms of attributes is still valid. Daviron and Ponte (2005) write "farmers and other producing country operators sell coffee in its material quality attributes. Consuming country operators create and appropriate value by selling the symbolic and in-person service quality attributes of coffee" (loc. 4962). The last section will delve into the policy implications of this paradox.

WIPO (2017) suggests, that while the coffee global value chain has been dominated by market/buyer-driven governance, with most value generated by downstream participants, recent developments in a newer coffee market segment offer opportunities for upstream coffee producers to enhance their value chain participation (p. 43).

1.4.B The cocoa value chain

As Table 7 shows, cocoa bean exports increased from US$3 in 1995 to US$ 9.5 billion in 2015. Africa exports 75 percent of the total, 40 percent of which comes from Cote d'Ivoire, followed by Ghana with 21 percent.

Table 7: Total cocoa exports, in US $ billions

Product	1995	2015
Cocoa beans, whole or broken, raw or roasted	2.91	9.50
Cocoa shells, husks, skins and waste	0.04	0.27
Cocoa paste not defatted	0.42	2.79
Cocoa paste wholly or partly defatted	0.09	0.55
Cocoa butter, fat, oil	1.57	5.42
Cocoa powder, unsweetened	0.38	2.11
Total cocoa exports	5.41	20.64
Cocoa powder, sweetened	0.14	0.43
Chocolate and other food preps containing cocoa > 2 k	1.08	4.23
Chocolate, cocoa preps, block, slab, bar, filled, >2k	1.64	4.05
Chocolate, cocoa prep, block/slab/bar, not filled,>2k	1.28	4.11
Chocolate/cocoa food preparations nes	3.23	12.60
Total chocolate exports	7.37	25.42

Source: Author's calculations based on COMTRADE.

Consistent with the results of section 3, there has been apparent upgrading in developing countries in cocoa intermediate processed products. Africa has increased its share (upgraded) in cocoa paste non defatted, amounting to 39 percent in 2015 (19 percent in 1995). Asia and Africa also upgraded in defatted cocoa paste, reducing the European share of the markets from 29 to 14 percent. The same can be observed in unsweetened cocoa powder (Europe dropped from 77 to 59 percent) and sweetened cocoa powder (Europe's share went from 60 to 49 percent). Exports of cocoa butter amounted to US$ 5.5 billion in 2015, growing from US$ 1.5 billion in 1995. European countries dominate this market but have also lost space (from 54 percent of the total in 1995 to 46 percent in 2015) while Asia increased the share from 21 to 31 percent.

The export market for chocolate has grown from 7 to 25 billion between 1995 and 2015. Europe's share went from 84 to 72 percent. Latin America's increased from 2 to 4 per cent while Asia grew from 4 percent to 9.5 percent. The item with higher growth is chocolate food preparations not elsewhere specified. In 1995 Europe's share was 87 per cent and North America (excluding Mexico) 6 percent. By 2015 Europe's share diminished to 74 per cent and North America's had increased to around 10 percent. Latin America and Asia's share increased from around 4 to around 6, and from 3 percent to 9 percent respectively, led by Mexico with 3 percent and Turkey with 2 percent. Although still small, this also confirms upgrading in the chain.

Table 8 presents *r*, the relative unit value increase of developing countries. It shows that most regions have seen a relative improvement in intermediates, as discussed above. It also shows that Latin America and Asia have improved its relative unit value in some chocolate items. This could reflect the nascent market of craft and origin chocolate, highlighted in the introduction (see Illustration 1).

Table 8: Relative increase in unit value of developing countries vs developed countries, by regions, 2010-2015 over 1995-2000

Product	Developing	Africa	East Asia	Latin America	South & W Asia
Cocoa beans, whole or broken, raw or roasted	(0.06)	(0.08)	(0.04)	(0.07)	(0.20)
Cocoa shells, husks, skins and waste	0.69	0.72	(0.75)	(0.12)	(0.65)
Cocoa paste not defatted	0.13	0.12	0.16	0.14	0.31
Cocoa paste wholly or partly defatted	0.27	0.29	0.20	0.27	(0.47)
Cocoa butter, fat, oil	0.05	0.08	0.04	0.05	0.08
Cocoa powder, unsweetened	0.16	(0.07)	0.16	0.28	(0.16)
Cocoa powder, sweetened	0.12	(0.07)	0.14	(0.83)	0.28
Chocolate and other food preps containing cocoa > 2 k	0.33	(0.51)	0.31	0.44	0.50
Chocolate, cocoa preps, block, slab, bar, filled, >2k	(0.08)	0.26	(0.16)	(0.11)	(0.18)
Chocolate, cocoa prep, block/slab/bar, not filled,>2k	(0.07)	(0.29)	(0.25)	0.01	(0.03)
Chocolate/cocoa food preparations nes	0.07	(0.54)	(0.07)	0.20	0.20

Source: Author's calculations based on BACI CEPII International Trade Database

Figure 8 presents diagram of the cocoa value chain, complementing the processing diagram from Figure 6. Cocoa, as was coffee, is rooted in the tropics. The Figure highlights that there are also no economies of scale in harvesting so most of the production comes from small farmer plots (Ryan 2012, p. 10, Fold and Neilson, 2016, p. 197). The first important difference between the value chains is that cocoa production is highly concentrated in few countries, mostly in Africa (Leissle 2018, p. 5) while around 50 countries produce coffee (Samper et. al 2017, p. 5). State agencies have also played important roles in the past through

the International Cocoa Organization (UNCTAD 2018) and in Ghana they still control most of the cocoa trade (Kolavalli and Vigneri 2017).

Figure 8: Cocoa value chain

Production:		**Farmers:**	
Rooted in tropics	90%	**Many** small farmer plots	Majority Africa
Early colonial trade	10%	Plantations in Latin America	
No economies of scale			
Difficult to mechanize		**State agencies**	Extension services
Highly concentrated in terms of countries			
		Preliminary processing	
	Rudimentary	**Cocoa beans**	
		State agencies	Quality certification
		Cocoa beans ready	
Highly concentrated		**International trader-driven**	**/ Processor**
		TNCS: Logistics, finance	
			Grinding
		Cocoa liquor	**Increasing in producing**
	Intermediates	Cocoa paste	**countries**
		Cocoa powder	Mostly FDI from TNCs
		Cocoa butter	National (limited)
			90-95%
NEWEST			**Industrial**
	0-3%	0-2%	Chocolate manufacturers
Single origin	**Boutique**	**Fair trade**	
			Producer-driven
	International trader driven		**Highly concentrated**
			TNCs headquarters
Foreign	*National*	NGOs	
National	Foreign	TNCs	
			They act also as:
			Buyer-driven
			Designing
			Marketing
Consumption:			
Mostly in developed countries		Chocolate and candy	
Growing in developing countries			

Source: Author's elaboration based on literature review

In terms of value chain governance, Bair (2008) notes that, based on his study of the chocolate chain, Niels Fold (2002) proposed that a bipolar governance structure can emerge

when two types of lead firms (in the case of chocolate, cocoa grinders and brand-name chocolate manufacturers) control different segments of the chain (p.21).

Figure 8 shows that the middle of the chain is dominated by international trader/processors (grinders). In recent decades middle-income countries, representing both producing and non-producing countries, have developed industrial capacity in cocoa processing. This explains the apparent upgrading observed above.

Fold and Neilson (2016, p. 198) refer to this upgrading as "one of the most important recent trends affecting the value chain, as producing country governments attempt to value-add raw materials prior to export as a platform for resource-based industrialization". These include Malaysia, Indonesia Singapore, Thailand, Brazil, and Mexico, with Brazil and Mexico only partially reliant on domestic production.

In Africa the developmental effects of this trend are less promising. While about 21% of the world's cocoa is ground in Africa, up from 15% a decade ago, most of the processing in the region is done by the same multinationals that were already grinding cocoa in Europe or elsewhere' (The Economist November 2018, p.54).

As Leissle (2018, p. 65) writes:

> "Producing countries may physically house processing facilities, but their governments do not usually own them. It is foreign multinationals that have increased grinding capacity at origins. Each of the three largest processors has a manufacturing presence in the major producer countries".

As was the case in coffee, most of the value in chocolate comes from marketing and branding. Accordingly, chocolate producers have focused more on that last part (Oxfam 2008). Talbot (2002, p. 718) suggests that, "as was the case in coffee, the final stage of the chain developed a governance structure that was a mixture of Gereffi's producer-driven and buyer-

driven types". He adds that "with high buyer-drivenness, the TNC grinders (processors) have captured control over product differentiation with technical innovations that allow them to generate diverse intermediate products independent of the origins of the cocoa" (Talbot 2008, p. 104).

Figure 8 then shows that the final market of chocolate is divided into industrial chocolate and the recently growing craft chocolate. Yet, according to Leissle (2018, p. 9), "two distinct consumer trends have been apparent in mature markets. One is demand for trade justice along the cocoa supply chain, including better remuneration for farmers and attention to child labor. The result has been a proliferation of bars with ethical trade labels (including fair-trade). The other has to do with health. Demand is rising for dark chocolate, with its lower sugar content (at least, lower than that of most milk chocolate and bonbons), and for chocolates that claim additional healthy properties, such as "raw" or organic".

This means that, while most chocolate is produced by multinationals from different mixes of cocoa, so that neither the origin of the bean nor artisanal manufacturing contribute significantly to the understanding of quality for the average consumer (Cidell and Alberts 2006, p. 1003), a market for craft chocolate has been developing in recent years. In this segment the content and origin of the cocoa and the special characteristics of each fruit are becoming valuable, contrary to the homogeneity required in the traditional market (Gilbert 2006, p. 270, Leissle 2018, p. 76) and that also characterized coffee's industrial processing. This opens an important opportunity for developing countries to get ahead of the curve and promote single origin chocolate and other varieties. While export statistics cannot show this development, Ghana, and some Latin American countries have been leading this trend.

> "Consumers have become especially interested in premium chocolates with a variety of exotic ingredients, chocolates made from single-origin cocoa beans, such as

those from Ghana, Ecuador or Venezuela, or organic and fair-trade chocolates." (Torres-Moreno et al., 2012, p. 404).

According to UNCTAD (2018, p. 29) the market of cocoa products that qualify as "niche" or "boutique" is approximated to have grown steadily for the past couple of decades at a close to 10 per cent, overtaking the average growth rate of the cocoa market at 6-7% a year. Among final consumers the recognition has risen too with about every third consumer buying at least occasionally unique flavour single-origin – commonly referred as "craft" – chocolate.

5 Policy discussion

This section explores some policies and instruments that have been proposed and tried as alternatives for increasing the benefits that producer countries get from producing primary commodities. If focuses on coffee but apply to cocoa prospects as well.

1.5.A Upgrading as forward integration – coffee roasted at origin?

According to Talbot (2002), the number of steps that must be taken after that point the horizontal lines in Figure 6 above, and before reaching the consumer, is an indicator of upgrading possibilities. He argues that because the distance is shorter in the coffee value chain than in the cocoa value chain, there would be more upgrading activities in the cocoa value chain (p. 712). This does not mean that it would be easier to reach the final consumption at the end of the chain:

"Cocoa producers may succeed in integrating forward from cocoa bean exporting to the export of cocoa powder and butter, but still not reach the final

consumption end of the chain. These considerations suggest that it will be hardest for cocoa producers to achieve full forward integration. It will probably be easier for actors in producing countries involved in the coffee chain, controlling it up to the green bean stage, to break into the final market for coffee." (Talbot 2002, p. 713).

As we saw in the previous section, there has been upgrading in the traditional sense in cocoa, albeit based on foreign capital, but reaching the final market for coffee has not been possible. Most of the coffee exported in 2015 is still in the form of green coffee (coffee not roasted not decaffeinated) (see Table 5). The roasted coffee trade takes place almost exclusively between consuming countries. Daviron and Ponte (2005) explain this pattern of trade from the fact that green and instant coffees can be stored for a long period of time, while roasted coffee loses its freshness much more quickly and there has been a general preference for blending various origins (Daviron and Ponte 2005, kindle edition loc. 1483 and 5902).

The freshness[10] and preference arguments are not immutable. Topic (2008, p. 52) notes that although later technology permitted the export of roasted and even ground coffee from growing countries as well as instant coffee manufactured in the global South, tariffs in consuming northern countries and the market power of roasters in the North prevented finished coffee exports. WIPO (2017, p. 45) states that packaging and distribution technologies were not adequate to preserve the quality and taste of roasted coffee beans until recently.

The trade in roasted coffee from origin is limited: in 2009/10 only 222,500 bags were exported from origin in roasted form compared to 6.9 million bags of soluble and 85.4 million bags of green coffee. In total, roasted coffee accounted for just 0.24% of all coffee exports (International Trade Center 2012, p. 32).

[10] https://topics.blogs.nytimes.com/2008/06/13/the-shelf-life-of-the-roasted-bean/

Expiring patents for packaging that allows roasted coffee to be stored longer than traditionally thought while keeping most of its flavor, at least to the regular day to day consumer, may change this in the future, especially if countries manage to achieve better negotiation power and are not afraid to compete with their traditional buyers. It may be a long-term project but one that Colombia is taking. In 2017, there were 54 companies exporting toasted coffee and 136 exporting green coffee, from 22 and 74 respectively in 2007 (Federacion Nacional de Cafeteros de Colombia).

1.5.B A critical view of external fair trade and other certifications

As we mentioned before, the 1960s witnessed the development of new agricultural chains, with the organic agriculture and fair-trade movements. Both explicitly encouraged and valued the differentiation of agricultural products, first through specific retailers and marketing chains, before promoting labelled products in mainstream chains (Daviron and Vagneron, 2011, p. 97).

Although organic and fair-trade products remain differentiated at the consumer level thanks to a label, although prices for organic and fair-trade products are higher than conventional ones, and although a certain degree of transparency has been achieved all the way to the consumer, Daviron and Vagneron, (2011, p. 102) consider that commoditisation is on its way.

External certification, as opposed to advice and extension services and fair trade as initially promoted by NGOS, reintroduces competition, privileging large plantations over groups of small and marginalized producers because they can afford high certification costs and are able to deliver large and consistent volumes of products of a constant quality.

Certification also helps large corporate downstream actors to control and switch between certified and hence substitutable suppliers (Daviron and Vagneron 2011, p. 99).

Although fair trade began as an attempt to de-commoditize the coffee trade it is now increasingly driven by large coffee brands as another market-capture tool via a process of 're-commoditization' (Wilson and Wilson 2013, p. 26). As Daviron and Ponte (2005, loc. 5183) summarize it, "in the extreme case, certifications promote the creation of mythologies and double fetishism, where social relations behind commodity production are apparently unveiled, but in reality such relations are concealed through the commoditization of information about them".

1.5.C Relationship coffee or Direct Trade

Over the past few decades, many food niches have emerged with a specific focus on quality. In specialty coffee, micro roasters have brought about Direct Trade coffee as a way of organizing an alternative around new tastes and qualities through ongoing and 'direct' relations to farmers and cooperatives. Holland, Kjeldsen and Kerndrup (2015) argue that instead of power, in the interaction with exporters what emerges is a coordination of quality.

As Vicol et. al (2018) state, the relationship coffee model is promoted by roasters as offering opportunities for often-marginalized producer communities to establish new and prosperous livelihood trajectories. Unlike fair trade, there is generally no third-party auditing involved in relationship coffee. Instead, the claims of roasters are verified through online marketing, including stories and photos of farmer interaction, and rely on relationships of trust with consumers.

WIPO (2017, p. 46) suggests that relationship coffee (or third wave) global value chain is relational. The emphasis on direct connection to the coffee farmers has led to a

shortened value chain. In this segment, cooperation between farmers and baristas has often led to product innovation, including new ways of preparing

coffee beverages.

Something similar is happening in cocoa. The market for micro-lots attracts growing interest from the high-quality chocolate industry. The fine flavour cocoa market shows a trend towards direct trade between producers and chocolate makers. These developments reflect growing consumer attention to production areas, as well as to the story of small-scale farmers and rural communities (UNCTAD 2017, p. 27)

As Vicol et. al. (2018) summarize, the benefits for the exporter and roaster are clear: It allows traceability, improve stability and reliability of supply, reduce or transfer risk, influence coffee production practices (and therefore quality), and achieve reputational and marketing goals. Direct relationships with producers may also reduce the transaction costs faced by roasting firms in procuring quality coffee.

Yet. Vicol et. al (2018) find that while the relationship coffee model does present opportunities for producer upgrading, these benefits have been subsequently captured by key individuals within the producer community who are able to accumulate wealth and consolidate their social position. They find that in Indonesia, the relationship coffee model has reproduced local patterns of inequality rather than contributing to poverty alleviation efforts. Hernandez-Aguilera et. al. (2017) find similar results. The relationship model did not provide significant farm-gate price differences.

In contrast, WIPO (2017, p. 54) argues that this market segment has the highest potential to increase participants' income along the global value chain. Vertical integration shortens the supply chain and ensures that farmers earn higher wages for their green coffee.

The average price differential between coffees that identify the grower and those that do not can reach USD 8 per pound.

With relationship coffee, the producing economy may benefit if the intermediaries are local instead of foreign. It may be an opportunity to link entrepreneurs in cities to farms in the country side. For coffee farmers, direct communication with buyers can sometimes lead to the sharing of technology and know-how, helping to upgrade the coffee farm and its processing (WIPO 2017, pp. 15 and 54). It may also create a reputation that can be used eventually for a geographical indication of origin.

While the previous strategies aim at improving the market and conditions of producers, quality and differentiation of the product itself may be the most promising alternative.

1.5.D Intellectual Property Rights and Geographical Indications of Origin

Daviron and Ponte (2005) argue that "market power is not only a question of market share (and abuse of it), but also of capturing the most valuable attributes while undermining the value of the attributes that need to be purchased." (Daviron and Ponte 2005, loc. 5460).

In the case of coffee and cacao, the material attributes of the products (the beans) are commoditized, while in-person services and symbolic attributes generated through branding, packaging, retailing and consumption are appropriated downstream in the value chains.

Daviron and Ponte (2005) argue that "higher prices and a fairer distribution of value in coffee [and cocoa] chains is unlikely to occur unless producers embed symbolic content in the material things they sell, secure property rights on this symbolic content, and obtain higher prices in doing so".

One of such symbolic attributes is that of quality. It is difficult to imagine a colloquial discussion about coffee with mentioning Expresso and Italy. Similarly, it may be ingrained in collective consciousness that Swiss chocolate is the best. Yet, both ideas are collective constructs aided by institutional support. European Union programs encourage specialty agriculture as a means of developing rural regions equating place association with a competitive edge. "Domestic-based quality is nearly always based on a region or city rather than a country (e.g., Parma ham, Champagne, or Gouda cheese), with coffee and chocolate as exceptions" (Cidell and Alberts 2006, p. 1001).

This strategy is not exclusive of European countries. Thanks to a marketing campaign that started in the 1960s, it is natural for many to associate Colombia with coffee: Juan Valdez, a ficticious character from a coffee producing area in Colombia, became a symbol for good quality coffee and many toasters and coffee traders began using the patented logo "100% Colombian coffee".

"Geographical indications (GI)" are a special form of intellectual property in which the "indication" – the markings or label -- identifies a good as originating in a particular territory of a Member and that the good has certain qualities, reputation or other characteristics that are essentially attributable to that geographical origin (Hughes 2010, p. 5).

Daviron and Ponte (2005) make a strong case for geographical indications. They argue that GI systems can be designed to: (1) facilitate the enforcement of intellectual property rights in relation to geographical indications of origin and truth in labelling; (2) promote regional or country-specific recognition; (3) build consumer trust and loyalty; and (4) improve and maintain quality. (loc. 4738). They argue that GI systems can also be engineered to cater to the needs of smallholders, especially in the more inclusive versions. Boundaries can be set to cover mainly smallholder-based producing areas. An additional step that could be taken is one of

adding social and environmental concerns to GI systems, so that civic concerns are tied to specific places. (Daviron and Ponte 2005, loc. 4774)

According to WIPO (2017, p. 62), "Brazil, Jamaica and Mexico have all used collective and certification marks in the US. Colombia, Ethiopia, Jamaica and Kenya also use trademarks to protect the origin of their coffee products. In the European Union, there are two GIs on coffee originating from Thailand, and one each for Colombia, the Dominican Republic and Indonesia, four EU trademarks related to the word "coffee" for Jamaica and Ethiopia, and five trademarks on logos for coffee from Colombia and Jamaica[11].

Setting a legal precedent, the dispute between Ethiopia and Starbucks was resolved in June 2007 in favor of the recognition of Ethiopia's rights over a trademark for its Sidamo, Harrar, Yergacheffe coffees. According to Samper et. al. (2017), OriGIn, the Geneva-based world network for GIs, estimates that there are at least 79 coffee GIs recognized around the world. Café de Colombia GIs are perhaps the only that have obtained recognition in markets other than the country of origin (Andean countries, European Union and Switzerland) or as a Certification Mark in the United States and Canada.

One study, cited by WIPO (2017, p. 54), focusing on the U.S. market estimates that single-origin coffee protected using IP instruments fetches at least three times the average U.S. retail price for roasted coffee.

Upendranadh and Subbaiah (2012) suggest that coffee trademarks can be licensed to international roasters and thus act as leverage for single-origin coffee in mass market brand building. Additionally, GIs can be part of government support of estate branding and schemes to boost domestic coffee demand in coffee-producing countries. Informal intangibles that can lead to long term "GI branding" require the right farm organization governance, developing

[11] See WIPO 2017, p. 62 for more details.

alliances, know-how, market knowledge and enforcement strategies (Samper et. al 2017, p. 60).

Cocoa producers can and should follow this path towards de-commodification. After all, as Daviron and Ponte state, “agricultural products that are internationally [are] commodit[ies] not because of a curse of nature, but because peculiar institutions made it such. Specific standards, grades and futures markets have been organizing its interchangeability across time and space for more than a century”. It may be time for new institutions.

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