

Intangibles are key to seizing new opportunities in the coffee market

Farmers can boost their earnings by selling premium coffees. That means upgrading their farms and investing in branding.

Coffee sales prices
(in USD/lb)



Chapter 2

Coffee: how consumer choices are reshaping the global value chain

Coffee is one of the most widely consumed beverages in the world; nearly 35,000 cups are drunk every second on any given day.¹ In the United States – the biggest market in terms of size and value – three-quarters of the population drinks coffee.²

As a commodity, coffee is produced in the Global South but mainly consumed in the Global North. Around 70 percent of the demand for it comes from high-income countries. These countries tend to be located in the northern hemisphere and are referred to as the coffee-importing countries. The coffee-producing countries, on the other hand, lie in the southern hemisphere and fall within the low- to middle-income brackets.

Coffee is one of the most important traded agricultural commodities, especially for producing countries. It is the income source for nearly 26 million farmers in over 50 developing economies.³ For seven countries in particular, coffee exports account for more than 10 percent of total export earnings over the past three decades.⁴ While the importance of coffee exports for countries' incomes has been decreasing over time, upgrading their participation in the global coffee value chain can contribute to their economic development, especially in combating poverty.

The popularity of coffee is growing. More and more countries outside the traditional coffee-importing countries such as Japan and those in Europe are increasing their coffee consumption levels. The Food and Agriculture Organization (FAO) and the International Coffee Organization (ICO) separately estimate that the growth in consumption is faster in less developed economies.⁵ In addition, new coffee products and services are attracting more consumers to drink coffee by varying how, what, when and where coffee products are consumed.

Studying the global value chain for coffee offers important insights into how poorer economies that rely on agricultural commodities may upgrade their value chain activities to benefit from international trade. Traditionally, the coffee global value chain has been dominated by market/buyer-driven governance, with most value generated by downstream participants. However, recent developments in a newer coffee market segment offer opportunities for upstream coffee producers to enhance their value chain participation.

One way for coffee participants to capture higher value added along the coffee global value chain is investing and owning intangible assets.

This chapter looks at the role of intangible assets in the coffee global value chain. It starts by describing how the chain has evolved over the decades, underlining the importance of coffee consumers in driving today's global value chain. Section 2.2 then focuses on the role of intangible assets in the global value chain, paying particular attention to how the distribution of value added is influenced by these assets. Section 2.3 takes a closer look at how intangible assets have been used in upgrading activities along the value chain, and discusses how technology flows between different participants in the chain.

2.1 – The changing nature of the coffee value chain

2.1.1 – From coffee cherries on a tree to the coffee in a mug – an international value chain

As for most traded commodities, the coffee supply chain resembles a snake. It begins with the farmer who chooses the coffee tree variety, and farms and harvests the coffee cherries. The mature coffee cherries then undergo different post-harvesting processes to yield green coffee. Depending on the market structures in place in the different coffee-producing countries, post-harvesting processes may take place at the farm site, in a cooperative, at a wet or dry mill owned by local traders, or even at a mill owned by exporters.

The exporters or cooperatives then select the green coffees by their density, size and color, and pack them according to specific definitions and standards set by coffee importers or industrial users such as roasters and soluble coffee producers.

Green coffees arriving in bulk in coffee-importing countries are stored in warehouses. The importers may mix and blend different green coffees from various countries in response to requests from buyers. They then sell these blends or the green coffee shipments to roasters or soluble coffee manufacturers.

The roasters or soluble coffee manufacturers may also blend the green coffee according to their needs. They then roast the green coffee using their own roasting recipes and protocols to obtain particular flavor profiles adapted to the regional taste preferences of their customers.

Box 2.1

Trading coffee is risky

Coffee prices are highly volatile because coffee yield is sensitive to weather conditions and outbreaks of disease.⁶ This wide price fluctuation makes coffee transactions risky for both buyers and sellers. In order to mitigate this risk, the futures market is used as a reference for most green coffee transactions.

The buyers – importers, roasters and soluble coffee producers – enter into a standard commercial contract with the sellers – coffee farmers, exporters or importers – using price benchmarks set by the international exchange platforms in New York for Arabica coffee and London for Robusta coffee.⁷ These prices are usually defined in the contract on a price-to-be-fixed basis, with a given quality of coffee specified, to be delivered at a specific delivery location within a specified time frame. An agreed differential is established and is later combined with the price of green coffee as fixed at different intervals by the buyer and seller at the stipulated futures delivery month.⁸

The absolute price received by the seller can be significantly different from the price paid by the buyers because final future prices are usually decided at separate times.

Certain key participants help to reduce the risk in coffee trading. In particular, importers and trading houses play an important role in facilitating coffee trade by taking on some of the transaction risk. For example, the buyer-seller contract will specify that acceptance of the coffee products on arrival is “subject to approval of sample.” If the buyer rejects the coffee shipment because the product fails to meet the quality standard or a specific technical standard, the seller will need to take possession of the coffee at the destination.

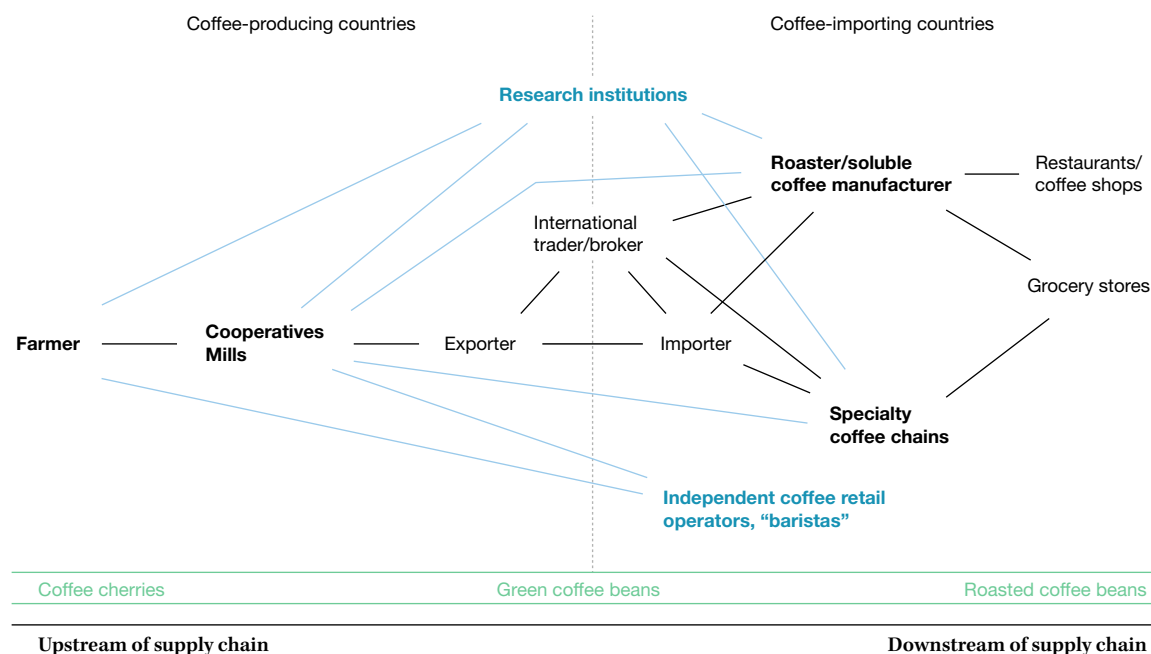
Coffee farmers and/or exporters based in coffee-producing countries are usually unable to address or absorb this extra cost and additional risk. Instead, intermediaries will be in a better position to find a different buyer for the shipment, while also finding an alternative solution for the original buyer who has rejected it.

Source: ICO and World Bank (2015) and Samper et al. (2017).

Figure 2.1

How coffee flows across the global value chain

Overview of the coffee global value chain showing modifications for newer market segments



Source: WIPO based on Ponte (2002) and Samper et al. (2017).

Note: Black lines indicate traditional links between participants; blue lines indicate relatively new links influenced by the growing importance of the second and third wave market segments.

Figure 2.1 shows the coffee supply chain. It is international in two main respects. First, as noted above, most coffee is consumed in rich importing countries such as the United States, Germany, Japan, France and Italy. While coffee-producing countries have also increasingly consumed coffee in recent decades, their levels of consumption are still significantly below those of their richer counterparts.⁹

Second, the short shelf life of roasted coffee beans necessitates that most of the roasting is done close to where it is consumed. Packaging and distribution technologies were not adequate to preserve the quality and taste of roasted coffee beans until recently. This slow technological development made it difficult for roasters in coffee-producing countries to export their roasted coffees worldwide. Therefore, coffee-producing countries tend to export green coffee – as an intermediate good in the value chain – and blending and roasting tends to take place in importing countries.

2.1.2 – Putting consumers first – how new forms of demand are changing the global value chain

The coffee global value chain is traditionally characterized as being buyer-driven, with roasters, large retailers and branded merchandisers capturing most of the value. These downstream participants are also the ones who set the production and quality standards for the rest of the industry.

However, this market-based governance is slowly changing. Two new market segments of coffee consumption are shifting the perception of coffee consumption from coffee-as-a-product to a coffee-plus-social-content product and service. Drinking coffee has become more social, and coffee consumers have become more discerning.

These new market segments provide opportunities for different participants to upgrade their role along the chain.

Demand for coffee is segmented into three market categories: conventional, differentiated and experiential. These segments are also referred to as the first, second and third waves, respectively. They differ according to target consumers, product offerings and prices.

The first wave – a “conventional” market segment

The first wave market segment accounts for the largest share of coffee consumption in terms of both volume and market value. Samper et al. (2017) estimate that it constitutes 65 to 80 percent of total coffee consumption, and USD 90 billion or 45 percent of the total value of the global coffee market.¹⁰

The target consumers for this segment mainly drink their coffee at home. Consumption is typified by daily need-for-energy coffee drinking and reasonably priced products which consumers can purchase easily at any large retail chain or small grocery store.

The products – in the form of packaged roasted coffee beans, soluble coffee and, more recently, single-serving capsules – are standardized, but there may be significant differences with regard to taste to reflect regional preferences. The differences between competing products can be reduced to the quality of the coffee blend in relation to its price.

Until a few decades ago, the quality of most coffee beans used in these products ranged from low to mediocre, but that emphasis on lower-grade coffee beans is shifting as large roasters such as JAB and Nestlé have introduced new products to cater to more sophisticated consumers. These products include single-serving capsules from single-sourced origins or blends of higher-grade coffee beans.

Governance of the coffee global value chain in this market segment is market driven. The coffee buyers – importers, roasters and soluble coffee manufacturers – purchase their green coffee based on cost considerations. If prices of Arabica beans are higher than those of Robusta beans, buyers may decide to purchase more Robusta beans and process them to attain specific standards. In addition, the origin of the green coffee has not been a significant selling factor in this segment. Importers, roasters and soluble coffee manufacturers will source coffee beans from many different places as long as their quality standard is met.

Participants in the coffee value chain take on risks when trading green coffee on the open market. Coffee prices tend to fluctuate significantly over time, and so contracts in the futures market are used (see box 2.1).

The second wave – a “differentiated” market segment

The second wave market segment targets consumers who prefer to consume coffee in a social setting. In this segment, consumers are able to appreciate a wide range of espresso-based beverages in a comfortable and convenient location.

Coffee products in the second wave range from the typical Italian espresso to more elaborate concoctions of coffee plus foamed milk. These beverages are prepared according to specific standard techniques by experienced servers, or baristas. In addition, importance is attached to the social element of consuming coffee; most coffee shops in this market segment offer a distinct ambiance to attract their customers.

The quality of the coffee beans used tends to be higher than those in the first wave. Over the last couple of decades, specialty coffee shops have been appealing to ethically aware consumers by offering drinks made from sustainably farmed beans whose farmers have been appropriately rewarded.

As with the first wave, governance of the global value chain for the second wave is market-based. However, the increased consumer interest in where the coffee beans are sourced, how they are farmed and whether the farmers receive fair wages offers differentiation opportunities to participants, enabling them to upgrade their activities along the value chain. Voluntary sustainability standards (VSSs) contribute to the image of specialty coffee shops, reinforcing the impression of social responsibility and perceived value, and distinguishing coffee in the second wave from first wave brands.

The third wave – an “experiential” market segment

The third wave market segment targets consumers with discerning coffee tastes, and is priced accordingly. Consumers in this market are willing to pay premium prices for their coffee. In exchange, they want to know where their coffee beans are sourced, how they have been farmed and how best to brew the beans in order to fully appreciate the flavor, body, aroma, fragrance and mouthfeel of the coffee.

The coffee products in this segment include the story behind the farming of the coffee beans as well as their roasting recipes and beverage preparation techniques. The emphasis is akin to the wine industry’s flavor profile, which valorizes the *terroir*, grape variety and craftsmanship involved in producing a wine.

The quality of the coffee beans tends to be superior to the other two market segments. Producers in this market focus on premium-grade coffee portfolios, with different blending and roasting techniques tailored to the beans. Baristas have deep product knowledge of the coffee beans, and may even have played a role in cultivating the coffee plants.

Governance of the third wave global value chain is known to be relational. The emphasis on direct connection to the coffee farmers has led to a shortened value chain (compare the traditional chains in black with the newer chains in blue in figure 2.1). In this segment, cooperation between farmers and baristas has often led to product innovation, including new ways of preparing coffee beverages.

In comparison to the first two waves, consumption in this segment is still low relative to the market as a whole, but it is growing fast.

2.2 – Intangible assets and value added

Ownership of intangible assets plays an important role in the coffee global value chain and helps explain how income is distributed along the coffee global value chain.

Formal intangible assets such as technology, designs and brands are important in helping participants in the chain appropriate returns to their innovation investments. These intangible assets are usually protected by formal intellectual property (IP) rights such as patents, utility models, industrial designs, trademarks, copyrights and trade secrets.

Informal intangible assets are also crucial in helping participants gain a higher share of income. For example, the baristas’ craftsmanship and know-how in blending and roasting particular coffee beans account for significant value added in the third wave market segment.

Moreover, access to distribution channels in coffee-importing countries is crucial in ensuring that coffee products are seen by potential consumers.

Table 2.1**The three coffee market segments**

	First wave – conventional	Second wave – differentiated	Third wave – experiential
Target consumers	Daily consumption, mostly consumed at home but could be elsewhere	Wide coffee beverage selection, usually consumed in a social setting	Socially aware coffee consumers – aficionados, who are willing to pay a premium for high-quality coffees which meet ethical standards
Consumer needs	<ul style="list-style-type: none"> • Energy 	<ul style="list-style-type: none"> • Energy • Social experience • Ethical awareness and/or social consciousness 	<ul style="list-style-type: none"> • Energy • Social experience • Ethical awareness and/or social consciousness
Products and services	<ul style="list-style-type: none"> • Packaged roasted coffee blend • Soluble (or instant) coffee • Single-serving pods 	<ul style="list-style-type: none"> • Espresso beverages such as caffè latte, latte macchiato and the like • Know-how regarding different brewing techniques for the coffee beverages – usually standardized • Some knowledge of the origin of the coffee beans as well as farming methods • Ambiance of the coffee shop 	<ul style="list-style-type: none"> • Single-origin coffee beans • Blending and roasting usually done in-house • Extensive know-how regarding different brewing techniques to enhance the flavor and aroma of each coffee • Deep knowledge of the origin of coffee beans and farming methods • Ambiance of the coffee shop
Production types	<ul style="list-style-type: none"> • Standardized mass production • Standardized quality 	<ul style="list-style-type: none"> • Different types of espresso-based coffee • Relatively standardized coffee-brewing techniques and service • Caters to the social experience of drinking coffee, similar to a coffee house 	<ul style="list-style-type: none"> • Tailored coffee origin-roast-technique service • Baristas tend to have vast knowledge of the coffee beans as well as the proper technique for brewing and preparing the beverage
Distribution channels	<ul style="list-style-type: none"> • Grocery stores • Food service outlets 	<ul style="list-style-type: none"> • Grocery stores • Online • Specialty coffee chains 	<ul style="list-style-type: none"> • Independent coffee retail operations • Online
Price point	Low	Mid to high	High to very high
Global value chain governance	Mostly market-driven	Mostly market-driven	Mostly relational

Source: WIPO based on Humphrey (2006), García-Cardona (2016) and Samper et al. (2017).

2.2.1 – Drinking versus growing coffee: an uneven income distribution

A significant share of the value added to coffee along its production chain is added close to where the coffee is consumed. Five factors account for this pattern.

First, roasted coffee beans lose their flavor and aroma quickly, so most beans are exported as green beans in order to preserve their quality.

Coffee is also exported as soluble coffee. However, soluble coffee production is capital-intensive, which may pose a barrier to entry in some coffee-producing countries. And while these countries are increasingly exporting coffee in soluble form, the unit value they get is less than that of coffee-importing countries.¹¹

One reason for this discrepancy in trade value is likely due to branding capabilities and access to distribution channels.¹²

Second, different continents and regions show distinctive preferences for the types of coffee beans used – blends of Arabica and Robusta coffee beans, or single origin – and even the degree of coffee bean roast. For example, Northern European countries prefer their coffee blends to consist of lighter roasted Arabica beans, while their Southern counterparts prefer darker roasts of coffee blends that include Robusta beans.¹³ Roasters and soluble coffee manufacturers located close to consumers tend to be better placed than their competitors in coffee-producing countries to tailor the blend and roast to regional preferences.

In addition to tailoring blends and roasting degrees to specific regional preferences, large roasters locate their roasting facilities so as to benefit from economies of scale. For example, a roasting facility in Germany may roast and blend coffee for several European brands, reducing its costs and increasing its production levels.

Third, industrial policies implemented in coffee-importing countries tend to favor the importation of unprocessed, mainly green, coffee beans over roasted and processed (soluble) coffee. This trade restriction in the form of tariff escalation inflates the cost of any roasted or even processed coffee exported by coffee-producing countries.

However, it is worth noting that for many coffee-importing countries – particularly the more developed economies – tariffs on coffee have been steadily reduced through various bilateral, regional and multilateral trade agreements. And today, while tariff escalation remains an issue, tariffs on roast and processed coffee tend to be low in the European Union and the United States; by contrast, India and Ghana have duties on soluble coffee of 35 and 20 percent respectively.¹⁴

Moreover, a study conducted by ICO (2011) shows that this tariff escalation is likely to have a higher impact on coffee consumers residing in less developed countries than their developed counterparts. In particular, consumers in developed countries will continue to purchase coffee even when the price of coffee beverage increases. This implies that coffee consumers in these countries will continue to consume their favorite imported coffee even if there is an increase in tariff-equivalent tax imposed on those imports.

There are also regulatory measures affecting the import of roasted and processed coffee from coffee-producing countries, such as sanitary and phytosanitary measures, which are not trade restrictions per se but may entail higher compliance costs for firms in coffee-producing countries.

Fourth, most product and process innovations related to processing coffee were developed in coffee-importing countries. Many apparatuses were invented and introduced on both sides of the Atlantic Ocean to maximize the taste and flavor of coffee by roasting, grinding and even percolating the coffee beans.¹⁵

Soluble coffee manufacturing, which involves more processing than coffee roasting, was arguably invented during the U.S. Civil War so that soldiers could easily drink caffeinated beverages.¹⁶ However, Nestlé, with its patented technology for producing powdered soluble milk, was able to improve on the taste of soluble coffee, and so dominate the soluble coffee market.¹⁷

Ownership of coffee-related patented technologies has been useful in helping launch new coffee products and services. The patents and industrial designs owned by Nespresso on its coffee machines and capsules helped cement Nestlé's strong presence in catering to coffee consumers in the first wave market segment. Most of these patents have now expired, but both Nestlé and Nespresso continue to be strong brand names in the coffee market.

And lastly, branding is an important investment to build consumers' trust and gain market share in the relatively saturated coffee market. Research has shown that branded products can command higher prices than their generic counterparts.¹⁸ Many roasters and soluble coffee producers and retailers invest heavily in this intangible asset, to differentiate themselves from their competitors and gain goodwill. Both Nescafé and Starbucks are well-recognized trademarked names, popular with coffee consumers worldwide.

Coffee-producing countries are slowly adopting IP protection to capitalize on their intangible assets. While many of the latest advances in coffee-related patentable technologies still take place in coffee-importing countries (see part 2.2.3 below), some coffee-producing countries are also developing their own coffee-processing capacities. Brazil, for example, has been producing roasted and soluble coffee to rival roasters and soluble manufacturers in more developed economies.

These countries are also pursuing branding more actively as a way to differentiate their coffees from others. For example, a few countries have been investing in protecting their coffee beans through geographical indications (GIs) and trademarks. Coffee beans originating from Jamaica (Blue Mountain) and Colombia (Milds) have fetched premium prices.¹⁹

However, ownership of these formal intangible assets is not enough to achieve the same level of access to consumers in more developed economies. The buyer-driven nature of the value chain, in addition to the difficulty of accessing distribution channels in the importing countries, makes it challenging for upstream coffee producers to compete in the downstream coffee market. But this rigid governance structure is slowly changing with the rise of the third wave market segment.

2.2.2 – How coffee participants' income varies according to the activity performed

Participants' income is distributed according to the activity they perform in the coffee value chain. As mentioned in chapter 1, this value added by different activities is a function of the capital and labor costs at the different steps of the chain. In particular, intangible capital plays a crucial role in explaining the value added along the chain.

The consumption traits characterized by the three coffee market segments affect the contribution of each participant. In some cases, the emphasis of the market segment creates new opportunities for participants, giving them a way to increase the value added of their activity. For example, their role as intermediaries between coffee farmers and buyers means importers and exporters can play an additional role as agents promoting the supply and certification of VSS coffees in the second wave.

In the third wave, by contrast, the direct link between farmers and independent coffee retailers eliminates the need for intermediaries and shortens the supply chain.

Participation in the different market segments also affects participants' ability to upgrade their activities and gain higher remuneration, especially those in the second and third waves. Table 2.2 provides a simplified overview of participants' roles and the related intangible assets. It relates back to figure 2.1 in showing how roles and links between participants have changed in the newer market segments. For example, direct trade between the farmers and independent retailers (in blue in figure 2.1), emphasizes the new intangible assets that farmers are now able to use to their advantage (marked with an asterisk in table 2.2).

Intense competition in the first wave

As noted above, the first wave market segment accounts for the largest share of the world's coffee consumption in terms of both volume and value. The sheer volume of coffee products sold in this market segment gives the downstream value chain participants – roasters, soluble coffee producers and retailers – significant power over the other participants in the supply chain. Cost-saving measures obtained along the chain are usually absorbed by these producers.

This market segment is a prime example of a buyer-driven global value chain.

However, competition between coffee producers in this market segment is high. This has led to significant consolidation of brands in the last few decades. Seven companies account for nearly 40 percent of coffee sold by retail grocers. They include international brands such as Jacobs Kronung (Germany), Maxwell House (United States), and Nescafé (Switzerland). These brands compete side-by-side with grocery store private brands for market share.

Due to the intense competition, the main consideration for downstream participants is to keep costs low while maintaining standards that consumers have come to know. Any slight change in price may induce consumers to switch to a different brand.

Figure 2.2 illustrates the distribution of income between coffee-importing and coffee-exporting countries in the grocery retail market for the period 1965-2013.²⁰ Since 1986, roasters and soluble coffee manufacturers in coffee-importing countries (in light blue in the figure) have gained a higher share of the total income in the market than participants in coffee-producing countries (in dark blue). In addition, the figure shows how coffee-producing countries' income moves in tandem with global coffee prices, as captured by the ICO composite price index. There has been a particularly close link between the two since 1989, when the International Coffee Agreement (ICA) quota restriction was abandoned (see box 2.2).

Table 2.2

Coffee participants, their value added activities and their intangible assets

Participant	Main value added activities	Main actors	Risks	Intangible assets	Geographical location
Farmers	<ul style="list-style-type: none"> Grow and harvest coffee crops. Many are connected to cooperatives or farmers associations. Coffee cherries are processed (in wet or dry processes) at the farm or by the next participant in the chain. 	<ul style="list-style-type: none"> Farmers and/or coffee growers; most of the farmers grow their coffee crop on less than five hectares of land. 	<ul style="list-style-type: none"> Crops and harvest are affected by changes in climate. The high volatility of coffee prices and domestic exchange rates are a threat to farmers' incomes. 	<ul style="list-style-type: none"> Farming methods (whether traditional or not).* Trademarks and/or geographical indications.* 	<ul style="list-style-type: none"> In over 50 less developed countries.
Cooperatives, Mills	<ul style="list-style-type: none"> Cooperatives build on economies of scale to reduce the cost of cleaning, sorting and/or grading green coffee. May sometimes export or roast the coffee. Most sell to exporters according to exporters' needs. Mills treat cherries and /or perform hulling (removing remaining fruit from beans). They operate like cooperatives in some areas. 	<ul style="list-style-type: none"> Cooperatives are usually located in other regions and do not directly compete with one another. 	<ul style="list-style-type: none"> Price volatility, credit risks and inability to control hulling or dry-milling operations. 	<ul style="list-style-type: none"> Some cooperatives are owned or supported by the state. The link between cooperatives and farmers helps in disseminating new farming methods or even new coffee varieties to plant.* 	<ul style="list-style-type: none"> In coffee-producing countries.
Coffee exporters and importers	<ul style="list-style-type: none"> Coffee beans from farmers, cooperatives, etc. are purchased and prepared for exportation. Some coffee exporters also perform post-harvesting processes such as cleaning. Coffee beans are mechanically grouped by their density, size and color to comply with definitions and standards set by clients. Milling may be outsourced. Importers store the green coffee and may blend it. Provide logistical arrangements to handle large inventories and deliver product to roasters in timely manner. As of more recently, they also perform traceability and certification services due to their connection to both upstream and downstream coffee actors. 	<ul style="list-style-type: none"> Many coffee exporters are connected to international importers or trading houses. Three firms arguably control 50 percent of the world's coffee imports: Volcafe and ECOM of Switzerland, and Neumann Coffee Gruppe of Germany. Large coffee farmers and cooperatives may also be coffee exporters. 	<ul style="list-style-type: none"> Highly leveraged business with exposure to price and exchange rate fluctuations. 	<ul style="list-style-type: none"> Trade secrets. Strong network/link to both upstream and downstream coffee supply chain providers. Know-how regarding blending, grading and some processing. Patents. Can attest to farming methods and support eco-labelling or any other types of certifications as demanded by their clients.* 	<ul style="list-style-type: none"> Exporters have procurement agencies located close to the farms in coffee-producing countries. Importers tend to be located in coffee-consuming countries.
Roasters and soluble manufacturers	<ul style="list-style-type: none"> Process green coffee beans based on regional preferences as well as to standard specifications using both proprietary technologies and firm-specific know-how. Distribute roasted and soluble coffee to various coffee retail outlets, depending on the standard specification of that market segment. Invest in packaging and branding to differentiate products from those of competitors. 	<ul style="list-style-type: none"> Nestlé, JAB-Jacobs Douwe Egberts, Strauss, J.M. Smucker Co. Folgers Coffee, Luigi Lavazza SpA, Tchibo GmbH and Kraft Heinz Co. represent nearly 40 percent of the major roasting companies in the retail grocery market. Nescafé (owned by Nestlé of Switzerland) and DEK and Dr. Otto Suwelak of Germany are the top soluble coffee manufacturers. 	<ul style="list-style-type: none"> Requires significant capital investment and reliance on economies of scale for soluble coffee manufacturers. 	<ul style="list-style-type: none"> Patents. Trademarks. Industrial designs. Trade secrets. Know-how in blending and roasting for market preferences. 	<ul style="list-style-type: none"> Usually located in proximity to the consuming market. Soluble manufacturers may be located elsewhere than the consuming market, thanks to the longer shelf life of soluble coffee products.

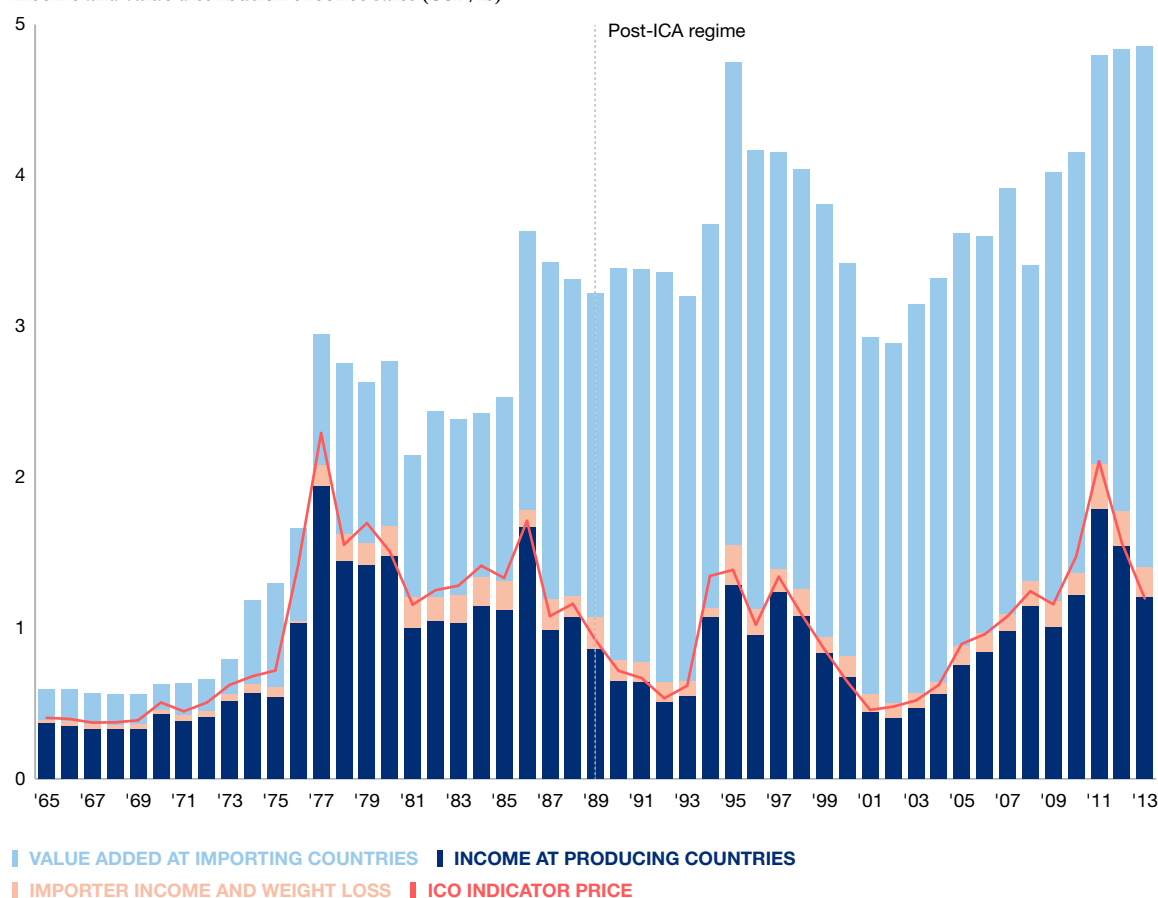
Source: WIPO based on Samper et al. (2017).

Note: *denotes new intangible assets due to opportunities in the newer market segments.

Figure 2.2**Coffee-importing countries take most of the income from retail sales**

Share of total income from grocery retail coffee going to exporting countries, importers and importing countries, 1965-2013

Income and value distribution of coffee sales (USD/lb)



Source: Samper et al. (2017) based on data collected from the FAO and ICO.

Note: Retail prices of grocery sales attributed to coffee-importing countries are based on USD per pound of roasted coffee, while incomes in coffee-producing countries and import prices are USD per pound of green coffee free-on-board (FOB). The weight loss refers to the hulling, drying, export preparation and roasting of green coffee. The ICO indicator price is a benchmark price for green coffee of all major origins and types. The ICA quota regime was generally in force from 1962 to 1989, but was temporarily abandoned because of high coffee prices during the period 1975-1977.

The high degree of competition in the first wave market segment implies that the profit margin upstream – from farmers to exporters in coffee-producing countries, and in certain cases to importers in coffee-importing countries – will tend to be small.²¹

Daviron and Ponte (2005) argue that the roasting, blending, grinding and vacuum packaging processes along the coffee value chain are relatively low-tech and make up a small share of downstream participants' margins. Rather, it is the investments they make to differentiate their coffee products, particularly through branding, that generate a significant share of the high value added in coffee-importing countries.²²

Box 2.2

The ICA quota restriction and its impact on income distribution

The global coffee trade was heavily regulated by an International Coffee Agreement (ICA) between 1962 and 1989, albeit not consistently.²³

The aim of the agreement was to reduce coffee price fluctuations and stabilize prices, especially when coffee prices were low. Parties to the agreement, comprising both coffee-producing and coffee-consuming countries, agreed to a target band price for coffee and limited exports of coffee by assigning export quotas to different producing countries. Quotas were relaxed when coffee prices rose above the target band, and tightened when they fell below it. They were abandoned completely when coffee prices rose well above the band, as was the case from 1975 to 1977.

Coffee prices were relatively high between 1963 and September 1972, October 1980 and February 1986, and November 1987 and July 1989, because of quota restrictions. During 1973 and 1980 there was no agreement between the parties to the agreement and so the quota restriction was suspended, and after 1989 the agreement was abandoned.

According to an estimate of income distribution under the ICA quota regime by Talbot (1997), approximately 20 percent of coffee income was retained in the coffee-producing countries, while coffee-importing countries accounted for 55 percent of income.²⁴ In contrast, when the ICA regime was abandoned, the share of total income attributable to coffee-producing countries dropped to 13 percent and coffee-importing countries saw their share surge to 78 percent.

Talbot cautions that while the ICA quota restriction regime may have been responsible for the higher share of income accruing to the coffee-producing countries, price fluctuations due to changes in global coffee production yields may have had an effect on the income split between producing and importing countries.

A rise in international coffee prices would shift a greater share of income to coffee-producing countries, while a fall would raise the share going to importing countries.

More recent estimates of the income distribution generally concur with the assessment that coffee-importing countries account for a higher share of the income from coffee than before.²⁵ Two factors explain the lower share of income accruing to coffee-producing countries – a real-terms decline in international coffee prices and an increase in non-coffee related costs in the coffee industry.

There were many problems in maintaining production restrictions under the quota regime. First, coffee-importing countries had to agree to higher prices than they would have received without the regime. Second, efficient producers in coffee-producing countries had to restrict their sales of coffee beans even when prices were high, and so lose potential revenue, in order to comply with the regulation. Some countries destroyed coffee beans in high-yield years.²⁶

And third, the quota restriction gave incorrect signals to farmers with regard to their yield and planting decisions. Since the price they received was disconnected from real green coffee consumption needs, they were encouraged to produce more than real market demand, causing further downward pressure on international coffee prices. A more recent study on the effects of the ICA quota restriction on coffee yield argues that coffee harvests are lower today in part because of the lower coffee price in place after the agreement was dissolved.²⁷

Despite these problems, the restriction generally met its objective of stabilizing prices for coffee producers when it was in force.

The importance of certification in the second wave

The second wave market segment began in the 1990s when the price of coffee fell sharply after the end of the ICA quota restriction.²⁸ Soon thereafter, non-governmental organizations (NGOs) started highlighting the impact of the low coffee prices on farmers, calling for action to help alleviate this problem. In response, coffee specialty shops such as Starbucks started offering coffees that met the expectations of their more socially conscious consumers. Sustainably farmed, organic coffees and products that promised higher prices for farmers started appearing in these shops along with their traditional outlets in health-food stores.

Most specialty shops do not have direct access to coffee farmers and so have to rely on intermediaries to ensure that the coffee beans they purchase meet their chosen criteria. Exporters in coffee-producing countries, with relationships with both coffee farmers on the one hand and the importers or roasters in coffee-importing countries on the other, are well placed to arrange for the supply of certified beans that comply with given farming methods and other sustainability criteria. Some NGOs also help provide certifications such as Fair Trade or Rainforest Alliance certifications.²⁹

The higher prices for these certified or labelled coffee products – with their emphasis on more value flowing to participants upstream in the value chain – are reflected in a different income level for farmers than in the first wave (see table 2.3). A host of other benefits clearly associated with VSSs have also been observed, ranging from improved resource and environmental conservation to better labor practices.³⁰

However, researchers differ on whether farmers receive significantly higher incomes. Some argue that farmers participating in this market segment receive higher prices than those in the first wave; others are less convinced.³¹

The skeptics argue that the cost of implementing a VSS and complying with certification standards may offset the higher gross income received, or that price premiums are declining.³²

Knowing the origin of your third wave coffee

The third wave market segment places high importance on appreciating the coffee beverage. Information about upstream activities – such as the origin of the coffee beans, how they were farmed and the climate conditions – is seen as almost as important as the downstream coffee activities of roasting, blending and brewing.

Table 2.3

Coffee farmers receive higher incomes in the newer market segments

		First wave		Second wave		Third wave	
		USD/lb (453g)	Index	USD/lb (453g)	Index	USD/lb (453g)	Index
Coffee farmer to exporter	Producer/farm gate	1.25 (a)	86	na		4.11	80
	Exporter	na		na		0.45 (d)	
	Dry milling	na		na		0.4	
	Packaging	na		na		0.11	
	Cooperative services	na		na		0.07	
Importer	Green FOB	1.45 (b)	100	2.89	100	5.14	100
	Logistic costs and importer margin			0.24			
	Green coffee at warehouse	na		3.13	108.3	6.58	128
Roaster	Weight loss and delivery to roaster	na		3.91		na	
	Packaging and direct labor	na		0.84		na	
	Other wages	na		1.00		na	
	Other fixed costs	na		2.00		na	
	Fair Trade USA fee for maintaining certification	na		0.04		na	
	Traveling to origin	na				0.35	
	Gross margin	na		0.71		na	
	Total roaster sale price	4.11 (c)	283	8.50	294	17.45	340

Source: ICO (2014), SCAA (2014) and Wendelboe (2015).

Notes: (a) Simple average from all ICO countries that submitted data; (b) average exdock indicator minus 10 cents for ex-dock FOB conversion; (c) simple average from all ICO countries that submitted data on retail prices minus 30 percent to cover channel markup, (d) producer–exporter breakdown based on 2012 figures. Index FOB = 100. Data for the market segments are based on 2014 prices.

This market segment arguably has the highest potential to increase participants' income along the global value chain. First, there is direct trade between coffee farmers and independent retailers. This 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.³³ Moreover, one study 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.³⁴

Table 2.3 illustrates the different incomes that coffee farmers receive in the different market segments. The farm-gate price per pound of coffee that a farmer supplying the second or third wave market segments receives is higher than in the first wave. In particular, the average third wave farmer's income per pound is triple that in the first wave. While this jump in income is impressive, it reflects the differentiation strategies employed upstream in the supply chain. In the second wave, differentiation is achieved through participation in a VSS, while third wave farmers look to differentiate both by emphasizing the quality of coffee bean and through direct trade with roasters in coffee-importing countries.

The closer relationship between upstream and downstream supply chain participants means there is more interaction between them. Roasters are able to learn more about how coffee is farmed and may help farmers improve their farming methods as well as their marketing, while the farmers are able to supply the high-quality coffee that roasters need.

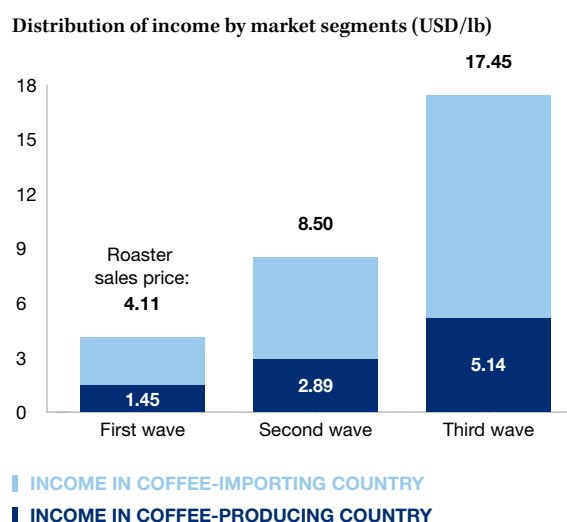
In this context, both upstream and downstream coffee participants increase the value they derive from their activities – the coffee farmers by upgrading their farming in line with roasters' needs, the roasters by using the enhanced knowledge they gain about the farmed coffee to help them produce very high-quality beverages.

Figure 2.3 presents the income distribution in the market segments in a more graphic way. Whereas figure 2.2 above showed the historical trend of income distribution for the first wave market segment, figure 2.3 is a snapshot of the three different waves based on prices in 2014.

Figure 2.3

Coffee farmers gain better remuneration from third-wave coffee

Share of total income from coffee going to participants in producing and importing countries by market segment, 2014



Source: ICO (2014), SCAA (2014) and Wendelboe (2015).

Note: See notes on table 2.3.

2.2.3 – Ownership of intangible assets can help participants capture value

The distribution of income along the coffee value chain can in part be explained by the ownership of intangible assets. As seen in the previous subsection, investments in innovation and branding are likely factors in explaining the high value added toward the tail end of the chain.

One way to measure innovative activities is examining the ownership of patents, utility models and industrial designs for coffee-related inventions, while branding activities can be measured through registered and unregistered trademarks and GIs, where applicable.³⁵

Most coffee-related IP is owned by participants in coffee-importing countries

As mentioned in part 2.2.1, coffee-importing countries tend to own most of the related formal intangible assets. Figure 2.4 compares the use of IP by the top five producing countries, on the one hand, and the top five importing countries plus China on the other.³⁶

Not surprisingly, the figures show that participants in importing countries account for large numbers of the IP rights related to coffee.

The United States, Switzerland and Italy are the top three countries of origin of participants filing for patents related to coffee. For trademarks filed at the United States Patent and Trademark Office (USPTO), European countries – specifically, Italy, Germany and the United Kingdom – are the top three filers, other than U.S. nationals.³⁷

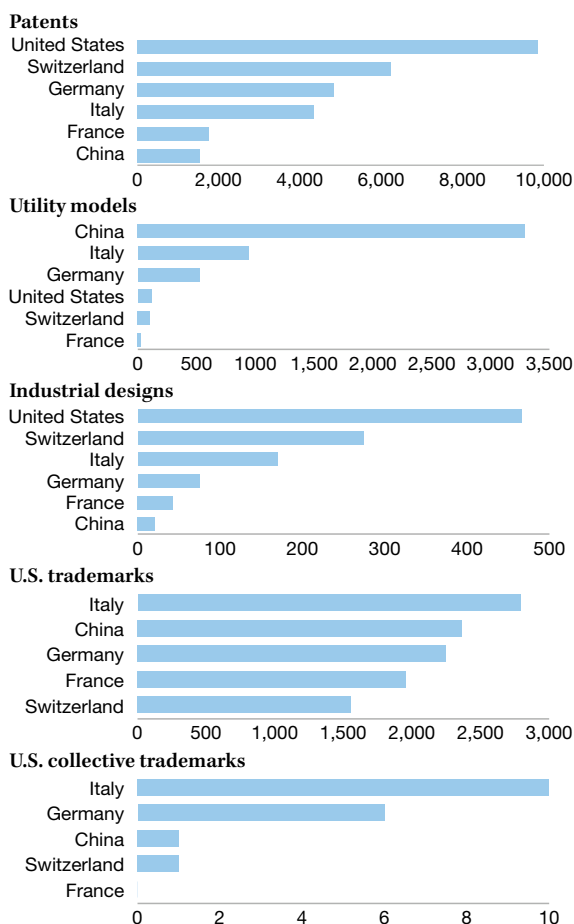
China, however, is a stark exception to the general picture in figure 2.4. IP filings related to coffee from China-based applicants rival those from the top five coffee-importing countries. Prior to 1995, the number of coffee-related patents from applicants in China was in the same low range as those for many coffee-producing countries such as Brazil, Colombia and Mexico. But since 1995, China has ranked among the important markets where patent protection is sought, along with traditional coffee-importing countries such as the United States and several European countries (see box 2.3).

Figure 2.4

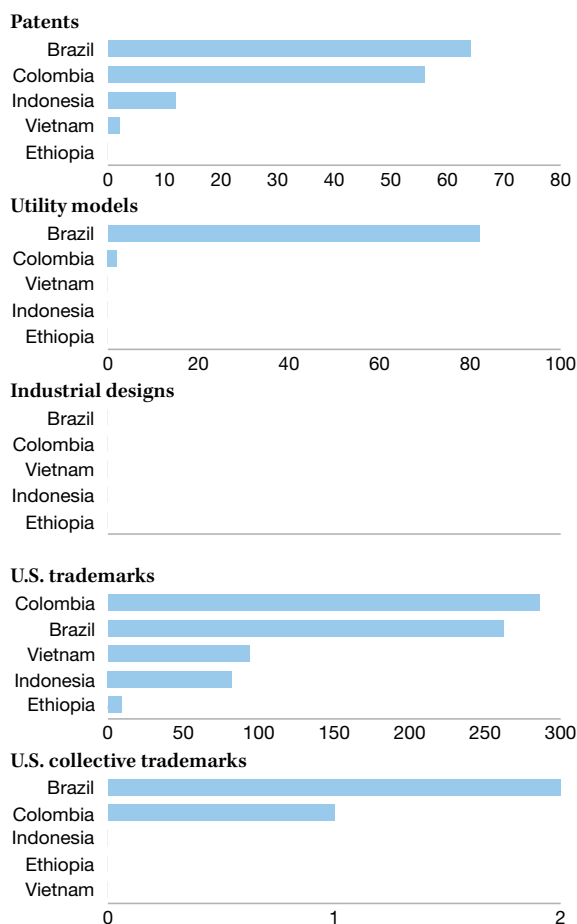
Participants in importing countries own most of the IP related to coffee

Totals of different IP rights owned by participants based in the top coffee-importing countries versus equivalent rights owned in coffee-importing countries and China, 1995-2015

Coffee-importing countries



Coffee-producing countries



Source: WIPO based on PATSTAT and USPTO; see technical notes.

Note: Data on patents, industrial designs and utility models come from the PATSTAT database, while data on trademarks come from the USPTO (see note 36).

Box 2.3

China – huge growth potential both in production and as a market

China is one of the newer coffee-producing countries, producing Mild Arabica coffee in the Yunnan province.³⁸ China's production of coffee has doubled every five years over the past two decades. It is a market with high growth potential for coffee consumption; its consumption pattern is similar to the evolution of demand for coffee in Japan 50 years ago.³⁹

China's IP activities seem to coincide with its increase in coffee production. It has seen a leap in both patent and trademark filing activities over the past decade, rivalling the higher-income coffee-importing countries.

Since 1995, applicants in China have filed nearly the same number of coffee-related patents as those in France, and more than those in the United Kingdom.⁴⁰ In addition, nearly 3,300 coffee-related technologies are protected through utility models.⁴¹ However, most Chinese patent filings are made in China only and do not have a foreign orientation in contrast to those from France, Italy and the United Kingdom.

But China filed nearly 2,400 trademarks at the USPTO in relation to coffee-related goods and services, ahead of Germany's filing of approximately 2,200. This suggests that Chinese companies have a significant presence in the U.S. coffee market.

IP ownership mirrors the distribution of income along the value chain

Figure 2.5 compares the distribution of patenting activities and firms across the different segments of the coffee value chain.⁴² It shows the proportion of participants at each stage of the chain (in light blue) and their share of total coffee-related patent filings (in dark blue).

Over 90 percent of all coffee-related patenting activities are concentrated in the bean processing and final distribution segments.⁴³ These two segments account for nearly two-thirds of the total number of firms in the coffee industry worldwide. These participants typically include roasters, soluble coffee manufacturers and retailers that also do their own roasting such as specialty coffee shops and independent coffee retailers.

In contrast, the activities that usually take place in coffee-producing countries such as coffee farming, harvesting and post-harvesting do not see much patenting. The farming and harvesting/post-harvesting segments together account for less than 2 percent of overall coffee-related patent filings.

Branding activity is growing among participants at the final distribution stage of the chain. Figure 2.6 plots the number of trademark filings at the USPTO by U.S. coffee retail brands in the first, second and third waves.

While trademark filings relating to coffee-related goods and services have generally been on the rise since 1980, the number of applications filed by second and third wave participants nearly tripled between 2000 and 2016. Filings from independent retail operators in the third wave account for a significant share of this growth.

This increasing reliance on trademark filings reflects the importance placed on branding activities for the coffee industry in general, but particularly for the second and third waves. These market segments started gaining traction from 2000 and 2010, respectively.

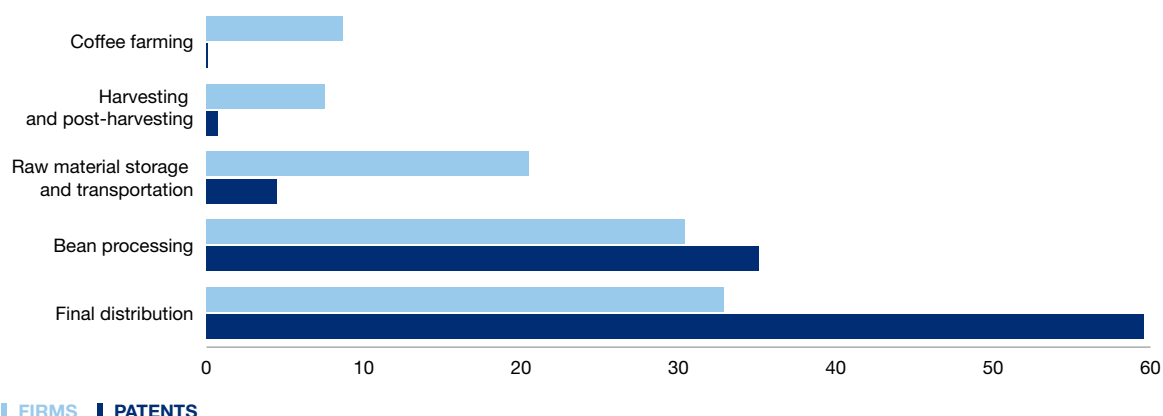
Branding activities are increasing, unlike patenting

Trademark filings in relation to coffee-related goods and services have risen over the years. Figure 2.7 shows that the ratio of coffee trademark filings to all other trademark categories has increased in recent decades. Notable jumps in coffee-related trademark filings occurred in 1991, 2000 and 2010, coinciding with the birth and uptake of the second and third waves.⁴⁴

In contrast, growth in patenting of coffee-related technologies during this period has been uneven. While the number of coffee-related patents has increased, they have declined as a proportion of all patents since 2005. Annual filing of coffee-related patents peaked that same year, with more than 1,500 applications filed worldwide.

Figure 2.5**More than half of all coffee-related patents relate to final distribution**

Percentage share of firms in the coffee industry and share of coffee-related patent applications by value chain segment

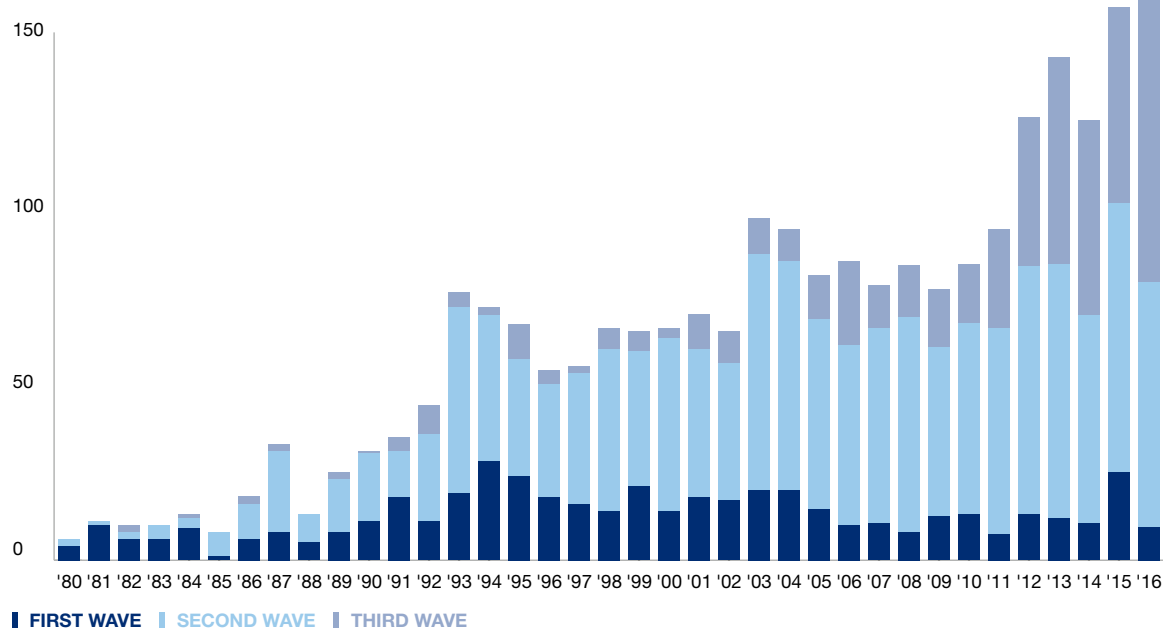


Source: WIPO based on PATSTAT and Ukers (2017); see technical notes. The classification of value chain segments is based on Samper et al. (2017).

Note: The bars in light blue represent the share of all firms in the coffee industry operating in each particular segment of the value chain. The dark blue bars indicate the share of coffee-related patents attributable to each chain segment. The share of coffee participants for the coffee-farming segment is likely an underestimate as the list of coffee participants retrieved from the Ukers directory only includes registered firms.

Figure 2.6**Trademark filings are rising, particularly for the second and third waves**

Total coffee-related trademark filings at the USPTO by market segment, 1980-2016

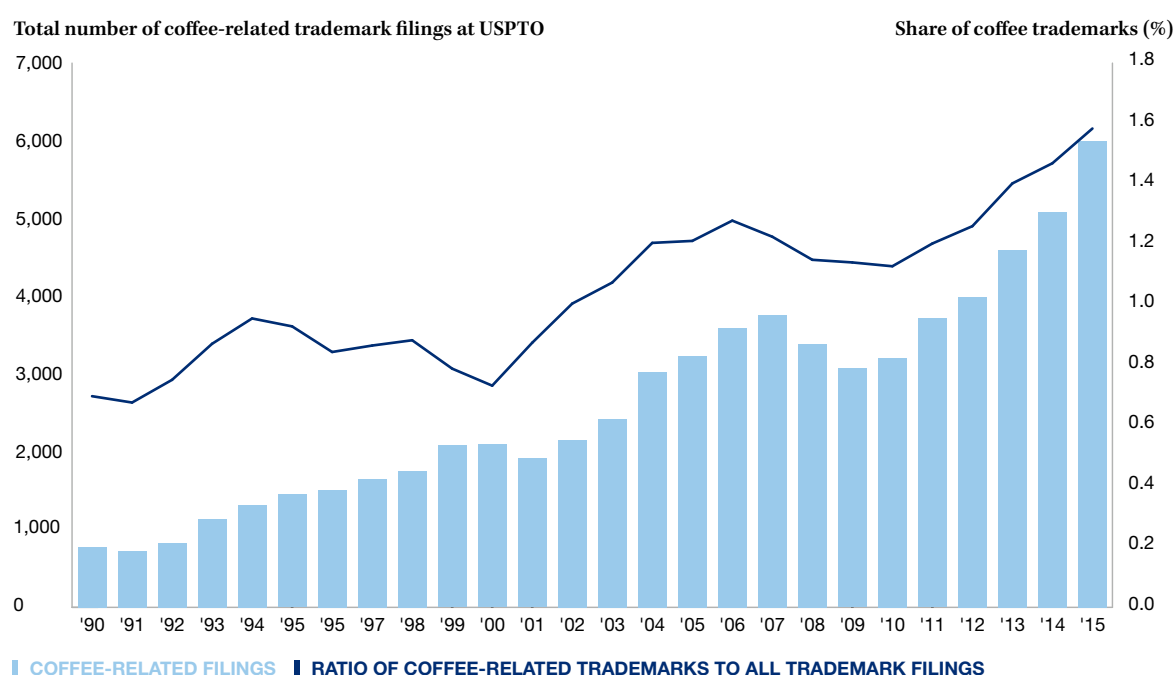
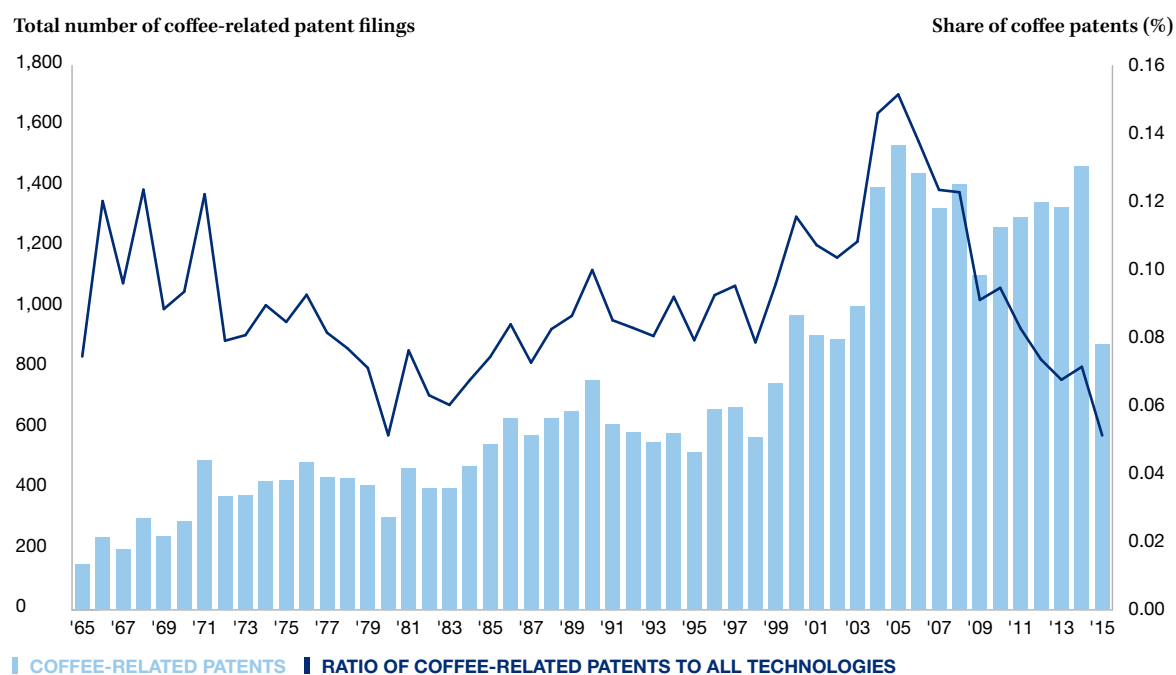


Source: WIPO based on the USPTO and PQC; see technical notes.

Notes: U.S. coffee brands have been classified by Premium Quality Consulting (PQC) according to the three different coffee market segments. PQC's list was used to identify trademark filings at the USPTO for each market segment or wave.

Figure 2.7**Coffee participants are increasingly using branding as a means of differentiation**

Annual coffee-related patent and trademark filings (left axis) and percentage share of coffee patents and trademarks in total patent and trademark filings (right axis)



Source: WIPO based on PATSTAT and the USPTO; see technical notes.

2.3 – Managing intangible assets in the coffee value chain

Participants in the global value chain for coffee protect and manage their intangible assets in four main ways: (i) protecting their patentable technologies where competitors are located, (ii) using differentiation strategies and especially branding to separate themselves from their rivals, (iii) building more direct connections to coffee farmers, and (iv) securing coffee yield by addressing climate change and coffee disease issues.

2.3.1 – Protecting coffee in important markets

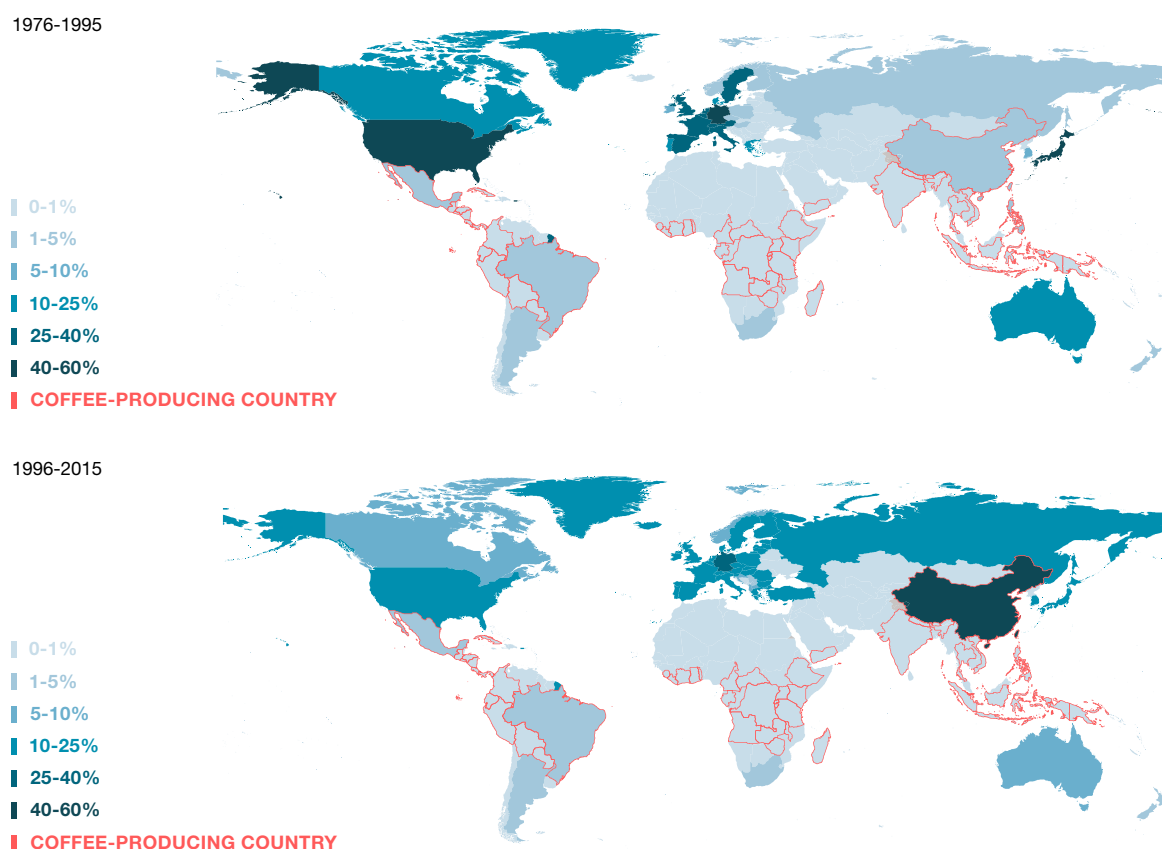
As noted above, most of the formal intangible assets in the coffee global value chain are owned by participants in the more developed, coffee-importing economies. These participants protect their intangible capital in countries where they face competitors, usually other more developed coffee-importing economies.

Figure 2.8 shows where patented technologies were protected worldwide in the periods 1976-1995 (top) and 1996-2015 (bottom).

Figure 2.8

The important markets for coffee-related patents

Percentage share of total worldwide coffee-related patent families for which applicants sought protection in a given country in 1976-1995 (top) and 1996-2015 (bottom)



Source: WIPO based on PATSTAT; see technical notes.

Notes: Patent families included in the figure have at least one patent document granted by an IP office. The countries outlined in red are ICO member countries identified as coffee-producing countries plus China.

Two points stand out. First, coffee-related technologies are protected mainly in more developed economies; that was true in 1995 and remains true today. Brazil, China and Mexico are the only coffee-producing countries where patent protection is being sought for coffee-related inventions. Second, however, IP offices in sizable markets like China and Russia now receive a higher share of coffee-related patent filings than they did in the period before 1996, likely reflecting the growth of coffee consumption in those countries.

But the rise in patenting activity in China is unique. Most filings at the State Intellectual Property Office of the People's Republic of China (SIPO) are filed only in China and nowhere else, while patents filed in other countries tend to be protected in more than one jurisdiction.

2.3.2 – Using branding as a differentiation strategy

Branding strategies differ across the three market segments

In the first wave, market-led governance implies that most intangible assets are controlled by the buyers, that is, coffee roasters and soluble coffee manufacturers. Here, long-term relationships with distributors, investments in introducing newer technologies and branding activities continue to ensure buyers' market share in a competitive marketplace. A prime example of the importance of branding is Nestlé and its introduction of at-home, single-portion espresso coffee machines and capsules through Nespresso and the Nescafé Dolce Gusto brands. These machines introduced the novelty of consuming single-portion quality espresso beverages at home.

The second wave market segment also has a market-based governance structure. Participants invest heavily in branding to differentiate themselves from their competitors. Starbucks, for example, is one of the biggest coffee brands in the world.⁴⁵ But the specialty coffee shops in the second wave have a different business model from the first wave which connects them directly to their consumers. These coffee shops pay close attention to consumption trends and often position themselves to cater to specific lifestyle images.

The second wave's emphasis on certification and labeling is being adopted by first wave roasters and soluble coffee manufacturers. More and more coffee packaging now includes third-party certification labels to indicate how the beans were farmed and reassure consumers that the farmers were adequately remunerated.

Figure 2.9 plots the number of trademarks filed in the U.S. by retail coffee brands in the first, second and third waves. Almost all of the retail coffee brands in the first wave have a trademark filed. While the second and third waves have more filings than the first wave in total, there is less likelihood that a brand in these two market segments will have trademark protection than a first wave brand. Only 12 percent of brands in the first wave have no trademark, while nearly 30 percent and 45 percent respectively of second and third wave brands are not protected through trademark registration.

In other words, participants in the first wave are more likely to use trademarks than those in the newer market segments, highlighting the value of the underlying brands.

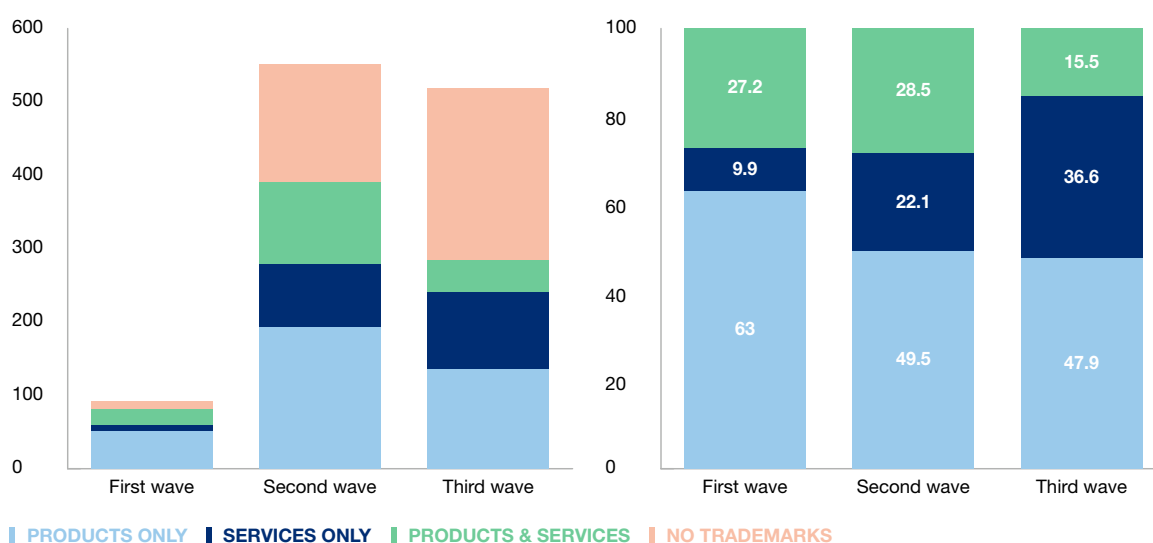
Moreover, the types of trademark application vary according to the target consumers in the three market segments. Retail brands in the first wave tend to file for more goods-related trademarks than those in the second and third waves, reflecting the former's focus on at-home consumption. The two newer markets have a higher share of applications for services-related trademarks, reflecting their focus on in-person services.

What might explain the relatively low use of trademark protection in the third wave? The defining traits of this market segment – close connections between specialist retailers and coffee farmers, greater emphasis on transparency and knowledge than in the older segments – suggest that branding is crucial intangible capital that should be protected. However, the data on trademark filing show that barely half of third wave retailers have applied for a trademark. The share of third wave retail brands with no trademark is 45 percent in comparison to nearly 30 percent in the second wave and just 12 percent in the first wave.

One possible explanation for this apparent anomaly is that most third wave retail brands tend to be small niche brands that may not need to rely on trademark protection for brand recognition. By contrast, first and second wave brands are more likely to be bigger and target the global coffee market, so may need to rely on more formal IP protection.

Figure 2.9**Newer market segments file for more trademarks in the United States**

Count of retail coffee brands and their related trademark filings by coffee market segment (left); distribution of different trademark filing types by coffee market segment (right)



Source: WIPO based on PATSTAT and PQC; see technical notes.

While the third wave remains small in terms of traded volume, it has already had an impact on how business is being conducted in the other two market segments.

2.3.3 – The third wave gives coffee growers opportunities to upgrade

The third wave, with its relational governance, has influenced how intangible assets are managed in the coffee industry. Its shortened value chain, which allows for direct trade with farmers, has opened up new opportunities for participants to upgrade, particularly farmers and buyers in the form of independent coffee shop retailers.

First, information on the origin and variety of coffee beans, how they were farmed and processed, and if the farmers are adequately compensated has become an integral part of selling coffee. This information and knowledge translates into higher prices for coffee, which can be reinvested to upgrade coffee farms.

Second, sourcing high-quality coffee beans is increasingly important for many buyers. Direct trade is one way buyers can ensure they are purchasing high-quality coffee.

In addition, buyers learn more about the coffee and may then be able to communicate its history to their customers. For coffee farmers, direct communication with buyers can sometimes lead to sharing of technology and know-how, helping to upgrade farms and processing.

A case in point is the Italian roaster Illycafé and its relationship with Brazilian coffee farmers since the late 1980s. For Illycafé, partnering directly with coffee growers ensured that it had a relatively stable supply of Brazilian coffee beans that met its high-quality specification. For the farmers, the partnership helped them to upgrade their coffee-growing and post-harvest methods and processing facilities, and included substantial formal training systems.

Third, the origin of the coffee bean has become an important aspect of coffee, and features on the packaging of coffee products. Single-sourced beans are now being offered by roasters, soluble coffee manufacturers and specialty coffee shops in both the first and second wave market segments. This emphasis on the origin of the coffee provides an opportunity for coffee farmers to differentiate themselves from suppliers in other coffee-producing countries.

More coffee-producing countries are adopting differentiation strategies

The second and third wave market segments show that participants in coffee-producing countries may be able to obtain a higher income from the value chain by differentiating their products. Now, more and more coffee-producing countries are investing in efforts to distinguish their production from generic or commoditized coffee.

First, some coffee farmers and/or associations are actively protecting the branding of coffees originating from their countries in overseas markets. In the United States, participants file trademarks to protect their coffee products. Brazil, Jamaica and Mexico have all used collective and certification marks there.⁴⁶ 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.

Governments such as those of Colombia and Ethiopia have supported initiatives to secure IP rights like GIs and trademarks to ensure that their countries’ products stand out. In Colombia, the Colombian Coffee Growers Federation (FNC) implemented a differentiation strategy that involved actively protecting coffees originating from its regions, compliance with certain VSSs and demonstrating that its coffee beans were suitable for espresso-based beverages. The FNC’s efforts include supporting the 100% Colombian Coffee Program, which allows certain coffee blends in the first wave as well as other market segments to be labelled with the 100% Colombian logo.⁴⁷

In Ethiopia, the Ethiopian Coffee Trademarking and Licensing Initiative, a public-private partnership consortium, has been actively branding coffees originating from its regions in an effort to promote them.⁴⁸ It has applied for trademark rights in Australia, Brazil, Canada, China, the European Union, South Africa and the United States, to name a few. The consortium has also hired a U.K.-based company to help market its coffees worldwide. Its initiatives have helped to increase the popularity of Ethiopian coffee (see box 2.4).

Box 2.4

How the Ethiopian trademark filing challenge at the USPTO raised its coffees’ popularity

In 2005 the Ethiopian Intellectual Property Office (EIPO), on behalf of the Ethiopian Coffee Trademarking and Licensing Initiative, applied for trademark protection at the USPTO for the brands Yirgacheffe, Sidamo and Harrar. However, it faced a challenge regarding the names Sidamo and Harrar.

The media reported that Starbucks was one of the driving forces behind that challenge. A year later, the Ethiopian Government and Starbucks came to a mutually beneficial agreement. Starbucks signed a voluntary trademark licensing agreement to acknowledge Ethiopia’s ownership of the Yirgacheffe, Sidamo and Harrar names, whether trademarked or not. In return, the EIPO licensed the use of those names to Starbucks under a royalty-free licensing scheme.

The media coverage of Ethiopia’s trademark challenge at the USPTO and Starbucks’ role may have helped to increase the popularity of Ethiopian-sourced coffee. The former director general of the EIPO commented that the price of Yirgacheffe coffee increased by USD 60 cents per pound after the media coverage.

Source: WIPO, “Ethiopia and the Starbucks Story”, IP Advantage: www.wipo.int/ipadvantage/en/details.jsp?id=2621.

Second, countries like Colombia and Brazil have entered the downstream coffee supply chain by roasting and selling products to markets overseas. Colombia has also entered the coffee retail business by opening specialty shops akin to Starbucks in different parts of the world. These shops carry the Juan Valdez brand and only serve Colombian coffee. By 2016, there were 371 Juan Valdez coffee shops in operation, 120 of them located outside the country. The Juan Valdez brand had accumulated USD 37 million in royalties for the Colombian coffee association by the end of that year.

Third, more and more coffee farmers are liaising directly with coffee buyers by participating in coffee community networks.

Building reputation by mobilizing the coffee community

The coffee community includes a network of baristas and roasters organized into guilds and associations. These guilds and associations hold contests and meetings whereby participants learn from one another and showcase their craftsmanship to gain recognition for their work.

One contest that benefits coffee farmers and buyers is the Cup of Excellence (COE). The COE recognizes coffee farmers for their investments in producing high-quality coffee. It provides an opportunity for the farmers to promote their coffees in an international setting. Coffees that rank among the top 10 of the COE are auctioned off and often receive premium prices. Their farmers and farms gain recognition and usually enter into long-term relationships with coffee buyers.⁴⁹ This form of branding confers substantial value on successful competitors.

An independent assessment of the COE programs in Brazil and Honduras put the value generated for these countries at USD 137 million and USD 25 million, respectively. These gains in value were estimated to come from direct auction sales, an upsurge in direct trade and increased access to specialty coffee markets. Successful COE participants saw their profit margins increase by two to nine times those of their conventional counterparts.⁵⁰

The coffee community adheres to standards to simplify the trade between buyers and farmers. Codified quality concepts and measurements such as the cupping and grading standards of the Specialty Coffee Association (SCA) facilitate this trade. These standards motivate coffee farmers to produce higher-quality coffee while also assuring baristas and roasters of the quality of the coffee they purchase. The more coffee participants that recognize a standard, the easier it becomes for transactions to take place directly between coffee suppliers and buyers in the global marketplace.

However, climate change issues and coffee diseases are threatening the production of coffee beans worldwide.

2.3.4 – Creating new coffee varieties through public-private partnerships

Coffee production faces several challenges, including climate change, coffee diseases and pests, labor shortages and land pressures.

These challenges are particularly acute for the production of high-quality Arabica coffee. First, there is little diversity in the Arabica coffee plant species, making it highly susceptible to diseases and climate change.⁵¹ Second, rising temperatures due to climate change are likely to reduce suitable coffee-farming areas.⁵²

More resilient coffee plant varieties are needed to ensure the supply of coffee worldwide. Research institutions in certain African coffee-producing countries such as Côte d'Ivoire, Ethiopia, Kenya, the United Republic of Tanzania and Uganda and Latin American countries such as Brazil, Colombia, Costa Rica and Honduras have been able to develop new coffee varieties for their regions.⁵³ There are also efforts by NGOs to help develop stronger coffee varieties. One notable example is World Coffee Research, which has been working closely with coffee-producing countries to share coffee varieties worldwide in an effort to develop hardier varieties. More recently, private coffee value chain participants such as Starbucks, Nestlé and Ecom Agroindustrial Corporation have been engaging with local research institutes too.

Most of the research outputs in this area are publicly available. Two reasons may explain why. First, research institutions and governments may request that work remain public. Second, plant varieties are specific to a region and its climate, so a coffee variety that has proven successful in one area may not easily be transferred to and used in a different region. In many cases, research institutions in different coffee-producing countries have to develop varieties specific to their environments, multiplying the effort and investment needed.

An initiative by World Coffee Research attempts to save effort and investment in identifying strong coffee plant varieties by sharing these varieties across countries within particular world regions. By closely collaborating with governments and coffee growers, this NGO is helping transfer technology from its research group to farmers.

Another possible way to facilitate this technology transfer is through relying on plant breeders' rights (PBRs). A few countries have relied on the system under the International Union for the Protection of New Varieties of Plants (UPOV) to protect the coffee plant varieties developed. The UPOV system aims to provide incentives to plant breeders to develop new plant varieties and encourage their dissemination.⁵⁴

The first application for PBRs under the UPOV system was in Brazil in 2004.⁵⁵ Currently, there are 46 PBRs filed on the coffee plant varieties of Arabica and Canephora, as disclosed to UPOV.⁵⁶ These 46 PBRs originated from Brazil (19), Colombia (19), Costa Rica (1) and Kenya (7) and most of them are filed by public research organizations and coffee associations.

2.4 – Conclusion

As with many commodities produced in the Global South and consumed in the Global North, the distribution of income along the coffee value chain is uneven. Roasters, brand holders and retailers downstream in the coffee-importing countries capture the lion's share of the total value of the market.

Intangible assets play an important role in the coffee global value chain. As seen in chapter 1, intangible capital accounts for 31 percent of total income in the food, beverages and tobacco product group. This chapter has shown how the income from coffee is currently distributed along the chain, and how ownership of intangible assets helps explain this allocation.

The first wave market segment dominates due to its consumption volume and market value. Competition in this market is intense and, more importantly, based on keeping the production cost low. Decisions regarding the origin of the coffee and whether Arabica or Robusta beans are used to cater to this market segment are based on price. Until recently, the origin of the coffee has been of minor importance; rather, downstream coffee participants – large roasters, soluble coffee manufacturers and large coffee retailers – rely on branding to differentiate themselves from their rivals. These participants capture a significant share of the total market income, reflecting the economic importance of these activities in the global value chain.

The beginning of the second wave market segment in the mid-1990s revived coffee-drinking culture and reintroduced the social aspect of coffee consumption. This market segment emphasizes higher-quality coffee and personal service and highlights the importance of where and how coffee has been sourced. The rise of this segment coincided with increasing social and ethical awareness among consumers; demands for fair remuneration of coffee farmers and environmental sustainability of coffee farming became relevant as selling points. In responding to these demands, downstream coffee participants in this segment began to focus on issues of transparency, such as providing more information and knowledge about upstream coffee-related activities through certification and VSS compliance.

The third wave market segment has added another layer in terms of quality and knowledge. As well as seeking to address social and ethical concerns about how farmers are paid and the sustainability of coffee farming, this market segment emphasizes direct links between specialist retailers and coffee farmers, and retailers' and consumers' in-depth knowledge of how best to brew beans in order to fully appreciate their flavor, body, aroma, fragrance and mouthfeel.

The newer coffee consumption trends of the second and third waves are changing the coffee industry landscape. First, ways to address social and ethical concerns pioneered by second wave roasters and retailers through various certification and VSS schemes have become a big differentiating point for selling coffee. The price differential between coffees that identify the grower and those that do not can reach up to USD 8 per pound.⁵⁷

Second, direct links between retailers and farmers provide upgrading opportunities for both upstream and downstream coffee participants. This new way of doing business in the coffee industry facilitates learning and technology transfer between participants. It also helps coffee farmers to create awareness of their coffees through branding efforts which may include marketing and/or filing for formal IP protection of trademarks and GIs. The farm-gate prices that coffee farmers receive by supplying to the second or third wave market segments are higher than those in the first wave; farmers' income in the third wave is triple that of first wave farmers.

Third, focusing on activities upstream in the coffee value chain helps to increase the income of both upstream and downstream participants.

The new way of doing business pioneered in the third wave is being assimilated by the first and second waves due to its fast growth and potential to expand coffee consumption. Indications include the recent acquisition by Nestlé – a large first wave roaster – of a notable third wave firm, Blue Bottle, signaling its entry into the third wave. And it is not the only one. Its close competitor, JAB, has purchased brand names Peet's and Stumptown to ride the third wave. Starbucks, from the second wave, recently tested the waters by introducing its Reserve brand.⁵⁸

The adoption of the third wave business strategy in other market segments creates further opportunities for upstream coffee participants to increase their income, particularly by leveraging their brands. The extent to which these participants are able to do so will depend on consumers' recognition and awareness of these brands. This will require more investment to raise awareness among both consumers and large retailers in coffee-importing countries.

The growth potential of the Third Wave is increasingly attractive to traditional roasters and soluble coffee manufacturers, even if it represents a small share of the coffee industry. So far, this business model seems to be highly profitable for every member of the coffee global value chain. If coffee growers are to benefit more from this attention, they must not only focus more on the array of differentiation opportunities, but may also need to consider using IP instruments to retain the value they create.

Notes

1. This chapter draws on Samper et al. (2017).
2. According to a project carried out by Technomic (2015) based on a study commissioned by NCAUSA (2015). In terms of GDP per capita, the United States is the 26th-largest coffee-drinking country. The country with the highest yearly coffee consumption per capita is Finland, followed by Norway, Iceland, Denmark and the Netherlands (Smith 2017).
3. ICO (2015a).
4. The seven countries include Burundi, Ethiopia, Guatemala, Honduras, Nicaragua, Rwanda and Uganda (ITC 2012; ICO 2015c).
5. ICO (2014).
6. The volatility of coffee prices is also influenced by investors' behavior in the commodity markets.
7. Most coffee beans consumed in the world come from the Arabica and Canephora species; the latter is commonly referred to as Robusta coffee. Arabica coffees are considered higher quality and fetch higher prices than Robusta coffees.
8. This differential is a band that stipulates by how much the price may vary, for example from the price of green coffee.
9. Brazil is an exception to this rule. According to the ICO (2014), Brazil increased its coffee consumption by nearly 65 percent, from 26.4 million bags in 2000 to 43.5 million bags in 2012.
10. Samper et al. (2017) value the global coffee industry at between USD 194 billion and USD 202 billion in 2016.
11. ICO (2013) calculates that soluble coffee exports by coffee-producing countries were worth 26 percent less on average than soluble coffee re-exports by coffee-importing countries in the period 2000-2011.
12. Samper et al. (2017).
13. Ponte (2002), Pendergrast (2010), Morris (2013), Elavarasan et al. (2016).
14. ITC (2012).
15. Ukers (1922).
16. Talbot (1997a) writes that soluble (instant) coffee was invented during the American Civil War. However, the first patent granted on soluble coffee was in 1771 in Great Britain on a "coffee compound." The first soluble coffee sold commercially is credited to a New Zealander, David Strang, who was granted a patent on the "Dry Hot-Air" process of making coffee in 1890.
17. The engineer was Max Rudolph Morgenthaler, and the patent was filed in Switzerland in 1937 for a "Process of preserving the aromatic substances of a dry soluble coffee extract."
18. See chapter 3 of WIPO (2013).
19. Giovannucci et al. (2009).
20. The methodology for this estimate of coffee income distribution is based on prior work by Talbot (1997b), and updated by Fitter and Kaplinsky (2001) and Ponte (2002). Lewin et al. (2004), and Daviron and Ponte (2005) have reviewed this methodology.
21. Daviron and Ponte (2005) show this point well in their breakdown of the coffee costs in the Uganda-Italy value chain for Robusta coffee.
22. Daviron and Ponte (2005) refer to these differentiation strategies as investments in "symbolic production." Lewin et al. (2004), call them "non-coffee costs."
23. ICO (2014).
24. Talbot (1997b) was the first to calculate the share of total income distribution in the coffee global value chain. His analysis covered the years from 1971 to 1995.
25. See Fitter and Kaplinsky (2001), Ponte (2002), Lewin et al. (2004) and Daviron and Ponte (2005). These four estimates use different methods of calculating the distribution of income between coffee-producing and coffee-importing countries. However, all four show similar results: a declining share of income accruing to coffee-producing countries.
26. See Long (2017).
27. Mehta and Chavas (2008) captured the evolution of coffee prices at the farm, wholesale and retail levels during and after the ICA regime in the case of Brazil.
28. The low price of coffee was a reflection of the high coffee stock that was dumped on the market, causing an oversupply of green coffee (ICO 2014).
29. See ITC (2011) for the different certification labels and their impact on the coffee trade.
30. COSA (2013) documents the observed benefits associated with VSSs.
31. Wollni and Zeller (2007). Daviron and Ponte (2005) find that farmers under the Fair Trade scheme receive an income similar to those during the ICA quota restriction regime, approximately 20 cents to the dollar, but they caution that when their study was conducted, the Fair Trade scheme covered less than 1 percent of the coffee market. Dragusanu et al. (2014) updated the data and reviewed global evidence to find general but not universal benefits.

32. A recent analysis by García-Cardona (2016) argues that coffee producers that participate in these certification standards do not necessarily receive a higher price for their certified coffee. The cost to farmers of complying with and maintaining the various certification standards is often high. See also IISD (2014) and Samper and Quiñonez-Ruiz (2017).
33. Transparent Trade Coffee (2017).
34. Teuber (2010).
35. A GI is different from a trademark in that it relates to the specific geographical origin of the product, and that product possesses qualities or a reputation associated with that origin, the *terroir*. See box 2.2 in WIPO (2013) for a more detailed explanation.
36. U.S. trademark filings at the USPTO have been excluded from this analysis.
37. The USPTO's trademark data was chosen for two reasons. First, the U.S. market is a big and important market for coffee consumption. Second, the USPTO has a use requirement, which paints a more accurate picture of actual coffee-related product and service competition (see chapter 2 of WIPO (2013) on intention to use versus actual use of trademarks).
38. The Chinese Government revived the coffee production industry in 1988. China also produces some Robusta coffee on Hainan island.
39. ICO (2015b).
40. China has filed approximately 1,500 patents on coffee-related technologies since 1995. Patents filed from France and the United Kingdom in the same period total 1,763 and 1,225, respectively.
41. Refers to the total number of utility models filed by Chinese inventors since 1995.
42. The Ukers (2017) directory has a large database of firms in the coffee industry, from farmers associations to roasters and suppliers of coffee machines as well as other coffee-related services such as coffee-specific packaging companies. Firms are classified according to their respective value chain segment. However, the list of firms does not include individual coffee farmers in different parts of the world, and thus underestimates the size of coffee participants in this particular segment.
43. Participants in these two segments tend to overlap. Most coffee roasters also perform their own bean processing activities.
44. The second wave market segment was introduced in the 1990s but did not take off until the year 2000, while the third wave market segment took off in 2010 after beginning around the year 2000.
45. In 2012, Starbucks was in the news for its transfer pricing and tax activities in the United Kingdom. The company had used international accounting rules to price its intangible capital in such a manner that it had avoided paying U.K. taxes (Bergin 2012). See chapter 1 on transfer pricing.
46. Jamaica and Mexico do not appear in figure 2.4 because they are not among the world's top five coffee producers.
47. See Reina et al. (2008).
48. The consortium included Ethiopian cooperatives, private exporters and the EIPO among other government bodies.
49. See www.allianceforcoffeeexcellence.org/en/cup-of-excellence/winning-farms for more information.
50. ACE and Technoserve (2015).
51. World Coffee Research found that Arabica coffee had only 1.2 percent pairwise genetic diversity. Robusta beans, however, are stronger and more diverse.
52. The model by Moat et al. (2017) predicts that there will be a 40 to 60 percent decrease in suitable farming areas in Ethiopia due to climate change, assuming no significant intervention or other major influencing factors. See also Stylianou (2017).
53. See ICO (2015c) for the African examples and Samper et al. (2017) for the Latin American examples.
54. See Jördens (2009).
55. The registry maintained by UPOV is based on voluntary reporting by national authorities. It is very likely that the list of registrations under the UPOV system is larger at the national offices than those disclosed here.
56. See Chen et al. (2017).
57. Transparent Trade Coffee (2017).
58. See de la Merced and Strand (2017).

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