Politecnico di Torino

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The coffee market: competitive strategies and firm performances in a saturated market

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Summary

The majority of the people all around the world, every time in the morning after waking up, drink coffee. This is one thing that people have in common, in some way or another: at home, at the bar, at the office. The coffee market is one of the leading market in the Food and Beverage industry. The objective of this paper is to analyze coffe market from a qualitative and quantitative point of view, to give a context and to understand the dynamics that move it, taking also a look to the market for coffee makers.

The market for coffee makers belongs to another industry, the one of the Household Appliances, but it is undoubtedly strictly related to the market of coffee. Light is shed on this market also following my Internship experience at Lavazza Group, in the Coffee Machines Procurement Department, at direct contact with the Coffee Machines Procurement Director and, in general, with Lavazza's coffee machines Buyers.

In this paper, the Italian coffee market will be analyzed as well as the worldwide coffee market, focusing on the demand on the major coffee consumer Countries: United States, Germany, Japan, Italy, France, Spain and Sweden. The main topics that will be discussed will be the description of coffee characteristics and its economy, the demand for coffee in the aforementioned Countries, the analysis of the supply chain and of the processes that transform the green coffee to ground coffee, the analysis of financial performances and strategies of the main roasters on the market (e.g. Starbucks Corp, Nestlé and Lavazza for the global market, Lavazza, Illy, Caffè Borbone and Kimbo for the Italian market) and a benchmark of the performances of Italian players with respect to global players, as well as the analysis of the environment in with they operate. Financial data were collected thanks to Aida and Orbis by Bureau van Dijk. Eventually, an econometric analysis is conducted on the estimation of the presence of economies of scale and technical progress in the Italian coffee industry, executed with the support of STATA and the implementation of several statistical regression models. Roasters' financial data are required for the analysis, and they were extracted from Aida. The time frame considered in the econometric analysis is the period that starts from 2005 and ends in 2020, and the evaluation of the economies of scale is made considering the following regressors: the labor cost, the cost of tangible assets and the added value of production. My internship experience and the interaction with Lavazza's managers were crucial for a correct interpretation of the output generated by the regression analysis.

Abstract

At the core of this paper there is the analysis of the coffee market from a qualitative and quantitative point of view, introducing also the coffee machines market. The main players of the market of reference will be analyzed, as well as the dynamics that move the competition worldwide and the external envirnoment in which firms operate, with a particular focus on the Italian market. The external analysis has been conducted through the PEST framework, the qualitative analysis has been carried out through Porter's Five Forces, whilst, for the quantitative analysis, Orbis and Aida were used in order to retrieve the financial data of the Companies in the sector under examination. Finally, STATA statistical software was used to conduct econometric analyses of technology trends over the years.

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1 The Coffee

Abyssinia, now Ethiopia, X – XV century. Legend says that there was a shepherd that was grazing his flock of goats in his land. Once, he noticed the effect of a particular type of shrub on his flock that was actually eating its berries, and it was an energizing effect. This plant was called “Coffea”, it inherits its name from the region in which it was located, Kaffa or Kefa. Another myth, contained in the manuscript of Abd al-Qadir Maraghi, attributes the discovery of the effects of this shrub to a disciple of the Shadhiliyya, Omar. He chewed the berries picked from some shrubs located nearby a cave, but they were bitter to the palate. He tried to treat them in different ways, until he discovered that softening them produced a liquid with a good scent and flavor. Always the legend tells us that, after drinking this liquid, he was able to not eat for several days, and he spread the word on the miraculous effect of those berries: that’s how the coffee began to be famous.

There are more and more legends that try to explain the origins of coffee, since they are still quite unknown. In the ancient times, this beverage was mainly diffused in the Middle East, whilst it reached the Europe only in the XVI century. The import in the continent is attributed to Prospero Alpini, which described a plant called “bon” that he studied in Egypt, whose graphic representation is very similar to the coffee plant. English were the first people in Europe to appreciate the drink, in fact the first cafè was opened in Oxford in 1650. From that moment, more than 3000 coffee shops opened in the British capital.

The export wave that led to the cultivation of coffee all around the world started, and after that period this beverage will become the most consumed all over the globe, resulting in an impressive turnover that brings benefits to the majority of the society, but actually hides a reality of exploitation in the poorest Countries.

1.1 Different species of coffee

On the market, different coffee typologies are sold on the basis of the taste, caffeine content, Country of origin and, actually, new variety of coffee have been artificially created recently. (Wikipedia.org, 2021)

The main traded coffee species are the Arabica, Robusta and Liberica.

1.1.1 Coffea Arabica

The Arabica is the first species ever used that meets its origins in Ethiopia, Sudan, Yemen and Kenya. It covers 60% of the world's total coffee production, hence it is currently the dominant one.

It is cultivated at high altitute (1,000 – 2,000 m), is self-pollinating and presents a minor coffein content with respect to the other species. It belongs to the family of *Rubiaceae* – a family of angiosperms that includes predominantly woody species. The Arabica tree is a small one, in fact it is tall no more than 12 m (usually around 9 – 12 m). Leaves can be, instead, elliptic-ovate or oblong, the length varies from 6 to 12 cm and breadth varies from 4 to 8 cm, colored glossy dark green. The flowers, whose flagrance resembles the one of the jasmine flower, are white and seeds are contaned in drupes, also known as cherries, about 1 cm long with oblong shape. Each cherry contains two seeds, the coffee beans, and when they mature are bright red or purple. It takes about seven years to fully mature and the most favourable conditions arise when it rains 1.0-1.5 metres evenly throughout the year and when temperatures are around 15/24°C.

In order to select the best coffee beans, drupes are choosed and picked by hands: if picked too early or to late, inferior coffee results are obtained. Sometimes drupes are picked by shaking off the tree and are collected on mats in order to speed up the process, hence ripe and unripe berries are collected together.

Generally speaking, trees are difficult to cultivate and generate on average from 0.5 to 1.1 kg of dried coffee beans (the amount depends obviously on the tree itself, but also on the season).

FIGURE 1: COFFEE ARABICA GERMINATING, SOURCE: WIKIPEDIA.ORG

FIGURE 2: COFFEE ARABICA FLOWERS, SOURCE: WIKIPEDIA.ORG

An IPCC model (Intergovernmental Panel on Climate Change) suggests that a depletion of originary Coffea Arabica could happen due to the climate change and all the phoenomena connected to it: rising temperatures, excessive rainfall and longer droughts. The sustainability of the production is under threat, hence there are attempts to select new species to grow to adapt to the climate change. Studies show that, for this reason, the total population of the plant could decrease of about 50 – 80%. But there is another important threat for the Arabica: deforestation. This is an understory plant, hence it needs a forest to grow. Before the big deforestation that happened in Ethiopia, it is estimated that Arabica covered between 25 – 31% of the forest, now it counts only 4%. The problem is that deforestation keeps going on. Not considering the main pest of coffee, namely the coffee berry borer (*Hypothenemus hampei*), which benefits from the increase in temperatures and could colonize higher altitudes that were once too cold for its proliferation.

FIGURE 3: COFFEE ARABICA PLANT IN BRASIL, WITH FRUITS IN DIFFERENT STAGES OF MATURITY. SOURCE: WIKIPEDIA.ORG

1.1.2 Coffea Robusta

Robusta, or correctly named *canephora*, is native to tropical Africa, it is cultivated at lower altitude with respect to the Arabica and is way more economical. It is allogamous, this means that a cross impollination is required to genetically differentiate the plant more easily than the Arabica. It represents the 43% of the total coffee production worldwide.

It is a species of flowering plant belonging to the family of *Rubiaceae*. Coffee robusta is actually a variety of the Coffea canephora, while another variety of this plant is the Coffee nganda. The main difference with the Arabica is that the berries are more bitter, less acid, and with different flavour (more woody and less fruity flavour).
The tree is robust and can grow up to 10 m, flowers are generated irregularly and berries are riped in 10 or 11 months. The beans produced present an oval shape. The yield of the Robusta tree is higher if compared to the one of the Arabica one, beans contain more coffeine (2.7% with respect to 1.5%) and less sugar (from 3 to 7% with respect to 6 to 9%). It is less sensitive to pests and requires less herbcide and pesticide than the Arabica, and that is the reason why it is cheaper than the latter.

FIGURE 4: COFFEA CANEPHORA, SOURCE: WIKIPEDIA.ORG

FIGURE 5: COFFEA CANEPHORA FLOWER, SOURCE: WIKIPEDIA.ORG

The Country in which it is cultivated the most is Vietnam, in which it was introduced by French colonists during the 19th century. This is the place where 40% of the global Robusta production takes place. Other Countries where it can be found are Brazil (25% of the global production), Indonesia (13% of the global production), India (5% of the global production) and Uganda (also 5%). Robusta beans are very used for the Italian coffee production, they provided full bodied coffee with better foam head.

1.1.3 Coffea Liberica

Liberica, less diffused than the others, is cultivated in west Africa, Indonesia and Philippines. A famous variety of Liberica is Excelsa, discovered only in recent times (1903).

FIGURE 6: LIBERICA COFFEE BEANS, SOURCE: WIKIPEDIA.ORG

Just like Coffea canephora, it belongs to the family of *Rubiaceae*. Trees are very tall, they reach 20 m, in fact they are harvested with ladders. Also the size of the berries is way bigger if compared to the size of the other two typologies of coffee. The shape of the beans is asymmetric, there is one side bigger than the other and the tip presents a characteristic hook. Also the central furrow is atypical, more jagged than the others.

Less than 2% of the global coffee trade is constituted by this variety. From Africa it was imported in Philippines in 1740s, then in western Countries where it was priced 5 times more than the other species of coffee.

In Philippines, where it is known as *kapeng barako*, Liberica was able to respond better to the coffee rust pandemic in the 19th century, but eventually plants succumbed and caused a crisis of the coffee industry in the islands. Nowadays, it is still cultivated and very successful in this zone, especially in Batangas. After the coffee pandemic, it was exported in Indonesia to replace the Robusta trees soccumbed. It is also cultivated in Malaysia.

FIGURE 7: COFFEA LIBERICA TREE, VIETNAM, SOURCE: WIKIPEDIA.ORG

The caffeine concentration of Liberica is lower than the one of Arabica and Robusta, presenting 1.23% of caffeine concentration.

Other coffee species that are less commercialized are *Coffea charrieriana*, that comes from Cameroon and does not contain caffeine; *Coffea mauritiana*, originary from Mauritius; *Coffea racemosa*, cultivated in Mozambique and has the characteristic to loses its leaves during the dry season; *Coffea steophylla*, native to West Africa (Liberia, Sierra Leone, Ivory Coast), has the characteristic to be resistent to dry and the unique flavour compared to the one of tea.

FIGURE 8: A CLOSER LOOK TO THE COFFEA LIBERICA BEANS, WITH THEIR DISTINCTIVE CHARACTERISTICS

1.1.4 Coffea Charrieriana

Coffea Charreriana is endemic to West Cameroon in the Bakossi Forest Reserve and, as already said, it is caffeine-free. It was discovered only in recent times, in 2008, and described in the Botanical Journal of the Linnean Society. The altitude on which it grows is low, around 160m in wet rainforest on rocky slopes. Trees can reach 10 m and spread 5 – 7 m. Leaves present an elliptic shape, small and thin, their base is slightly wedged in shape while the apex tapers to a round tip (with a tapering long from 7 to 13 mm).

FIGURE 9: COFFEA CHARRIERIANA, SOURCE: ILCAFFEESPRESSOITALIANO.COM

In order to grow up, Charrieriana needs wet place with a lot of sunshine. Just like the other coffee species, the fruits of the trees contain edible beans that can be prepared with all the processes necessary to make a coffee, that will be illustrated in the third chapter.

There are other beverages known as “coffee”, but that actually do not contain coffee, like barley coffee and ginseng coffee.

1.2 Green coffee vs Roasted coffee

FIGURE 11: GREEN COFFEE

FIGURE 10: ROASTED COFFEE

When talking about “green coffee”, one refers to the unroasted coffee. One of the best ways to consume green coffee is through green coffee extracts, and it became more famous for being a dietary relief while losing weight. This typology of coffee is obtained by crushing coffee beans. Two different types of roasted coffee exist: light roast and dark roast. Light roasted coffee is also known as “brown coffee”, while dark roasted coffee is also known as “black coffee”. The main differences between green and brown/dark coffees are illustrated in table 1.

Green coffee	Brown coffee
Unroasted	Roasted
Caffeine = 0.1mg/cup	Caffeine = 60mg/cup
High antioxidant power	Low antioxidant power
High chlorogenic acid level	Low chlorogenic acid level
70 – 100 cal/cup	120 cal/cup

TABLE 1: DIFFERENCES BETWEEN GREEN AND BROWN COFFEE, SOURCE: DAQUIANTIMES.COM (WELLER, 2020)

1.3 Nutritional properties

In this section, the nutritional properties of 100 g of coffee will be analyzed. The benefits of this beverage are part of the huge success it made all around the world, hence they are an important topic of discussion.

In general, coffee does not contain a significant amount of macronutrients (fat, proteins and carbohydrates). Of course, a cup of a “simple” coffee is taken into consideration, i.e. only of coffee espresso, without milk, sugar or other additives. In 100 g of an Italian espresso coffee, the total amount of caffeine equals 212 mg.

Nutrition label for 100 g of Espresso Coffee		
Energy value (calories)	2	Kcal
Proteins	0,12	g
Carbohydrates	0	g
Sugar	0	g
Fats	0,18	g
Saturated	0,092	g
Monounsaturated	0	g
Polyunsaturated	0,092	g
Cholesterol	0	mg
Dietary fiber	0	g
Sodium	14	mg
Alcohol	0	mg

TABLE 2: NUTRITIONAL LABEL FOR 100G OF COFFEE ESPRESSO, SOURCE: DIETABIT.IT

A cup of coffee contains other nutrients, like nitrogenous compounds, lipids, vitamins and minerals such as calcium, magnesium, potassium, niacin and other organic acids, chlorogenic acids and phenolic compounds, while alkaloids contained are trigonelline and caffeine. Of course, there are some factors that influence the percentage quantity of these components in a cup, such as the amount of grounded coffee used, the brewing and roasting methods, the typology of water used and the presence of other ingredients (as already said, sugar or milk, for example).

Coffee consumption brings benefit to the consumer, but also some risks if the consumption is excessive. The main benefits recognized by science are: protection against type-2 diabetes, Parkinson's desease, liver desease and liver cancer. Risk from an excessive consumption are: bone fractures (some studies demonstrated the correlation between the excessive consumption of coffee and the higher sensitivity of bones to fractures), deseases in pregnancy, gastroesophageal reflux disease, anxiety, caffeinism.

1.3.1 Caffeine

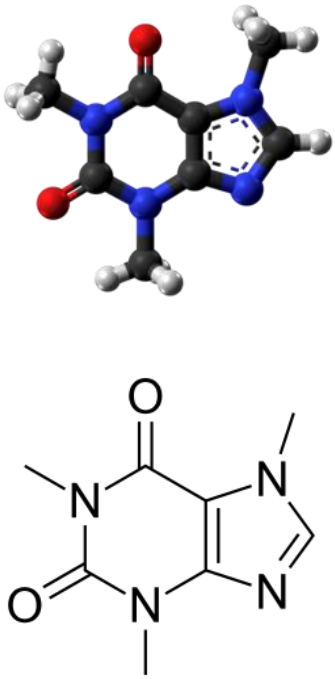


FIGURE 12: $C_8H_{10}N_4O_2$, THE CAFFEINE, SOURCE: WIKIPEDIA.ORG

Caffeine is also known as theine or guaranyne, IUPAC name *1,3,7-trimethylpurine-2,6-dione*. It is a natural alkaloid present in coffee, cocoa, tea, cola, guarana and mate plants and in the beverages obtained from them. Caffeine was isolated from coffee beans in 1819 by the German chemist Friedlieb Ferdinand Runge, who called it "Kaffein", and is present in leaves, seeds and fruits of these and several plants, such as guarana, tea, cola or yerba mate, where it acts as a natural insecticide, paralyzing (tetanizing) or otherwise with toxic effect on insects and other arthropods that eat them. The great popularity of caffeinated beverages (coffee and tea first and foremost) makes this stimulant drug the most widely used psychoactive substance and the most widely consumed in the world, being used both recreationally and medicinally. Caffeine is legal in all Countries, unlike other psychoactive substances, and accepted or tolerated by almost all major religions. The extraction for the obtainment of the pure substance is done directly on coffee beans in order to subsequently obtain from them a beverage with equivalent organoleptic characteristics, but decaffeinated. The most used solvent in the industry is supercritical carbon dioxide (at about 31 °C and 7.3 MPa).

After the evaporation of the solvent, caffeine is purified and used in the chemical, food and pharmaceutical industry. The caffeine molecule is structurally similar to adenine (the nitrogen base of adenosine) and binds to nucleoside receptors on cell membranes. Thus, competitive inhibition occurs; that is, caffeine affects a process of nerve regulation by discharge of the postsynaptic potential. This results in increased levels of adrenaline and noradrenaline. Through these, caffeine indirectly stimulates the sympathetic nervous system and leads to an increase in heart rate and blood flow to the muscles, a decrease in blood flow to the skin and internal organs, and glucose

release from the liver. Secondly, since caffeine is also an inhibitor of the phosphodiesterase that converts cAMP (the second messenger for the action of adrenaline) into its acyclic AMP form, it prolongs the effect of these and similar substances such as amphetamine, methamphetamine, and methylphenidate. In addition, these actions of caffeine facilitate the transmission of dopamine (neurotransmitter linked with motivation) and glutamate (with memory). (Wikipedia, 2021)

1.4 Coffee-producing Countries

Experts show that the quality of coffee is related to the growing environment, to the techniques used in the cultivation, to the type of processing of the berries and to the place of origin. The most important parameters for the evaluation of the quality, according to the exponents of the *Cup of Excellence* (whose duty is to assign Oscars to coffee), are the flavour, the sweetness, the sourness, the lack of defects and the aftertaste.

There are several Countries that produce coffee. The world leading Countries for coffee area harvested are Brazil, Indonesia, Côte d'Ivoire, Colombia, Ethiopia, Mexico, Vietnam, Uganda, Honduras and India.

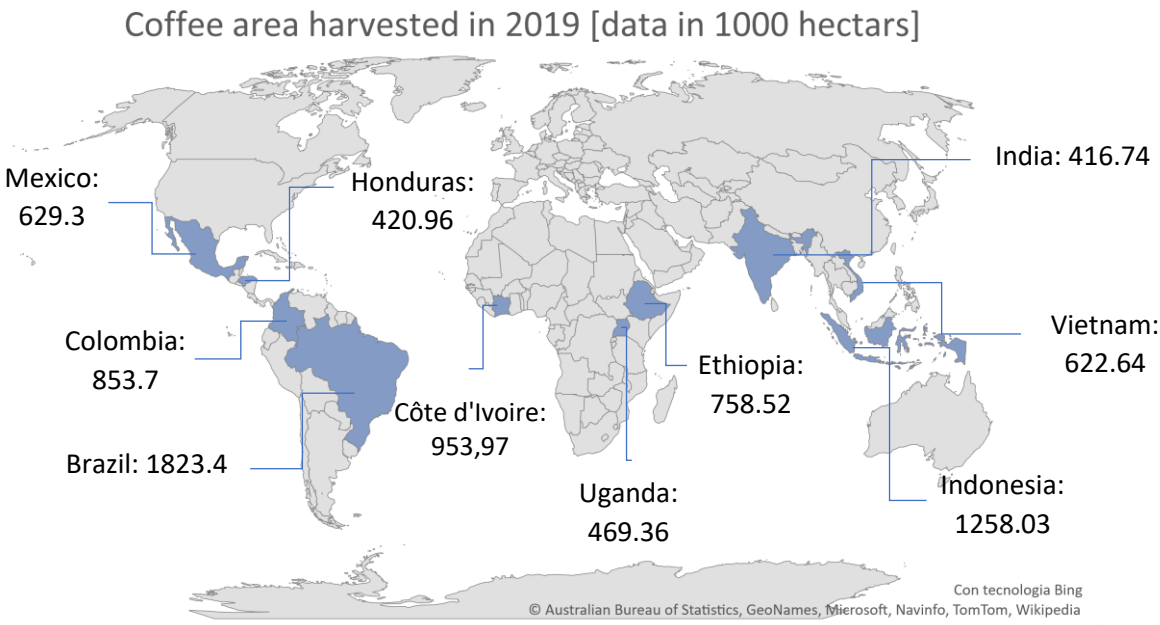


FIGURE 13: LEADING COUNTRIES WORLDWIDE BASED ON COFFEE AREA HARVESTED IN 2019 (SHAHBANDEH, 2021)

The top 25 Countries that produce coffee, both Arabica and Robusta, is listed in table 3. Data are referred to the year 2020, with Brazil that always leads the ranking. Liberica is not considered in this case, since even if taken into account, its production would be irrelevant due to the reducted volume produced. The revenues associated with the sale of the commodity are present in the last column.

Country	Metric tons	% Arabica Produced	% Robusta Produced	Euros
Brazil	3,558,000	69%	31%	9,262,195,200.00
Vietnam	1,830,000	5%	95%	4,763,347,200.00
Colombia	858,000	100%	0%	2,234,073,600.00
Indonesia	642,000	9%	91%	1,670,832,000.00
Ethiopia	441,000	100%	0%	1,147,737,600.00
Honduras	390,000	100%	0%	1,015,488,000.00
India	329,100	73%	27%	857,260,800.00
Mexico	273,000	96%	4%	710,841,600.00
Peru	270,000	100%	0%	702,576,000.00
Uganda	255,000	18%	82%	663,609,600.00
Guatemala	216,000	97%	3%	562,060,800.00
Nicaragua	140,400	98%	2%	366,048,000.00
China	138,000	100%	0%	358,963,200.00
Malaysia	120,000	0%	100%	312,912,000.00
Côte d'Ivoire	108,000	0%	100%	281,030,400.00
Costa Rica	82,500	100%	0%	214,905,600.00
Tanzania	75,000	52%	48%	194,832,000.00
Papua New Guinea	54,000	94%	6%	140,515,200.00
Thailand	42,000	0%	100%	109,814,400.00
El Salvador	39,000	100%	0%	101,548,800.00
Kenya	39,000	100%	0%	101,548,800.00
Venezuela	36,000	100%	0%	93,283,200.00
Laos	28,500	24%*	76%	74,390,400.00
Philippines	27,000	6%	94%	70,848,000.00
Cameroon	21,000	14%	86%	54,316,800.00

TABLE 3: TOP 25 COUNTRIES PRODUCER OF ARABICA AND ROBUSTA QUALITIES IN 2020, METRIC TONS AND PERCENTAGE OF ARABICA AND ROBUSTA PRODUCED, REVENUES GENERATED IN EUROS. SOURCE: ELEVENCOFFEES.COM (MILTON, 2021)

There is a certain degree of uncertainty in the Arabica production of Laos, hence the percentage of the quantity produced in 2020 is just an estimation. In table 3, whenever the production of a certain variety of coffee is below 1000 60kg bags annually, it is reported 0%.

Taking a closer look to historical data, in figure 14 it is illustrated the worldwide coffee production from 1990 to 2020.

It is possible to notice that there is an increasing trend in coffee production, although during the first years of the analysis (from 1990/91 to 2003/04) the trend is a little more swinging than the following years, but still growing. This trend is, of course, related to the coffee demand that will be analyzed more in detail in the following chapter. Data are reported in table 4.

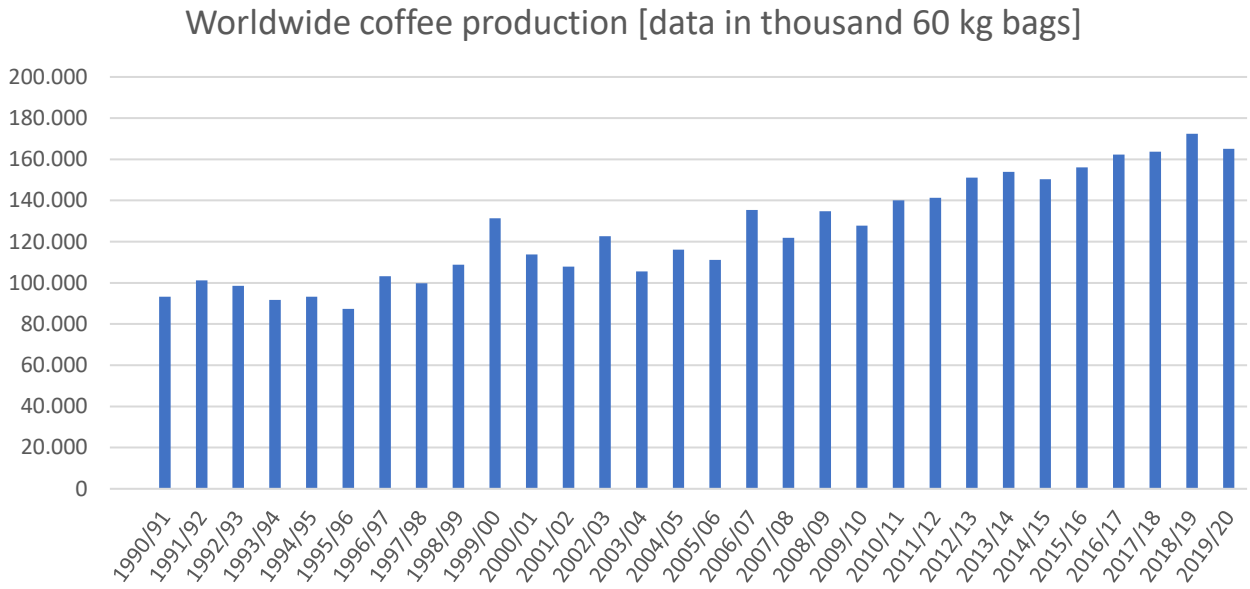


FIGURE 14: WORLDWIDE COFFEE PRODUCTION FROM 1990/91 TO 2019/20. SOURCE: ICO.ORG

Years	Global coffee production
1990/91	93.923
1991/92	101.267
1992/93	98.524
1993/94	91.761
1994/95	93.314
1995/96	87.321
1996/97	103.308
1997/98	99.887
1998/99	108.866
1999/00	131.383
2000/01	113.746
2001/02	107.902
2002/03	122.625
2003/04	105.503
2004/05	116.078
2005/06	111.169
2006/07	135.400
2007/08	121.842
2008/09	134.800
2009/10	127.837
2010/11	140.078
2011/12	141.327
2012/13	151.184
2013/14	153.910
2014/15	150.302
2015/16	156.126
2016/17	162.320

2017/18	163.693
2018/19	172.461
2019/20	165.053

TABLE 4: WORLDWIDE COFFEE PRODUCTION FROM 1990/91 TO 2019/20. SOURCE: ICO.ORG

Coffee imported and exported around the globe is usually packaged in 60-kilograms bags. Figure 15 illustrates the amounts of the two most produced varieties of coffee in the world, the Arabica and Robusta in the years that go from 2005/2006 to 2021/2022, with 2022 forecasted. It is clear that both of the varietes saw an increase in the production to meet an increasing demand worldwide. Arabica starts with a value of 70484 thousand 60 kg bags and it is forecasted an amount of 87734 thousand 60 kg bags; regarding the Robusta the initial value was of 47009 thousand 60 kg bags, with a forecasted quantity of 77105 thousand 60 kg bags. It is interesting to notice that the production of Robusta is growing at a higher rate with respect to the production of Arabica: a 64.02% of Robusta growth against a 24.47% of Arabica growth.

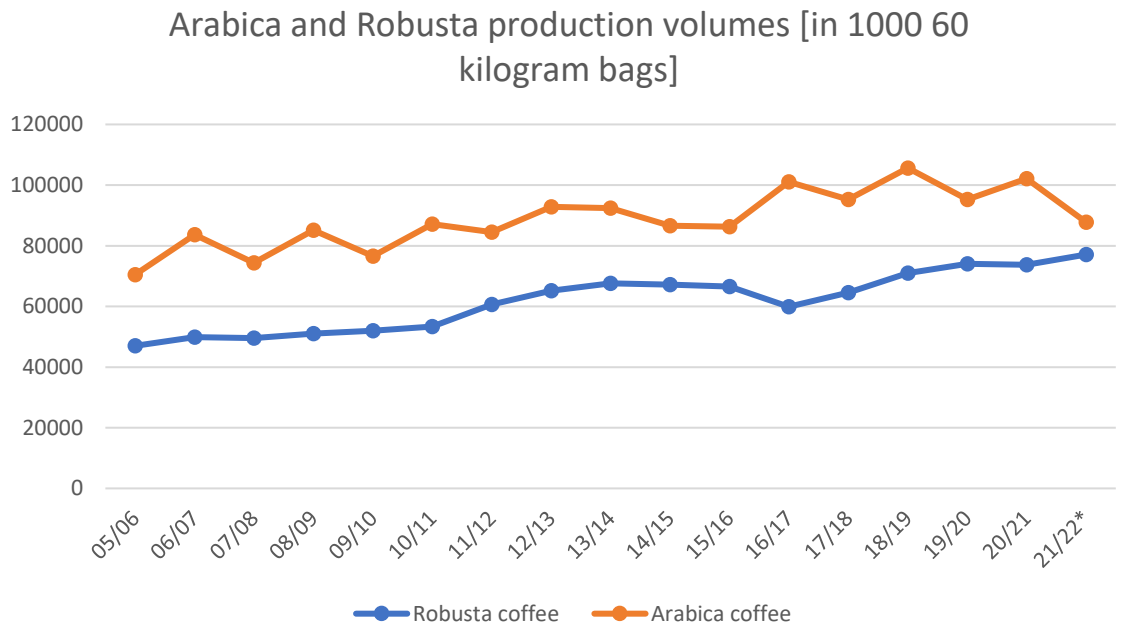


FIGURE 15: ARABICA AND ROBUSTA COFFEE PRODUCTION WORLDWIDE FROM 2005/06 TO 2021/22, SOURCE: STATISTA.COM

1.4.1 The role of coffee in developing Countries

In developing Countries, coffee represents for the majority of farmer families the one and only source of income. It is estimated that this situation is faced by 20 million families, especially in Eastern Africa and Central America, where the main business is represented by the coffe export: for example this happens in Uganda, Rwanda and Ethiopia. Due to the high volatility characteristic of

the coffee market, this is not a positive situation. In fact, although producers may benefit from the increase of prices, the real beneficiaries are exporters and speculators that own the stock availability. Talking about small farmers, their continuous and heavy need for liquidity brings them to sell their coffee as soon as they can, sometimes while the beans are still on the plants. Moreover, with this need for financial liquidity, they are certainly not in a good position to negotiate the best price. Therefore, the situation is the following: whenever prices are high, small producers usually sell their crops to individual buyers, who pay cash and immediately, rather than to their cooperative who would pay them a higher price but later. Conversely, when prices fall, farmers sell their crops to cooperatives.

It is interesting to talk about the situation verified in Ethiopia, the "coffee war". Three prestigious qualitites of coffee are produced in the Country: *Sidamo*, *Harar* and *Yirgacheffe*. Due to this advantage, Ethiopia was starving in 2005 to patent those varieties at USPTO, i.e. the American patent office. The process was blocked by the National Coffee Association which believed that beans and names should have been free of copyright. But what were the implications of the registration? Taking into account that Ethiopia's per capita GDP is around 160 USD per year, and that the average life expectancy is around 47 years, a positive additional inflow of cash would have been generated from the registration for an amount of 88 million USD per years. A substatial increase, knowing that in 2002 Ethiopia gained 156 million USD from export of coffee. This case involved, moreover, a large multinational catering company (Starbucks) and one of the most established NGOs in the world, Oxfam. The point was that Oxfam accused Starbucks to have hindered and blocked the registration of the three varieties, hiding behind the National Coffee Association (Starbucks is one of the most influent members NCA). Obviously the multinational denied everything, proving that it increased the volume of sales of Ethiopia of 400% in the last four years, bringing higher benefits to Ethiopian farmers that were paid 23% higher than the international average. The reality is that Starbucks offered *Sidamo* and *Harar* qualities at a price of 26.29 dollars per lb (450 g), but Ethiopian farmers earned between 30 and 59 cents for the same quantity. This coffee war ended with an advantageous deal for both parties. Starbucks agreed for the registration of the three varieties of coffee and decided to help Ethiopia in the commercialization and distribution, not paying any royalty. In the meantime, Starbucks was able also to save its image, yet damaged by these events. (Torchiani, 2007)

1.4.2 COVID-19 impact

The COVID-19 pandemic presented some important implications for poverty and food insecurity for coffee producers in low- and middle- income Countries, that were totally unprepared to respond to a public health crisis of this proportion. The local currencies of some coffee-producing Countries have sharply devaluated against the U.S. dollar. Taking the Brazil as reference, in the first quarter of 2020 the Brazilian Real lost around 15% against the US dollar, and the correlation between international coffee prices and movements in the Brazilian Real has been proved. The consequence of this devaluation is an increase in competition in the global market of farmers and exporters in coffee-producing Countries.

As long as domestic supply chains are damaged, higher labor and trade costs, as well as higher costs of imported intermediate inputs, may offset the initial gains from currency devaluation. Generally

speaking, it must be underlined that some studies have also demonstrated that price fluctuations and volatility in international agricultural markets are not necessarily carried over to all domestic and local markets in developing countries. In Ethiopia, for example, there is a low degree of correlation between fluctuations in international prices and producer prices regarding the coffee industry.

There are some potential policies to implement to face crisis in poorest Countries:

- Put in place emergency measures to mitigate the impact of the pandemic and support Countries with low institutional capacity: this means establishing safety guidelines to protect farmers and value chain workers during the upcoming harvest season, as well as short-term social safety nets to protect the incomes of vulnerable populations;
- Promote recovery while ensuring long-term sustainability. This includes supporting key links in the value chain and increasing resilience to external shocks (market, climate, pandemics, etc.). In addition, policymakers can encourage investment in both mechanization and automation of harvest and supply chain processes (where possible) to ensure compliance with security protocols. The digitization of business transactions, port transaction and customs procedures can also help to reduce transaction and trade costs.
- Support the demand for coffee. A (temporary) reduction in the coffee tax will lead to lower consumer prices. This will partially offset the decline in household incomes caused by the impending recession, boost demand for coffee in the domestic market and in major consuming Countries, and help stabilise the market.
- Spread vaccination. Right now, only 14% of the promised doses have been delivered to poorest Countries (261 million doses against 1.8 billion promised). (Huff Post, 2021)

1.5 Coffee economics

Unroasted coffee (or green coffee) beans are traded as a commodity on many exchange markets, being the underlying asset of futures contracts. The markets in which it is exchanged are: New York Board of Trade, New York Mercantile Exchange, New York Intercontinental Exchange, Brazilian Mercantile and Futures Exchange, Kansai Commodities Exchange, Tokyo Grain Exchange, Borsa Italiana, National Commodities and Derivatives Exchange, Singapore Commodity Exchange, Multi Commodity Exchange and London International Financial Futures and Options Exchange. Not all the coffee is traded on these markets. To make an example, Starbucks buys coffee through multi-years private contracts, purchasing it at premium.

Brazil is the main coffee exporter all around the world. The main production is constituted by the Arabica variety, and being more expensive than the other due to the higher cultivation cost, the Country has to face competition from other Countries that mainly trade the cheaper Robusta quality. Several factors influence the price of coffee: first of all, the climate conditions during the cultivation, then the production and roasting processes. In fact, if the roasting process is shorter, the result will be a more acid and bitter coffee (i.e. cheaper coffee), the other way around if the process is longer, aroma and taste will be more round and pleasing, and this translates into higher prices. Talking

about the climate, excessive rains or long periods of drought will lead to higher coffee prices, whilst "perfect" climate conditions will make prices fall. (Avatrade.it, 2021)

Other factors that influence the price of coffee regard the distribution cost, the geopolitics and the health issues. Fuel is required to transport coffee, and the more expensive is fuel, the more expensive is transporting the commodity, hence the price will be influenced and will increase. It is also important to look at the politic landscape of the Country in which coffee is cultivated. The more shaky it is, the higher the probability of the supply chain to be interrupted, and if this happens of course the price increases. Eventually, the consideration that people have on health issues caused by coffee influences the demand, therefore the price will be influenced to. The overall result is a high price volatility. (Killian, 2019)

Figure 16 shows the Arabica coffee price trend from 1969 to 2021. Figure 17 illustrates in a more specific way the price of some varieties of Arabica and Robusta, while figure 18 illustrates coffee futures price from 1979 to 2021.

FIGURE 16: ARABICA OFFEE PRICE TREND FROM 1969 TO 25/10/2021. SOURCE: MACROTRENDS.NET

In figure 16, all the price fluctuations of coffee can be observed, the price is never stable and never goes over 3.5$, but in 2001 it reached a very low price, the lowest, that was almost 0$.

Colombian Mild Arabicas appeared to be the most expensive coffee typology per pound in 2019, though the trend has seen the price plummet from a 2011 high of 2.84 dollars to 1.34 dollars in 2019. As discussed, Arabica coffee is more expensive that Robusta coffee for all the reasons already analyzed.

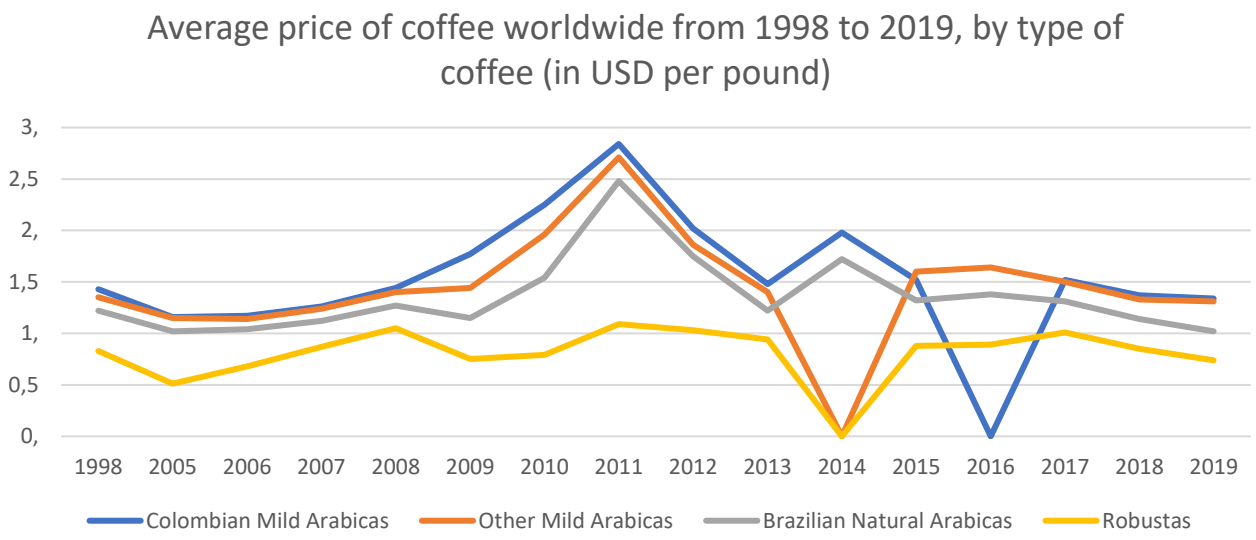


FIGURE 17: AVERAGE PRICE OF COFFEE ARABICA AND ROBUSTA WORLDWIDE FROM 1998 TO 2019, BY TYPE OF COFFEE (IN USD PER POUND) FROM 1998 TO 2019. SOURCE: STATISTA.COM

FIGURE 18: ARABICA COFFEE FUTURES PRICE TREND FROM 1/12/1979 TO 31/12/2021. SOURCE: INVESTING.COM

1.5.1 COVID-19 impact

The virus spread in all the coffee producers Countries, causing a global shock that affects all the stages of the coffee value chain.

ICO stands for “Composite Indicator Price”. It is a weighted average of the price of all major coffee typologies for all the Countries of origin. Starting from February 2020, ICO has shown a fluctuating but upward trend, whilst prices began to fall in April of the same year: in fact, after a 6.9% monthly increase in March (positioning at 109.05 US cents/pound), the composite indicator averaged 108.91 US cents/pound in April. It is clear that changes in spot prices are being driven mostly by Arabica coffee, considering the fact that this species sets up around 60% of globally traded coffee and, therefore, there have been more concerns about supply disruptions and the ongoing demand uncertainties compared to Robustas. Robusta prices decreased by 0.9 percent in March and 5.2 percent in April, averaging 63.97 US cents/pound. A similar trend has been followed by futures prices. Arabica derivatives close to maturity saw an increase in price equal to 10.8% in March, with a decrease in April of 1.2%, averaging 113.61 US cents/pound. Robustas average futures price in the London market saw a decrease of 2.8% in March and 5.2% in April, positioning at 54.4 US cents/pound.

Speculation can also increase the coffee price volatility. In fact, the price fluctuations derived from the pandemic crisis attracted also speculators (non-commercial traders). There are researches that evidence a causal effect between speculators’ activities in futures coffee markets in New York (Arabica) and London (Robusta) and spot prices. However, the registered effect is a short-term one, moreover it has occurred both in periods of falling and rising prices. In fact, it was demonstrated that, in the long run, market fundamentals prevail. It must be said that there are other on-going researches that estimate the correlation between speculators’ activity and price volatility, as well as any consequent impact along the value chain.

The pandemic crisis caused both a demand and a supply effect on the coffee industry, both of them will be analyzed in detail in the next chapters. (International Coffee Organization (ICO) and International Food Policy Research Institute (IFPRI), 2020)

2 The demand analysis

As anticipated in the previous chapter, the demand for coffee and coffee machines will be analyzed. The demand is a fundamental part of a market analysis, probably the most important. Without a demand, there is no market.

2.1 The demand for coffee

Nowadays, coffee is “one of the most widely consumed beverages in the world”, as reported by Statista (Conway, Global coffee consumption 2012/13-2020/21, 2021): approximately 30-40% of the world's population consumes coffee on a daily basis and, during the last decade, the worldwide demand for coffee slightly increased, growing from an amount of 146.98 million of 60kg bags to an amount of 166.63 million of 60kg bags, with a CAGR equal to 5%.

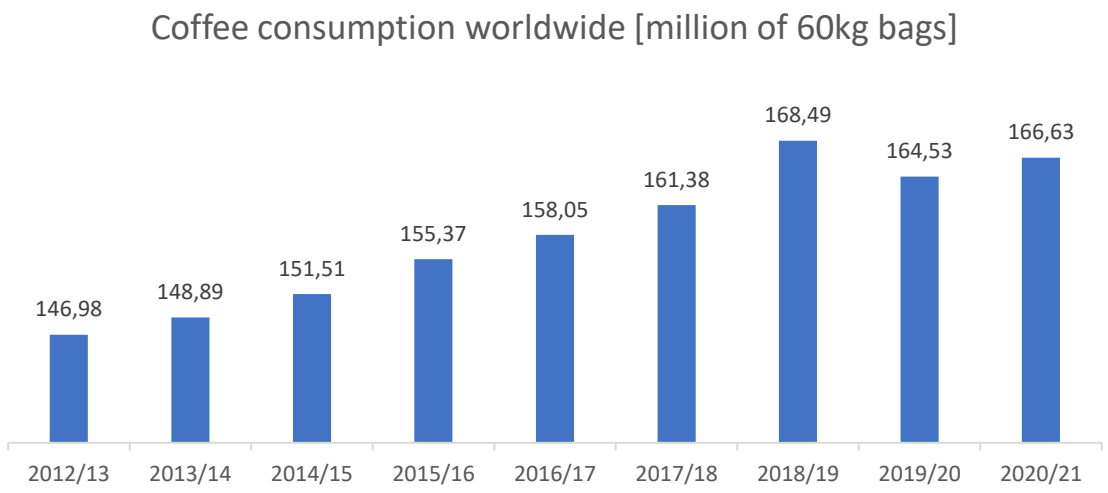


FIGURE 19: COFFEE CONSUMPTION WORLDWIDE FROM 2012/13 TO 2020/21

In general, it is deminstrated that the coffee price elasticity of demand equals 0.3: if the price of coffee increases of 10%, the demand decreases of 30%. It can be said that the demand is inelastic, and consumers are willing to pay even if the coffee price increases. The other way around, if the coffee price decreases, the demand will not be affected that much.

2.1.1 Worldwide consumption

A research conducted in 2020 shows the differences in the coffee consumption all around the Globe: Netherlands lead the ranking with 8.3 kg of yearly per capita consumption, followed by Finland and

Sweden, with 7.8 and 7.6 kg of yearly per capita consumption respectively. Italy ranks eleventh with its 4.7 kg of coffee consumed in 2020 per capita. (Armstrong, 2020)

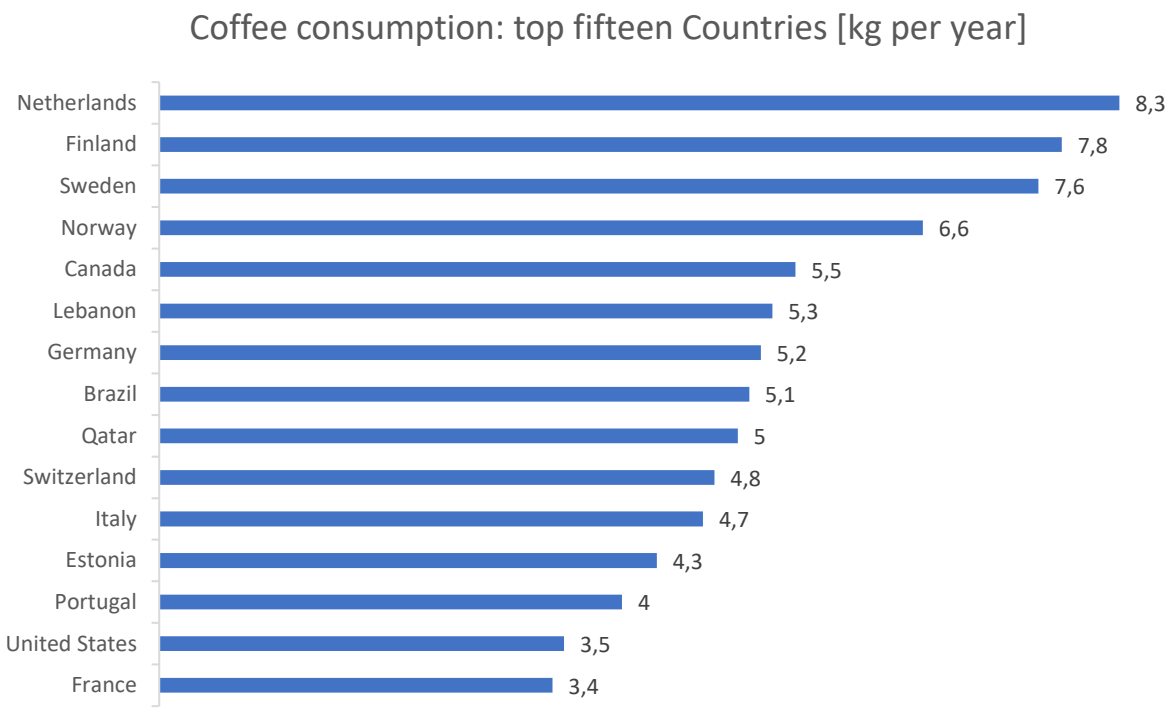


FIGURE 20: THE COUNTRIES MOST ADDICTED TO COFFEE. ESTIMATED AVERAGE PER CAPITA COFFEE CONSUMPTION IN SELECTED COUNTRIES, WHERE PER CAPITA CONSUMPTION EXCEEDS 3 KG PER YEAR, IN 2020 (IN KG). SOURCE: STATISTA.COM

The boom in consumption of coffee in the European Nordic Countries is due to historical circumstances and not to their geographical conditions, since it is clear that their climate cannot support the growth of coffee beans. When coffee landed in Europe, it was a beverage that could be afforded only by rich and wealthy people. The point is that people in Nordic Countries were not that rich and, moreover, there was a prohibition in the consumption of alcohol. Despite this situation, the coffee trade was able to penetrate the poorest segments of the society: people needed to find a social substitutive drink to alcohol. (Gundersen, 2020)

This introduction is useful to understand the importance of this beverage, the reason behind its diffusion from a social point of view that has, most of all, an impact on the global economy. The following statistic illustrates the revenues coming from the sale of coffee in 2019, divided by Country. Both caffeinated and decaffeinated coffees are considered, in the form of whole coffee and coffee beans, while “ready-to-drink” beverages are not taken into account. To better understand the data in figure 21, it is important to highlight the distinction made by the source, Statista.com, between revenues realized off-trade and on-trade. The sales off-trade are referred to sales realized in stores, hence sales are valued at retail prices, while on-trade are realized in coffee shops, hence revenues are valued on the basis of the on-trade sales at purchasing prices to the on-trade establishments.

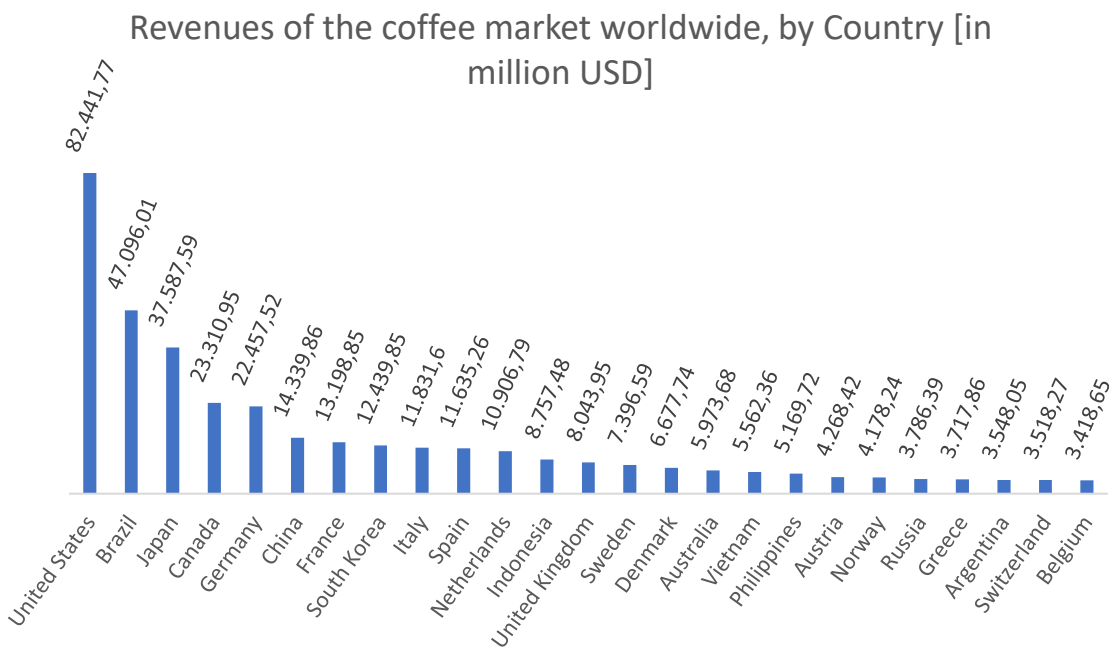


FIGURE 21: REVENUES OF THE COFFEE MARKET WORLDWIDE IN 2019, DIVIDED BY COUNTRY (OLORUNTOBA, 2020)

The Coffee demand in 87 Countries (53 exporting Countries and 34 importing Countries), which have the major coffee consumption worldwide, is illustrated in figure 22, while the related data in table 5. The trend is upward sloping, and the majority of coffee consumption is concentrated in importing Countries. From a value of 78.831 thousand of 60 kg bags consumed in 1990, the demand arrives at 137.406 thousand of 60 kg bags in 2019. The import and export quantity analysis and the demand of importing and exporting Countries will be discussed from now on.

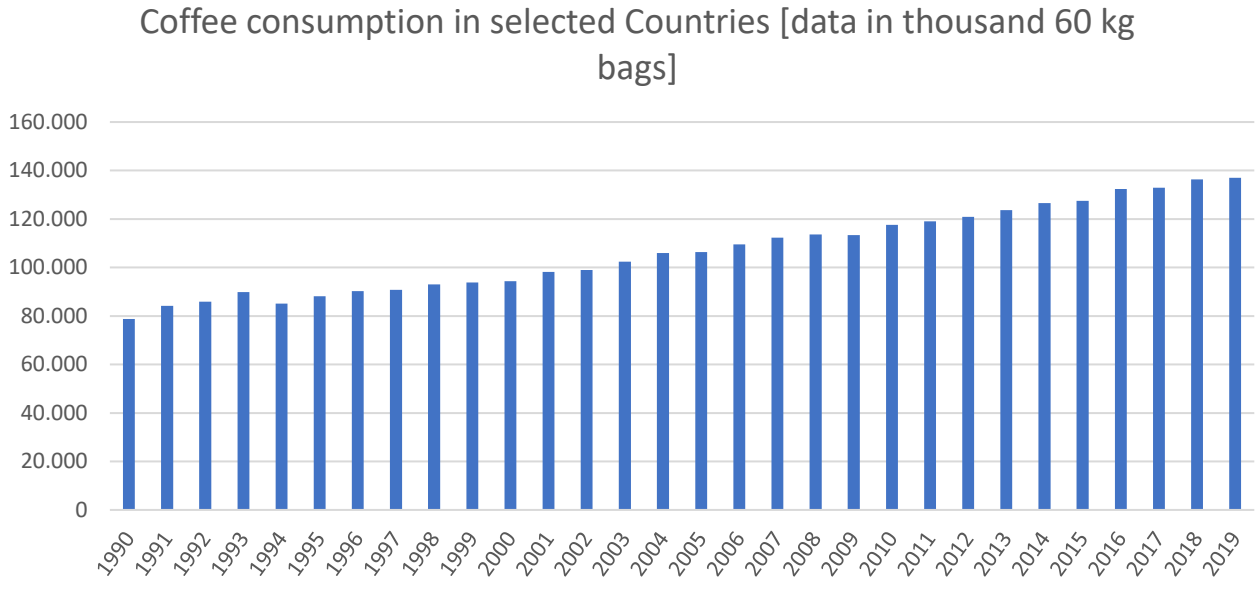


FIGURE 22: COFFEE DOMESTIC CONSUMPTION IN SELECTED COUNTRIES FROM 1990 TO 2019. SOURCE: ICO.ORG

Calendar years	Worldwide consumption	Export Countries %	Import Countries %
1990	78.831	24.75%	75.25%
1991	84.158	24.04%	75.96%
1992	85.833	24.41%	75.59%
1993	89.802	23.49%	76.51%
1994	85.102	25.10%	74.90%
1995	88.196	25.63%	74.37%
1996	90.293	26.04%	73.96%
1997	90.796	26.73%	73.27%
1998	93.044	26.99%	73.01%
1999	93.842	27.43%	72.57%
2000	94.329	28.70%	71.30%
2001	98.179	28.83%	71.17%
2002	98.988	29.05%	70.95%
2003	102.342	29.15%	70.85%
2004	106.017	29.63%	70.37%
2005	106.362	31.16%	68.84%
2006	109.570	31.92%	68.08%
2007	112.359	32.85%	67.15%
2008	113.633	33.80%	66.20%
2009	113.390	35.01%	64.99%
2010	117.577	35.42%	64.58%
2011	118.997	36.30%	63.70%
2012	120.881	36.94%	63.06%
2013	123.724	36.63%	63.37%
2014	126.616	36.70%	63.30%
2015	127.468	37.15%	62.85%
2016	132.422	36.50%	63.50%
2017	132.846	37.40%	62.60%
2018	136.393	36.84%	63.16%
2019	137.046	36.47%	63.53%

TABLE 5: COFFEE DOMESTIC CONSUMPTION IN SELECTED COUNTRIES IN THOUSAND 60 KG BAGS FROM 1990 TO 2019. SOURCE: ICO.ORG

2.1.1.1 Import and export

The amount of global coffee imported in 2020 is equal to 133.03 million 60-kilograms bags while, in the same period, around 142.37 million bags were exported worldwide. For the 2021 coffee marketing year, both imports and exports are expected to decrease (in fact, official data are still not available but it is possible to make some forecasts). The highest export volumes belong to Brazil (3.22 million 60-kilogram bags only in January), followed by Vietnam and Columbia.

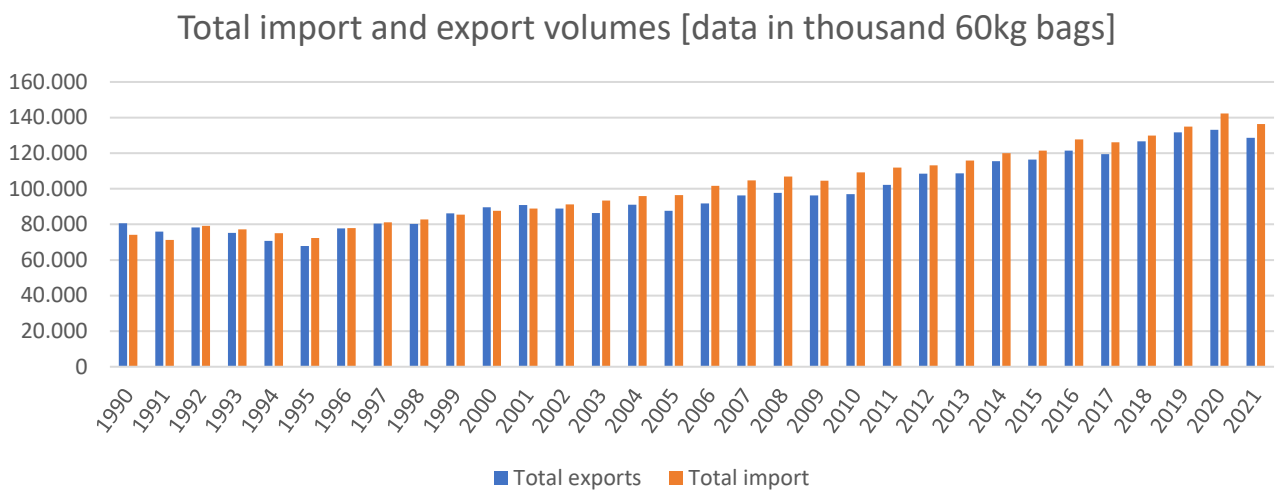


FIGURE 23: TOTAL IMPORT, EXPORT AND RE-EXPORT VOLUMES FROM 1990 TO 2021, DATA IN THOUSAND 60 KG BAGS. SOURCE: ICO.ORG

Calendar years	Total exports	Total import	Re-export
1990	80.675	74.131	8.769
1991	75.943	71.282	9.770
1992	78.299	79.216	10.691
1993	75.166	77.120	11.041
1994	70.710	75.024	12.833
1995	67.876	72.371	11.539
1996	77.670	77.854	12.485
1997	80.439	81.063	14.136
1998	80.243	82.767	15.135
1999	86.143	85.432	15.331
2000	89.562	87.642	16.796
2001	90.859	88.950	18.588
2002	88.847	91.266	19.602
2003	86.372	93.394	21.284
2004	91.097	95.847	21.693
2005	87.562	96.376	24.028
2006	91.760	101.567	26.123
2007	96.302	104.655	28.747
2008	97.599	106.798	32.106
2009	96.242	104.513	31.873
2010	97.046	109.145	34.048
2011	102.185	111.812	35.461
2012	108.444	113.171	36.221
2013	108.567	115.931	36.282
2014	115.548	120.028	39.073
2015	116.396	121.378	40.258
2016	121.334	127.632	42.437
2017	119.519	126.063	43.110

2018	126.598	129.947	44.808
2019	131.694	134.944	46.896
2020	133.030	142.366	N.A.
2021	128.585	136.336	N.A.

TABLE 6: TOTAL IMPORT, EXPORT AND RE-EXPORT VOLUMES FROM 1990 TO 2021, DATA IN THOUSAND 60 KG BAGS. SOURCE: ICO.ORG

Re-export data are reffered to exports of import Countries. The lion's share of worlwide import volume is taken by Europe (figure 24), which, on average, imported 59% of the global production. Figure 25 illustrates, instead, the yearly volume of coffee imported in the European Union in the same period: on average, 58.377 thousand 60 kg bags of coffee were imported.

The European Country that historically imports more coffee is Germany, to which is given 30% (on average) of the total European import volume, followed by Italy (13%) and France (12%). Netherland, the most addicted-to-coffee Country, receives 6% of the total European imports. Of course, the reason behind this lower percentage lies in the size of the population, way lower than the other three mentioned Countries (figure 26).

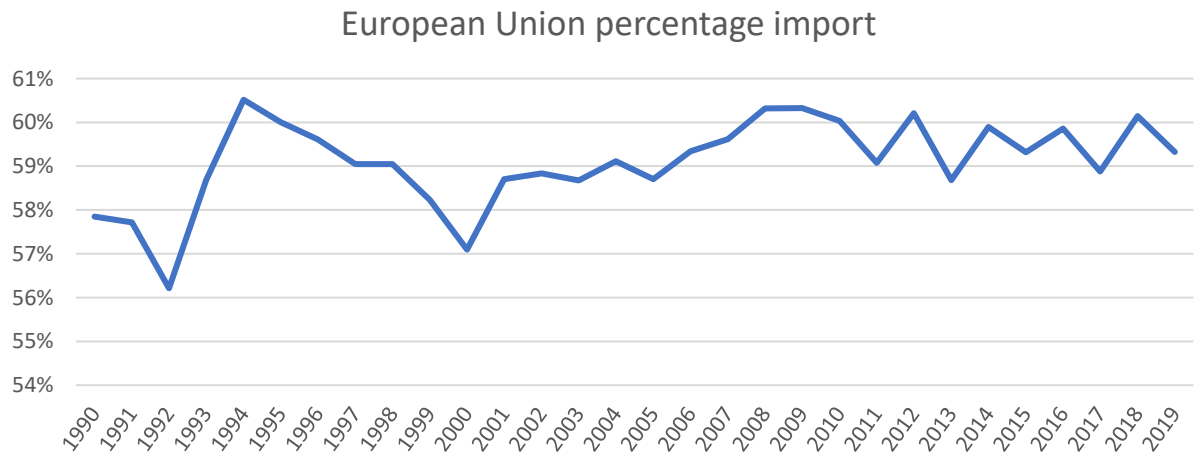


FIGURE 24: EUROPEAN UNION IMPORT PERCENTAGE ON GLOBAL IMPORT FROM 1990 TO 2019, SOURCE: ICO.ORG

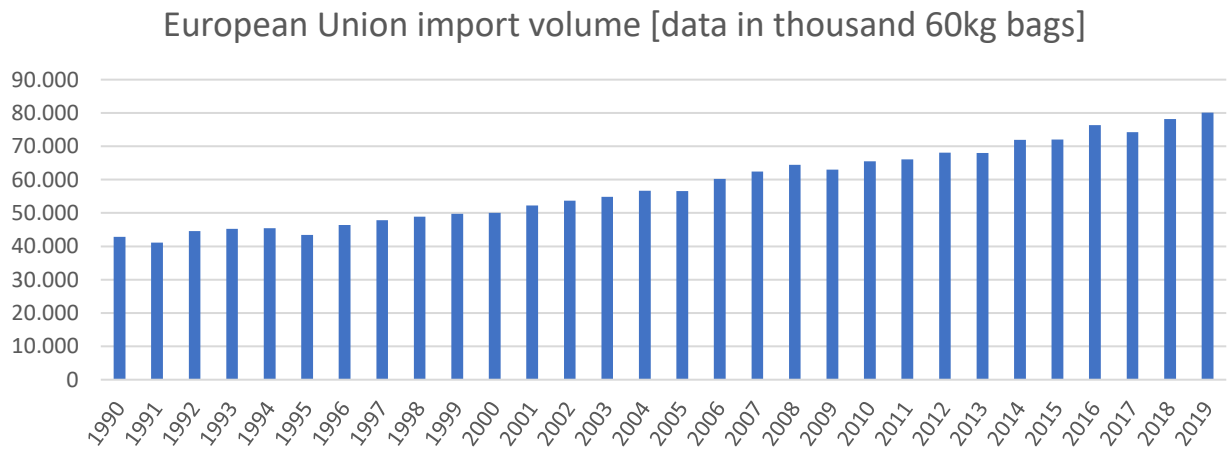


FIGURE 25: EUROPEAN UNION IMPORT VOLUME OF COFFEE FROM 1990 TO 2019, SOURCE: ICO.ORG

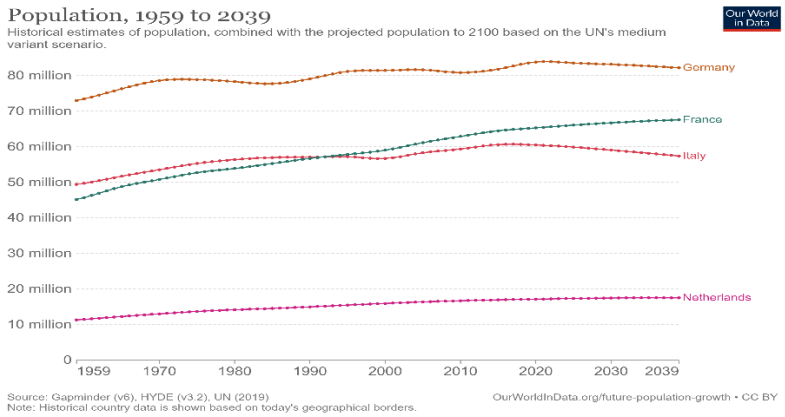


FIGURE 26: GERMANY, FRANCE, ITALY AND NETHERLANDS POPULATIONS FROM 1959 TO 2039 (FORECASTED). SOURCE: OURWORLDINDATA.ORG

Worldwide, the Country that imports the highest coffee volume is United States, whose import volumes equal, on average, 24% of the global ones. US are followed by Germany (18%), Italy and France (both close to 7%).

Importing Countries usually re-export coffee, for example to sell the typology of coffee drank in a certain Country abroad. The bigger worldwide re-exporter is Germany, which re-exports 34% of the total coffee re-exported, followed by United States (11%), Belgium (9%) and Italy (7%). In general, Europe is the larger re-exporter: it counts 81% of the global volumes.

2.1.1.2 Domestic consumption in exporting Countries

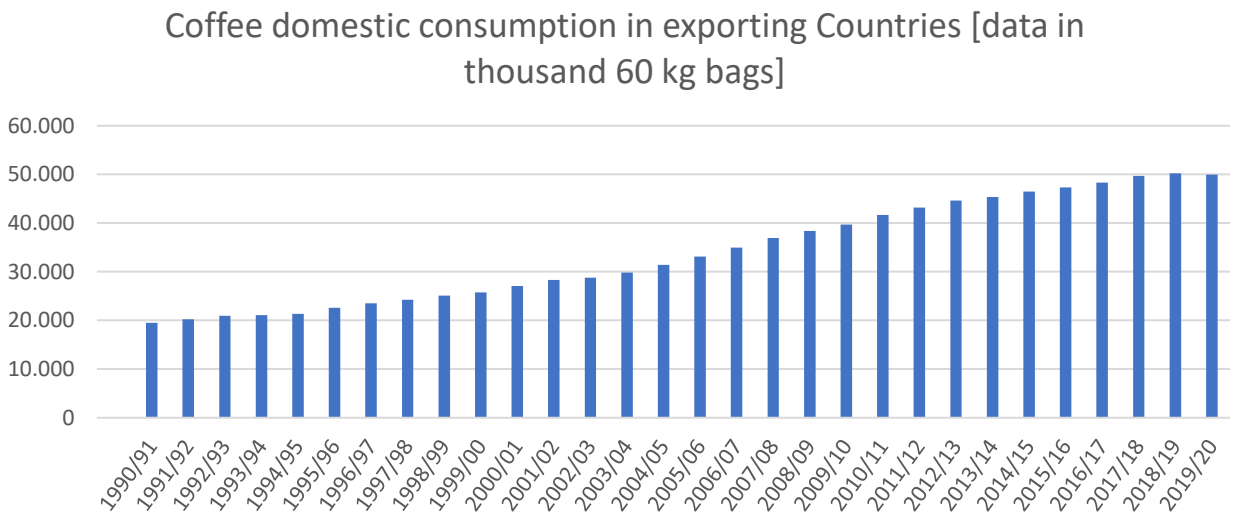


FIGURE 27: COFFEE EXPORTING COUNTRIES DOMESTIC CONSUMPTION FROM 1990/91 TO 2019/20. SOURCE: ICO.ORG

ICO, the International Coffee Organization, shows the coffee domestic consumption in export Countries in thousand 60 kg bags from 1990 to 2020. Also in this case, it is possible to see a global increasing trend, but it would be interesting to measure the coffee consumption per capita, since it is clear that the population increased in the time frime of reference, hence the total coffee consumption increased as well. The CAGR is equal to 3.30%. Data are contained in table 7.

Years	Export Countries coffee domestic consumption
1990/91	19.509
1991/92	20.228
1992/93	20.951
1993/94	21.098
1994/95	21.360
1995/96	22.603
1996/97	23.513
1997/98	24.271
1998/99	25.117
1999/00	25.741
2000/01	27.068
2001/02	28.309
2002/03	28.752
2003/04	29.833
2004/05	31.413
2005/06	33.143
2006/07	34.974
2007/08	36.911
2008/09	38.403
2009/10	39.699
2010/11	41.646
2011/12	43.192
2012/13	44.653
2013/14	45.324
2014/15	46.474
2015/16	47.349
2016/17	48.334
2017/18	49.686
2018/19	50.245
2019/20	49.982

TABLE 7: COFFEE EXPORTING COUNTRIES DOMESTIC CONSUMPTION FROM 1990/91 TO 2019/20. SOURCE: ICO.ORG

Considering the population trend in the exporting Countries from 1959 to 2039, with 2022 – 2039 forecasted (figure 22), it is possible to notice that there is a significative increase of population, most of all for India. Therefore, this is the Country that impacts the most the increasing trend in coffee consumption of developing Countries.

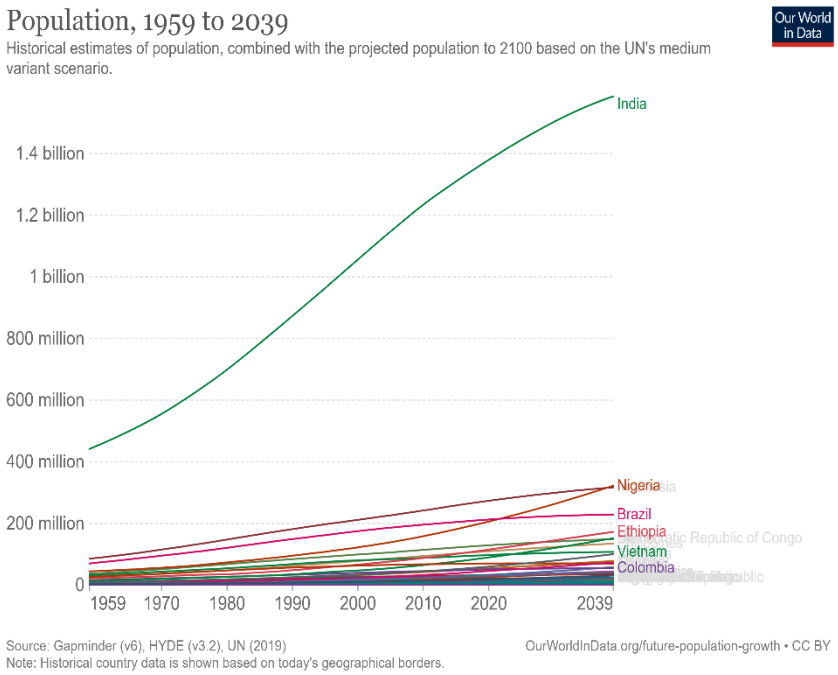


FIGURE 28: POPULATION TREND IN EXPORTING COUNTRIES FROM 1959 TO 2039, FORECASTED THE PERIOD 2022/2039. SOURCE: OURWORLDINDATA.ORG

2.1.1.3 Domestic consumption in importing Countries

Always ICO reports the coffee domestic consumption in import Countries in thousand 60 kg bags from 1990 to 2019. Also in this case, it is possible to see a global increasing trend, but the coffee consumption per capita should be taken into account too, since it is clear that the population increased in the time frime of reference, hence the total coffee consumption increased as well with CAGR equal to 1.33%. Data are contained in table 8.

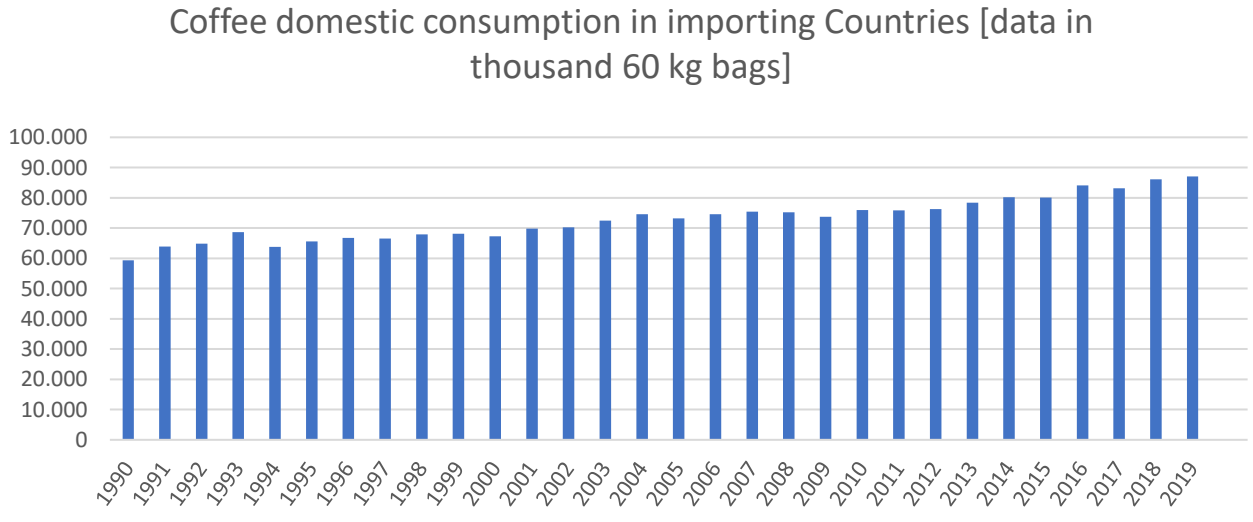


FIGURE 29: COFFEE IMPORTING COUNTRIES DOMESTIC CONSUMPTION FROM 1990 TO 2019. SOURCE: ICO.ORG

Calendar years	Total
1990	59.322
1991	63.930
1992	64.882
1993	68.704
1994	63.742
1995	65.593
1996	66.780
1997	66.525
1998	67.927
1999	68.101
2000	67.261
2001	69.870
2002	70.236
2003	72.509
2004	74.603
2005	73.219
2006	74.596
2007	75.448
2008	75.231
2009	73.690
2010	75.931
2011	75.804
2012	76.229
2013	78.400
2014	80.142
2015	80.119
2016	84.088
2017	83.161
2018	86.149
2019	87.064

TABLE 8: COFFEE IMPORTING COUNTRIES DOMESTIC CONSUMPTION FROM 1990 TO 2019. SOURCE: ICO.ORG

Only Europe consumes, on average, 51.78% of coffee over the totality of consumption in all the importing Countries. It is interesting to notice that the percentage European consumption trend tends to decrease over time, even though in absolute terms increases with CAGR equal to 0.89%: it is clear that coffee is becoming more and more popular in the other importing Countries. The trend is illustrated in figure 30. The percentage coffee consumption started from a value of 53.74% in 1990 and became equal to 47.39% in 2019. It is a slight decrease, but it is a sign that other Countries are discovering the pleasure of a cup of coffee.

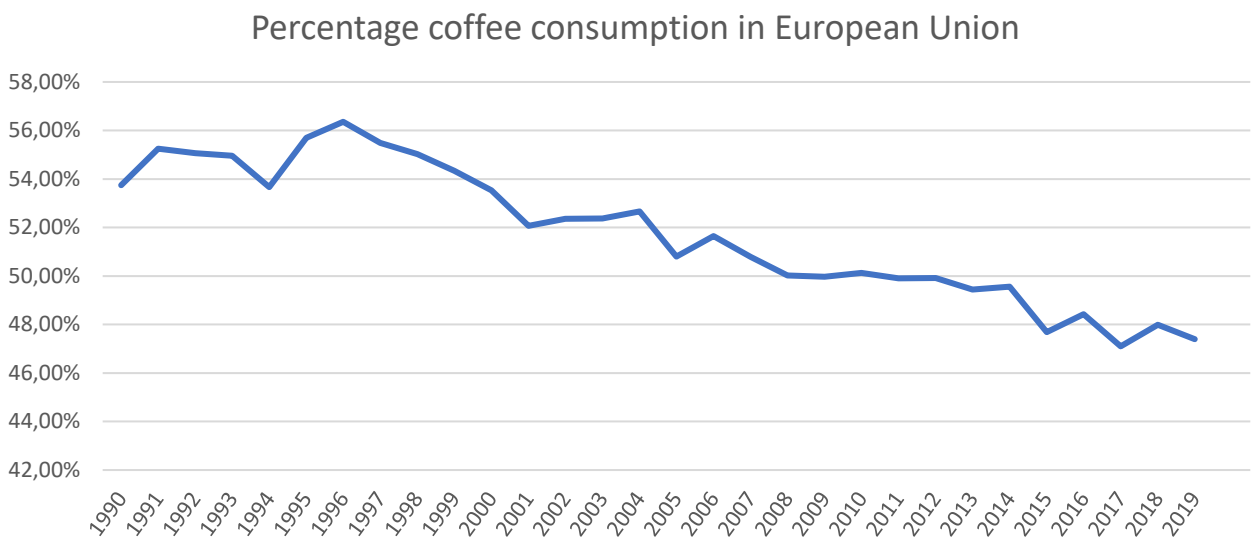


FIGURE 30: PERCENTAGE CONSUMPTION IN EU WITH RESPECT TO THE GLOBAL IMPORTING COUNTRIES CONSUMPTION. SOURCE: ICO.ORG

Of course, there is a correlation between the bigger importing Countries (in terms of volume imported) and the bigger consumption Countries (in terms of volume consumed). In the analysis of the import volumes, 34 Countries have been considered. As already seen, the main global importers are United States, Germany, Italy and France. There are other Countries that import a huge quantity of coffee, like Japan, Spain and Sweden. These are also the Countries in which coffee is consumed the most: considering the percentage consumption over the global importing Countries consumption, US values, on average, 28.71%, Germany 12.92%, Japan 9.27%, France 7.59%, Italy 7.30%, Spain 4.22% and Sweden 1.91%. In this paragraphs all of these Countries will be analyzed. As a general overlook, the consumption data are summarized in table 9, which aggregates the domestic consumption of the selected Countries by time periods, averaging the consumption in time.

	Average volumes [thousand 60kg bags]				
	1975-79	**1980-89**	**1990-99**	**2000-08**	**2008-19**
USA	18,696.00	17,981.00	18,297.00	20,327.00	24,033.00
Germany	6,924.00	8,720.00	9,998.00	9,141.00	8.839.00
Japan	2,475.00	4,087.00	5,796.00	7,007.00	7,463.00
Italy	3,399.00	4,099.00	4,707.00	5,495.00	5,743.00
France	4,869.00	5,267.00	5,424.00	5,261.00	5,772.00
Spain	1,531.00	1,983.00	2,884.00	2,975.00	3,323.00
Sweden	1,677.00	1,624.00	1,448.00	1,229.00	1,460.00
Sub-total	39,571.00	43,762.00	48,555.00	51,435.00	56,633.00

TABLE 9: DOMESTIC CONSUMPTION IN SELECTED IMPORTING COUNTRIES FROM 1975 TO 2020, SOURCES: ICO.ORG

2.1.1.3.1 UNITED STATES

Half of the American people declair that drinking coffee is “pure pleasure”. It is possible to look more in detail at the coffee consumption in the US from 1990 to 2019. The trend is upward sloping, with an initial value of 18.298 thousand 60 kg bags to a final value of 27.310 thousand 60 kg bags.

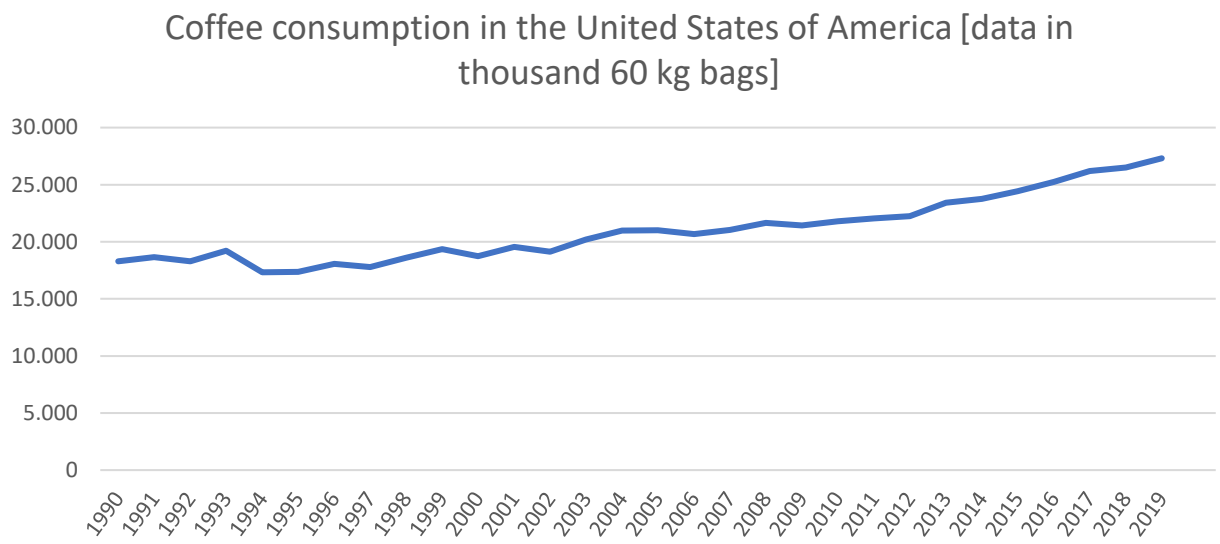


FIGURE 31: HISTORICAL DATA OF COFFEE CONSUMPTION IN THE US. SOURCE: ICO.ORG

In the United States, a sample of 2,838 people was collected in January 2020 and everyone was asked the typology of coffee they are used to drink. Results highlighted a preference for consumers of “traditional coffee” (figure 32), in fact, 43% of people prefer it. The “traditional coffee” is considered to be a coffee drunk hot or iced. It includes both gourmet and not gourmet coffee (notice that the percentages illustrated in figure 32 might not add up due to rounding). The traditional coffee (not gourmet) is a version of traditional coffee drunk hot or iced that is not brewed from premium whole bean or ground varieties. The traditional coffee (gourmet) is the other version of traditional coffee drunk hot or iced, obtained by brewing from premium whole bean or ground varieties. The category “espresso-based beverages” includes espresso, cappuccino, café mocha, coffee “macchiato” and American coffee. Non-espresso based beverages include, instead, frozen blended coffee, cold brew coffee and nitro coffee.

The main difference between the Italian coffee and the American one lies in the beans: where for espresso is used a blend of Arabica and Robusta species with dark roasting and fine grinding, for American coffee is used an Arabica, with light/medium roasting and coarser grinding. The overall result is that the Italian espresso is more full bodied and creamy whereas American is a real brew.

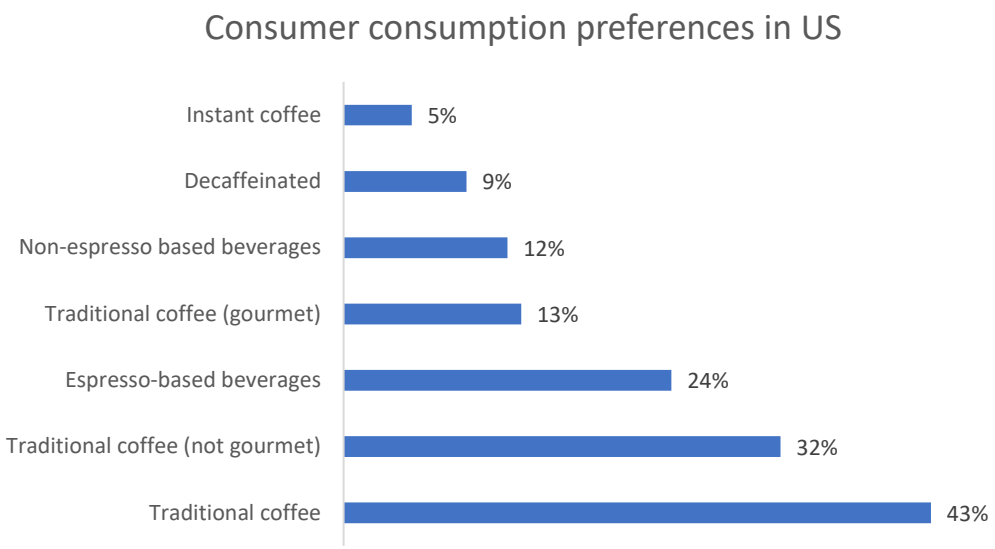


FIGURE 32: COFFEE CONSUMPTION PREFERENCES IN THE UNITED STATES IN 2020, BY TYPE OF COFFEE, SOURCE: STATISTA.COM

It is also interesting to know how many cups of coffee an American drinks per day. The most common consumption pattern is drinking 2 or 3 cups of coffee per day (44% of people have this consumption habit), while 26% of people drink at most 1 cup per day.

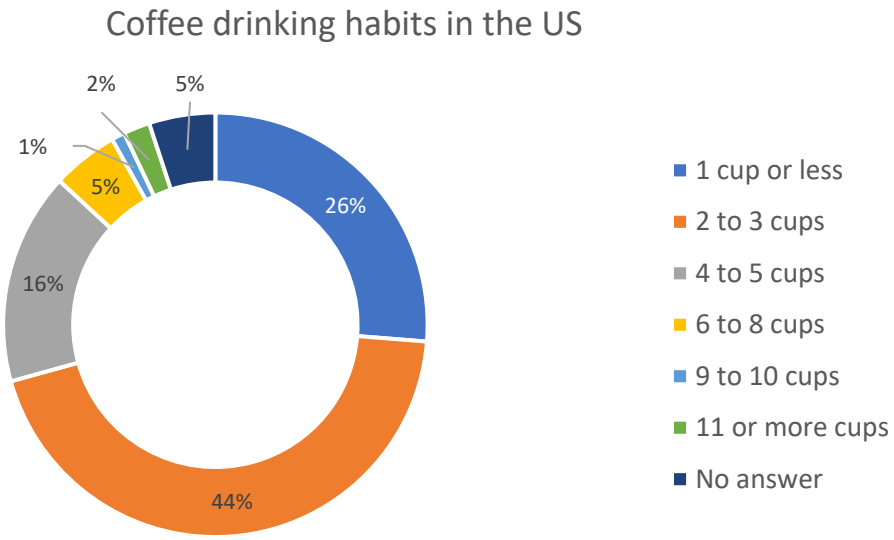


FIGURE 33: NUMBER OF CUPS OF COFFEE DRUNK BY PEOPLE IN THE US. SOURCE: STATISTA.COM

Coffee is imported in the United States from different Countries. Colombia was the biggest coffee trading partner of the United States in 2020: the Country imported 1.21 billion USD worth in that

year. Brazil was the second partner, exporting over 1.16 billion USD of coffee to the Country. United States imports coffee also from other importers who re-exported it, like Switzerland (0.45 billion USD imported) and Canada (0.38 billion USD imported).

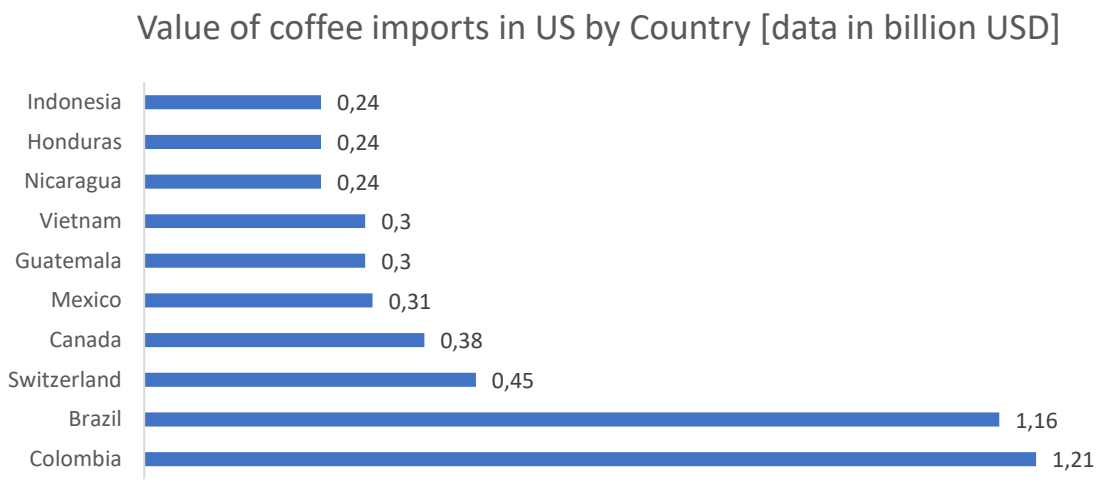


FIGURE 34: VALUE OF COFFEE IMPORTS IN UNITED STATES BY COUNTRY OF ORIGIN IN 2020, SOURCE: STATISTA.COM

In 2016, about 16% of the coffee imported by the United States from Colombia was Fair Trade certified, i.e. United States invested in coffee to improve conditions for workers in agriculture and the environmental sustainability of the crops harvested. Also in 2016, 22 million USD of the imported coffee from Colombia was organic.

A study conducted in 2010 by Denis Seudieu Chief Economist Denis Seudieu, Chief Economist International Coffee Council, estimates the correlation coefficients between the coffee price in the US and consumption, plus the correlation between GDP per capita and consumption.

	Correlation coefficients
Retail price and consumption	-0.16
GDP per capita and consumption	0.60

TABLE 10: CORRELATION COEFFICIENTS BETWEEN CONSUMPTION AND RETAIL PRICE/GDP PER CAPITA IN THE US. SOURCE: ICO.ORG

The correlation coefficient between retail prices and consumption volumes in the US is estimated to be negative, and this should suggest that an increase in price is reflected in a decrease of demand, but there is a weak correlation between the two variables: as already said, the demand is inelastic. This is confirmed by figure 35, in which there is the evidence of the correlation between price increase – demand decrease and viceversa, but the overall consumption is not affected too much (data of 2008 price are not available). It is also interesting the estimation of the correlation

coefficient between GDP per capita and consumption, which suggests that an increase in households' wealth corresponds to an increase in coffee consumption, and it is a strong correlation.

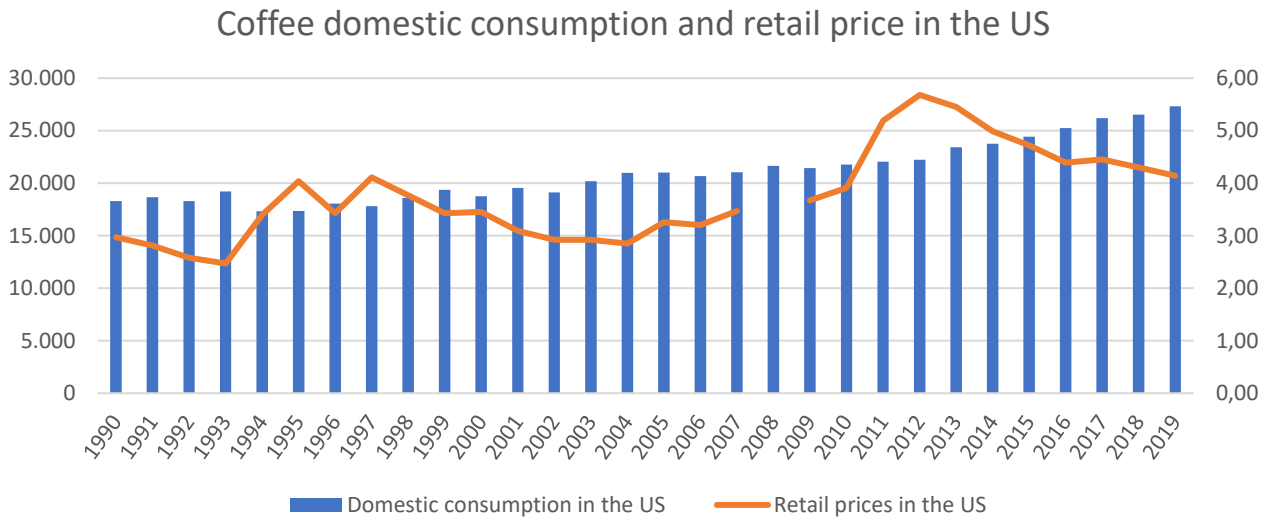


FIGURE 35: HISTORICAL DATA OF COFFEE DOMESTIC CONSUMPTION (IN THOUSAND 60 KG BAGS) AND RETAIL PRICE (IN USD/LB) IN THE US, FROM 2011 TO 2020. SOURCE: ICO.ORG

2.1.1.3.2 GERMANY

In Germany, coffee and tea are the most preferred hot beverages. More than 30 million of people buy caffeinated coffee every year: 34.21 million in 2016, 33.93 million in 2017, 33.31 million in 2018, 32.36 million in 2019 and 31.49 million in 2020. The vast majority of people prefer to consume roasted ground coffee, as reported by Statista.com. The study was conducted on a sample made by group of people aged from 14 years: 23,086 respondents in 2018; 23,120 respondents in 2019 and 23,138 respondents in 2020. Coffee capsules are not very popular (but more preferred than instant coffee), instead coffee pods are. Researches indicate that people usually drink coffee more than once per day (figure 36).

The per capita consumption of coffee is way higher than the per capita consumption of any other hot drink (mainly tea, the substitute product of coffee). The yearly per capita consumption of coffee is, on average, 157.02 liters, which correspond to 35 g of roasted coffee per liter. The coffee consumption trend was almost stable during the last 19 years, as the number of people who did not change their consumption habits in 2017, 2018, 2019 and 2020. Per capita consumption quantities are represented in figure 37, while the total consumption trend from 1990 to 2019 is depicted in figure 38. With respect to US, the demand is more constant, especially in the last 6 years, but at the beginning it was very fluctuating. It is also illustrated the relationship between consumption and coffee retail prices (whose 2019 data is not available).

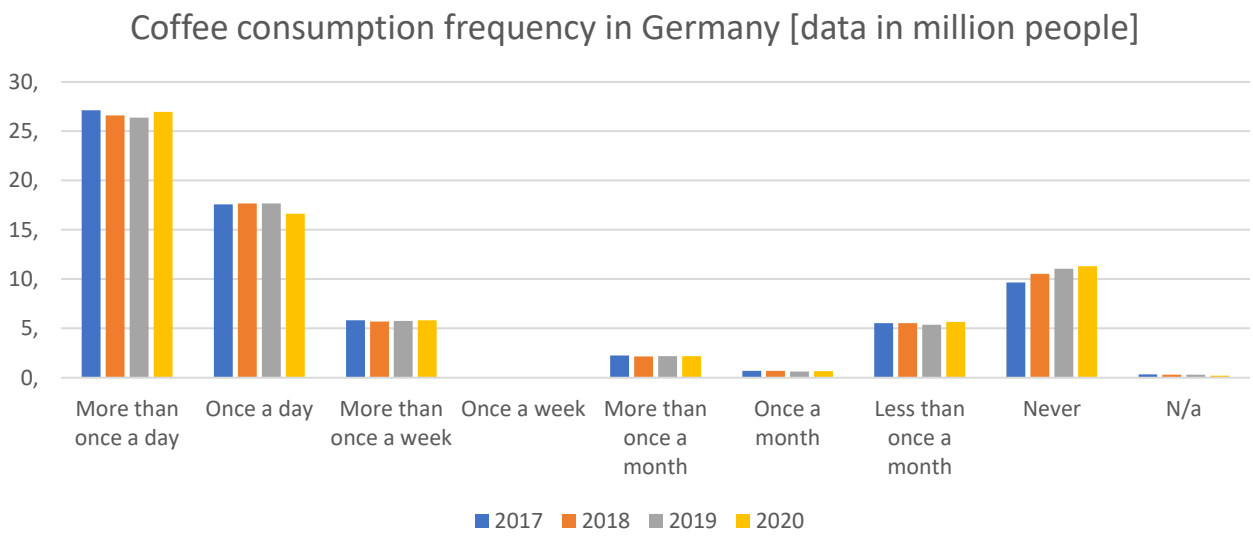


FIGURE 36: NUMBER OF PEOPLE CONSUMING ROASTED AND GROUND COFFEE IN GERMANY FROM 2017 TO 2020, BY FREQUENCY. SOURCE: STATISTA.COM

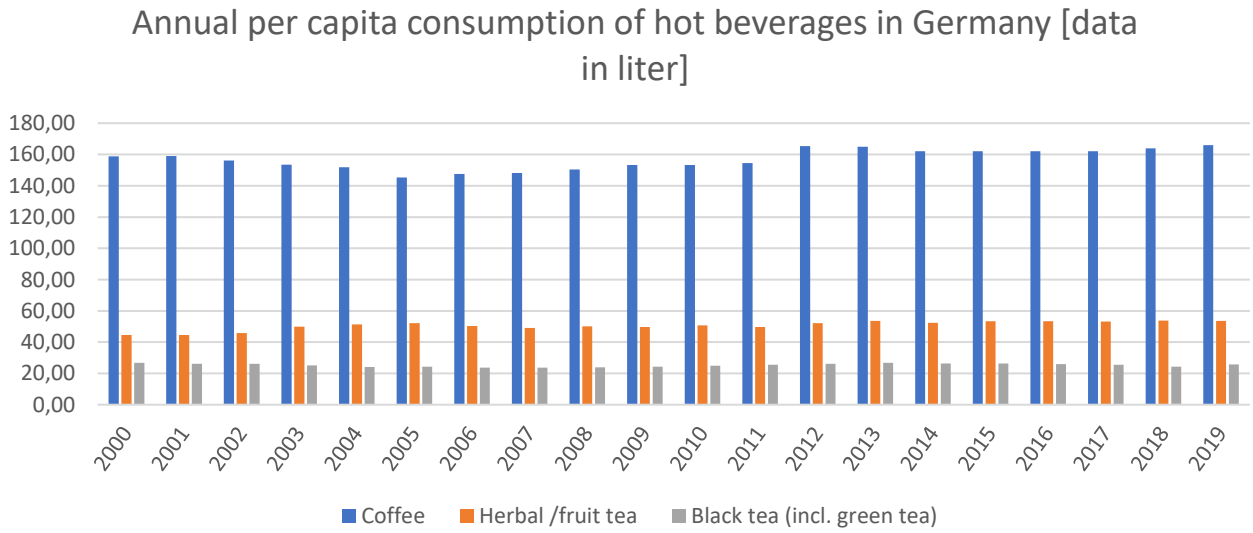


FIGURE 37: PER CAPITA CONSUMPTION OF HOT BEVERAGES IN GERMANY FROM 2000 TO 2019, BY TYPE. SOURCE: STATISTA.COM

It is interesting to notice that, for Germany, it is not always true that to an increase in coffee price corresponds a decrease in coffee consumption. Instead, it seems the opposite. Just look at the years 1995, 1998, 2003, 2004, 2006, 2008, 2011, 2013, 2017: in those years, coffee price increased and coffee consumption increased as well. It could be said the opposite while looking at the years 1996, 1999, 2000, 2009, 2012, 2015: the coffee priced decreased and also the demand decreased. It seems that, between the two variables, for the German market there is no correlation.

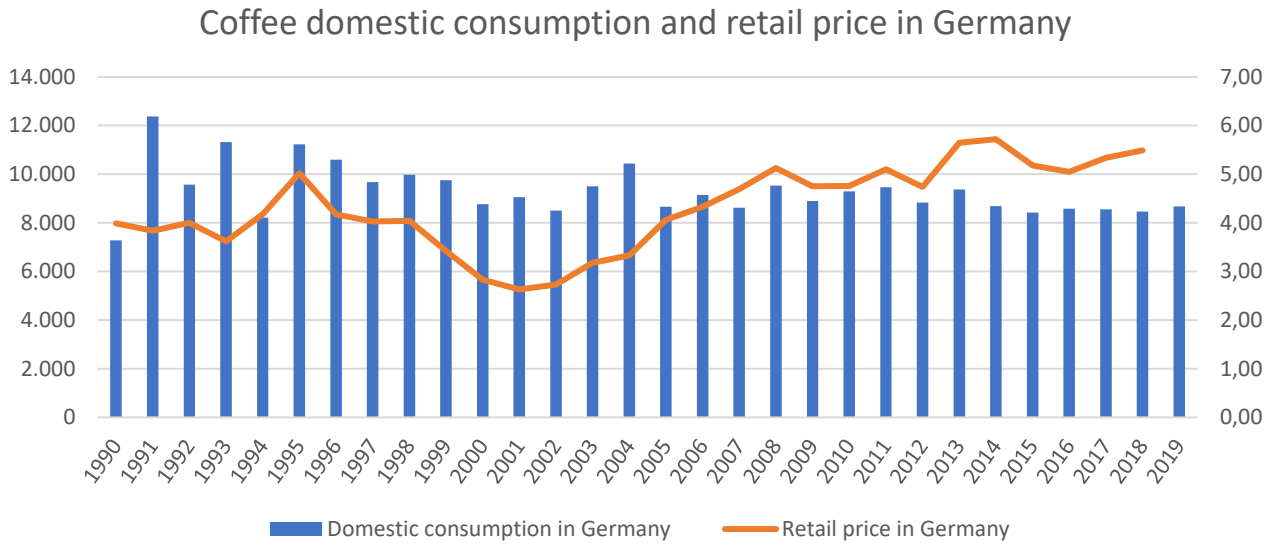


FIGURE 38: HISTORICAL DATA OF COFFEE DOMESTIC CONSUMPTION (IN THOUSAND 60 KG BAGS) AND RETAIL PRICE (IN USD/LB) IN GERMANY, FROM 1990 TO 2019. SOURCE: ICO.ORG

Denis Seudieu estimated, also for Germany, the correlation coefficients between the coffee price and consumption, plus the correlation between GDP per capita and consumption.

	Correlation coefficients
Retail price and consumption	0.04
GDP per capita and consumption	0.56

TABLE 11: CORRELATION COEFFICIENTS BETWEEN CONSUMPTION AND RETAIL PRICE/GDP PER CAPITA IN THE US. SOURCE: ICO.ORG

The correlation coefficient between retail prices and consumption volumes in the US is estimated to be positive, and this should suggest that an increase in price is reflected in an increase in demand, but there is a weak correlation between the two variables, due to the inelasticity of demand: this also reflects the considerations made by looking at figure 38. The correlation coefficient between GDP per capita and consumption indicates that an increase in households' wealth corresponds to an increase in coffee consumption, and it is a strong correlation.

The German variety of coffee is called "pharisäer". The pharisäer is very sweet, it is made with rum, whipped cream, mixed with sugar and served with whipped cream on top.

2.1.1.3.3 JAPAN

Historical data of coffee consumption and retail price in Japan are reported in figure 39.

Here the demand trend is increasing, meaning that coffee is becoming more and more popular in the island, complicit in the fact that the price has decreased over time, even though the correlation does not seem to be very high. It is true that the overall trend suggests that, due to a decrease in price, there is an increase in consumption, but looking for example at the years 1991, 1993, 1995, 1999, 2004, 2010, 2012 and 2016, it is possible to notice that price in those periods rose up, as well as the coffee consumption.

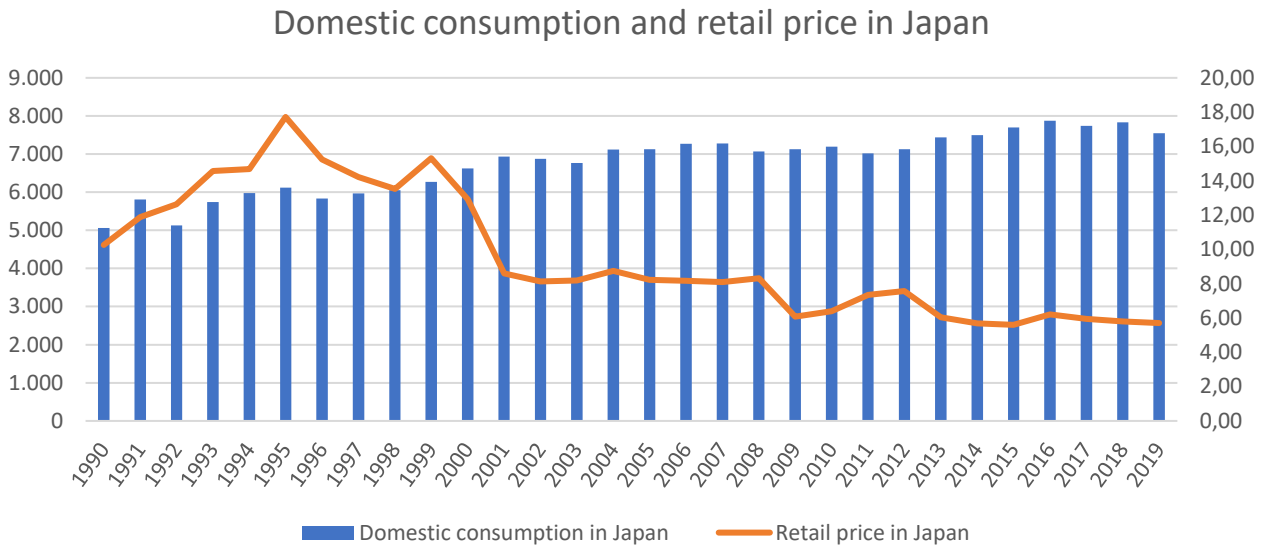


FIGURE 39: HISTORICAL DATA OF COFFEE DEMAND (IN THOUSAND 60 KG BAGS) AND RETAIL PRICE (IN USD/LB) IN JAPAN, FROM 1990 TO 2019. SOURCE: ICO.ORG

The correlation coefficient between retail prices and consumption volumes in Japan is positive but weak, to confirm the inelasticity of demand and the observations made above. The correlation coefficient between GDP per capita and consumption suggests that an increase in households' wealth corresponds to an increase in coffee consumption, and it is a strong correlation (table 12).

	Correlation coefficients
Retail price and consumption	0.16
GDP per capita and consumption	0.94

TABLE 12: CORRELATION COEFFICIENTS BETWEEN CONSUMPTION AND RETAIL PRICE/GDP PER CAPITA JAPAN. SOURCE: ICO.ORG

A survey conducted in July 2020 in Japan suggests that the lion's share of people drank coffee at least once per day, in fact, more that 39% of respondents declaired that they drank coffee beverages 2 to 3 times a day.

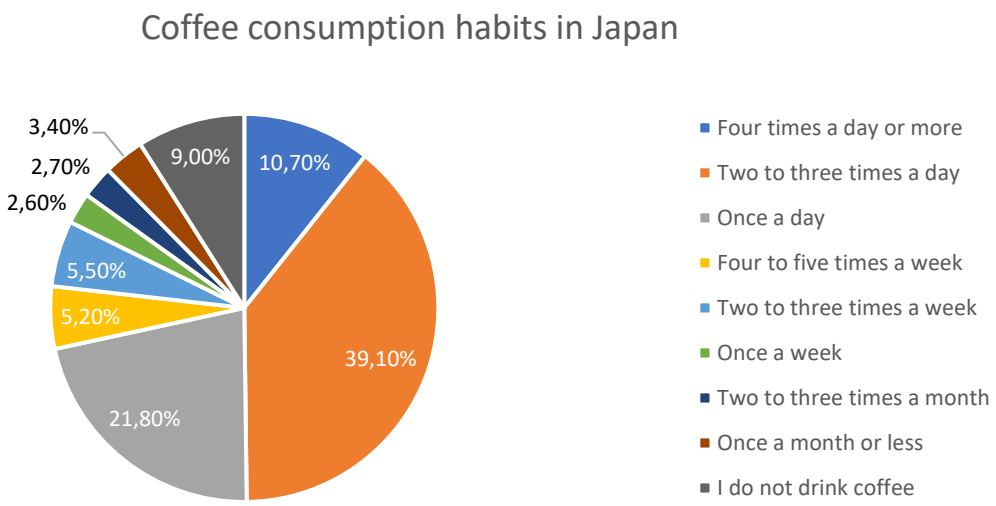


FIGURE 40: FREQUENCY OF COFFEE DRINKING PER DAY IN JAPAN. SOURCE: STATISTA.COM

2.1.1.3.4 FRANCE

The coffee consumption trend in France can be considered almost stable during the last 30 years. Also in this case, the correlation between demand and retail price does not seem to be very consistent (figure 41).

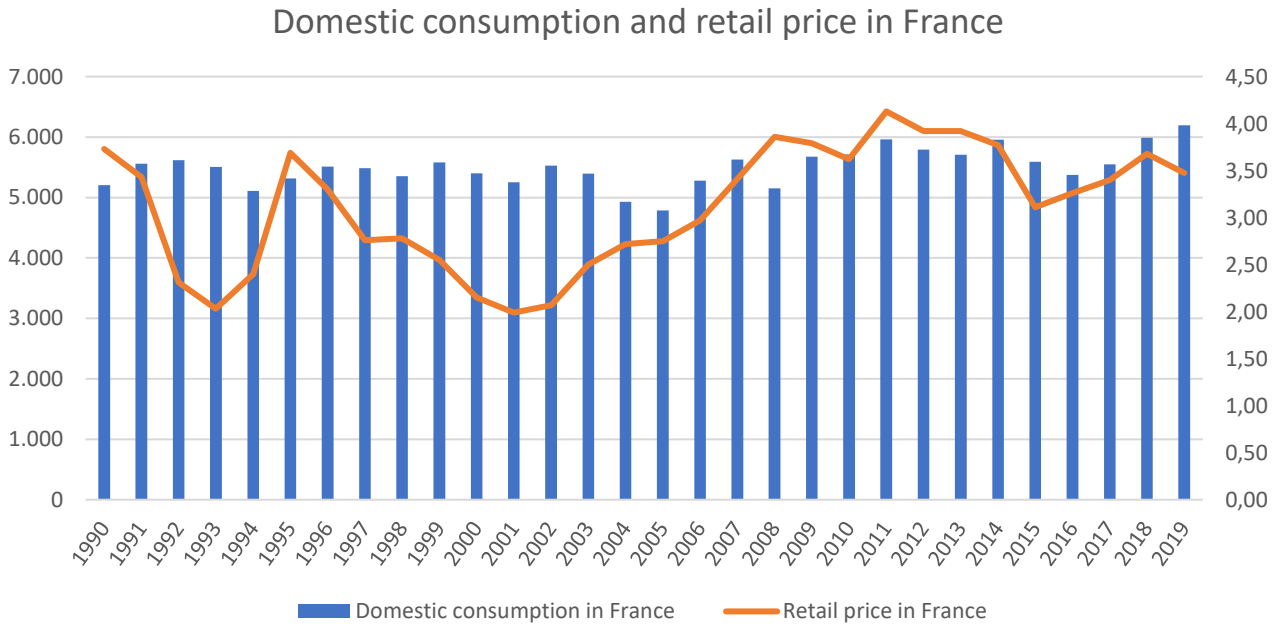


FIGURE 41: HISTORICAL DATA OF COFFEE CONSUMPTION (IN THOUSAND 60 KG BAGS) AND RETAIL PRICE (IN USD/LB) IN FRANCE, FROM 1990 TO 2019. SOURCE: ICO.ORG

The correlation coefficient between the coffee price and consumption, and the correlation between GDP per capita and consumption are estimated in table 13.

	Correlation coefficients
Retail price and consumption	-0,23
GDP per capita and consumption	0.32

TABLE 13: CORRELATION COEFFICIENTS BETWEEN CONSUMPTION AND RETAIL PRICE/GDP PER CAPITA IN FRANCE. SOURCE: ICO.ORG

The inelasticity of demand is confirmed also in this case, while the correlation coefficient between GDP per capita and consumption indicates that an increase in households' wealth corresponds to an increase in coffee consumption, but the correlation here is moderate and not strong like in the other situations.

The most beloved variety of coffee in France is the "café au lait", in which coffee is served with milk. Coffee is brewed and the milk is whipped with steam, and it is similar to the Italian cappuccino. This recipe can be served with or without foam on top.

2.1.1.3.5 SPAIN

Spain domestic consumption of coffee is characterized by an increasing trend from 1990 to 2019, with an average value of coffee consumption equal to 3.072 thousand 60 kg bags per year.

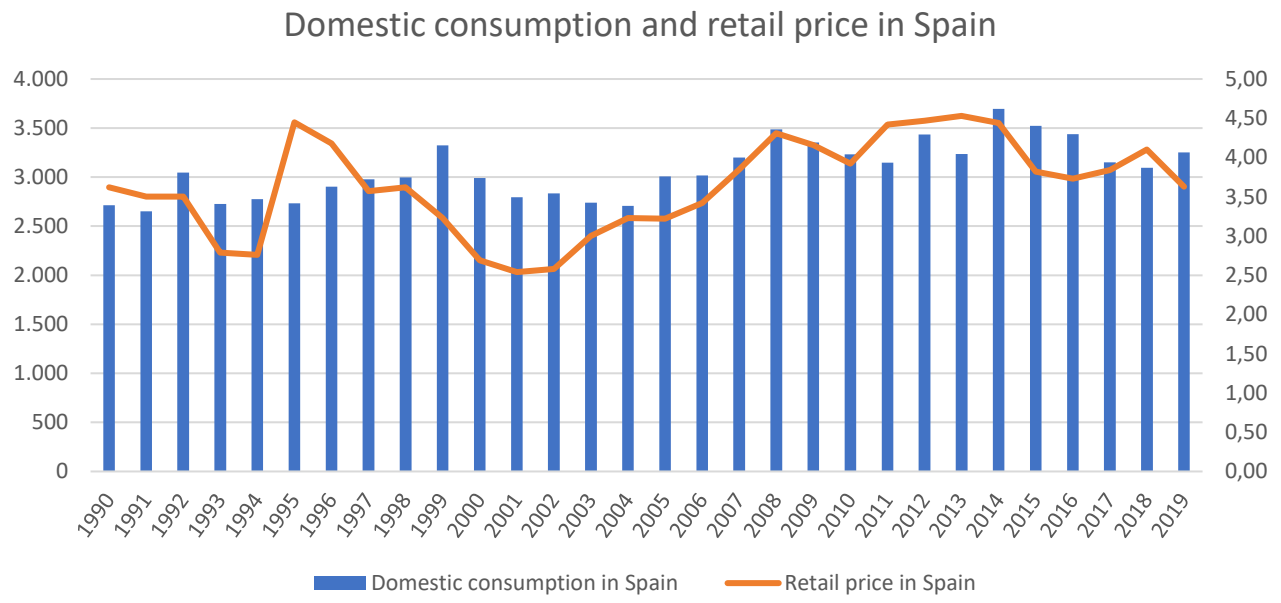


FIGURE 42: HISTORICAL DATA OF COFFEE CONSUMPTION (IN THOUSAND 60 KG BAGS) AND RETAIL PRICE (IN USD/LB) IN SPAIN, FROM 1990 TO 2019. SOURCE: ICO.ORG

Also the trend of retail price is illustrated in figure 42: no significant correlation between price and consumption also in this Country. The inelasticity of demand is confirmed also in this case, while the correlation coefficient between GDP per capita and consumption indicates that an increase in households' wealth corresponds to an increase in coffee consumption, and there is a strong correlation between the two variables.

	Correlation coefficients
Retail price and consumption	0.05
GDP per capita and consumption	0.83

TABLE 14: CORRELATION COEFFICIENTS BETWEEN CONSUMPTION AND RETAIL PRICE/GDP PER CAPITA IN SPAIN. SOURCE: ICO.ORG

There are two typologies of coffee consumed the most in the Country: the natural coffee and coffee blends (e.g. cappuccino). In fact, every year, on average, 0.5 kg of natural coffee are consumed by the average Spanish man, while 0.55 kg of coffee blends are consumed per capita. Decaffeinated coffee and instant coffee are not very successful, they are less consumed than the other two varieties.

2.1.1.3.6 SWEDEN

In Sweden, domestic consumption met a decrease in 1995, passing from 1.669 thousand 60 kg bags in 1994 to 1.204 thousand 60 kg bags in 1995, remained almost constant until 2014, when it passed from 1.175 thousand 60 kg bags to 1.652 thouand kg bags in 2015.

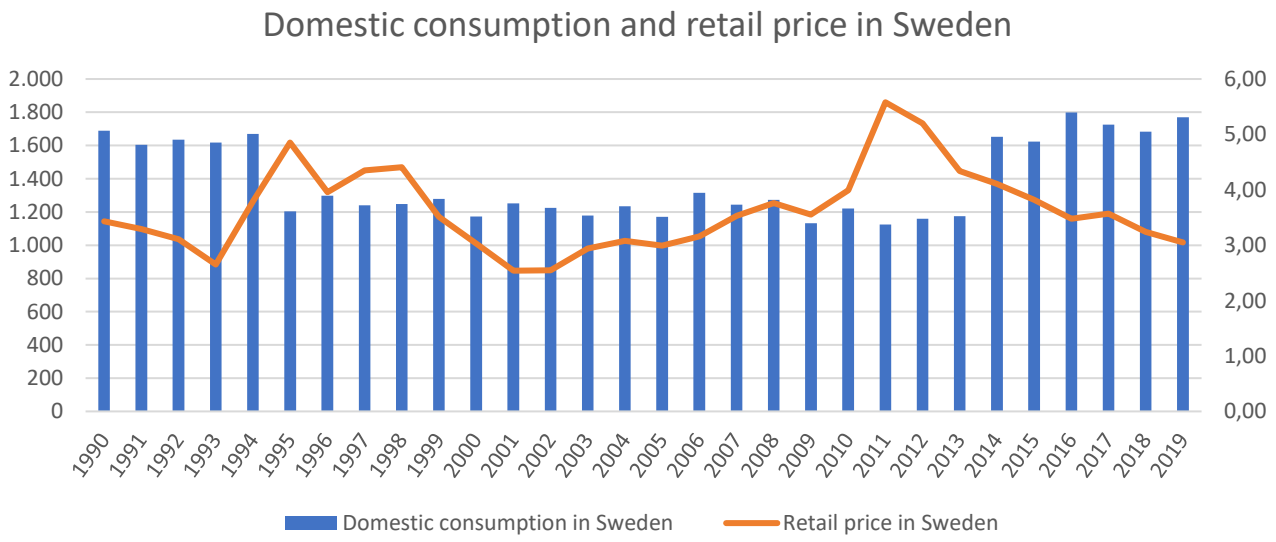


FIGURE 43: HISTORICAL DATA OF COFFEE CONSUMPTION (IN THOUSAND 60 KG BAGS) AND RETAIL PRICE (IN USD/LB) IN SWEDEN, DATA FROM 1990 TO 2019. SOURCE: ICO.ORG

It seems that in Sweden there is a higher correlation between retail price and consumption volumes, the correlation is moderate and not weak with respect to the other Countries. Moreover, the correlation coefficient between per capita GDP and consumption volume is negative, showing a very different behaviour: the two variables change in different directions.

	Correlation coefficients
Retail price and consumption	-0.30
GDP per capita and consumption	-0.66

TABLE 15: CORRELATION COEFFICIENTS BETWEEN CONSUMPTION AND RETAIL PRICE/GDP PER CAPITA IN SPAIN. SOURCE: ICO.ORG

The per capita consumption of coffee is very high, as Sweden is one of the Countries most addicted to coffee: the value ranges from 7.3 to 8.8 kg every year (Ridder, 2021).

2.1.1.3.7 OTHER COUNTRIES PREFERENCES

In Greece, the most famous coffee variety is the frappé, a typical summer refreshing drink made with instant coffee, water, milk and sweetened with sugar. The fundamental step of the recipe is to shake the beverage vigorously, in this way a frothy top is created. Typically, it is served with ice.

In South Korea the dalgona coffee is typical. It is made by mixing instant coffee or espresso powder with hot water and sugar. Then, also in this case, the beverage is shaked until it becomes beige and obtains a thick and frothy consistency. This recipe is typically served with hot or cold milk.

Staying in Asia, this time in Hong Kong, yuanyang is drank. It is a milk tea infusion mixed with freshly brewed coffee.

Café de olla is typical of Mexico. Three different spices are used: anise, cloves and cinnamon, in addition with a lightly processed sugar (the so called piloncillo). Cafè de olla takes its name form the earthenware pot in which it is prepared, called “olla”, then served in clay cups.

Always in latin America, in particular in Brazil, cafezinho is consumed. Cafezinho means “small coffee”, and this is what it actually is: it is a strong and black coffee, full bodied and with a lot of sugar.

In Australia, the Flat White is drank. It is prepared by mixing espresso coffee and a little quantity of milk, and it is drank in the morning or after meals.

Turkish coffee is the türk kahvesi. Coffee beans are grounded and mixed with sugar right before the water boils. Typical is the foam on top that is created.

2.1.2 Deep dive on the Italian coffee market

Italian domestic consumption is illustrated in figure. The trend is slightly increasing over time, and the average consumption is equal to 5.322 thousand 60 kg bags per year. The demand is pretty stable compared to the price trend, but some things must be noticed: in 1993-1994 the coffee price declined and the coffee demand increased; in 1995, when coffee price increased, the demand slightly decreased. This reasoning can be applied to all the following years, and it seems that the italian demand is affected a little by the price fluctuation, even if it is not distorted.

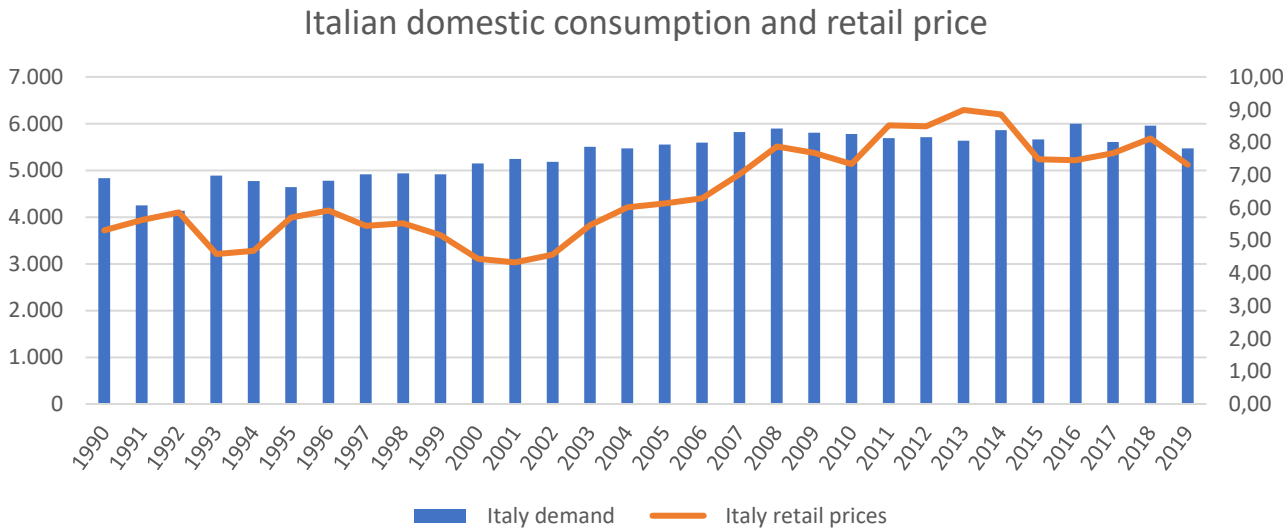


FIGURE 44: HISTORICAL DATA OF COFFEE CONSUMPTION (IN 60 KG THOUSAND BAGS) AND RETAIL PRICE IN ITALY, FROM 1990 TO 2019. SOURCE: ICO.ORG

Anyway, the correlation coefficient between retail price and coffee consumption has been estimated to be 0.72: this high value states that when coffee price rises, also the consumption increases as well, and the same happens with an increase of GDP per capita. Of course, the viceversa il also true. The reason of this behaviour must be found looking at historical correlation coefficients between price and consumption: in the period 1975-79, it was -0.21; between 1980 and 1989 it was 0.21; from 1990 to 1999 it was -0.48; eventually from 2000 to 2008 it was 0.98. It is clear that che economic crisis impacted a lot on the consumption habits of the good.

	Correlation coefficients
Retail price and consumption	0.72
GDP per capita and consumption	0.91

TABLE 16: CORRELATION COEFFICIENTS BETWEEN CONSUMPTION AND RETAIL PRICE/GDP PER CAPITA IN ITALY. SOURCE: ICO.ORG

A statistic, conducted on people aged over 18 years old in Italy, say that only 9% of the population do not drink coffee at all (Coppola, 2021). Analyzing the time period that goes from 2012 to 2021, on one hand it emerges that instant coffee is not very successful: every year, its per capita consumption equals 0.1 kg, and this quota is expected to be constant until 2025; on the other hand roast coffee is the most consumed tipology of coffee in Italy (figure 45).

The per capita coffee consumption is almost stable during the years, considering the fact that, on average, from 2012 to 2021 people had consumed every year 4.6 kg of roasted coffee. The trend indicates that the consumption is slightly increasing, and the research forecasts an increase in consumption up to 5 kg per capita in the next four years. There is only a slight decrease in per capita consumption in 2020.

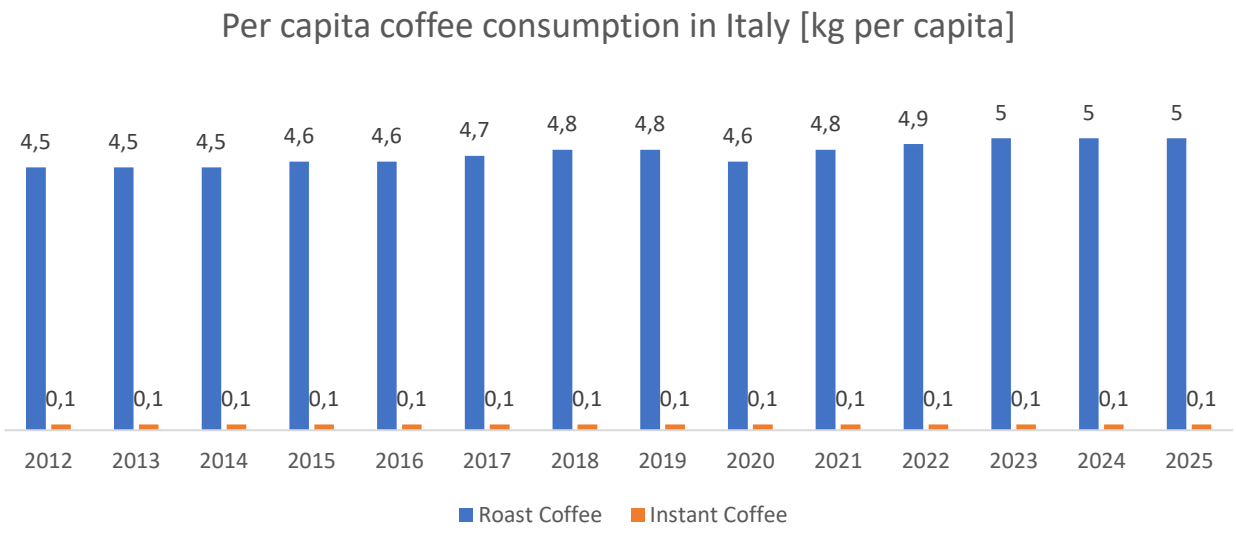


FIGURE 45: PER CAPITA CONSUMPTION VOLUME FORECAST OF COFFEE IN ITALY FROM 2012 TO 2025 (STATISTA RESEARCH DEPARTMENT, 2021)

Generally speaking, the Italian coffee market generated sales revenues in 2018 for an amount equal to 1.5 billion Euros. United States, Germany and Italy are the first three Countries in the Globe in import of green coffee; in Europe Italy is the second Country, only behind Germany, in terms of exported coffee. Italy imports green coffee from different Countries, mainly Brasil for the "Arabica" quality and Vietnam for the "Robusta" quality; other Countries sources of the raw material are Colombia, Ethiopia, Honduras, India, Indonesia and Uganda. Taking into account different types of coffee, namely green coffee, decaffeinated, coffee preparations and soluble coffee, 10,659,405 bags of green coffee were imported in 2018, for an equivalent amount of 639.6 million kg. The reference source for these data, i.e. the annual report of Beverfood.com, does not provide an estimation of the import value of 2019 since those data are still not available, but it is possible to assess this value by analyzing the Italian import data per Country in 2019 provided by Statista.com.

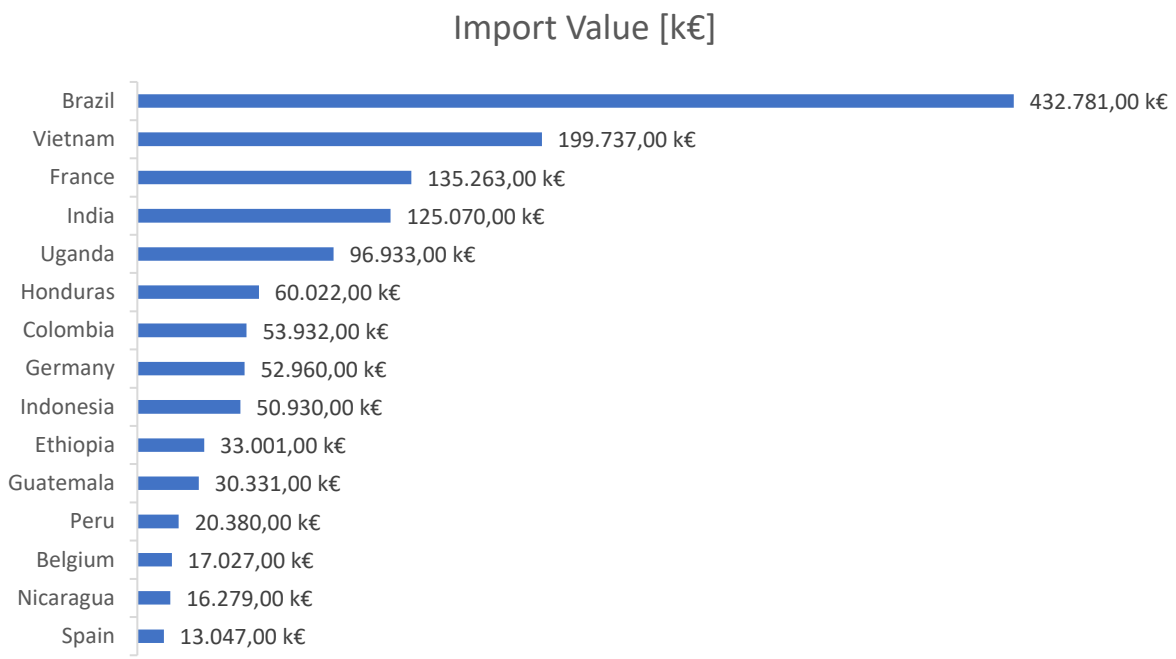


FIGURE 46: IMPORT VALUE OF COFFEE IN ITALY IN 2019, BY COUNTRY OF ORIGIN, SOURCE: STATISTA.COM

Looking at figure 46, it emerges that the total import value of coffee in Italy in 2019 is equal to 1.34 billion Euros. This value is in line with the total value of import of 2018, about 1.4 billion Euros, with an average purchase price of 2.1 €/kg. The major force that drives the growth of the coffee market in Italy is not represented by imports, but by exports. In 2018, roasted coffee exports from Italy accounted for 4,681,996 bags of green coffee bean equivalent (around 280 million kg), up 5% from 2017, while the value of Italian coffee exports is estimated to be around €1.5 billion. Italian coffee exports consist mainly of roasted and ground coffee, mostly to satisfy the increase of the international demand for Italian espresso. Target Countries for the export of coffee are mainly France, Germany and Austria, which account the 60% of the total export. Going outside the European Community, destinations are Switzerland, Australia, UK, USA, Russia and Canada. The following tables represent the available data related to import and export in a more schematic way.

	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Brazil	164	165	177	164	176	209	169
Vietnam	122	113	128	120	130	131	136
India	70	65	73	73	81	68	50
Uganda	39	43	42	51	54	62	77
Indonesia	31	39	37	35	29	30	29
Honduras	13	17	22	23	25	25	22
Colombia	13	20	23	21	18	20	17
Ethiopia	9	8	8	9	11	11	8
TOTAL	**461**	**470**	**510**	**496**	**524**	**556**	**508**

TABLE 17: COFFEE COUNTRIES: IMPORT GREEN COFFEE IN ITALY. MILLION KG GREEN COFFEE EQUIVALENT BY YEAR (BEVERFOOD.COM, 2020) (TRADEMAP, S.D.)

	2014	2015	2016	2017	2018	2019	2020
Import (Million kg green coffee equivalent)	562.0	560.6	614.3	602.1	639.6	648.1	597.6
Export (Million kg green coffee equivalent)	209.1	221.2	252.4	266.8	280.9	277.2	258.0
Apparent Consumption (Million kg roasted coffee)	282.3	271.5	289.5	268.2	287.0	n.a.	n.a.
Per Capita Consumption (Million kg roasted coffee)	4.7	4.5	4.8	4.4	4.7	n.a.	n.a.

TABLE 18: IMPORT, EXPORT & CONSUMPTIONS OF COFFEE IN ITALY (BEVERFOOD.COM, 2020) (TRADEMAP, S.D.)

Import and export data referred to 2019 and 2020 are not available in the report of Beverfood.com, but they can be consulted on Trademap.org, whilst information related to the apparent consumption and to the per capita consumption in the last two years are still not available. What can be observed is the trend of sales in retail stores and the price fluctuation in those two years:

- Sales in retail stores faced a growth in 2020 of 10.3% with respect to the previous year;
- The total amount of sales revenue in 2020 equalled 1.526 billion Euros, with respect to 1.384 billion Euros of 2019;
- The coffee price per kg in 2020 increased by 7% compared to the price per kg of the previous year;
- Coffee in capsules results to be the preferred modality to consume coffee by Italians, with an increase in sales of 26.8% in 2020 with respect to 2019;
- Coffee pods are the second most preferred by Italians, with a growth in sales of 18.2%
- Coffee beans face a decrease of 5%. (Torriani, 2021)

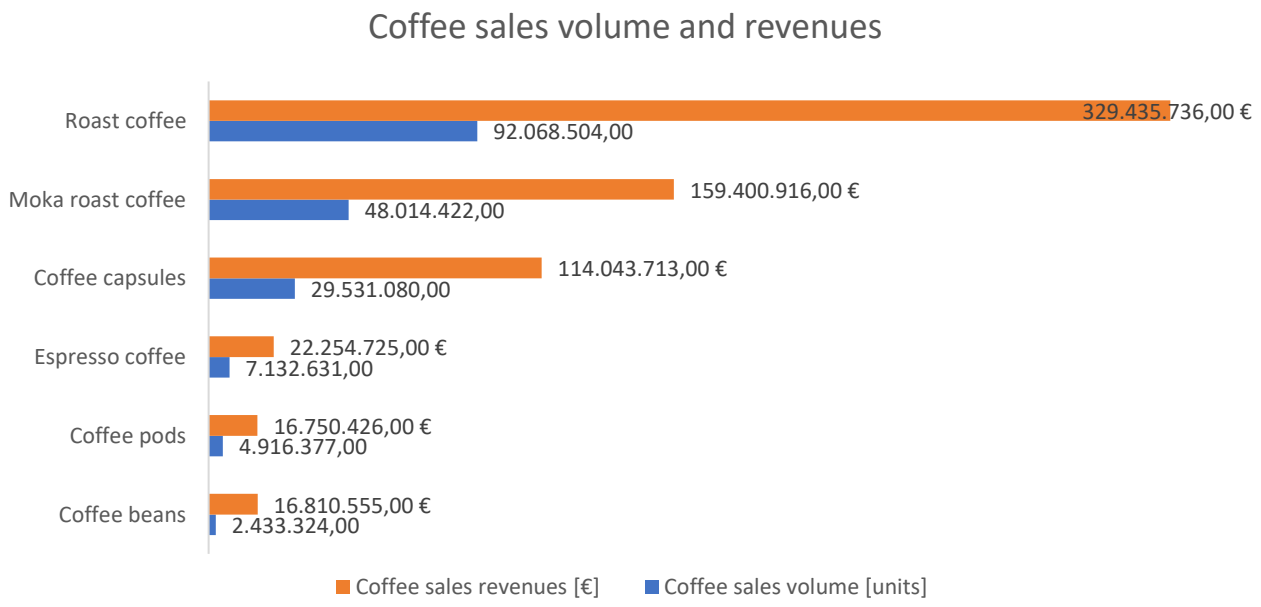


FIGURE 47: SALES VOLUME OF COFFEE IN ITALY IN THE FIRST QUARTER OF 2020, BY PRODUCT (STATISTA RESEARCH DEPARTMENT, 2020)

	Coffee sales volume [units]	Coffee sales revenues [€]	Average price per unit [€/unit]
Coffee beans	2,433,324	16,810,555	6.91
Coffee pods	4,916,377	16,750,426	3.41
Espresso coffee	7,132,631	22,254,725	3.12
Coffee capsules	29,531,080	114,043,713	3.86
Moka roast coffee	48,014,422	159,400,916	3.32
Roast coffee	92,068,504	329,435,736	3.58

TABLE 19: AVERAGE PRICE PER UNIT IN RETAIL STORES, GROCERY SHOPS, DISCOUNT STORES, BASED ON THE DATA OF FIGURE 47

Over the total of the sales of coffee products, roast coffee takes the lion's share of coffee sales in Italy, with an amount equal to 50.01% of the total sales, to which corresponds an equal quota of revenues over the totality. Moka roast coffee represents 26.08% of total sales, coffee capsules 16.04%, coffee pods 2.67% and coffee beans 1.32%. The reason behind the failure of coffe beans lies in their price, as it will be illustrated in the next paragraphs.

Before the COVID-19 crisis, in 2019 the market segment of coffee beans met an increase in sales in online and physical distribution channels as illustrated in table 19, which excludes the quota of sales that comes from discount stores, illustrated in table 20. Regarding the other typologies of coffee, data show that not portioned coffee is becoming more unsuccessful (row *F* of table 19, row *C* of table 20), leaving free field for capsules and pods (portioned coffee, row *I* of table 19, row *F* of table 20).

		Sales 2019 [mln kg]	Δ% (w.r.t. 2018)	Revenues [mln €]	Δ% (w.r.t. 2018)
A	*Ground – Moka*	62.7	-4.5	457	-6.8
B	*Ground – Moka (100% Arabica)*	5.8	+0.1	87	-1.0
C	*Ground – Espresso*	8.8	-3.2	79	-5.5
D	*Ground – Espresso (100% Arabica)*	0.7	+0.3	16	+1.1
E	*Ground – gift pack*	0.3	+9.9	5	+0.8
F	*TOT Ground – not portioned (A+B+C+D+E)*	78.3	-3.8	644	-5.6
G	*Ground – capsules*	7.9	+16.0	331	+9.6
H	*Ground - pods*	2.4	+4.7	46	+3.7
I	*TOT Ground – portioned (G+H)*	10.3	+13.2	377	+8.6
L	*TOT Ground (F+I)*	88.6	-2.3	1,021	-0.9
M	*Coffee beans*	5.5	+1.3	51	+0.3
N	*Instant coffee*	2.8	-21	65	-2.4
O	*TOT (L+M+N)*	96.9	-2.0	1,137	-0.9

TABLE 20: COFFEE QUOTA OF SALES IN ITALIAN RETAIL STORES, DISCOUNT STORES EXCLUDED (BEVERFOOD.COM, 2020)

		Sales 2019 [mln kg]	Δ% (w.r.t. 2018)	Revenues [mln €]	Δ% (w.r.t. 2018)
A	*Ground – Moka*	9.6	-3.0	61	0
B	*Ground – Espresso*	1.4	0	8	-1.8
C	*TOT Ground – not portioned (A+B)*	*11.0*	*-2.7*	*69*	*-1.4*
D	*Ground – capsules*	1.0	+32.9	29	+38.1
E	*Ground – pods*	0.3	-15.1	6	-13.7
F	*TOT Ground – portioned (D+E)*	1.3	+18.2	35	+25.0
G	*TOT Ground (C+F)*	12.3	-1.3	104	+3.1
H	*Coffee Beans*	1.8	-4.1	8	-5.0
I	*Instant coffee*	0.9	+0.2	12	+1.5
L	*TOT (G+H+I)*	15.0	-1.6	124	+2.4

TABLE 21: COFFEE QUOTA OF SALES IN ITALIAN DISCOUNT STORES (BEVERFOOD.COM, 2020)

These two tables highlight the differences in the purchasing habits of people that buy products from discount stores and people that buy from other types of stores, and, somehow, it correlates the typology of coffee sold to the income of households. In 2019, it is possible to notice that there was a reduction of 4.1% in kg of coffee beans, the most expensive typology, sold in discount stores with a consequent decrease of 5.0% in revenues. The other way around, in other stores coffee beans have been more successful, with an increase in kg sold of 1.3% with respect to 2018, and a consequent increase of 0.3% in sales revenues. Sales of not portioned coffee decreased both in discount stores and in other retail stores, while capsules and pods are more and more purchased by consumers, hence an increase in coffee machines that work with portioned coffee is expected. As illustrated before, the reason why the coffee beans are not very successful may lie in their price per package (figure 48).

It is clear, looking at figure 48, that the most expensive typologies of coffee are coffee capsules, coffee pods and instant coffee. But, as far as it is considered the price that is offered to the consumer in stores (which may be online or physical), namely the price per package, all the typologies of coffee are aligned on the average price/package, except for the coffee beans that are priced almost the double than the average. Of course, this is just a matter of quantity sold in the package (on average very close to 1 kg) and, on the long run, buying coffee beans could be effective from an econonomical point of view for the households, but in the short run this expense weights heavily on the wallet. It must be underlined that this is an average data: according to Lavazza Financial Statements, the performance in sales of the bean product has been positive both in 2019 and 2020. Lavazza is the leader in the bean segment in Italy, meeting a growth in sales at retails, in 2020, of 30.1%. Moreover, the demand of coffee beans is highly related to the demand of Bean-to-cups, hence if the price of these appliances is prohibitive for most of the families (and it is, since their price is very high compared to other typologies of coffee machines for reasons that will be illustrated in the next paragraphs), it is natural that coffee beans are not very popular.

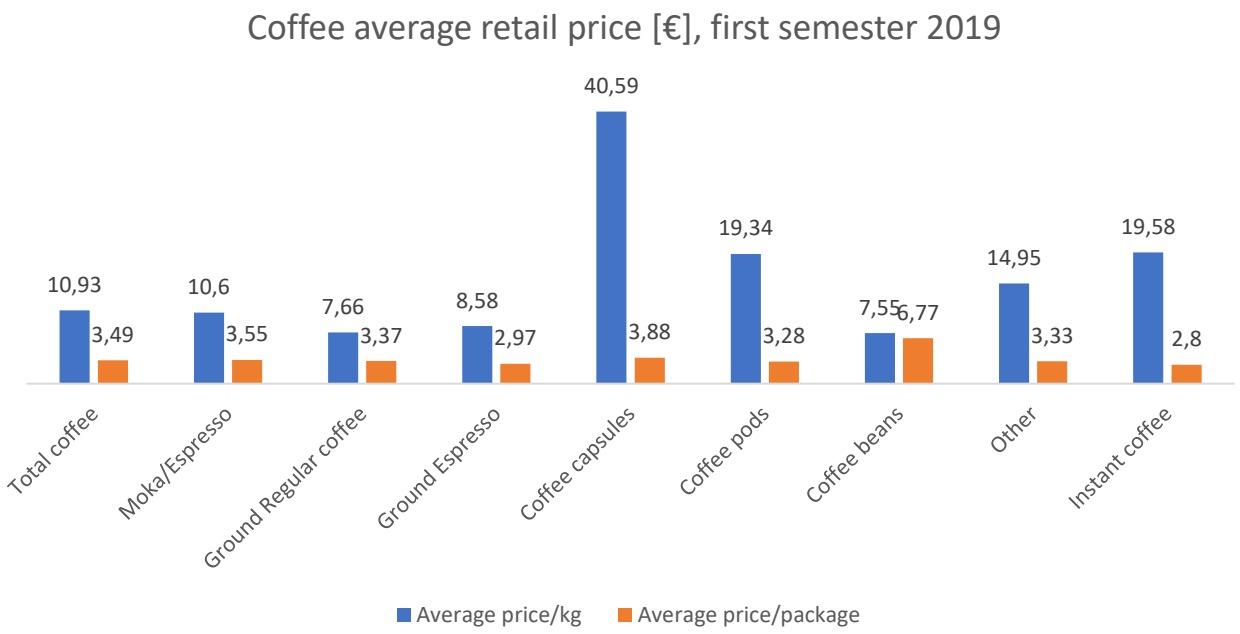


FIGURE 48: COFFEE RETAIL PRICE TREND IN ITALY IN THE FIRST HALF OF 2019, BY COFFEE TYPE, SOURCE: STATISTA.COM

The point of offering to the customer the possibility to purchase coffee beans is to be able to replicate at home the same experience he/she has when he/she is sitting at the coffee bar. There are evidences that the customer is more willing to spend time at bar, or in general out of the house, to drink coffee. The channels where the "Away from home" consumption takes place involve different scenarios:

- The Ho.Re.Ca segment (hotels, restaurants and coffee bars);
- Vending machines;
- OCS (office coffee service);
- Collective caterings.

Drinking coffee outside of the house is even more important than drinking any other beverage. This action has a dual feature: people have the chance to charge their batteries and it gives time to socialize and network. The amount of coffee sold away from home is about 81 million kg per year, which accounts for 33% of the total market. However, in terms of value, the away from home market is clearly superior to the domestic market due to higher prices. During 2018, sales in the Ho.Re.Ca. sector rose by 1.9%, which correspond to a total value of 861 million Euros. In fact, keeping into account only the Ho.Re.Ca. sector and the catering service, it is estimated that the volume of sales corresponds to 48.6 million kg. (Beverfood.com, 2020)

2.2 The demand for coffee machines

The way in which the coffee is processed has, without a doubt, a relevant influence for the final taste of the beverage and for the experience that the customer enjoys while drinking it. But the other actor that plays an important role in this story is the coffee machine: the technologies and the material used for the manufacturing of the product have a huge impact on the customer experience. Just think of the brand-new coffee Machine launched by Lavazza on the market, "Lavazza A Modo Mio Voicy", which integrates the experience offered by Lavazza brand (with the product range of the coffee Machines "Lavazza A Modo Mio") with the technological innovation of the voice assistant "Alexa", Amazon workhorse. These paragraphs will focus on the Italian market of home coffee machines, since each Country prefers to drink coffee in a different way, with different characteristics (e.g. the amount of cream on top of the drink or the concentration: Italians tend to drink coffee with some cream on top and prefer it more bodied, while in Nordic countries they drink it in a similar way to American coffee, with less cream on top and less concentrated).

The coffee machines market is a subcategory of the large market of Household Appliances. In fact, this is divided in two categories: "major appliances" and "small appliances": the coffee machines market belongs to the last category.

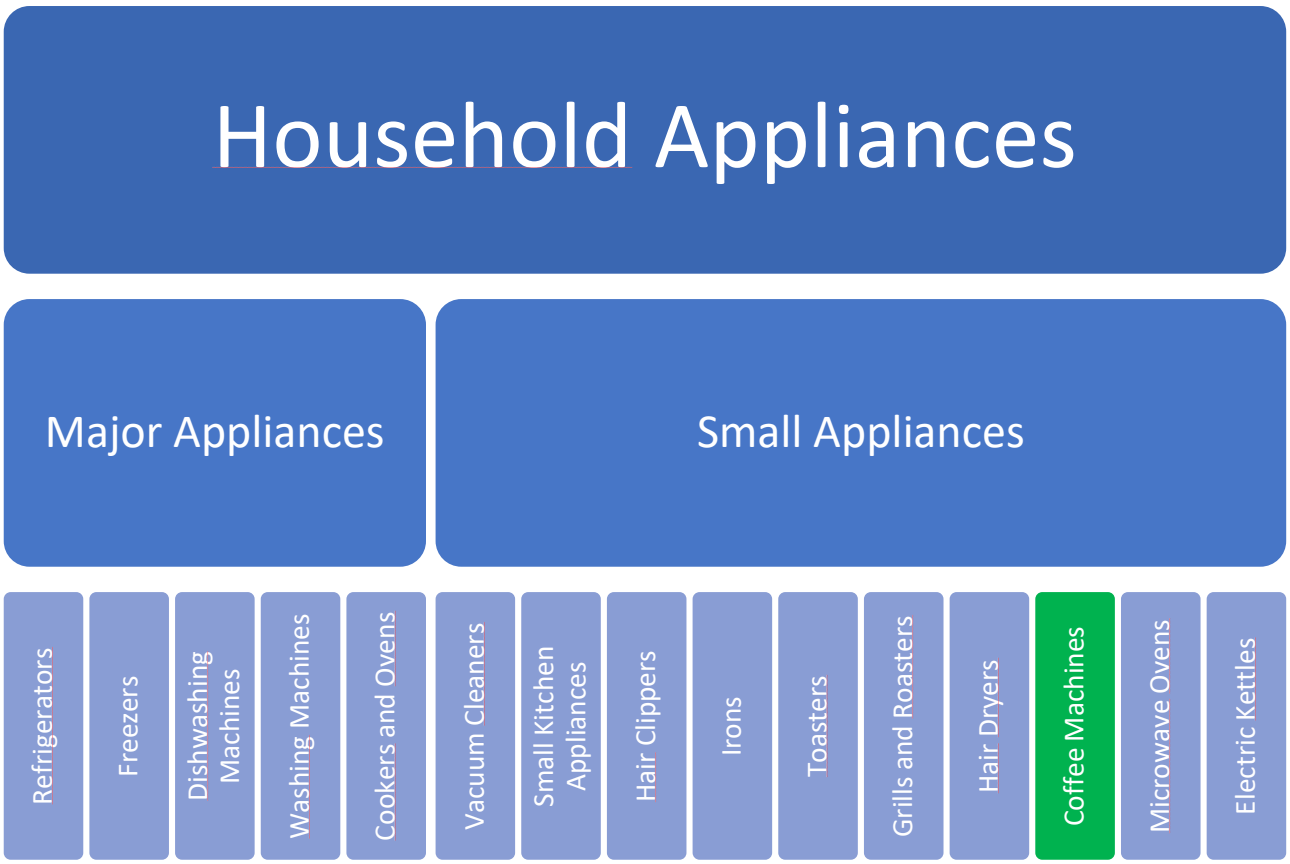


FIGURE 49: MARKET SEGMENT IDENTIFICATION (STATISTA CONSUMER MARKET OUTLOOK, 2021)

2.2.1 The relationship between coffee and coffee machines markets

It is clear that the coffee market is completely different from the coffee machines market. They follow different dynamics, and generally the firms involved in the two markets have different structures, both from an organizational and an economic poit of view. It is not unusual that a large coffee roaster (like Lavazza, for example) sells also coffee machines. The reason of this choice lies in the rato cost/benefits that derives from this marketing action. In fact, the strategy behind this choice is the so-called “razor blade”, that will be described in the next chapters. By selling a coffee machine (and it often happens that there is a loss on the sale) the coffee roaster increases the quantity of coffee sold, increasing as a consequence sales revenues and covering the loss deriving from the sale of these appliances. It is also a way to drive purchasing habits: if there is an advantage in buying the whole package coffee-coffee machines, the customer will be willing to spend for it even more than spending only in coffee.

2.2.2 Different technologies for the coffee machine

Generally speaking, what drive the most the Household Appliances market are the consumer spending intentions, which of course depend on per-capita income, household debt level and customers expectations.

Coffee machines, or coffee makers, differ significantly in principle, function and price from each other, from the simplest drip coffee machine (which brews a large quantity of black coffee at a time), to capsule coffee machines (which usually provide a single-serve coffee), to expensive fully automatic espresso machines (which combine the functions of grinding, pouring and frothing and allow the consumer to choose between cappuccino or white coffee). Different regions have different cultures and different ways of making coffee. In fact, within the market segment of the coffee machines, it is possible to identify other segmentations by technology, by type, by sales channel, by geographic area and by end-user.

Figure 50 illustrates the different segments of the coffee machines market.

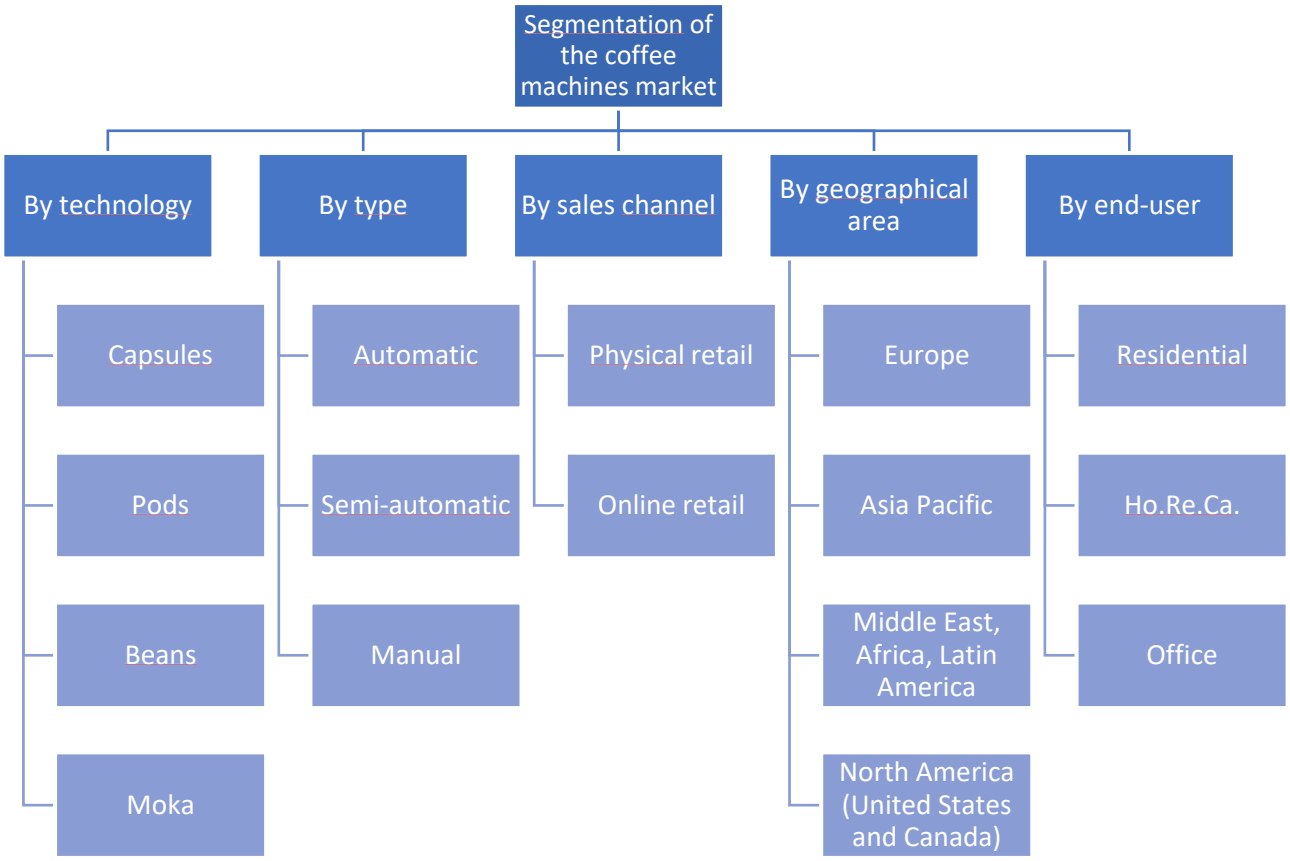


FIGURE 50: SEGMENTATION OF THE COFFEE MACHINES MARKET (CREDENCERESEARCH, 2018)

First of all, it is important to identify the different technologies a coffee machines can use for serving coffee.

FIGURE 51: MOKA

The Moka is one of the most famous coffee machine. There are two types of Moka: the traditional one, that appeared on the market in 1933, and the electric one. The base is a boiler, it works as a reservoir for water and, once heated, produces an increase in pressure and the water is pushed upwards. The filter, which lays between the boiler and the upper part, must be filled with coffee powder.

Once the water travels upward, meeting the coffee powder it becomes the drink that all the people know. In the electric version, the base is electrified and contains a resistance that produces the heat necessary for the delivery of coffee. With the classic Moka, coffee brewing times are usually long, but it is true that the time factor must be considered in relation to the size of the machine: the greater the size of the machine, the greater the quantity of water, the longer the waiting time will be. Keep in mind, moreover, that brewing times also vary according to the type of stove; with a gas stove the process will be faster whereas with an electric stove the time will be longer. A 3/4 cup coffee maker will take between 5 and 10 minutes to brew coffee. In order to always obtain a good coffee, a daily cleaning and a fairly accurate ordinary maintenance is needed. The various components must be rinsed thoroughly after each use, so as to eliminate all residues and avoid the formation of mold. Besides cleaning, it is also necessary to pay attention to other

details, such as the wear of the gasket, the possible clogging of the upper filter and the deposits of limestone in the water boiler. The size of the Moka is really smallest, even the largest models can be easily stored in cupboards or shelves after use. Anyway, it is necessary to store the Moka in a dry place, because humidity could deteriorate it more quickly.

FIGURE 52: POD COFFEE MACHINE

Chronologically, the pod coffee machine is the first marketed innovation as an alternative to the Moka. This product resembles the structure of the machines also used in bars, since it also has a filter holder arm where one inserts the coffee powder or pods, single portions of about 7 g of ground coffee, usually packed in biodegradable envelopes. There is a water tank and a filter in which to insert the coffee pod or powder. The mechanism that allows the delivery of coffee leverages, also in this case, on the pressure that pushes the water inside the filter. The appliance works connected to the electrical power supply, the user must fill the reservoir, add the coffee pod or powder into the compartment provided and proceed to start up the machine. There is the possibility to buy on the market also many "advanced" models that include a frother to make milk froth for cappuccinos: often, there are also additional functions such as automatic shut-off and storage of favorite settings. Coffee brewing times are definitely reduced: this is considered to be a semi-automatic machine. In about 1 minute or less, therefore, it will be possible to obtain a cup of espresso coffee: this could certainly be considered an advantage, especially if compared to the brewing time of the Moka. Similarly to the Moka, cleaning is required after each use, and the process becomes a bit more challenging when using powdered coffee instead of the pod which is just thrown away after use. Maintenance is not particularly demanding and the attention should be focused on the levels of limescale in the tank, to be treated with a special descaling cycle. From time to time the drip tray must be washed under running water or in the dishwasher. The overall dimensions of these appliances are much larger than those of a Moka, but smaller than those of an automatic machine. The dimensions vary according to the model: the height is usually around 30/40 cm, while the depth is around 15/20 cm.

FIGURE 53: CAPSULE COFFEE MACHINE

Capsule coffee machines are considered to be the modern evolution of those with pods. They are, in fact, appliances that work exclusively with 7 g coffee monoportions kept inside aluminum envelops. Unlike pods, capsules are not recyclable, therefore their environmental impact is very incisive, and this could represent a fault for ecologically conscious consumers. The electricity produces the instantaneous heating of the water contained inside the tank. The water, pushed by the strong pressure generated, rises until it reaches the capsule and passes through it, dispensing coffee. It is a very simple mechanism, which works both for coffee and for other beverages such as tea, herbal tea, chocolate or cappuccino. The brewing time is very very short, in less than 1 minute a cup of espresso is ready. Cleaning operations are simple, as there is no contact with loose coffee and therefore the chances of getting dirty are negligible. It will only be necessary to make a descaling cycle from time to time, in order to eliminate limestone residues from the tank and from the internal mechanism. Some models are also equipped with a tray in the lower part to avoid dripping on the support surface: if present, this component will have to be emptied and washed. The overall dimensions of capsule coffee machines are pretty limited, as these devices usually do

not exceed 25 cm in height. It should also be considered that many of the models currently on the market are real and proper objects of furniture with a particular design and colors.

FIGURE 54: BEAN-TO-CUP

Automatic coffee machines, also known as Bean-to-cups, were commercialized only in recent times. The most interesting technical characteristic of these machines is the possibility to use coffee beans. In fact, inside the machine there is a grinder that allows to instantly grind the beans for each coffee brewed, thus allowing to obtain a drink with a very fresh and intense aroma. They are devices that often include several functions that allow the consumer to make not only espresso but also long coffee, cappuccino, coffee macchiato or even just provide hot water for tea and herbal teas. Brewing times are slightly longer than those of pods or capsules coffee machines, but in any case much shorter than the Moka. It takes about 2 minutes to make a cup of coffee, including the grinding of the beans. Moreover, some automatic machines also carry out a rinsing cycle before brewing each cup. It is important to devote more care to the machine since it is necessary to periodically carry out a descaling cycle, which is almost always signaled by the machine itself when necessary. The tray containing the coffee grounds must also be emptied and washed frequently (about every 10 coffees) as well as the tray at the bottom of the machine. The overall dimensions of automatic coffee machines are quite considerable: on average, they present a height of about 45 cm, a width of 20 cm and a depth of about 30 cm. The dimensions are related to several characteristic of the appliance itself: the presence of a water tank and a larger one for coffee, the presence of an internal grinder and a container for the coffee grounds. (Qualescegliere.it, 2018)

Taking a closer look to the Bean-to-cups market segment, according to credenceresearch.com, it emerges that Europe dominates the global Bean-to-cup coffee machines market in terms of market value, due to its history and tradition in preparing and serving coffee. The major growth driver for this segment is the market for coffee makers in restaurants and commercial cafes that serve freshly brewed coffee to customers, and this market will continue to dominate the residential segment in the coming years. In fact, this segment stimulated the demand of Bean-to-cups in the last year, generating a market value of 1,285 million Euros in 2017, and it is estimated this value to reach 1,967.75 million Euros in 2026, with a CAGR equal to 4.9% worldwide. More and more people consume coffee, and their preferences are shifting from pre-ground, packaged coffee to freshly ground and brewed beverage. This change has led to a steady growth in demand in the coffee machine market in recent years. Due to the high cost of purchasing and maintaining these machines, they are mainly bought by restaurants and hotel cafes and are not widely used by individual end users. With the development of coffee culture and the growing enthusiasm for brewing coffee from beans and putting it into coffee cups, this sector is expected to become the most profitable in the coming years.

Not considering only the home sector, semi-automatic coffee machines have been surpassed by automatic coffee machines in terms of market share, indeed the latter are dominating the global market. They are widely used in hotels, restaurants, and cafes because they can brew large quantities of coffee easily and inexpensively. However, as already said, since automatic coffee machines are costly, they are not really preferred by households.

2.2.3 Global demand

In figure 55, the global market revenue that derives from the sale of coffee machines is illustrated. It does not include accessories such as moka stovetops, percolators, cold-brewing systems, professional coffee machines (Ho.Re.Ca. or Office), different coffee brewing methods (e.g. French press, grinders, milk frothers, spare parts).

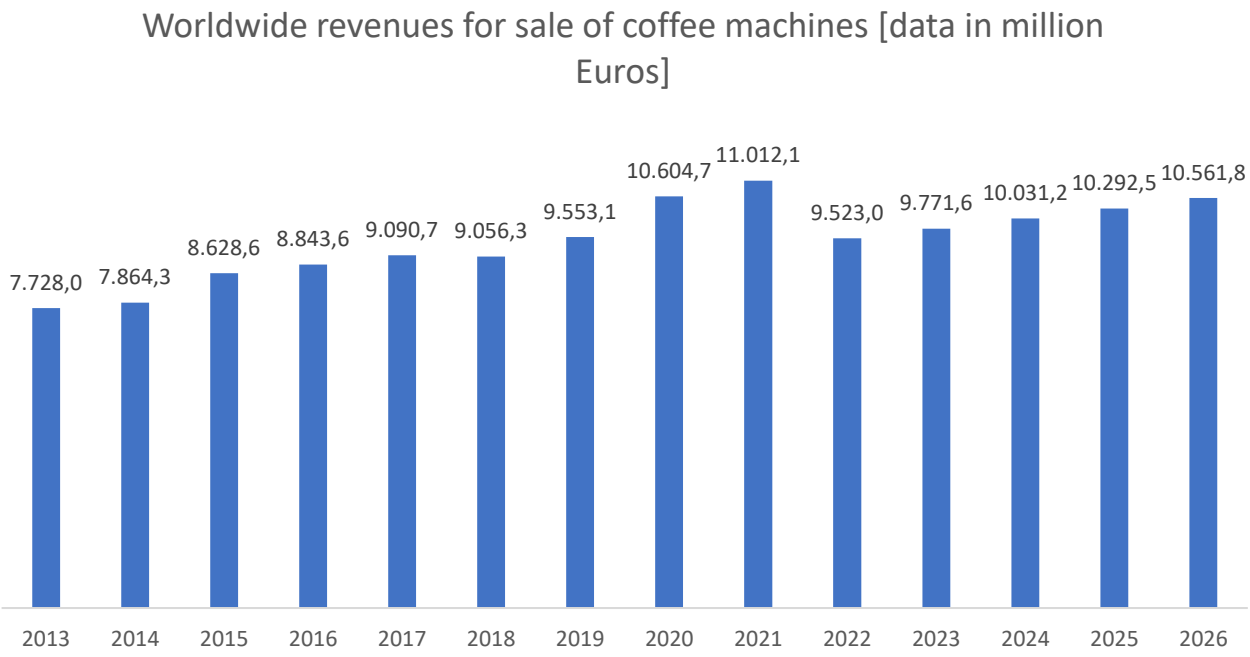


FIGURE 55: HOME COFFEE MACHINES MARKET REVENUE WORLDWIDE FROM 2012 TO 2020, WITH FORECAST UNTIL 2026. SOURCE: STATISTA.COM

Forecasts say that the value of the global coffee machine market will reach 10,561.8 million Euros in 2026. It is interesting to notice that, from 2012 to 2020, the demand experienced an uncontested growth. There is a peak of demand in the year of COVID-19 outbreak and in the following one, but there are no clear explanation about this phoenomenon. A theory could be that, due to the fact that people had to stay at home, it makes sense that there was a sudden increase in demand for home coffee machines derived from “panic-buying”, a characteristic phoenomenon of the first pandemic months, lacking the alternative solution of drinking coffee at the bar or the office.

Worldwide, the apparent consumption of home coffee machines follows the same trend of the associated revenues. There is a peak in 2020 and 2021, while forecasts say that starting from 2022 there will be a more aligned quota of revenues to the pre-pandemic situation, knowing a decrease in sales equal to 14.2%.

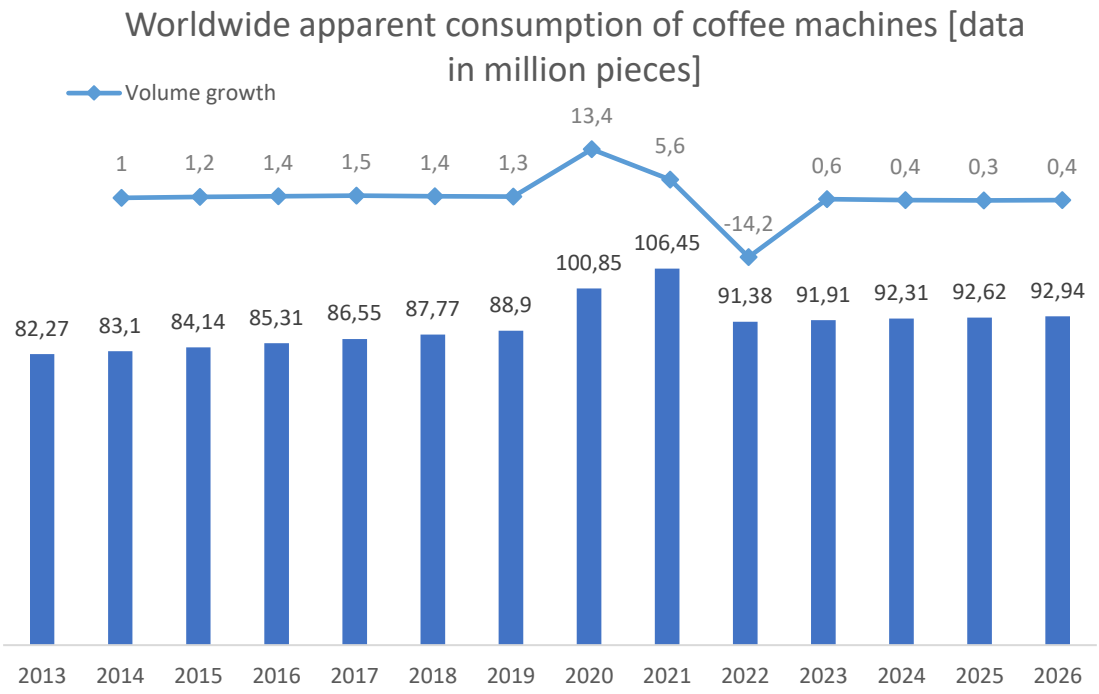


FIGURE 56: APPARENT CONSUMPTION OF COFFEE MACHINES ALL OVER THE WORLD, WITH FORECAST FROM 2022 TO 2026. SOURCE: STATISTA.COM

The question that comes up is: why is such a decrease forecasted? Could a saturated market be to blame? This could be an explanation: in figure 57 is illustrated the household ownership rate of coffee machines by Country, and it is possible to notice that in the market where this appliance made great success, the ownership rate is, of couse, high. As a consequence, being coffee machines a relatively "big" purchase, consumers think carefully before replacing them and making an active purchasing decision. Like all the typologies of appliances, they are seen as an investment on the long run and are owned by many households all over the world, according to a statistic provided by Statista Global Consumer Survey 2021. In Austria, Germany, Spain, France and Sweden more than 80% of household own a coffee machine.

Looking at figure 57, it is clear that, in Europe, United States and Canada, coffee machines are very popular. Focusing the attention on Europe, it is possible to make a comparison between the households ownership rate of 2020 and 2021. It is represented in figure 58, in which data show the decrease in ownership rate of coffee machines in France, unlike Italy and Spain in which it slightly increases. It increases also in Netherlands, more than Italy and Spain (and, as already analyzed in the demand analysis of coffee, in this Country there is a deep coffee culture). Eventually, the ownership rate remains constant in Germany, Sweden and United Kingdom.

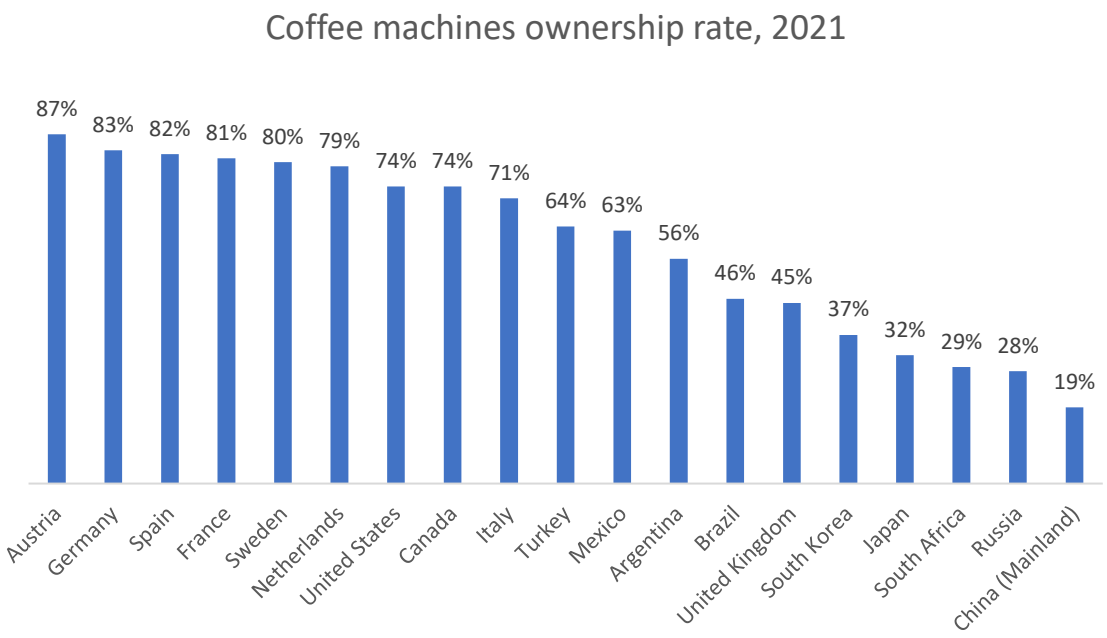


FIGURE 57: COFFEE MACHINES OWNERSHIP RATE IN DIFFERENT COUNTRIES IN 2021, SOURCE: STATISTA.COM

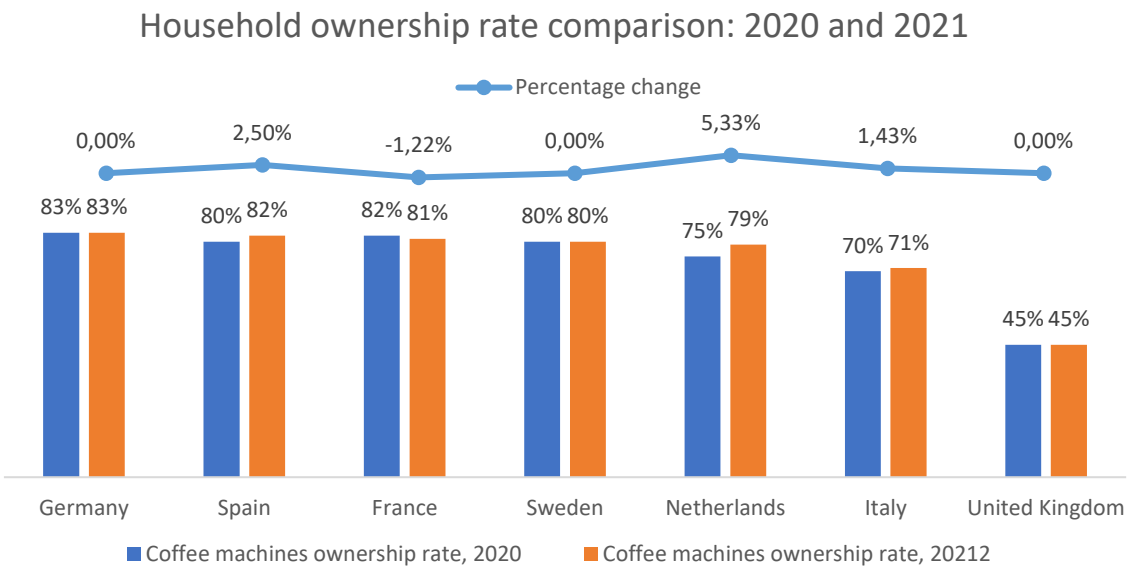


FIGURE 58: HOUSEHOLD OWNERSHIP RATE OF SMALL KITCHEN APPLIANCES, TOASTERS AND COFFEE MACHINES IN MOST POPULOUS COUNTRIES IN EUROPE IN 2020, SOURCE: STATISTA.COM

Another theory that can explain the sudden decline in sales, is the fact that the uncertain economic situation created by the diffusion of the pandemic makes very difficult the forecast of the demand, also for the next year. In fact, the data provided are subject to continuous changes.

In the United States, there is an overall increasing trend in buying espresso coffee machines, but taking a closer look to the percentage of people who used coffee machines in the last 4 years, it seems that this trend is meeting a decrease.

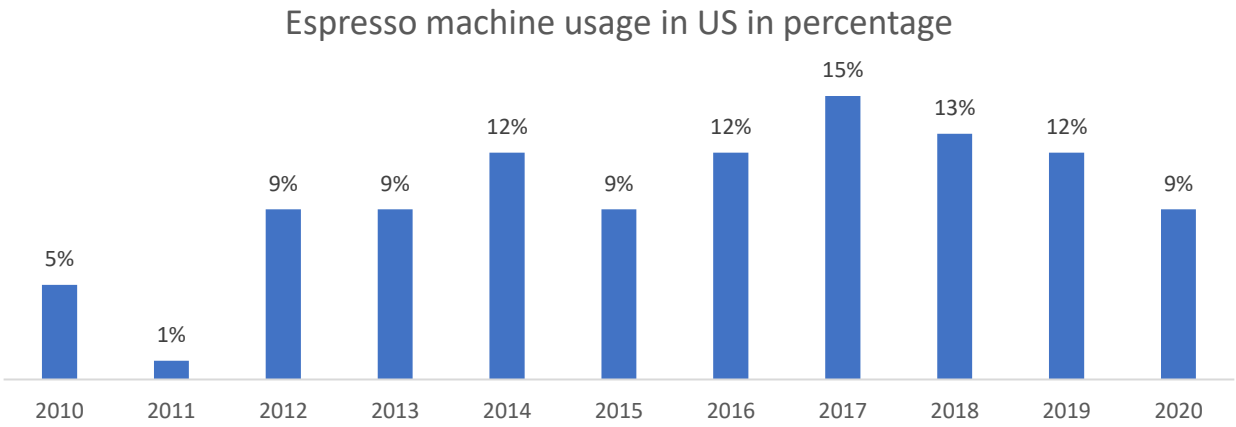


FIGURE 59: ESPRESSO MACHINE USAGE AMONG PAST DAY COFFEE DRINKERS IN THE UNITED STATES FROM 2010 TO 2020, SOURCE: STATISTA.COM

2.2.4 The demand in Italy

Analyzing the time period between the years 2014 and 2018, the evidence is that the market of Home coffee machines in Italy has taken off, almost doubling the production value because of a boost in demand.

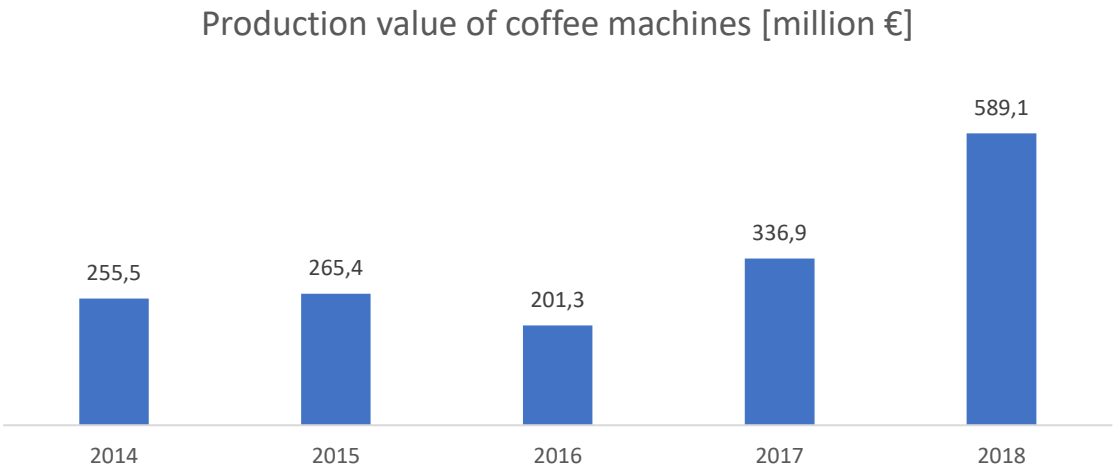


FIGURE 60: VALUE OF HOME COFFEE MACHINES PRODUCED IN ITALY FROM 2014 TO 2018. SOURCE: STATISTA.COM

During 2020, there was an exponential growth on sales of coffee makers, despite the pandemic crisis. Gfk declairs that in Italy, with respect to the same period of 2019, at the end of the first half of the year there was an increase in sales of 35.6%. Most of the value was created thanks to online retails, which increased the value creation of 86%, while physical retail stores realized a 26% growth. (Comunicaffe, 2020)

In figure 61, the Italian demand trend of the period 2013 – 2021 is depicted, with a forecast for the next years until 2026. The forecast is the same, both for the Italian and for the global situation: a spike in 2020, follwed by an increase in demand in 2021, followed in turn by a sudden decrease (in

Italy of 12.9%) in 2022. The 2021 is coherent with the ownership rate increase: of course, more home coffee machines have been sold and more families own a coffee machines (figure 58, the ownership rate in 2020 was 70%, in 2021 is 71%). Therefore, the drop in demand can be explained in the same way of the global decrease.

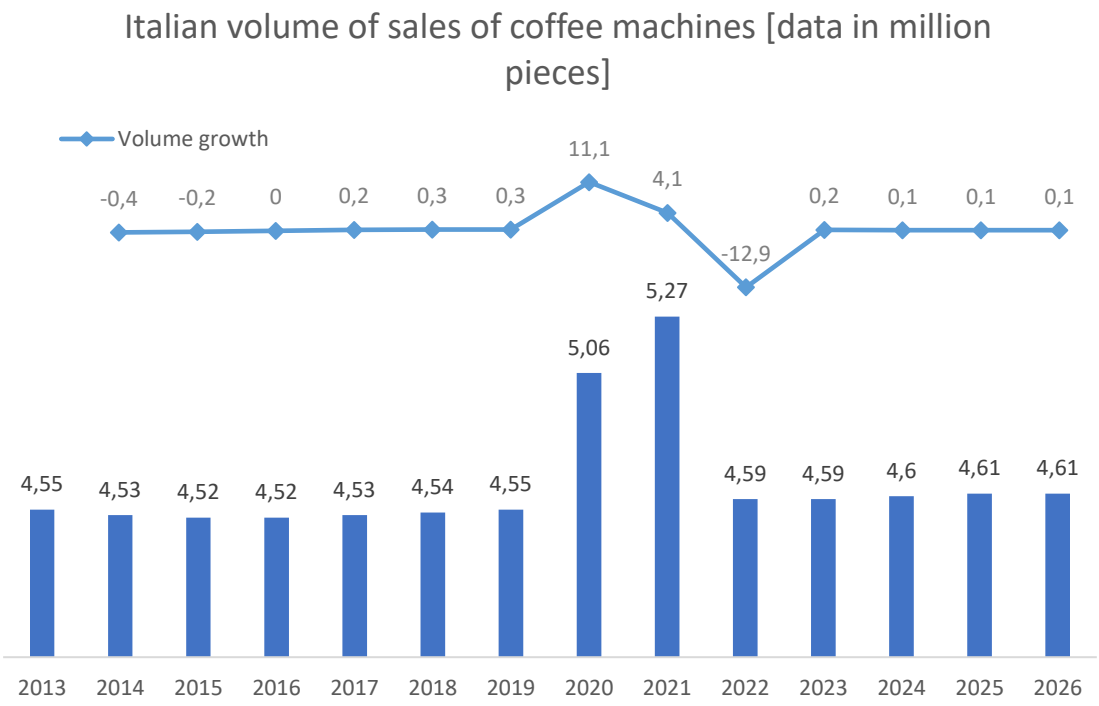


FIGURE 61: VOLUME OF SALES OF COFFEE MACHINES IN ITALY FROM 2013 TO 2021, FORECAST UNTIL 2026

The chart in figure 62 illustrates the revenues trend of the sector. For the evaluation of revenues, it is necessary to keep into account also the price trend in figure 63.

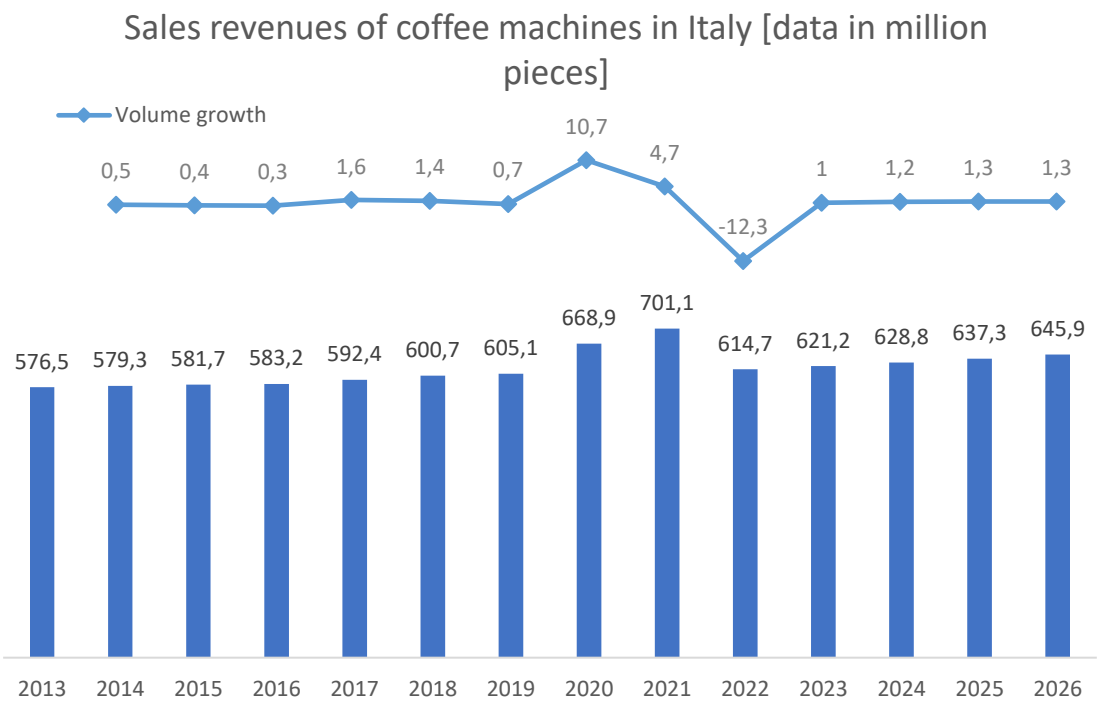


FIGURE 62: SALES REVENUES OF COFFEE MACHINES IN THE ITALIAN MARKET FROM 2013 TO 2021, FORECAST UNTIL 2026 (STATISTA RESEARCH DEPARTMENT, 2021)

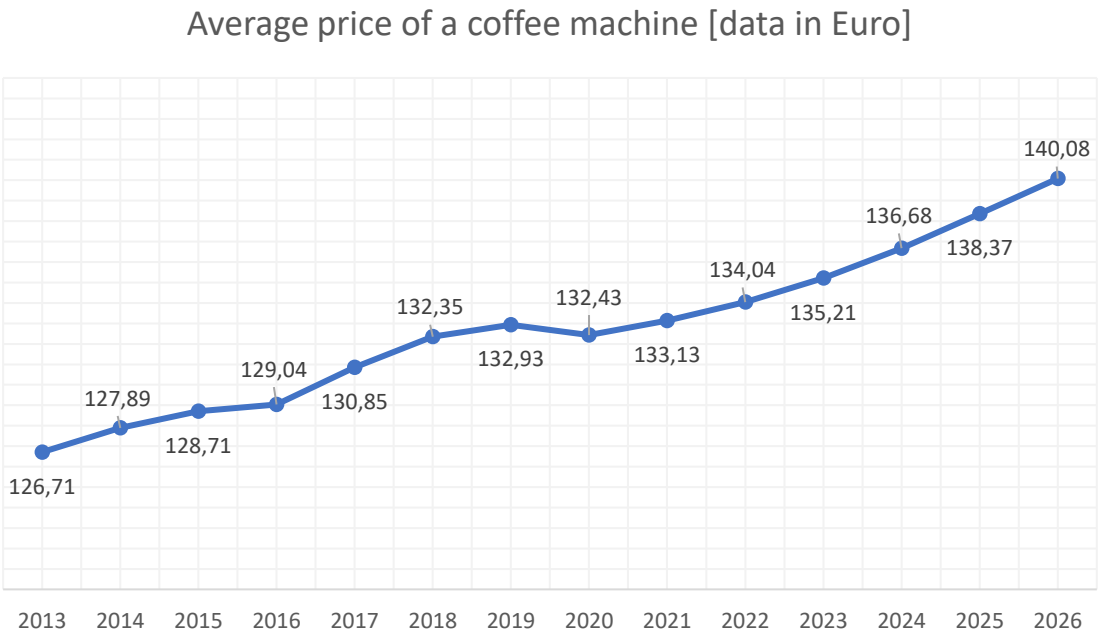


FIGURE 63: AVERAGE PRICE OF A COFFEE MAKER IN ITALY FROM 2013 TO 2021, FORECAST UNTIL 2026

This as an "average" price trend, since it takes into account all the typologies of home coffee machines. On average, from 2013 to 2021 the price of coffee machines tends to increase, and it is

expected to increase also in the following years. Considering the post-pandemic years, this situation will be explained in the next chapter, under the Economic part of the PEST analysis.

Looking at these data, the following question comes up: being the price data an average data, which typology of coffee machine weights the most in the calculation of the average? Automatic coffee machines (Bean-to-cups) are the ones who present the highest price, in spite of capsules or pods coffee machines. This barrier discourages many people from considering purchasing one. In fact, list prices start at around just under 400 Euros and go way over 1000 Euros. Thanks to offers from online stores, the price range actually drops considerably, usually starting at around 250 Euros, and still getting close to 1000. Another cost associated with this type of machine is the one of the softener filter, which normally lasts 2 months, and costs from 10 to 30 euros, depending on the model (Pecchi, 2018). The price of an automatic coffee machine, and of coffee machines in general, depends on the features of the appliance: for example, the possibility of making coffee and cappuccino or only coffee, the presence of cold milk recipes and so on.

On the market there are not many models of coffee machines exclusively made with pods, and in most cases prices are between 100 and 150 € for the basic models without steam brewing. On the other hand, those who are looking for a vintage model or a model with a particularly accurate finish will have to be willing to spend around 300 €. Coffee machines that work with capsules travel on the same price range.

The Moka is the most classic coffee machine and its advantage is its very low price, that is around 20 Euros (40 Euros for the electrical version).

3 The Industry supply chain

After having quantified the demand for both coffee and coffee machines, it is interesting to understand what is the process that brings the coffee from the farmer to the cup that everyone drinks almost daily. The very first step of the coffee supply chain is made by farmers, who cultivate coffee trees applying fertilizer, herbicides and pesticides, they irrigate the plants and harvest coffee cherries. Then, coffee beans are picked and a process of dry/wet follows, the result is the green coffee. The refining process is constituted by a multitude of actions: polishing, sorting, washing, drying, roasting. Eventually, there is the packaging process, in which coffee is ready for the distribution and consumption. A graphical representation of this process can be seen in figure 64. (William Byrnes and Nima Khodakarami, 2016)

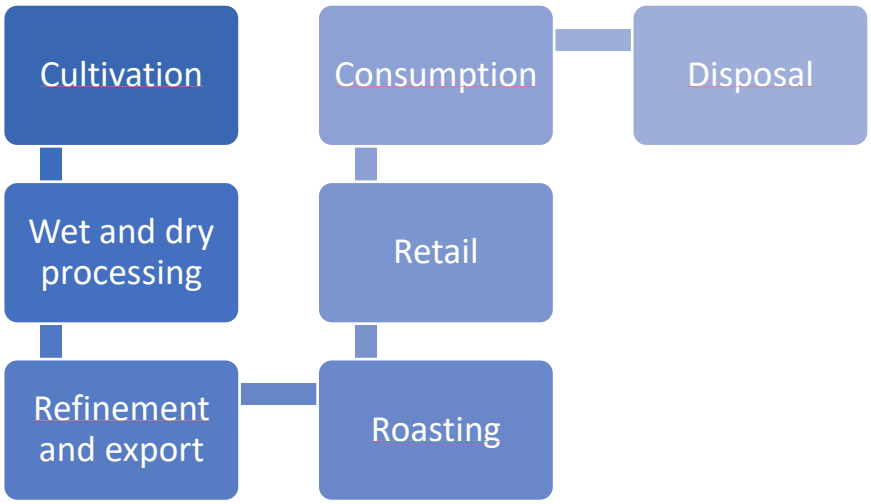


FIGURE 64: COFFEE SUPPLY CHAIN ACTIVITIES, SOURCHE: RESEARCHGATE.NET

Different dynamics exist for the passage of the green coffee from farmers to sellers. Small farmers sell coffee beans to middleman exporters, also known as *coyotes*; large farmers have deals with transnational coffee processing or distributing companies, and sell at prices established by the New York Coffee Exchange. Hence, coffee is purchased by importers from exporters or directly from large plantation owners. Roasters rely heavily on importers, since they do not have the resources to buy coffee from exporters. In the United States, Roasters have the highest profit margin in the commodity chain and it estimated to be around 1200 of them in the territory. Before reaching the final customers, coffee is sold from large Roasters to large retailers, or directly from Roasters to retailers.

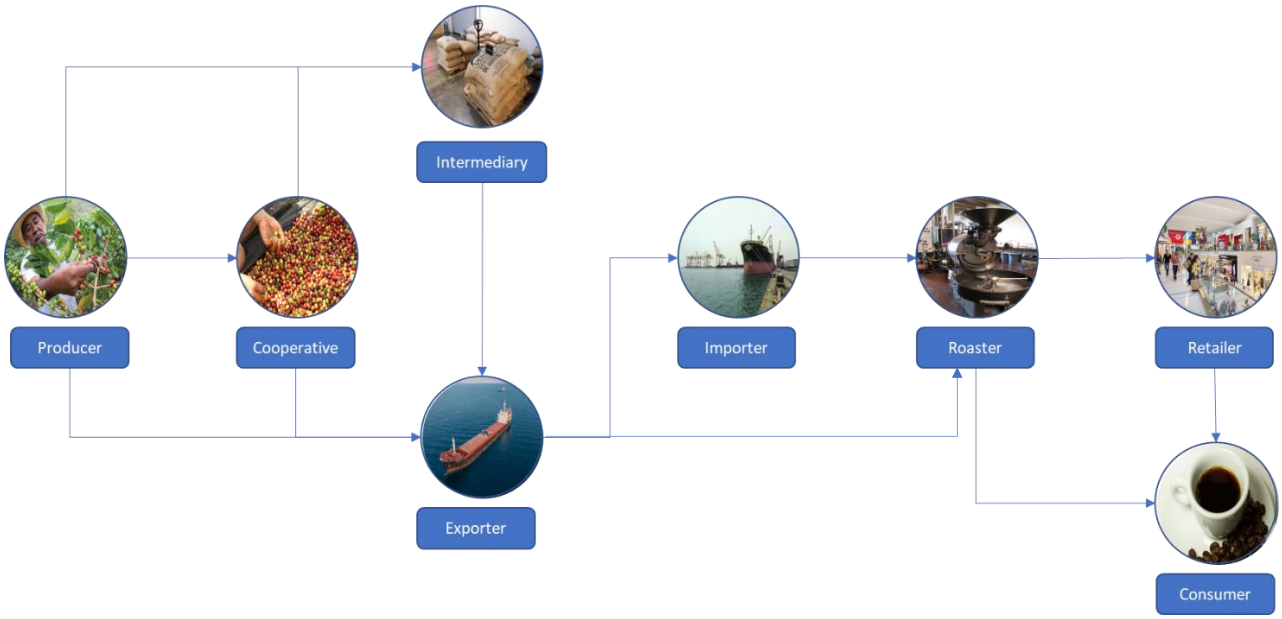


FIGURE 65: ACTORS INVOLVED IN THE COFFEE INDUSTRY SUPPLY CHAIN

John M. Talbot, Professor in the Department of Sociology, University of California-Berkeley, studied the division of the total income per pound of coffee, allocating the value generated to the different actors involved in the supply chain. According to his study, the share of margin is described in table.

Actors	Share of margin
Producers	20%
Intermediaries	11%
International traders	8%
Exporters	6%
Insurance and freight fees of importing and exporting	2%
Roasters	30%
Retailers	15%
Taxes	6%

TABLE 22: ALLOCATION OF VALUE GENERATED IN COFFEE INDUSTRY, SOURCE: RESEARCHGATE.NET

As already anticipated, Roasters capture more value than the other actors involved. The largest coffee Roasters worldwide are Nestlé, Starbucks, Lavazza, Jacobs Douwe Egberts, Boyd.

In the following paragraphs, the processing made to transform coffee beans into coffee-to-drink is studied.

3.1 Coffee processing

3.1.1 Harvesting process

The quality of a cup of coffee is influenced from the very first step, the harvesting one. Farmers pay a lot of attention to the grains, in fact, if still unriped, they could give a bad taste to the consumer palate (flat and astringent taste); the other way around, if the ripening is excessive, the coffee could taste rancid and unpleasant. As already illustrated, the harvesting could be done by picking (by hand) or stripping the fruit. Hand picking consists in picking fruits from the tree literally one by one, choosing the best one to pick and leaving the others on the tree. The final quality is superior, but higher costs are required. When the manual stripping is used, all the fruits are removed from the plant and drupes are selected in a second time, manually or by flotation.

3.1.2 Drying process

The second step consists in the drying process, and can be executed in two different ways: through the drying method and through the wet method.

With the dry method, drupes are positioned in huge sunny barnyards and stirred, in order to avoid the formation of mold. The stirring process continues until the beans are completely dried. After this process, the shell is broken and the two coffee beans are picked. The dry method is applied to coffee picked through the stripping method, i.e. to lower quality coffee.

Through the wet method, drupes are subject to pulping. They are put in pulping machines that work thanks to a continuous flow of water, they break the skin and the beans are released. Those beans are then fermented in tanks of water for a few days (typically from 1 to 3 days). The next step is to clean the beans and dry them in a desiccator or under the sun light. From that moment, the coffee is “washed”: it is sent to a decorticanting machine and then to a sieve, where the washing process happens. This method is usually applied to picked coffee, i.e. higher quality coffee. Although this is a costly and longer method, the result obtained presents higher quality than the one obtained through the dry method.

3.1.3 Defects evaluation

In the evaluation of the physical characteristics of coffee beans, several parameters are taken into account: the shape, the color and the size. These parameters are all tabulated and taken as global standard. The analyzed sample consists of few hectograms of coffee beans and, of course, the evaluation depends on the number of defects detected: the bigger the number of defects, the worse will be the evaluation. As reported in figure 66, defects can be classified by cause. There are physiological defects, i.e. effects caused by randomness and not by external agents, like the presence of bulges on the surface, off-centered groved and curled walls. The other two categories

represent the external agents: the first one is identified as the processing, while the second one is identified by worms (or could be said parasites, in general), that leave holes of 1mm diameter. Defects during the processing could be generated in the harvesting, in the cleaning process and in the hulling process. There is a right moment for the harvesting. When the drupe is ripe, and if this time is not respected the bean could present a green color if immature, pale yellow spots and a wrinkled surface. When the drupe is picked after the harvesting, the grain could be black and wrinkled, or dry and dark. If the cleaning process is not well executed, the endocarp (or parchment grain) could still be presented partially or totally, and of course this is a defect. During the hulling process, some seeds could brake due to incorrect drying.

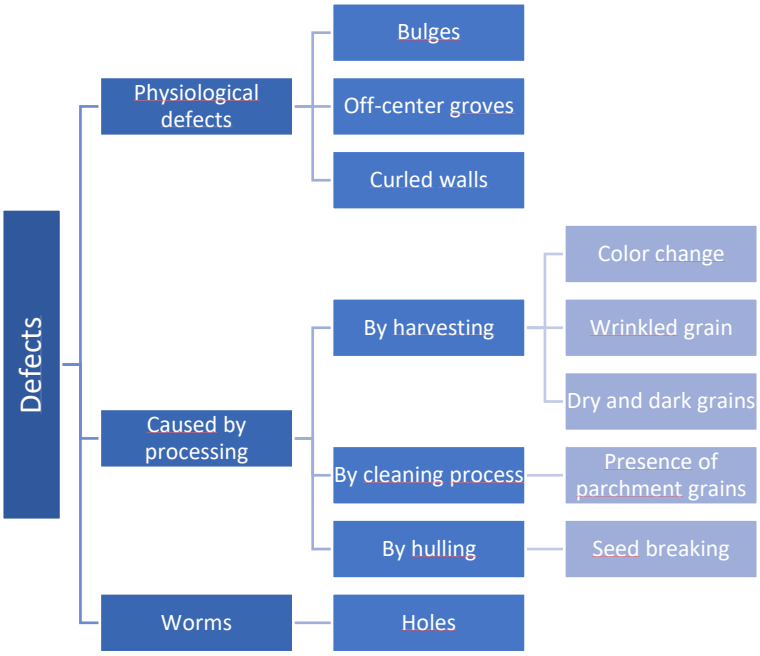


FIGURE 66: COFFEE BEANS DEFECTS CLASSIFICATION

3.1.4 Roasting process

This is the final step for trasforming raw beans into the coffee that all people know. In fact, beans are roasted and obtain the characteristic flavour typical of coffee. The process is executed after the import of the beans, since, after the roasting, the aroma gets lost in a few time and the bean absorbs humidity and other foreign odors.

The machine used for this process is the roaster, in which the bean reaches temperatures between 200°C and 250°C, for a time between 10 or 20 minutes. The choice of time and temperatures depends on the final result that one wants to obtain, for a dark coffee the time should be longer and temperatures higher, for example.

FIGURE 67: ROASTER

During the process, the coffee beans loses between 15% and 20% of weight for the evaporation of water and other volatile substances; the volume increases as well and the color becomes darker due to the carbonization of cellulose and the caramelization of sugars; the "caffeone" appears on the surface (a special oil that gives to the bean its unique flavour); a little loss of caffeine due to the high temperatures. Hence, the result is the classical coffee beans in the collective immagination. During all the process, the coffee beans get in contact only with stainless steel, in order to avoid any possible contamination with metals, paint or other substances. During the roasting process, one of the main non-aromatic volatile compounds generated is the CO_2. This could be a problem, especially in the packaging step that will be analyzed in the next paragraphs, that is why a degassing process is necessary.

3.1.5 Cryogenic cooling

Also in this process, the coffee bean enters in contact only with stainless steel. After roasting, it gets cooled down by air method not to alterate the organoleptic properties of the product, hence any contact with water is avoided. A lot of attention must be paid in this phase of the production process, since any contamination with other materials could influence the final flavour and taste.

3.1.6 Grinding process

FIGURE 68: COFFEE GRINDER

The grinding process transforms the coffee bean into powder. There are several techniques to grind beans. The most used is friction grinding, where beans pass thanks to the gravity in an empty space (in which they are introduced with a programmed drop) between a pair of moving tools, the grinders. These grinders are usually cylindrical, this means that there are two ribbed cylinders with parallel assess that rotate in opposite directions.

The grinding process is now included in the Bean-to-cup coffee machines, whose input is the roasted coffee bean.

3.1.7 Degassing process

As already said, carbon dioxide is a problem for the packaging since it can compromise the integrity of the package, that is why it must be eliminated through the degassing. This is a process in which

the gas contained in the coffee is eliminated through dispersion and it is necessary to not affect the quality and the conformity of the final product. It is executed in special storage silos, in which the risk of overpressure in the packaged product is reduced.

The degassing operation can be total or partial. Total degassing is necessary when the coffee will be sealed in packaging solutions that do not allow gas leaks (e.g. coffee capsules). Partial degassing is used when coffee will be packaged in soft-pack solutions in which there is a one-way valve (and that is the case of roasted coffee).

3.1.8 Packaging process

FIGURE 69: VACUUM PACKAGING

For a correct packaging of roasted process, a unidirectional degassing valve is necessary. In fact, this valve allows the release of carbon dioxide and prevents the entry of humidity and oxygen.The first method to be analyzed is the *vacuum packaging*, mainly used for ground coffee. Flexible packaging bags are filled with coffee, then the air within the package is removed and the package is hermetically sealed. This process is called “forced vacuum”. Of course, beans take some time to develop CO_2 after roasting, hence some time should pass before executing the forced vacuum. Before that, coffee must be put into silos for some hours (typically 24 or 48h). Once packaged, ground coffee can be conserved for 3 years.

FIGURE 70: NON-RETURN VALVE PACKAGING

The other typology of valve that can be used is the *non-returning valve*, used in association with (or without) inert gas. Immediately after roasting, the coffee is stored silos for a week or more. It is then poured into a special container containing a "flavor protection valve". This allows the gas (carbon dioxide) to escape from the inside and prevents outside air from entering. The advantage of this method over the traditional method is that no gas is released and the coffee can be kept from spoiling for up to two years. This method is more effective if an inert gas (usually nitrogen) is injected into the package during the packaging process. This process removes air and oxygen, preserving the aromatic properties of the coffee.

FIGURE 71: COFFEE CAPSULES

As regards capsules, polypropylene is used. In pods, the coffee is sealed in a paper filter, usually made of biodegradable cellulose. The coffee is wrapped in foil to preserve the aroma in a protective atmosphere. In capsules, the coffee is wrapped in plastic or aluminum to preserve and protect the flavor. The capsules are packaged in the same way as coffee beans, with nitrogen added to remove oxygen.

3.2 The role of information systems

As mentioned several times before, the growth rate in the coffee industry (CAGR) is equal to 5%. This is certainly an advantage for incumbents, but it also represents a disadvantage on two fronts: the first is the increased danger of new entrants attracted by the growth rate of this market, the second concerns an increase in coffee production also linked to a decrease in costs. Costs, as it has been analyzed, are greatly influenced by climate changes which lead to irregular harvests and, as a consequence, to an increase in prices, a situation worsened by the pandemic which caused a decrease in manpower and a bottleneck in transports and production. Moreover, it should not be underestimated the changing tastes of consumers, who are more and more pushed to try new varieties of coffee and experiment new types of beverages. For this reason, keeping up with the novelties and changes dictated by the external environment becomes a challenge for companies in the sector. And this is where technology plays a fundamental role in the development of the industry, both in the production chain and within the coffee shops.

3.2.1 Technology in coffee shops

The increase in demand for coffee in recent years leads, inexorably, to an increase in demand in coffee shops, so the speed of service execution becomes essential in order to meet customer expectations and increase customer satisfaction. If this were not the case, stores would lose customers who have neither time nor desire to stand in long, slow queues to drink a cup of coffee. Technology runs to the rescue here. Many coffee shops have mobile printers integrated with the POS to make it easier to apply order information directly from transactions to recipe labels, not to mention improving order accuracy. Mobile order takers have been installed in many stores, allowing customers to place an order from the comfort of their seats (avoiding queues) and improving the way those orders are received at the checkout.

For store owners, there are a number of apps that help manage inventory data, help them figure out what the top sellers are, and figure out if there's been employee theft - it's a new way to minimize risk and maximize profits.

Importantly, technology is affecting not only customer expectations, but also the quality of coffee prepared by baristas, who can be much more precise. The direct consequence is that the quality of the coffee prepared remains very similar from store to store (obviously what makes it vary is the quality of the blend, the quantity of coffee used...).

3.2.2 Technology in the production process

The influence of technology starts with coffee farms. In fact, there is some software to monitor and share harvesting information to improve efficiency. Among the information analyzed are the coffee's origins, growth altitude, harvest date, soil moisture, and climatic factors of the moment.

Worth mentioning is Cropster, an app that plays just this role, combining this information with data from the various roasting processes, managing to give an estimate of the overall product quality. This is a way to reduce the asymmetry of information between producer and roaster, other than giving a general look to the problematics related to the production process to have a fast solution on hand. (Coffeeinformer.com, n.d.)

3.3 COVID-19 impact

The pandemic crisis influenced the downstream value chain of the coffee industry, leading to increasing transaction and trading costs. In coffee-producing Countries, post-harvest processing and movements of crops to harbors are subject to delays: in some ports, social-distancing measures require that only one person at a time can access to containers to load bags, the result is a lower packing density and less bags per container (about 1/3 less). Moreover, ports and customs authorities work with reduced human capital. The luck is that coffee is less perishable than other fruits and vegetables, but this delay negatively affect the quality and, hence, prices. Not considering that, in addition, delays make difficult the timely fulfillment of contracts.

First deseases verified in February 2020. When the virus did not spread significantly all around the globe and was concentrated in China, reductions in containers space availability were reported, since China reduced exports. Anyway, the impact of the pandemic on shipping activity was not that dramatic, yet was influent. In fact, some of the top exporting Countries reported significant reductions in shipments, for example: Colombia 20% deline, India 10% decline and Honduras with 7% decline, while others faced more modest decreases, like Guatemala (4%), and Vietnam (2%). These reductions may not all be correlated to the spread of the virus and international logistics disruptions, since they could be also caused by other factors, such as a lower coffee availability for export from the previous crop and current inventories.

The use of seasonal and migrant workers is crucial in many coffee production systems. In Brazil, the world's largest coffee producer and exporter, mechanical harvesting is the norm, but some Arabica and all Robusta coffees are harvested by hand. The spread of the virus can lead to social mobility and exclusion, reducing the workforce and potentially leading to disease. Experience from previous epidemics (e.g. Ebola) shows that the indirect impact of prevention strategies can be significant, as a large part of the workforce is forced to stay at home. Social distancing measures are expected to have an impact on the internal mobility of seasonal workers in Brazil. Similar constraints to cross-border mobility exist in Latin America. Fewer workers in the fields can lead to delays and longer harvest times, which can have a negative impact on quality and producer prices. A reduction in labour supply can also lead to higher wages, i.e. higher labour costs, which can affect profitability, as labour costs represent more than 50% of total production costs in some countries. This poses a direct threat to countries in the harvest cycle or in the early stages of harvest, such as Brazil, Colombia (Mitaka harvest), Ecuador, Indonesia and Peru. Colombia's National Coffee Producers Association has already reported that the April harvest was 28% lower than the same month last year. In the smaller coffee-growing countries, the harvest begins in July. More than half of producers will start harvesting in the last quarter of the year, when the first pandemic is expected to end.The

COVID-19 pandemic could limit coffee producers' access to jobs and credit. In low-income countries, interest rates on new loans have recently risen. This has increased production costs, reduced access to credit and caused farmers to use less fertiliser and pesticides, which in turn has affected yields (and prices). In some cases, long-term investments in replanting coffee trees may be delayed or cancelled. Finally, social alienation means that in many countries field visits are cancelled and farmers have no access to government extension services or technical assistance from coffee buyers (traders and roasters), international organizations or NGOs. Table 23, retrieved from "ebrary.ifpri.org", illustrates the COVID-19 consequences and measures taken in some of the coffee importing Countries.

Country	Measures taken	Coffee harvest and delivery	Domestic Trucking	Port and custom operations	Container availability
Brazil	Partial lockdown	Harvesting season delayed by 15-20 days in Minas Gerais	Normal	Normal at ports. Reduced staff at customs	Delays in delivery
Colombia	Lockdown	Reduced the mobility of seasonal workers, 13% of coffee delivery centers closed	Minor deseases (slight delay)	Lower operational capacity due to reduced staff	Minor deseases
India	Lockdown	N.A.	Normal, coffee is considered an essential good	Slowed down operations	Less incoming vessels
Indonesia	Curfews, social distancing and Roadblocks	Delay in Robusta distribution	Normal	Normal	Shortage of containers
Kenya	Lockdown	N.A.	Minor deseases (slight delay)	Slower operations caused by health & safety protocols, lockdown, quarantine and mass testing	Less incoming vessels
Peru	Partial lockdown	Restricted entry and exit within regional communities	Delays	N.A.	Minor deseases
Rwanda	Lockdown	N.A.	Delays	Delays	Normal
Vietnam	Partial lockdown	N.A.	Normal	Tan Thanh border gate with China has reduced capacity	Lower shipping capacity and frequency

TABLE 23: COVID-19 CONSEQUENCES ON THE DOWNSTREAM VALUE CHAIN. SOURCE: EBRARY.IFPRI.ORG

4 Market competitors

In this chapter will be analyzed the main competitors both worldwide and in Italy. The dynamics of the competition will be better described in the next chapter through the Porter's Five Forces analysis.

4.1 Roasters worldwide

The major roasters worlwide have been found with Orbis, the database provided by Bureau van Dijk that contains firms data from all around the world. The research was made applying as filter the NACE Rev.2 code 1083, which corresponds to the sector "tea and coffee processing", both as primary and secondary code. The activity text search was also applied in order to narrow the search field (searching "coffee" only as primary and secondary activity), plus the selection of large and very large firms. Moreover, only active companies have been selected. Companies are considered to be very large by Bureau van Dijk if at least one of the following conditions is satisfied:

- Revenues are higher than 100 million Euros;
- Total assets valuation is higher than 200 million Euros;
- There are more than 1000 employees;
- The firm is listed.

A company is considered to be large if at least one of the following conditions is satisfied:

- Revenues are higher than 10 million Euros;
- Total assets valuation is higher than 20 million Euros;
- There are more than 150 employees;
- The firm is not included in the category "very large".

Financial data collected in Orbis are "standardized": every Country has a unique way to register financials, hence comparing data among firms located in different Countries can be complicated. That is why there is this standardization in a global standard format.

Through this research, 1319 companies have been found. Thanks to Orbis, it was done a benchmark of all the 1319 large and very large Companies operating in coffee industry. The time frame of the analysis goes between 2012 and 2020, several parameters were taken into account:

- Profit margin;
- ROA;
- ROE;
- ROCE;
- EBITDA %;
- EBIT %;
- Current ratio.

		2012	2013	2014	2015	2016	2017	2018	2019	2020
Profit Margin [%]	St. Dev.	10.22	9.01	9.36	12.50	11.64	12.25	14.05	13.35	10.34
	Median	4.17	4.94	4.75	4.57	5.05	4.70	5.36	5.05	3.87
	Average	5.37	5.98	5.77	4.78	5.20	5.88	6.54	5.66	4.50
ROA [%]	St. Dev	19.61	16.56	12.91	12.70	9.83	11.06	11.87	10.42	9.69
	Median	5.28	5.15	3.23	3.99	4.41	4.14	4.41	4.23	2.68
	Average	11.27	9.67	4.27	3.85	5.79	5.04	5.26	5.15	4.02
ROE [%]	St. Dev	65.69	54.33	83.15	61.28	45.70	61.24	48.64	59.15	46.09
	Median	13.45	12.79	9.37	10.54	10.82	10.16	10.04	9.44	6.39
	Average	24.83	19.67	8.88	11.52	14.82	14.12	12.33	12.97	9.27
ROCE [%]	St. Dev	59.75	29.55	55.03	81.45	51.13	61.22	32.06	51.39	28.43
	Median	9.01	8.88	8.64	8.72	9.80	9.10	9.45	8.47	5.26
	Average	15.16	10.21	10.18	11.40	15.97	14.83	11.16	6.98	9.16
EBITDA [%]	St. Dev	10.61	8.67	8.96	8.60	8.52	10.57	10-73	9.41	10.47
	Median	8.47	9.93	10.01	9.54	9.64	8.90	10.02	9.12	7.91
	Average	8.60	10.27	10.77	10.09	10.17	9.88	9.63	10.43	8.66
EBIT [%]	St. Dev	11.61	8.69	9.35	10.65	9.00	9.82	10.62	9.80	9.45
	Median	6.97	7.22	5.42	5.37	5.64	5.57	6.02	5.28	4.34
	Average	8.07	8.39	6.69	6.01	5.99	5.78	6.19	5.95	4.96
Current ratio [%]	St. Dev	3.38	5.36	5.90	3.74	3.57	3.65	4.02	3.94	6.36
	Median	1.53	1.56	1.48	1.42	1.42	1.51	1.53	1.64	1.87
	Average	2.46	2.73	2.50	2.26	2.21	2.33	2.51	2.58	3.34

TABLE 24: PROFITABILITY INDEXES AND CURRENT RATIO OF THE COFFEE INDUSTRY, FROM 2012 TO 2020. SOURCE: ORBIS-BVDINFO.COM

The values in table 24 will be taken as a reference in the analysis of the largest companies in the sector. The highest variability belongs to ROE, even though median and average are quite stable in the time, excluding a couple of outliers (2012 for the average, 2020 for the median). It is interesting to notice that the per capita revenues have a standard deviation higher than the average, meaning that there is a very high variability and it is quite usual that a firm in the coffee industry can be at a loss. This is also confirmed by the average and standard deviation of the profit margin. All the indexes knew a decline in 2020, as a sign that the coffee industry took the brunt of the pandemic shock, except for the current ratio. The current ratio is an index that measures the liquidity of a firm: being calculated as the ratio between the current assets and the current liabilities, it determines the degree to which a Company can face its short-term commitments. It seems that, on average, firms were able to sustain short-term liabilities.

The first seven firms, listed by revenues, are reported in table 24. The very first firm is Starbucks, followed by Jacobs Douwe Egberts B.V. The Italian company Lavazza S.p.A. ranks sixth in terms of revenues generated.

Company name	Turnover of the last year available [in thousand Euros]
Starbucks Corp	20,087,125
Jacobs Douwe Egberts B.V.	6,072,000
Concentrate Manufacturing (Singapore) Pte. Ltd.	3,481,920
Boyd Coffee CO	2,501,460
Nestle France	2,185,258
Lavazza S.p.A.	2,089,541
Westrock Coffee CO LLC	1,752,914

TABLE 25: FIRST SEVEN COFFEE ROASTERS BY REVENUE, WORLDWIDE. SOURCE: ORBIS-BVDINFO.COM

4.1.1 Starbucks Corp

FIGURE 72: STARBUCKS LOGO

Starbucks is a chain of café shops and roaster born in Seattle in 1971. It is the biggest in the sector, it counts 28,720 stores in 78 countries, including 12,000 in the U.S. The main goal of the company is, beyond selling coffee, offering a unique experience to the consumer, and that is its key success factor.

The first Starbucks shop was opened by three university students, an English teacher and a writer. It became the most famous brand thanks to an idea of Howard Schultz, a CEO. At the beginning, the Company main business was the production of black coffee, and the only coffees that a consumer could drink were only free samples in the shop. They bought beans from Peet's Coffee & Tea, and only later they decided to buy them directly from producers. In 1989, Starbucks counted more than 40 shops in the United States. It landed in Europe in 2012, in Italy in 2018. Nowadays, shops are opened in 67 Countries (figure 73). (Wikipedia.org, 2021)

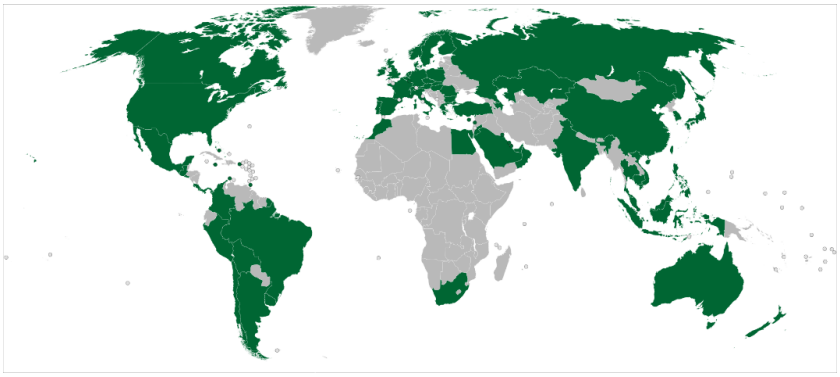
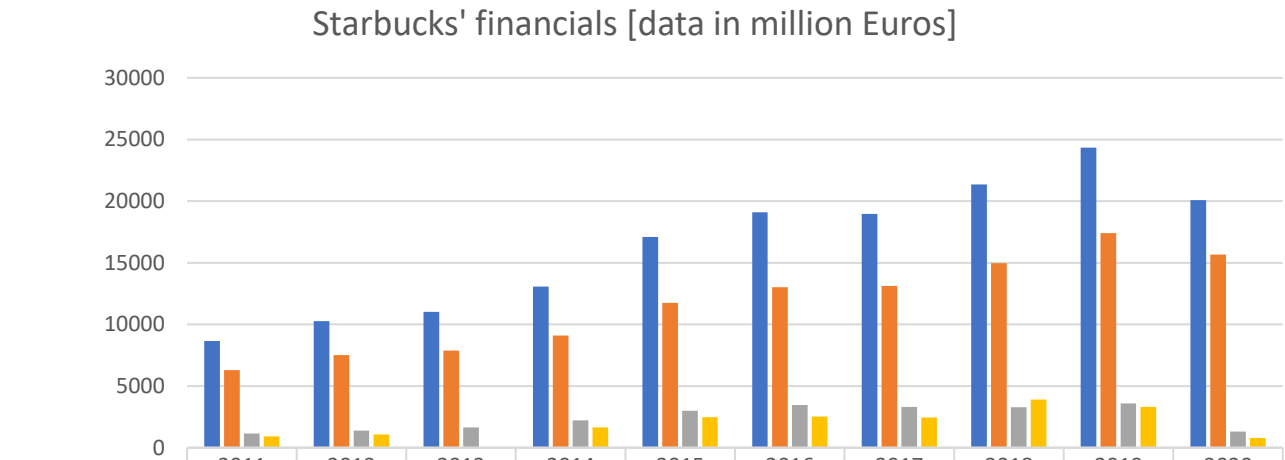


FIGURE 73: COUNTRIES WHERE THERE IS AT LEAST ONE STARBUCKS SHOP. SOURCE: WIKIPEDIA.ORG

In figure 74, financial data from Income Statements are represented, in order to have an idea of the growth of the company in the last 10 years. It is clear that expansionary policy of Starbucks has been successful, but to better understand these data one should look at other financial indicators, such as ROA, ROS, ROCE and ROE. It must be underlined that ROE can be a tricky indicator, since a positive ROE is not always sign of the firm's good health. In fact, ROE is expressed by the following formula:

$$ROE = \frac{Net\ Income}{Average\ Shareholders'\ Equity}$$

If both the numerator and the denominator are negative (and the latter can be negative when there are accumulated losses that surpass the stakeholders' equity), the result is a positive ROE that, at first sight, could communicate a good financial performance, but this could be a false information. Therefore, while analyzing this index, one must pay attention to both the components of the formula.

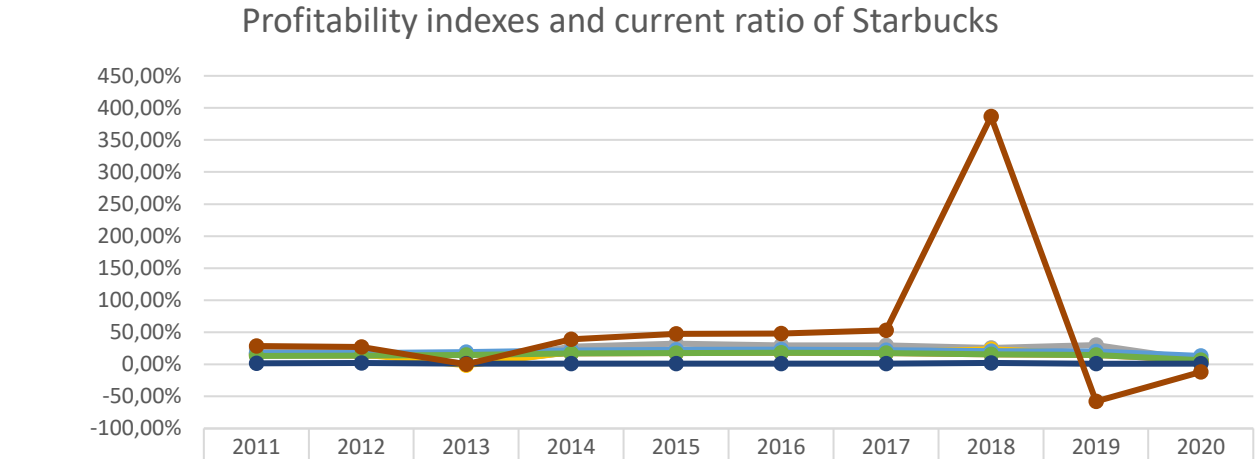


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sales Revenues	8665,038	10268,624	11008,367	13071,445	17104,971	19098,558	18962,224	21354,089	24344,385	20087,125
COGS	6302,6	7502,784	7874,269	9106,095	11745,693	13015,053	13108,42	14952,331	17401,507	15653,745
EBIT	1151,448	1381,825	1634,432	2219,343	2991,252	3452,827	3300,695	3288,268	3596,014	1296,464
Net income	922,536	1070,224	6,146	1643,567	2461,305	2524,595	2443,419	3903,161	3305,354	792,877

FIGURE 74: HISTORICAL DATA OF STARBUCK'S SALES REVENUES, COST OF GOOD SOLD, EBIT AND NET INCOME IN MILLION EUROS. SOURCE: ORBIS-BVD.COM

In figure 75, profitability indexes and current ratio are reported. Excluding the outliers, the average ROA is equal to 19.05%, the average ROE 27.77% and the average ROCE 40.49%. All these indexes, taken alone, do not give a lot of information: a benchmark with the industry average must be done. There are some years in the analysis that present outliers: 2013, 2018, 2019 and 2020. The last year can be explained easily: Starbucks strenght lies in its shops, whose sales were clearly affected by the lockdown measures, hence the net income was affected as well. 2013 is a year in which all the three

indexes present lower values, due to the fact that there is a reduction in net income. The total assets passed from a value of 6,356.690 million Euros in 2012 to a value of 8,527.731 million Euros in 2013 mainly due to an increase of cash (and cash equivalents) and properties, plants and equipment (that increased due to the total acquisition of a new coffee farm in Costa Rica), while the net income amount was 1,070.224 million Euros in 2012 and 6,146 million Euros in 2013 (therefore, ROA_{2012} = 16.84% and ROA_{2013} = 0,07%).



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ROA	16,92%	16,84%	0,07%	19,23%	22,21%	19,69%	20,08%	18,70%	18,73%	3,16%
ROS	13,92%	13,46%	14,85%	16,98%	17,49%	18,08%	17,41%	15,40%	14,77%	6,45%
ROCE	24,20%	23,57%	0,59%	27,64%	32,25%	29,69%	29,35%	25,38%	30,10%	6,20%
Profit margin	15,48%	15,51%	-1,55%	19,21%	20,37%	19,70%	19,29%	23,38%	16,85%	4,95%
EBITDA %	17,76%	17,83%	19,26%	21,53%	22,36%	22,91%	22,17%	20,68%	20,24%	13,10%
EBIT %	13,29%	13,46%	14,85%	16,98%	17,49%	18,08%	17,41%	15,40%	14,77%	6,45%
Current ratio	1,83%	1,90%	1,02%	1,37%	1,09%	1,05%	1,25%	2,20%	0,92%	1,06%
ROE	28,41%	27,09%	0,19%	39,23%	47,39%	47,89%	52,93%	386,35%	-57,75%	-11,89%

FIGURE 75: PROFITABILITY INDEXES AND CURRENT RATIO OF STARBUCKS FROM 2011 TO 2020. SOURCE: ORBIS-BVDINFO.COM

The $EBIT_{2012}$ was 1,381.825, whilst $EBIT_{2013}$ was 1,634.432, and sales revenues in 2013 were higher than sales revenues in 2013. What impacted the most in the Income Statement was the change in value of financial charges, that impacted the most on the net income value.

As it is possible to see in figure 75, ROE in 2018 assumes this enormous value of 386.35%. For sure, the increase in value of net income impacted (it passed from 2,443.419 million Euros in 2017 to 3,903.161 million Euros in 2018), but the other component that changed a lot was also the equity: from a value of 4,616.382 million Euros in 2017, it reached the value of 1,010.280 million Euros in 2018 (and it follows that ROE_{2017} = 52.93% nad ROE_{2018} = 386.35%). The reason is the decrease in retained earnings: 4.712,181 million Euros in 2017 to 1,258.984 million Euros in 2018, due to a repurchase of common stock and dividends given. The negative value of ROE in 2019 and 2020 is due to a negative value of Stakeholders' equity: retained earnings, or better, retained losses, reached -5,724.493 million Euros in 2019 and -6,667.494 million Euros in 2020. For investors this is

a red flag, since the company's liablities exceed the asset value. The reason behind this loss does not lie in high dividend payments, since they are in line with past years dividend. There is a huge increase in non-current liabilities starting from 2018, as illustrated in table 25, while the amount of current liabilities is in line with the other years.

The huge increase in long-term liabilities suggests that the Company can afford issuing debt liberally and is not really concerned on the costs that derive from this operation, due to the fact that the amount of interest to be paid is manageable, and it is covered by EBIT.

	2017	2018	2019	2020
Non-current liabilities	3,976.622	14,947.042	17,708.789	25,480.703
Long term debt	3,331.018	7,852.624	10,255.304	12,521.014
Other non-current liabilities	645.604	7,094.418	7,453.485	12,959.689

TABLE 26: STARBUCKS' NON-CURRENT LIABILITIES FROM 2017 TO 2020. SOURCE: ORBIS-BVDINFO.COM

The other liability that must be checked is the one of deferred revenues. Starbucks entered a deal with Nestlé as part of the Global Coffee Alliance, in which Nestlé can market, sell and distribute Starbucks' products. Nestlé paid Starbucks an upfront royalty of 6.7 billion USD, the latter will record it in equal amounts under the voice of "other revenues" over the life of the deal, which according to Starbucks' annual report, is 40 years. The overall result is that the deferred revenue liability will reduce by around 175 million USD every year for the next 38 years. (Paige, 2020)

ROA, ROCE, EBITDA, EBIT and profit margin are way higher than the average, also ROE (except for the last two years for the reasons illustrated above). The current ratio is a little bit lower than the average, this means that there are a lot of other firms that can face short-term liabilities better than Starbucks.

Starbucks is listed at NASDAQ under the name SBUX, and the stock price does not seem to be affected by the huge amount of liabilities (figure 76).

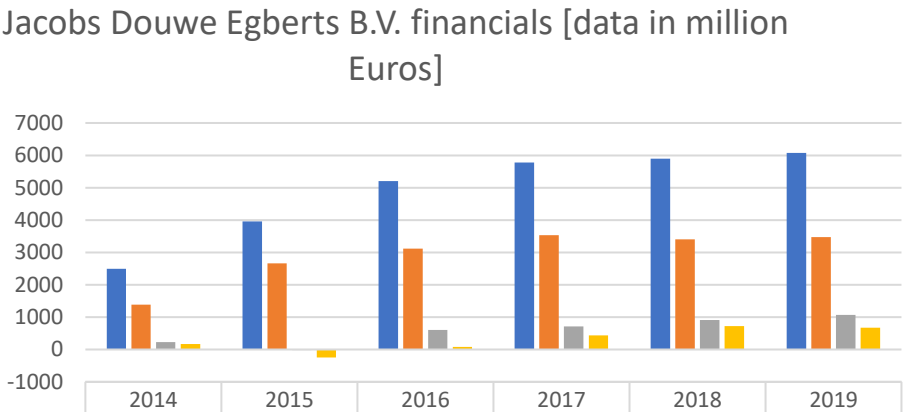
FIGURE 76: STARBUCKS STOCK PRICE FROM 2012 TO 28/10/2021. SOURCE: NASDAQ.COM

4.1.2 Jacobs Douwe Egberts B.V.

FIGURE 77: JACOBS DOUWE EGBERTS LOGO

Douwe Egberts was born in 2015 from a merger of Douwe Egberts (founded in 1753 as general grocery shop) and the coffee division of Mondalez International (an American multinational company in the sector of confectionery, food, holding and beverage and snack). It is a listed Dutch company.

The company traces its origins to De Witte Os, a general grocery store that Egbert Douwes founded in 1753 in Netherlands. His son transformed the shop into a Company into the coffee, tea and tobacco business, only in 1925 it changed the name into Douwe Egberts. Starting from 1948, the Company began to sell in Belgium, France, Spain and Denmark. In 2013 Douwer Egberts expanded by buying Norway's Kaffehuset Friele coffee manufacturer, and in 2014 planned a merge with Mondelez International, that was approved by the European Commissioner for Competition Margrethe Vestager on 5 May 2015 but under several conditions: the brands Merrild and Carte Noire should have been sold (and now are owned by Luigi Lavazza S.p.A.) and that the Austrian brand Senseo should have been licensed by other competitors. In 2020 the company merged with Peet's Coffee to form JDE Peet's and was listed in May 2020 in Amsterdam. The company owns 43 brands, amoung which Café HAG. (Wikipedia.org, 2021)

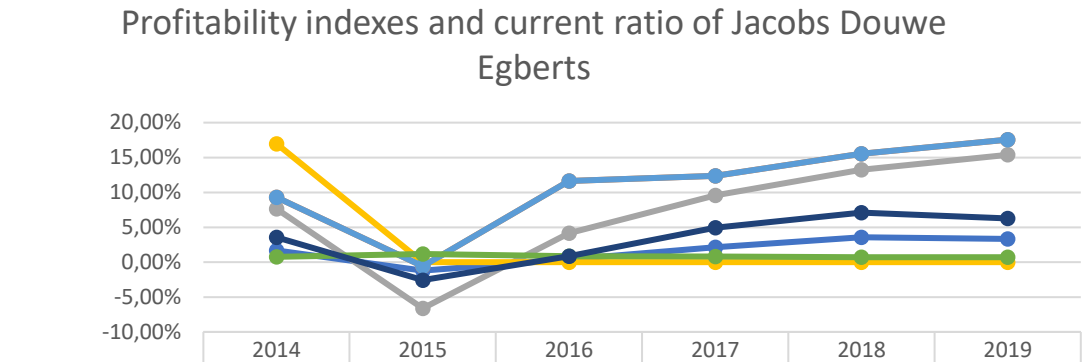


	2014	2015	2016	2017	2018	2019
Sales revenues	2491	3955	5206	5779	5895	6072
COGS	1382	2666	3116	3532	3408	3471
EBIT	232	-23	605	716	915	1066
Net income	168	-245	82	431	727	672

FIGURE 78: SALES REVENUES, COGS, EBIT AND NET INCOME OF JABOCS DOUWE EGBERTS B.V. FROM 2014 TO 2019. SOURCE: ORBIS-BVDINFO.COM

2020 financial data are not available on Orbis, but they were disclosed by the Company itself. The main problem of using these data is that they are not adjusted to the global standard used by Orbis, hence cannot be compared to the other years. Anyway, it is possible to notice from these data a reduction in the sales revenues and, as a consequence, of the net income: the Company was affected by the COVID-19 consequences, like all the other Companies.

Looking at the period that goes between 2014 and 2019, it is possible to notice an overall increase of sales revenues and net income, except for the year 2015. It is not possible to safely assess the causes since the annual report on that year is not available and the financial data disclosed are very poor, but an hypothesis is that the merger operation happened in that year weighted much on the Company's income statement. Moreover, due to the scarcity of data, it is not possible to compute ROCE, but ROA, ROS and ROE are available.



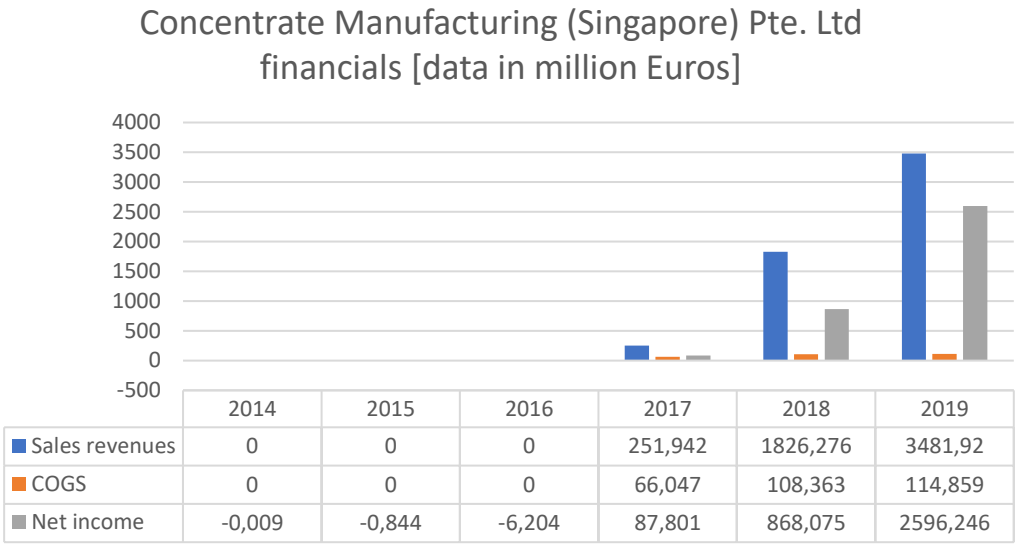
	2014	2015	2016	2017	2018	2019
ROA	1,67%	-1,21%	0,41%	2,12%	3,57%	3,33%
ROS	9,31%	-0,58%	11,62%	12,39%	15,52%	17,56%
Profit margin	7,63%	-6,62%	4,17%	9,55%	13,22%	15,38%
EBITDA %	16,98%	0,00%	0,00%	0,00%	0,00%	0,00%
EBIT %	9,30%	-0,58%	11,62%	12,39%	15,52%	17,56%
Current ratio	0,74%	1,17%	0,85%	0,81%	0,71%	0,71%
ROE	3,55%	-2,57%	0,85%	4,93%	7,10%	6,29%

FIGURE 79: PROFITABILITY INDEXES AND CURRENT RATIO OF JACOBS DOUWE EGBERTS FROM 2014 TO 2019. SOURCE: ORBIS-BVDINFO.COM

ROA and ROE follow the same pattern of the income, due to the fact that there are not big variation in the composition of the balance sheet. They are not high, are below the industry average, while the profit margin and the EBIT surclass the average. The EBITDA is available only for the first year, hence is not a significative data. The current ratio is below the average, but just only looking at it, it is clear that the firm cannot always face short-term liabilities with current assets.

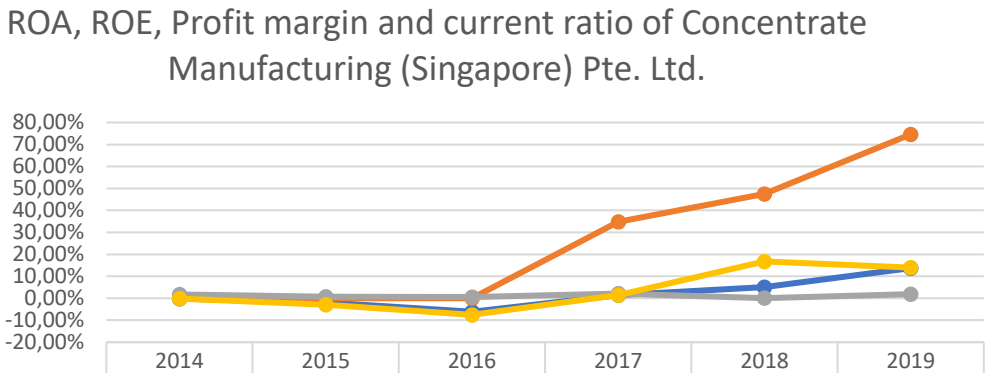
4.1.3 Concentrate Manufacturing (Singapore) Pte. Ltd.

Concentrate Manufacturing (Singapore) Pte. Ltd. has seat, as the name suggests, at Singapore and operates in the tea and coffee production industry, starting its operations in 2008. The Company is not listed and, apart from that, there are not a lot of information available about the history, and also only some financial data are available from 2014. Sales revenues and COGS from 2014 to 2016 are not available, the same happens for ROCE and EBIT that, instead, are not available for all the years.



	2014	2015	2016	2017	2018	2019
Sales revenues	0	0	0	251,942	1826,276	3481,92
COGS	0	0	0	66,047	108,363	114,859
Net income	-0,009	-0,844	-6,204	87,801	868,075	2596,246

FIGURE 80: SALES REVENUES, COGS AND NET INCOME OF CONCENTRATE MANUFACTURING (SINGAPORE) PTE. LTD FROM 2014 TO 2019. SOURCE: ORBIS-BVDINFO.COM



	2014	2015	2016	2017	2018	2019
ROA	-0,13%	-1,90%	-6,15%	1,37%	5,12%	13,72%
Profit margin	0,00%	0,00%	0,00%	34,85%	47,55%	74,60%
Current ratio	1,66%	0,65%	0,52%	2,11%	0,05%	1,81%
ROE	-0,21%	-2,93%	-7,53%	1,39%	16,76%	13,96%

FIGURE 81: ROA, ROE, PROFIT MARGIN AND CURRENT RATIO OF CONCENTRATE MANUFACTURING (SINGAPORE) PTE. LTD. FROM 2014 TO 2019. SOURCE: ORBIS-BVDINFO.COM

On average, ROA is on the average and ROE is below the average, but both of them increase in the years, while profit margin is not available for the first three years, but generally they seem to be way higher than the average. The current ratio presents a fluctuating trend, not always the firm is able to meet short-term obligations.

4.1.4 Boyd Coffee CO

FIGURE 82: BOYD COFFEE CO LOGO

Boyd Coffee Company, also known as Boyd's Coffee Company, is an American, unlisted coffee firm founded in 1900, acquired by Farmer Brothers in 2016. Also in this case, there are not a lot of anagraphical information about this Company. It is not possible to analyze the financial data of this Company, since the only one is the sales revenues in 2017, that amounted to 2,501.460 million Euros. For this reason, this company will be excluded from the analysis.

4.1.5 Nestlé France

FIGURE 83: NESTLÉ LOGO

Nestlé France belongs to the societary group of Nestlé S.A., and its main business is in the tea and coffee manufacturing industry.

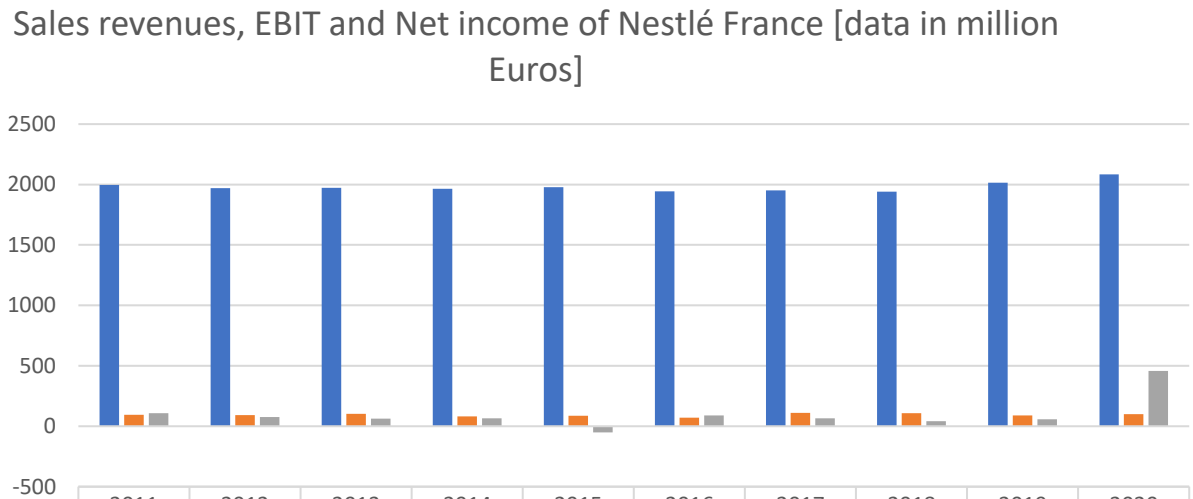
Generally, Société des Produits Nestlé S.A. (as known as Nestlé S.A.) is a Company involved in the Food and Beverage industry, it produces and distributes a wide variety of items, from water to baby food, from frozen foods to dairy products. Around 1860, pharmacist Henri Nestlé developed a food for infants who could not be breast-fed due to particular intolerances. The product saved a baby's life, and Farine Lactée Henri Nestlé was soon sold throughout Europe. In 1866, Nestlé was formally founded. In 1905, Nestlé merged with the Anglo-Swiss Condensed Milk Company. The company quickly grew to have factories in the United States, the United Kingdom, Germany and Spain. During the first World War, demand for dairy products grew, and Nestlé's production doubled before the

end of the conflict. After the end of the conflict, the dairy market returned to normal and most consumers returned to fresh milk. Nestlé responded to this change in environment by changing its business line, reducing its debt and beginning to expand into chocolate production, which remains the company's second largest business to this day. At the beginning of World War II, the company's profits fell sharply (from 20 million USD in 1938 to 6 million USD in 1939). New factories were built in many developing countries, especially Latin America. It was precisely the war that led to the invention of a new product of enormous success, Nescafé, which was initially used by the United States army. Also thanks to this product, the company's profits rose again during the conflict. After the second World War, a takeover wave started. In 1947, Nestlé merged with Maggi (maker of condiments and soups). This was followed by Crosse & Blackwell in 1950, Glaces Gervais (1960), Findus (1963), Libby's (1971) and Stouffer's (1973). A shareholding with L'Oréal (1974) was also made, with further diversification of production. In 1977, Nestlé continued to expand outside the food sector by acquiring Alcon Laboratories. In 1984, a giant of the U.S. food industry, Carnation, was acquired. In March 1988, Nestlé took over the Italian food company Buitoni with its Buitoni and Perugina brands. Also in 1988, following the acquisition of the English confectionary group Rowntree Mackintosh (company owner of various brands in the international markets among which Kit Kat, Smarties, Lion, Polo, Fruit Joy, Quality Street), Nestlé became the second world producer in the snack sector behind Mars Inc. In the first half of the 1990s, the emergence of the global market provided Nestlé with important new markets in which to expand. In 1993, thanks to the acquisition of Italgel in Italy from SME (Motta, Antica Gelateria del Corso, Valle degli Orti and Surgela brands), Nestlé consolidated its presence in the cold food sector in Europe. In the following years, new important acquisitions took place: Sanpellegrino (1997), Spillers Petfoods (1998), Ralston Purina (2002), Dreyer's (2002) and Chef America (2002). In 2005, Nestlé lost positions in the baby food market after the withdrawal of certain types of powdered milk, and proceeded to acquire Gerber Products Company in 2007 and the food division of the multinational Pfizer in 2012 with the intention of regaining a leading position in emerging markets. In 2016, Nestlé decided to spin off its international ice cream business (except for the markets of Israel, and North America, where it is still present through the Dreyer's and Häagen-Dazs divisions) creating together with the British group active in the cold branch R&R (the third world producer in the sector) Froneri, a joint venture where both companies each hold 50% of the capital. In 2018, Nestlé divested its confectionery business in the U.S. market, giving Ferrero ownership of more than 20 brands including Crunch, Butterfinger, BabyRuth, 100Grands, Raisinets, Wonka, SweeTarts, Laffy Taffy and Nerds. The Nestlé Group's 2018 sales amounted to CHF 91.493 billion (€ 80.583 billion); net income increased by 41.6% to CHF 10.1 billion (€ 8.9 billion). In July 2019, Nestlé decided to divest its ice cream business in Israel as well to Froneri, thus remaining operational in the sector only in markets on the American continent. In December 2019, Nestlé also sold its brands held in the U.S. market (Häagen-Dazs, Dreyer's, Edy's, Outshine, Skinny Cow and Drumstick) to Froneri.

The main companies under Nestlé that operate in the coffee sector are Nespresso, Nescafé and Nescafé Dolce Gusto.

In figure 84, sales revenues, EBIT and net income of Nestlé France are illustrated (COGS is not available). It is possible to notice a quite stable trend of the sales revenues, the same for net income. Apparently, the Company responded well to the pandemic shock of 2020, since the financial data are in line with those of the previous years. In figure 85 the trends of profitability indexes and

current ratio are represented. There is an overall decreasing trend from 2011 to 2017 except for 2014 in which they increased, but after 2017 all the three indicators increase, also in 2020. In fact, even though financial data are stable also in 2020, the indexes performed good if compared to the previous years: for the ROA, total assets decreased (117,626.965 million Euros in 2019 and 114,778.712 million Euros in 2020); for the ROE, equity decreased (48,600.880 million Euros in 2019 and 43,045.256 in 2020); the capital employed is obtained by subtracting the current liablities to the total asset, and this quantity decreased as well).



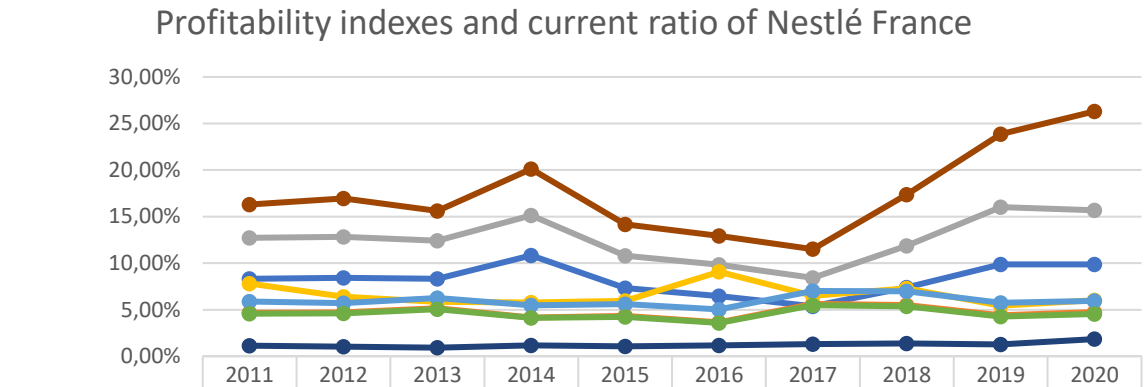
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sales revenues	1997,008	1969,378	1973,753	1964,393	1977,333	1944,979	1952,059	1940,993	2016,075	2083,346
EBIT	93,621	92,549	101,377	81,912	85,535	70,811	109,686	106,668	88,946	98,747
Net income	107,006	74,964	63,842	65,538	-50,541	90,234	66,445	41,557	58,486	456,828

FIGURE 84: SALES REVENUES, EBIT AND NET INCOME OF NESTLÉ FRANCE, FROM 2011 TO 2020. SOURCE: ORBIS-BVDINFO.COM

It is not possible to access to the annual reports of Nestlé France, hence it becomes difficult to understand the investments made to reduce these quantities. All the profitability indexes are above the average, except for the EBITDA% and the EBIT%, which are slightly below the industry average.

Considering the current ratio, even though it is a little bit below the average, it describes an overall situation in which the Company is able to meet its short-term commitment, except for the year 2013.

The Company was able to react well during the first pandemic year, since all the profitability indexes are greater than the industry average.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ROA	8,32%	8,41%	8,32%	10,83%	7,31%	6,47%	5,37%	7,40%	9,86%	9,86%
ROS	4,69%	4,70%	5,14%	4,17%	4,33%	3,64%	5,62%	5,50%	4,41%	4,74%
ROCE	12,71%	12,81%	12,41%	15,14%	10,80%	9,82%	8,42%	11,86%	16,02%	15,68%
Profit margin	7,82%	6,40%	5,85%	5,78%	5,93%	9,07%	6,50%	7,27%	5,43%	6,02%
EBITDA %	5,89%	5,72%	6,25%	5,46%	5,61%	5,03%	7,01%	6,99%	5,73%	5,96%
EBIT %	4,57%	4,59%	5,04%	4,11%	4,24%	3,58%	5,48%	5,37%	4,26%	4,52%
Current ratio	1,13%	1,02%	0,92%	1,16%	1,08%	1,16%	1,29%	1,38%	1,27%	1,84%
ROE	16,28%	16,95%	15,62%	20,11%	14,17%	12,93%	11,50%	17,35%	23,85%	26,30%

FIGURE 85: PROFITABILITY INDEXES AND CURRENT RATIO OF NESTLÉ FRANCE FROM 2011 TO 2020. SOURCE: ORBIS-BVDINFO.COM

4.1.6 Luigi Lavazza S.p.A.

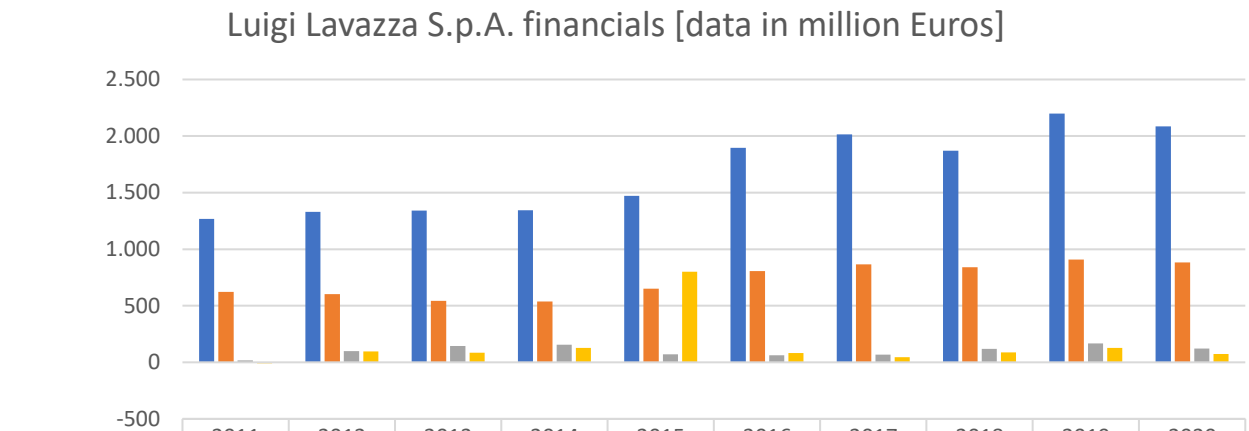
FIGURE 86: LUIGI LAVAZZA S.P.A. LOGO

Luigi Lavazza S.p.A. was founded by Luigi Lavazza, who moved from Murisengo to Turin and took over Paissa & Olivero, a small grocery store in the heart of Turin. The grocery store, the forerunner of today's company, began its activity on 24 March 1894, although Lavazza's birth is commonly traced back to 1895.

Thanks to a skilful use of blending, an art that was still unknown to its competitors (who limited themselves to selling coffee in a single variety), the Lavazza grocery store expanded and, needing more space, moved in 1910 to Via San Tommaso 10, where there is currently a bar and restaurant owned by the family. After the first World War, Luigi Lavazza and his family founded the Company that began “società per azioni” in 1927. In 2016, it is an official partner of the Baku Chess Olympics. Also in 2016, it acquires the French Carte Noire for €700 million and the Danish Merrild from the Jacobs Douwe Egberts Group. In 2017, continuing its strategy of strengthening itself in all coffee segments in its target market, it takes over Kicking Horse Coffee in Canada, ESP (Espresso Service Proximité) in France and Italy's Nims. In July 2018, it acquires Blue Pod Coffee in Australia and in

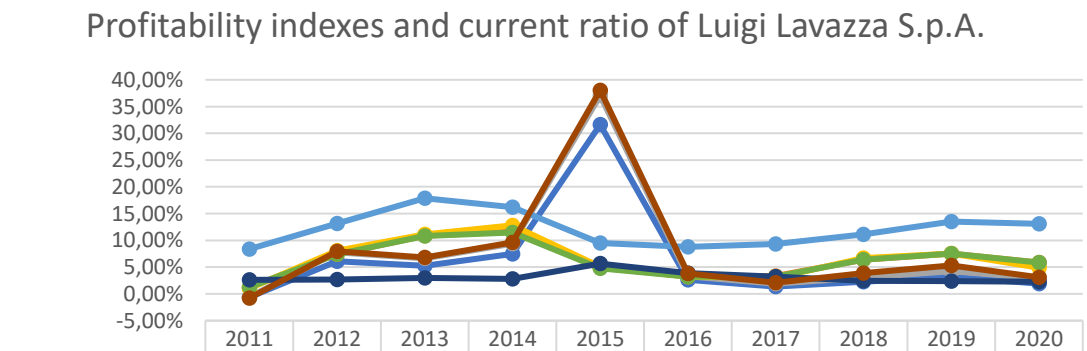
October the American Mars Drinks. From 2018, Lavazza's headquarter Nuvola is in Turin, projected by the architect Cino Zucchi in Borgo Aurora. (Wikipedia.org, 2021)

Lavazza's main business is focused on products for consumption at home, products for consumption away from home and coffee shops. The company is operative in more than 90 Countries, with more than 20 offices and plants in Italy and worldwide.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sales revenues	1.269	1330,661	1340,11	1344,11	1472,649	1895,665	2014,754	1870,003	2199,69	2085,258
COGS	621,873	603,858	543,03	537,453	649,698	807,942	866,814	839,691	908,74	881,681
EBIT	15,962	98,235	145,491	156,292	71,681	61,719	66,948	119,843	166,156	122,209
Net income	-9,077	97,105	84,836	126,663	802,075	82,16	44,659	87,932	127,382	72,974

FIGURE 87: SALES REVENUES, COGS, EBIT AND NET INCOME OF LUIGI LAVAZZA S.P.A., FROM 2011 TO 2020. SOURCE: ORBIS-BVDINFO.COM



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ROA	-0,62%	6,12%	5,25%	7,45%	31,61%	2,62%	1,38%	2,26%	3,20%	1,93%
ROS	1,26%	7,38%	10,86%	11,63%	4,87%	3,26%	3,32%	6,41%	7,55%	5,86%
ROCE	-0,58%	7,78%	6,63%	9,36%	37,06%	3,30%	1,91%	3,02%	4,23%	2,91%
Profit margin	1,02%	8,08%	11,12%	12,81%	5,08%	3,22%	2,96%	6,71%	7,54%	4,91%
EBITDA %	8,37%	13,12%	17,87%	16,19%	9,53%	8,78%	9,31%	11,12%	13,48%	13,08%
EBIT %	1,24%	7,38%	10,80%	11,47%	4,78%	3,20%	3,22%	6,40%	7,54%	5,85%
Current ratio	2,65%	2,70%	2,96%	2,83%	5,65%	3,85%	3,23%	2,46%	2,41%	2,27%
ROE	-0,80%	7,97%	6,79%	9,62%	38,05%	3,83%	2,07%	3,88%	5,32%	3,10%

FIGURE 88: PROFITABILITY INDEXES AND CURRENT RATIO OF LUIGI LAVAZZA S.P.A. FROM 2011 TO 2020. SOURCE: ORBIS-BVDINFO.COM

In figure 88 are represented the profitability idexes and the current ratio of Lavazza from 2011 to 2020. ROA is below the industry average, except for 2015 when there is a spike, due to the fact that there is an increase in net income. During that year, Lavazza used more stocked materials with respect to the other years, and this impacted the net income, moreover there is a huge increase in extraordinary revenues for capital gains from the sale of equity investments (i.e., the sale of 13,075,333 shares of Keurig Green Mountain Inc), according to its annual report. ROE, ROCE and EBIT % are below the industry average, whilst EBITDA% is higher than the average. The current ratio is in line with the industry expectations, meaning that Lavazza has no problem in facing short-term commitments.

4.1.7 Westrock Coffee CO LLC

Westrock Coffee CO LLC is an American roaster, located in the USA, in North Little Rock. Their mission is to "create a new and improved system that benefits everyone throughout the entire process—and be there every step of the way to make sure it happens" (Westrockcoffee.com, s.d.). Their financial data are not disclosed, except for some data related to 2020. For this reason, it is not possible to include the Company in the benchmark.

4.2 Roasters in Italy

By applying the same searching criteria to identify the number of roasters in Italy, Orbis returns a number of 54 large and very large Italian roasters. By removing the "large" and "very large" filters, in Italy there are 884 roasters.

In table 26, the profitability indexes and the average current ratio of the sector of analysis are represented from 2012 to 2020. It is possible to see that, in Italy, there is a high return variability: for example, the ROA of reference for the market is around 1%, but the variability is around 10%. ROE is the index with the highest variability, followed by ROCE. In general, Italian firms have a current ratio that describes a situation in which firms are in a good position to pay short-term liabilities. It is possible to make a comparison with the worldwide situation. All the profitability idexes in Italy are lower than the global ones: on average, ROA_{ITALY} = 0.65% and $ROA_{WORLDWIDE}$ = 6.05%, ROE_{ITALY} = -1.87% and $ROE_{WORLDWIDE}$ = 14.27%, $ROCE_{ITALY}$ = 3.64% and $ROCE_{WORLDWIDE}$ = 11.67%, Profit $Margin_{ITALY}$ = 2.22% and Profit $Margin_{WORLDWIDE}$ = 5.52%. Only the Italian EBITDA is a little bit higher than the worldwide one (10.93% versus 9.83%).

Also in this case it is possible to identify the biggest firms, in the Italian, sector by revenue (table 27). The leader in Italy is Luigi Lavazza S.p.A., whose performances have already been analyzed as comparison to the global market, while now they will be studied related to the Italian one. Lavazza is then followed by Illycaffè S.p.A., Caffè Borbone and Kimbo, very famous brands in the peninsula.

		2012	2013	2014	2015	2016	2017	2018	2019	2020
Profit Margin [%]	St. Dev.	12.67	13.83	12.33	11.95	14.61	15.59	14.21	13.83	16.06
	Median	2.35	2.80	3.25	3.01	3.30	2.41	3.44	3.31	0.28
	Average	2.07	2.54	3.19	2.39	3.26	2.20	3.49	4.20	-3.36
ROA [%]	St. Dev	9.89	9.70	7.93	10.14	10.57	11.20	10.78	10.19	10.03
	Median	0.78	0.94	1.12	1.08	1.31	1.07	1.53	1.55	0.04
	Average	0.56	1.04	1.35	0.52	0.80	0.89	1.27	1.54	-2.11
ROE [%]	St. Dev	68.53	63.61	75.42	66.92	62.90	37.97	57.45	66.47	77.81
	Median	3.46	3.99	4.74	4.27	5.22	4.91	5.67	6.10	0.26
	Average	-6.23	1.00	-3.78	-2.22	-0.39	3.96	3.65	2.59	-15.43
ROCE [%]	St. Dev	44.84	36.98	38.28	62.30	33.70	22.21	24.71	42.26	28.87
	Median	5.42	5.74	6.29	5.07	5.40	5.09	5.81	5.30	1.00
	Average	3.67	5.08	4.66	0.12	2.62	5.44	6.27	7.34	-2.47
EBITDA [%]	St. Dev	11.32	13.10	14.97	14.57	17.34	15.50	15.92	14.61	16.60
	Median	11.06	11.92	11.44	11.08	10.98	10.99	11.50	12.28	8.32
	Average	11.81	12.19	11.65	10.73	11.22	10.45	11.53	11.92	6.91
EBIT [%]	St. Dev	11.18	13.56	13.12	11.65	14.29	16.31	14.03	15.27	15.42
	Median	4.31	5.09	5.32	4.82	4.92	4.26	5.15	4.76	1.21
	Average	3.84	4.36	4.66	3.87	4.28	3.09	4.57	5.20	-1.99
Current ratio [%]	St. Dev	3.72	2.19	2.14	2.66	3.73	2.41	2.87	5.00	3.38
	Median	1.30	1.32	1.35	1.39	1.44	1.42	1.42	1.45	1.77
	Average	2.31	2.04	2.07	2.19	2.25	2.19	2.32	2.60	2.86

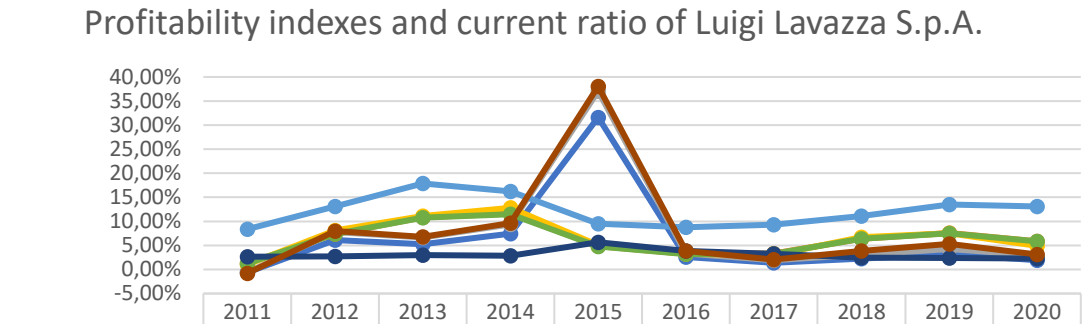
TABLE 27: PROFITABILITY INDEXES AND CURRENT RATIO OF THE COFFEE INDUSTRY IN ITALY, FROM 2012 TO 2020. SOURCE: ORBIS-BVDINFO.COM

Company name	Turnover of the last year available [in thousand Euros]
Luigi Lavazza S.p.A.	2,089,541.00
Illycaffè S.p.A.	458,427.00
Caffè Borbone S.r.l.	219,776.00
Kimbo S.p.A.	158,796.00
Gruppo Gimoka S.r.l.	100,404.00
Casa Del Caffe' Vergnano Societa' Per Azioni	81,050.00
Coind Società Cooperativa	77,796,00

TABLE 28: FIRST SEVEN COFFEE ROASTERS BY REVENUE IN ITALY. SOURCE: ORBIS-BVDINFO.COM

4.2.1 Luigi Lavazza S.p.A.

After having analyzed the positioning of Lavazza in global market, it is interesting to discuss also its positioning in the Italian one. Even though it is not among the top three roasters in the world, it is the first in Italy by turnover. In figure 89 are reported, again, the Company's profitability indexes and current ratio.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ROA	-0,62%	6,12%	5,25%	7,45%	31,61%	2,62%	1,38%	2,26%	3,20%	1,93%
ROS	1,26%	7,38%	10,86%	11,63%	4,87%	3,26%	3,32%	6,41%	7,55%	5,86%
ROCE	-0,58%	7,78%	6,63%	9,36%	37,06%	3,30%	1,91%	3,02%	4,23%	2,91%
Profit margin	1,02%	8,08%	11,12%	12,81%	5,08%	3,22%	2,96%	6,71%	7,54%	4,91%
EBITDA %	8,37%	13,12%	17,87%	16,19%	9,53%	8,78%	9,31%	11,12%	13,48%	13,08%
EBIT %	1,24%	7,38%	10,80%	11,47%	4,78%	3,20%	3,22%	6,40%	7,54%	5,85%
Current ratio	2,65%	2,70%	2,96%	2,83%	5,65%	3,85%	3,23%	2,46%	2,41%	2,27%
ROE	-0,80%	7,97%	6,79%	9,62%	38,05%	3,83%	2,07%	3,88%	5,32%	3,10%

FIGURE 89: LAVAZZA'S PROFITABILITY IDEXES AND CURRENT RATIO. SOURCE: ORBIS-BVDINFO.COM

With respect to the Italian landscape, the Company is well positioned under the profitability point of view. ROA is generally higher than the average, meaning that Lavazza is able to exploit its own assets better than the average, as well as ROCE and ROE: the Company is in a good position to exploit its sources of profitability. Also in general, EBITDA% is coherent with the expectations, while EBIT is generally higher, just like the profit margin.

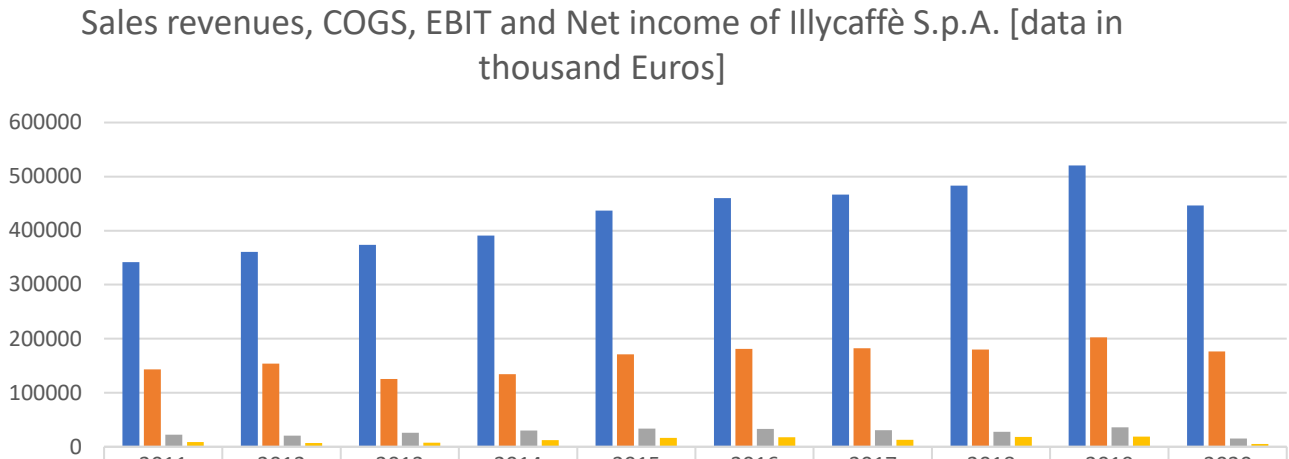
4.2.2 Illycaffè S.p.A.

FIGURE 90: ILLYCAFFÈ S.P.A. LOGO

Illycaffè S.p.A. is a company specialized in the production of coffee, with headquarters and production plant in Trieste, where the whole process of the product is followed, from cultivation to preparation in bars. It was founded in Trieste in 1933 by Francesco Illy born in Temesvár, Austria-Hungary. The founder started an entrepreneurial activity in the field of cocoa and coffee and then decided to dedicate himself exclusively to "black", as espresso coffee is called in Trieste. In 1934 he patented the "pressurization with inert gas" packaging system, in order to preserve the coffee aromas inside the jar, while in 1935 he filed the engineering patent for Illetta, Illy's professional espresso machine. In 1947, Ernesto, Francesco's son, joined the company and immediately put his

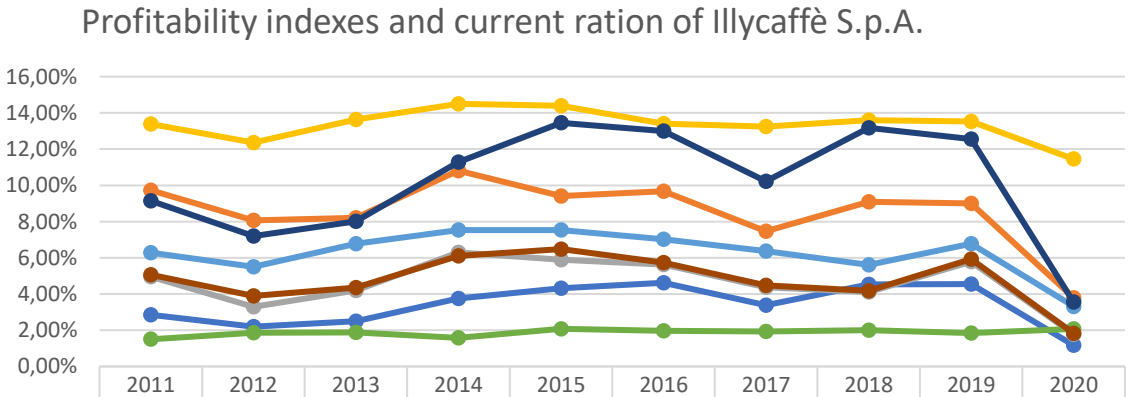
degree in chemistry to good use by setting up the company's first chemical laboratory, also creating scientific synergies with international institutions. In 1965, the company's current administrative and production headquarters were built. In 1974, the single-serving paper pods for espresso coffee were patented, a prelude to the ESE coffee pods. In the 1980s, Riccardo Illy, Ernesto's son, brought to the company an innovative approach towards organized distribution and the opening up of new international markets. In the same period, Ernesto is modifying a machine for the automatic chromatic selection of diamonds, so that he can choose only the perfect coffee beans. In 1988, Illy patents the system for the digital selection of coffee beans. Andrea Illy created the University of Coffee, which since 1999 has been promoting the culture of coffee to growers, professionals and students. The internationalization of the brand allows to think and create the chain of franchising bars "Espressamente illy", able to promote and spread in Italy and in the world the culture of quality coffee. In 2007, illy created a new generation of espresso coffee capsules, the Iperespresso method (covered by five international patents) capable of creating a thicker and more persistent cream for espresso coffee. The following year, thanks to a 50-50 joint venture between illycaffè and The Coca-Cola Company, illy issimo, a coffee-flavored beverage in a can, was born. In 2013 illy collaborates with Kimbo and Indesit in the creation of the UNO capsule system. Illycaffè is among the official partners of Expo 2015 in Milan, on the occasion of which it collaborates with the company Alessi in the project for a "moka of 2000": thus Pulcina was born. The company in 2017 was the only Italian to be included within the list of the “124 most ethical companies in the world” made by Ethisphere.

At the moment, it is the second coffee roaster in Italy by turnover. In figure 91, sales revenues, cost of good sold, EBIT and net income of Illycaffè are illustrated. It is possible to notice that sales revenues increased throughout the years, as well es EBIT and net income, not taking into account 2020 that is a very particular year due to the pandemic crisis. Thanks to the data reported in figure 92, it is possible to compare the Company’s profitability with the average profitability of the sector of analysis. Also in this case, the Company is able to exploit in a proper manner its own asset, as highlighted by ROA, that is way higher than the reference values. It is also able to exploit them better than Lavazza, if one compares the index for the two firms. The return on asset of Illycaffè in 2020 is positive, whilst the one of the average is negative. This means that, even though the Company suffered the pandemic wave, it was able to answer to it in a good way, by reaching a return average than the others. The same can be said about ROCE and ROE. The determinant of these indexes is mainly the net income, and not what stands at the denominator, and this can be understood by looking at the trend of all these measures. Overall, ROS is lower than the Lavazza’s one, meaning that Lavazza is more able to turn sales into profits. There is a higher profit margin compared to the industry average, EBITDA% is two percentage points higher than average and the same can be said about EBIT%. Looking at the current ratio, the company has no trouble in facing short-term liabilities with its current assets.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sales revenue	341931,463	360617,771	373937,005	390811,062	437138,053	460386,532	466855,029	483379,404	520456,855	446452,006
COGS	143262,312	153582,74	125418,694	134468,149	171259,681	181385,003	182202,258	180132,948	202391,022	176262,101
EBIT	22230,798	20314,182	25785,115	29864,736	33737,556	32871,805	30412,929	27527,957	36102,212	15197,323
Net income	8894,123	7013,939	7839,358	12004,495	16570,614	17392,765	13003,769	18094,769	19030,227	5013,453

FIGURE 91: SALES REVENUES, COGS, EBIT AND NET INCOME OF ILLYCAFFÈ S.P.A. FROM 2011 TO 2020. SOURCE: ORBIS-BVDINFO.COM



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ROA	2,85%	2,20%	2,49%	3,76%	4,31%	4,62%	3,38%	4,53%	4,54%	1,17%
ROCE	9,72%	8,06%	8,21%	10,81%	9,41%	9,68%	7,46%	9,09%	9,01%	3,79%
Profit Margin	4,96%	3,29%	4,19%	6,30%	5,89%	5,63%	4,37%	4,11%	5,78%	1,78%
EBITDA%	13,38%	12,36%	13,63%	14,50%	14,40%	13,41%	13,25%	13,60%	13,53%	11,45%
EBIT%	6,28%	5,50%	6,78%	7,53%	7,53%	7,02%	6,36%	5,61%	6,77%	3,32%
Current Ratio	1,50%	1,87%	1,88%	1,58%	2,08%	1,96%	1,94%	2,01%	1,84%	2,07%
ROE	9,14%	7,20%	8,01%	11,29%	13,45%	13,00%	10,22%	13,18%	12,56%	3,55%
ROS	5,06%	3,89%	4,35%	6,10%	6,48%	5,73%	4,47%	4,17%	5,92%	1,83%

FIGURE 92: PROFITABILITY INDEXES AND CURRENT RATIO OF ILLYCAFFÈ S.P.A. FROM 2011 TO 2020, SOURCE: ORBIS-BVDINFO.COM

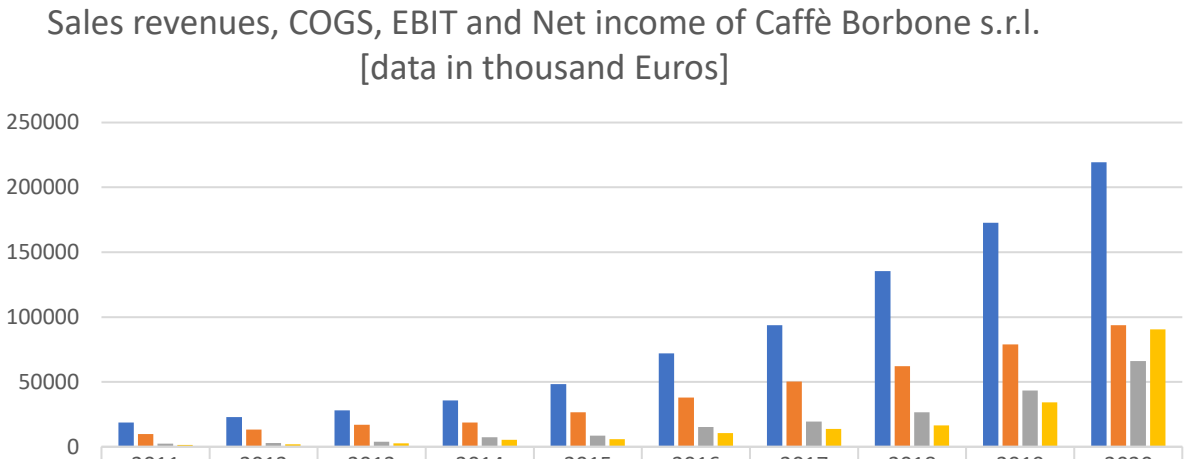
4.2.3 Caffè Borbone S.r.l.

FIGURE 93: CAFFÈ BORBONE S.R.L. LOGO

Caffè Borbone s.r.l. was founded in Naples in 1997. The first products marketed by Caffè Borbone are 44 mm paper pods, containing single-serving coffee doses and compatible with the best coffee machines working with the ESE ("Easy Serving Espresso") system. These are compostable pods, which can be differentiated in the wet waste. Following the trend of the coffee market, the Neapolitan brand announces and puts on the market 4 exclusive capsules, compatible with the most popular machines. Caffè Borbone offers 5 types of fragrances: Miscela Blu, full-bodied and with a balanced taste; Miscela Nera, creamy and with a perfect roasting degree; Miscela Oro, with a creamy consistency and a full bodied taste; Miscela Rossa, with a strong and marked taste; Miscela Verde, decaffeinated and delicate to the palate. From the attention to the environment comes the new Compostable Line of Caffè Borbone, compostable and biodegradable pods, which after use can be disposed of in the recycling bin. (Caffè Borbone, s.d.)

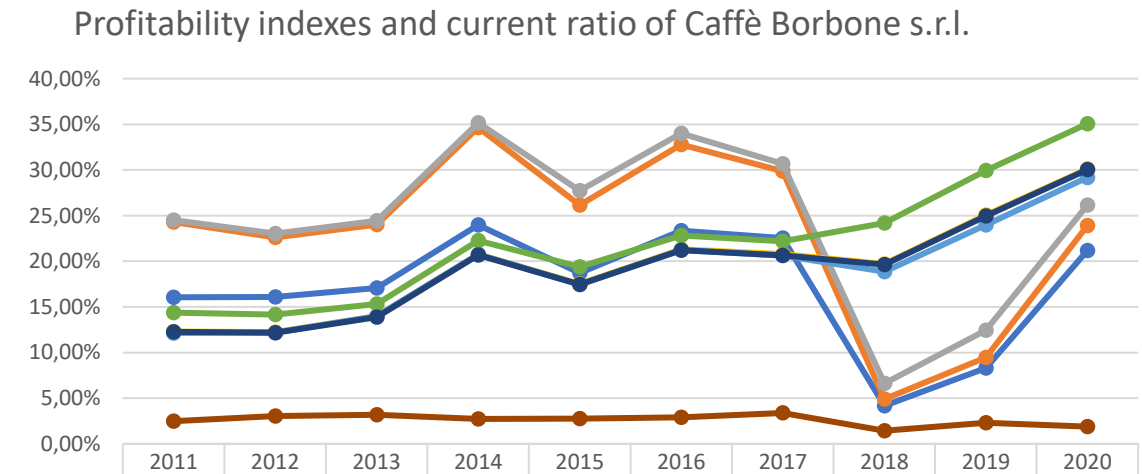
Figure 94 represents sales revenues, cost of good sold, EBIT and net income of Caffè Borbone, whilst figure 95 contains data related to profitability indexes and current ratio. It is impressive how the sales revenues met an exponential growth during the last 9 years, starting from a turnover value of 18,802.568 thousand Euros in 2011 to 219,260.000 thousand Euros in 2020, meaning that the Company is becoming more and more popular in Italy. Also in this case, ROA is above the average even if there is a decline in 2018. The reason lies in the huge investment made to increase the asset portfolio, to which goodwill and a substantial increase in intangible assets were added: there was the merge between Caffè Borbone S.r.l. (whose name was Aromatika S.r.l.) and the holding Caffè Borbone S.p.A. on May, 3rd 2018. This takeover impacted both goodwill and intangible assets, increasing the trademark value and the client list. About ROE, the sudden decrease in 2018 is related to the capital increase caused by the takeover, but, overall, the index is way higher than the average and higher than the one of the two competitor studied above, Lavazza and Illy. The same reasoning can be applied to ROCE. ROS is very high, if compared to Lavazza and Illy, and cannot be seen in the graph because its trend is entirely covered by the profit margin curve, which assumes almost the same values of ROS.

The company has no problem in managing short-term liabilities, since the current ratio is almost always 2%, except in 2018 and 2020, in which is close to 1.5%.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sales revenues	18802,568	22892,594	28183,879	35618,495	48268,787	71918,739	93640,224	135389	172624	219260
COGS	9801,179	13224,256	16941,379	18678,077	26580,962	37866,324	50303,358	62025	78987	93832
EBIT	2311,716	2801,009	3944,669	7385,964	8451,755	15316,191	19469,735	26678	43264	66004
Net income	1518,443	1855,967	2607,942	5321,938	5805,229	10484,686	13669,799	16498	34219	90546

FIGURE 94: SALES REVENUES, COGS, EBIT AND NET INCOME OF CAFFÈ BORBONE S.R.L. FROM 2011 TO 2020. SOURCE: ORBIS-BVDINFO.COM



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ROA	16,04%	16,10%	17,07%	23,97%	18,70%	23,35%	22,53%	4,17%	8,31%	21,18%
ROCE	24,29%	22,60%	24,01%	34,65%	26,15%	32,78%	29,87%	4,90%	9,45%	23,92%
ROE	24,49%	23,03%	24,45%	35,16%	27,72%	34,01%	30,67%	6,62%	12,43%	26,15%
ROS	12,29%	12,24%	14,00%	20,74%	17,51%	21,30%	20,79%	19,70%	25,06%	30,10%
Profit margin	12,14%	12,20%	13,98%	20,75%	17,46%	21,24%	20,61%	18,84%	23,98%	29,18%
EBITDA%	14,37%	14,16%	15,31%	22,26%	19,38%	22,81%	22,18%	24,17%	29,94%	35,06%
EBIT%	12,26%	12,17%	13,88%	20,68%	17,44%	21,20%	20,66%	19,63%	24,97%	30,03%
Current ratio	2,48%	3,03%	3,20%	2,72%	2,76%	2,89%	3,38%	1,44%	2,32%	1,87%

FIGURE 95: PROFITABILITY INDEXES AND CURRENT RATIO OF CAFFÈ BORBONE S.R.L. FROM 2011 TO 2020, SOURCE: ORBIS-BVDINFO.COM

4.2.4 Kimbo S.p.A.

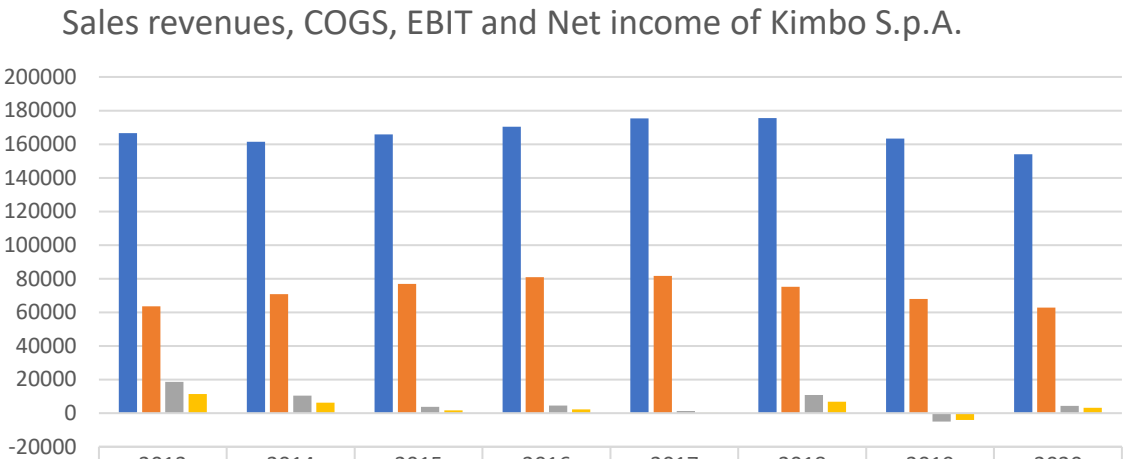
FIGURE 96: KIMBO S.P.A. LOGO

Since 2013, Kimbo S.p.A. has taken the name of its most famous brand, replacing it with the initial name of Café do Brasil, born in 1963 in Naples. The company has four brands: Kimbo, Kosé, Caffè Karalis, La Tazza d'oro. Café do Brasil was founded in the 1950s in Naples by the Rubino brothers, Francesco, Gerardo and Elio, as a roasting company for the sale of coffee in bars and at home. "Kimbo Caffè", the brand, was born in 1963 also in Naples. In the sixties the new systems of packaging in coffee cans allow a greater diffusion of the product and so Cafè do Brasil starts the industrial production with the brand Kimbo, joined in the early nineties by the low cost brand Kosé coffee. From 1994 onwards, Kimbo coffee is positioned in second place in the Italian market of packaged coffee behind Lavazza and manages to gain market share throughout Europe and also in the Middle East, United States, Australia and Japan. In 2009 the company added to the historical plant of Melito, in the hinterland, the warehouses in the Interporto di Nola. In June 2012 Cafè do Brasil acquires the Cagliari-based La Tazza d'oro, founded in 1938 by Giuseppe and Carmen Murgia after becoming three months earlier, in March, the new supplier of Autogrill.

In 2013, on the occasion of the company's 50th anniversary, it was decided to change the company's name from Café do Brasil to Kimbo. (Wikipedia.it, 2021)

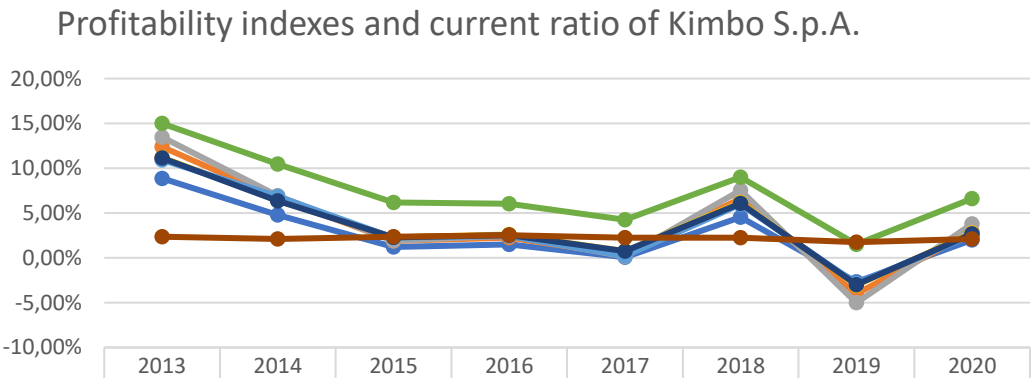
Kimbo's financial data are available from 2013 to 2020. Figure 97 highlights the fact that sales revenues have been almost constant over time, there are significative changes from one year to another, but it is clear that the Company has taken the brunt of the pandemic crisis in 2020, when sales revenues reach the lowest level. Profitability indexes all follow the same trend: higher values than the average in the first years (2013 and 2014), then there is an overall decrease that positions Kimbo sometimes below, sometimes above the average. The very first loss happens in 2015, when the Company loses three percentage points in ROA. The reason behind this loss must be identified in a sudden decrease in net income: even though sales revenues are higher in 2015 than 2014, what happens is that there is a huge decrease in change in value of WIP and raw materials (237,500 Euros in 2014 versus 2,783,852 Euros in 2015) and there are financial expenses (absent in 2014). It is interesting to analyze what happens in 2019, when the company was at loss and, therefore, profitability indexes resulted to be negative. The first phoenomenon that must be highlighted is a decrease in sales revenues, as illustrated in figure 97, associated with higher total production costs (in figure is illustrated only COGS, but the overall production cost increased, as described in the annual report). No income reported from associated Companies, while 2,594,816.00 Euros paid for deferred taxes. ROS is lower than the other competitors, EBITDA% and EBIT% are also lower than the expectations.

Also in this case, the company has no problem in facing short-term liabilities.



	2013	2014	2015	2016	2017	2018	2019	2020
Sales revenues	166647	161356,755	165792,42	170365,381	175366,553	175595,238	163260,354	153946,863
COGS	63551	70827,118	76868,196	80872,383	81598,903	75139,492	67879,833	62843,968
EBIT	18638	10398,133	3763,119	4427,209	1331,089	10866,405	-4997,746	4258,256
Net income	11386	6310,609	1754,339	2208,88	107,707	6869,699	-4009,941	3154,608

FIGURE 97: SALES REVENUES, COGS, EBIT AND NET INCOME OF KIMBO S.P.A. SOURCE: ORBIS-BVDINFO.COM



	2013	2014	2015	2016	2017	2018	2019	2020
ROA	8,87%	4,77%	1,21%	1,48%	0,07%	4,54%	-2,69%	1,99%
ROCE	12,38%	6,70%	1,88%	2,26%	0,33%	6,59%	-4,03%	2,94%
ROE	13,47%	6,94%	1,89%	2,50%	0,14%	7,54%	-5,02%	3,77%
ROS	11,18%	6,44%	2,27%	2,60%	0,76%	6,19%	-3,06%	2,77%
Profit margin	10,92%	6,87%	2,23%	2,41%	0,22%	5,95%	-2,86%	2,54%
EBITDA%	14,99%	10,45%	6,16%	6,04%	4,25%	9,01%	1,51%	6,59%
EBIT%	11,14%	6,36%	2,30%	2,54%	0,76%	6,07%	-3%	2,68%
Current ratio	2,34%	2,10%	2,34%	2,52%	2,24%	2,25%	1,75%	2,09%

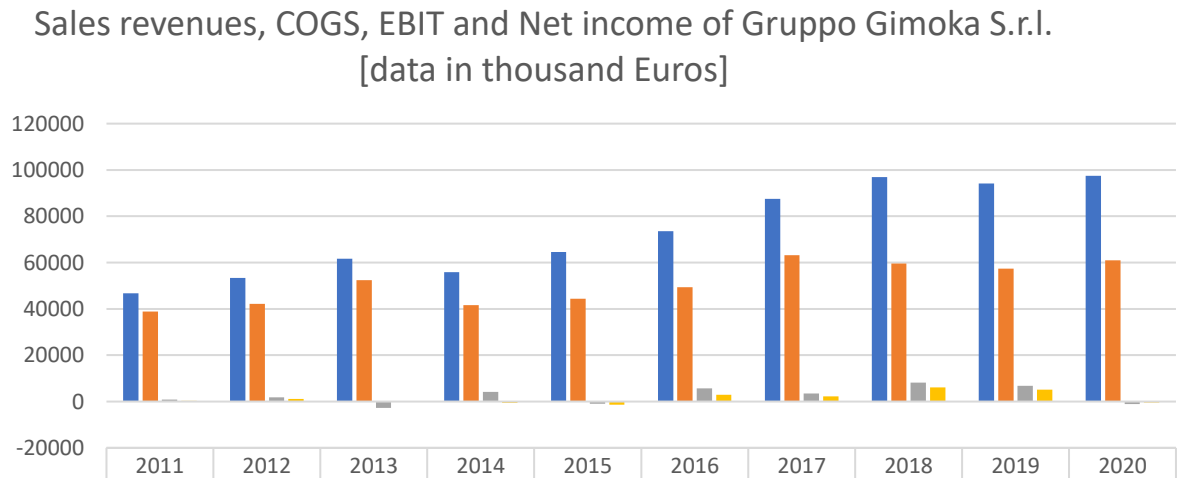
FIGURE 98: PROFITABILITY INDEXES AND CURRENT RATIO OF KIMBO S.P.A. FROM 2013 TO 2020. SOURCE: ORBIS-BVDINFO.COM

4.2.5 Gruppo Gimoka S.r.l.

FIGURE 99: GRUPPO GIMOKA S.R.L. LOGO

In terms of volume of sales and raw coffee processed annually, Gimoka Group is one of the leading roasters in Italy. The Company was born in the 1980s, and developed over time to become a major player on the international scene, currently exporting to over 50 countries. An expansion strategy was undertaken in recent times with the acquisition of a Company specialized in the development and production of instant beverages in order to enrich and complement the offer in the traditional channels of home, offices and Ho.Re.Ca. It is organized in two Business Units: the first one is "Ground Coffee and Coffee Beans", whilst the second one is "Portioned Coffee" (pods and capsules) to maintain control at technological level over the processes and the fundamental phases of coffee transformation and its packaging. There are 3 different production sites, accounting for 27 production lines with highly automated processes, more than assembly and packaging lines, all close to Andalo Valtellino. In addition, there are 3 logistics warehouses with an area of over 9,000 m^2. (Gruppogimoka.com, s.d.)

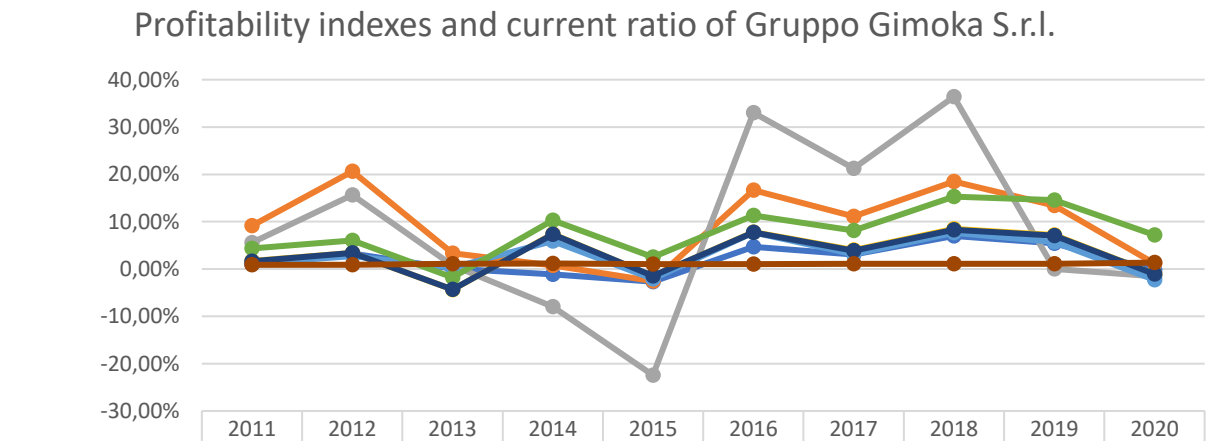
Financial data for the time period 2011 – 2020 are available.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sales revenues	46712,149	53336,705	61712,39	55810,434	64595,284	73607,024	87514,491	96888,88	94198,935	97505,542
COGS	38858,129	42152,896	52386,343	41681,375	44370,687	49434,085	63181,33	59534,453	57324,655	60951,392
EBIT	782,671	1819,933	-2682,347	4124,708	-988,566	5750,348	3525,213	8206,59	6761,991	-1069,175
Net income	320,525	1065,858	54,598	-509,639	-1354,873	2982,035	2283,185	6149,171	5151,911	-335,923

FIGURE 100: SALES REVENUES, COGS, EBIT AND NET INCOME OF GRUPPO GIMOKA FROM 2011 TO 2020. SOURCE: ORBIS-BVDINFO.COM

There is an overall growth of the company, which gains more and more territory (looking at the sales revenues in figure 100). It was at loss in 2014 and 2015: it is true that there was a decrease in sales revenues in 2014, but this is not the reason why its loss, since this measure increased the following year. The company had to pay financial expenses and other expenses (it is not specified the nature of this expenses in the annual reports). The overall result is a fluctuating trend of profitability indexes, sometimes below and sometimes way above the average. ROS is higher than Kimbo, comparable to the Lavazza's one and lower than Illy. The company can face short-term liabilities, even though the current ratio is a little bit above one.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ROA	0,95%	3,24%	0,11%	-1,11%	-2,68%	4,70%	3,07%	6,98%	5,45%	-0,26%
ROCE	9,15%	20,63%	3,33%	0,78%	-2,56%	16,67%	11,12%	18,50%	13,39%	1,18%
ROE	5,57%	15,62%	0,79%	-8,00%	-22,43%	33,05%	21,25%	36,39%	0	-1,55%
ROS	1,68%	3,41%	-4,35%	7,39%	-1,53%	7,81%	4,03%	8,47%	7,18%	-1,10%
Profit margin	1,18%	2,69%	0,29%	5,93%	-2,06%	7,72%	3,12%	7,67%	5,69%	-2,29%
EBITDA%	4,33%	6,03%	-1,78%	10,30%	2,54%	11,29%	8,14%	15,29%	14,53%	7,21%
EBIT%	1,66%	3,40%	-4,33%	7,31%	-1,50%	7,70%	3,90%	8,29%	7,02%	-1,07%
Current ratio	0,88%	0,92%	1,11%	1,14%	1,02%	1,01%	1,10%	1,10%	1,13%	1,35%

FIGURE 101: PROFITABILITY INDEXES AND CURRENT RATIO OF GRUPPO GIMOKA S.R.L. FROM 2011 TO 2020, SOURCE: ORBIS-BVDINFO.COM

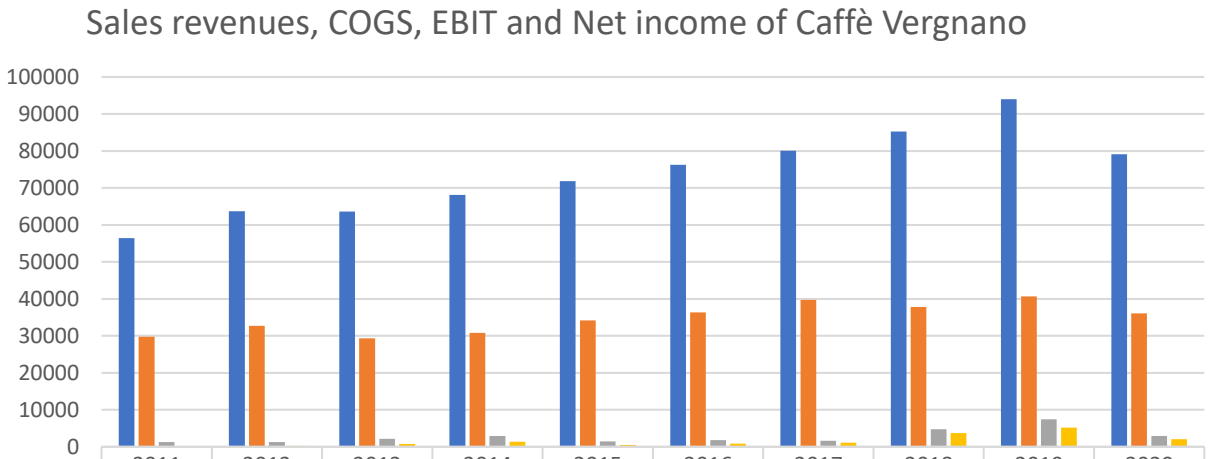
4.2.6 Casa Del Caffè Vergnano S.p.A.

FIGURE 102: CASA DEL CAFFÈ VERGNANO S.P.A. LOGO

Casa Del Caffè Vergnano S.p.A., commonly known as Caffè Vergnano, is an Italian company specialized in coffee roasting, founded in 1882 in Chieri and based in Santena, in the metropolitan city of Turin. Caffè Vergnano is considered to be the oldest coffee producer in Italy among the large coffee roasters. The company was founded in 1882 by Domenico Vergnano. It was a small grocery store in Chieri, a small town on the hills of Turin. The business grew very quickly and the first three Italian warehouses were opened in Turin, Alba and Chieri. The real leap, however, came in the 1930s when the company purchased a coffee farm in Kenya. With a plant of 13,500 square meters and 24 automated production lines, it is the sixth Italian company in the large-scale distribution channel, present in 19 regions with more than 4,500 HORECA customers and worldwide with more than 70 locations in 19 countries. It also exports to more than 80 Countries. Since 2000, the company has started the project of expanding its products and brand through the cafeterias that are now located a bit 'everywhere around the world. In 2016 the hundredth café was opened in Singapore, in 2017 the cafés are already more than 130 thanks also to the collaboration with the chain of Eataly megastores that allowed Caffè Vergnano to be present in Toronto, New York, Rome, Milan, Chicago, Los Angeles, Sao Paulo, Istanbul, Seoul, Tokyo and Moscow. The model, designed by the architect Roberto Ferrero, is easily exportable: eco-design inspired furnishings, furniture in untreated wood, floors made with low formaldehyde release wood and eco-leather seats. The Italian coffee ritual is completed by an assorted menu ranging from breakfast to lunch and aperitif. A new strand of cafeterias is developing in big city airports. The first was opened in Bari in partnership with My Chef, the second at Rome Fiumicino airport in the new extension of terminal 3 of intercontinental flights, the third in 2018 at Munich airport, intercontinental flights, with the partnership of Allresto. The development of the cafeterias led the company's accounts to reach in five years, from 64 million euros in 2013, first 75.5 million in 2015 and then 82 in 2017. So much so that the company expanded the reach of the cafeterias even to large railway stations: the first in July 2018 at Roma Termini. On June 28, 2021 Coca Cola enters with 30% in the company with the task of dealing with the distribution of Caffè Vergnano abroad.

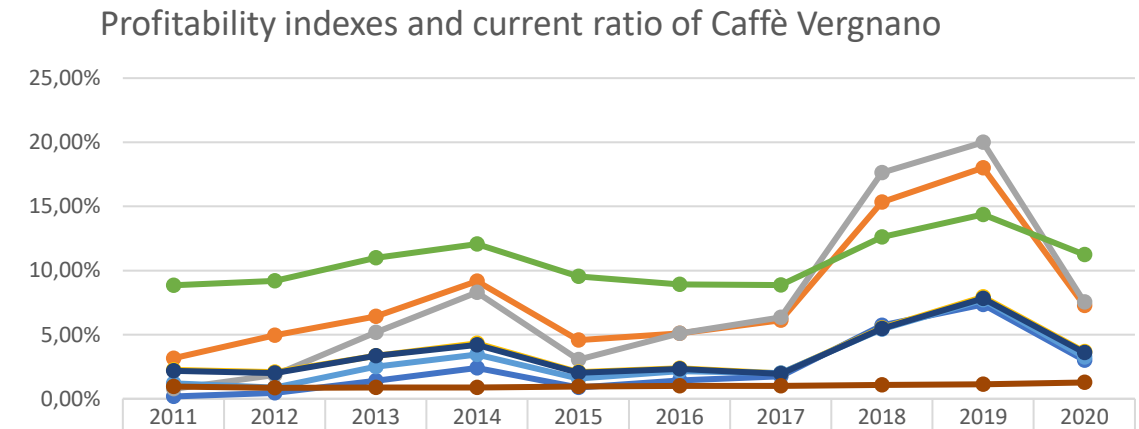
Vergnano gained quota of sales during the years, taking the brunt of the pandemic since revenues decreased in 2020. ROA presents a slightly increasing trend, whilst this trend is more marked in ROCE and ROE. All of them follow the trend of net income, meaning that this is the variable that impacted the most on the calculation of the three indexes. At the beginning, ROA was quite in line with the industry average, it gained percentage points during the years surclassing the competition. Same thing happened with ROCE. ROE is always above the average, even if a little bit weaker than the competitors analyzed above. Regarding ROS, it is in line with the one of Gimoka, higher than Kimbo, but lower than Illy’s and comparable Lavazza’s one. EBITDA% is in line with the average, whilst EBIT% is a little bit lower.

Eventually, the company at the beginning could not manage to cover its short-term liabilities, but gained some points throughout the years, until it was able to cover it (even if the final current ratio is still weaker than the average).



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sales revenues	56392,676	63654,285	63568,262	68130,378	71857,947	76257,507	80024,927	85222,048	94024,314	79123,166
COGS	29747,068	32696,764	29338,349	30810,196	34133,131	36290,931	39686,07	37814,898	40680,108	36082,465
EBIT	1261,34	1318,385	2137,232	2943,166	1488,907	1818,169	1584,911	4710,193	7462,538	2913,402
Net income	105,929	256,488	760,03	1331,831	500,919	856,886	1122,096	3724,011	5199,151	2086,359

FIGURE 103: SALES REVENUES, COGS, EBIT AND NET INCOME OF CAFFÈ VERGNANO FROM 2011 TO 2020. SOURCE: ORBIS-BVDINFO.COM

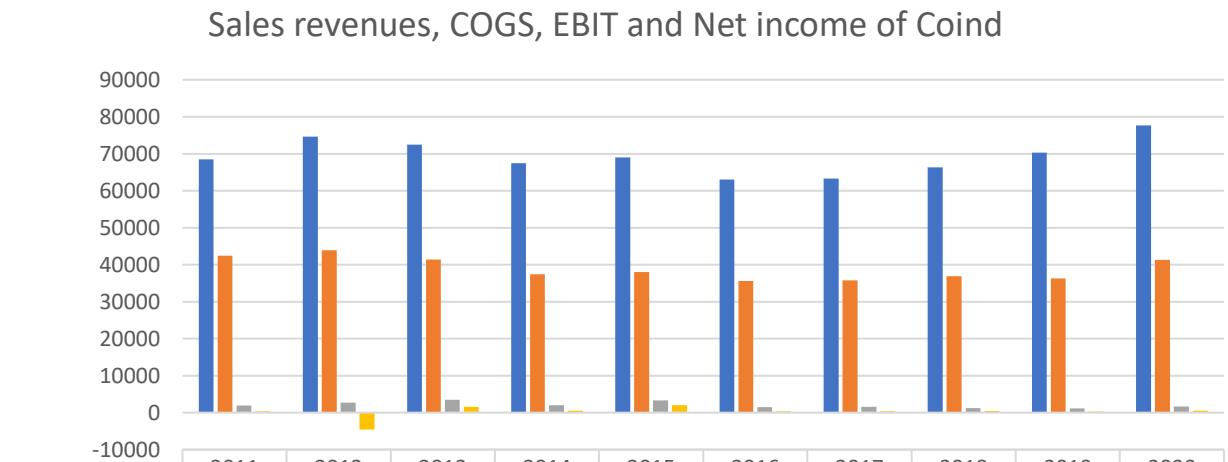


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ROA	0,18%	0,45%	1,41%	2,41%	0,89%	1,43%	1,76%	5,71%	7,35%	3,00%
ROCE	3,16%	4,96%	6,42%	9,16%	4,57%	5,10%	6,13%	15,32%	18,01%	7,28%
ROE	0,77%	1,84%	5,16%	8,29%	3,06%	5,09%	6,35%	17,64%	19,99%	7,54%
ROS	2,24%	2,07%	3,36%	4,32%	2,07%	2,38%	1,98%	5,53%	7,94%	3,68%
Profit margin	1,20%	0,87%	2,49%	3,45%	1,59%	2,15%	1,99%	5,43%	7,72%	3,24%
EBITDA%	8,85%	9,19%	11%	12,06%	9,55%	8,92%	8,87%	12,62%	14,37%	11,23%
EBIT%	2,17%	2,01%	3,35%	4,19%	2,03%	2,32%	1,94%	5,48%	7,82%	3,60%
Current ratio	0,95%	0,85%	0,88%	0,89%	0,95%	1%	1,01%	1,08%	1,14%	1,27%

FIGURE 104: PROFITABILITY INDEXES AND CURRENT RATIO OF CAFFÈ VERGNANO FROM 2011 TO 2020. SOURCE: ORBIS-BVDINFO.COM

4.2.7 Coind Società Cooperativa

Coind is an important industrial group founded in 1961 in Castel Maggiore in the province of Bologna. The company's core business has historically been coffee roasting, with 7000 tons of green coffee passing through the expert hands of Coind experts every year, to bring all the taste and aroma of the best espresso coffee to the tables of Italians. The scrupulous selection of coffee beans in the producing countries, the laboratory analyses, the grinding and roasting and finally the packaging follow strictly controlled procedures: the high quality of the production processes is one of the aspects that characterize all Coind products. The company's mission is to offer its customers high quality, ethically sustainable private label products. Coind is very sensitive to the issue of environmental sustainability: the production processes, the packaging used, the certifications and the careful reuse of both energy and industrial waste, make the Group an environmentally sustainable company. (Coind.it, s.d.)

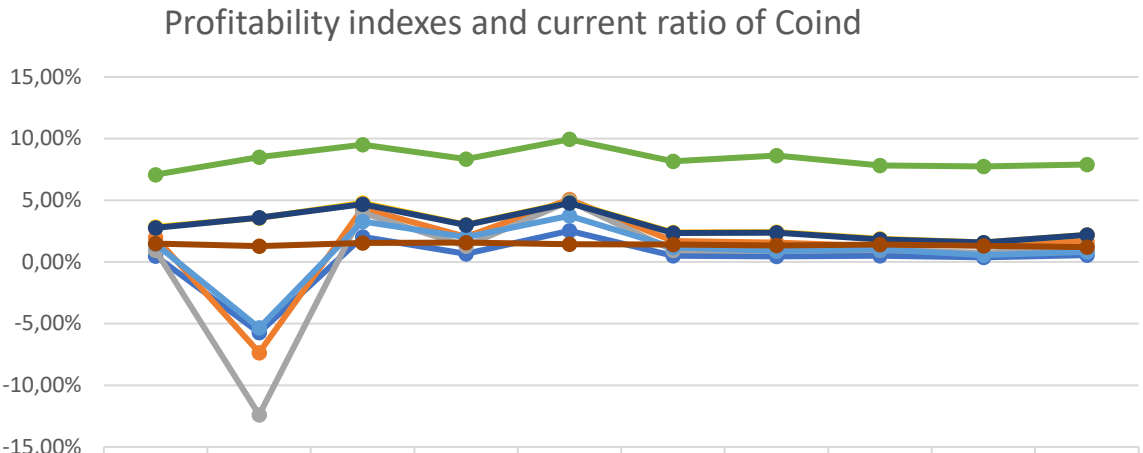


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sales revenues	68480,5	74668,138	72493,695	67410,353	69012,125	63065,846	63333,346	66295,354	70298,036	77644,279
COGS	42464,333	43896,664	41431,903	37449,104	38043,004	35573,995	35798,563	36869,472	36309,537	41286,18
EBIT	1937,606	2663,786	3464,306	2032,933	3333,948	1514,452	1539,56	1249,98	1114,197	1693,303
Net income	387,466	-4569,694	1530,901	496,986	2011,489	388,152	366,918	408,1	311,18	567,359

FIGURE 105: SALES REVENUES, COGS, EBIT AND NET INCOME OF COIND FROM 2011 TO 2020. SOURCE: ORBIS-BVDINFO.COM

In figure 105 it is possible to see the fluctuating trend of sales revenues, even if the company managed to face the sudden pandemic crisis in 2020. A loss occurred in 2012: a huge write-down of equity investments happened (350,000 Euros in 2011 versus 5,768,335 Euros in 2012). Of course, profitability indexes have been affected by this operation (figure 106), being negative in 2012. Anyway, the situation is recovered the following year, even though the profitability indexes are way lower than the ones of the competitors described above, also lower than the industry average.

The Company has always been able to face short-term liabilities, even though the current ratio is a bit lower than the industry average.



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ROA	0,47%	-5,73%	2,03%	0,66%	2,52%	0,51%	0,45%	0,50%	0,37%	0,56%
ROCE	1,98%	-7,35%	4,35%	2,03%	5,07%	1,69%	1,58%	1,29%	1,43%	1,65%
ROE	0,94%	-12,40%	3,99%	1,28%	4,93%	0,94%	0,88%	0,97%	0,73%	1,26%
ROS	2,83%	3,57%	4,78%	3,02%	4,83%	2,40%	2,43%	1,89%	1,58%	2,18%
Profit margin	1,46%	-5,35%	3,27%	2,02%	3,74%	1,19%	0,89%	1,01%	0,56%	0,81%
EBITDA%	7,08%	8,51%	9,50%	8,34%	9,94%	8,15%	8,62%	7,83%	7,75%	7,89%
EBIT%	2,77%	3,58%	4,69%	3%	4,78%	2,35%	2,38%	1,82%	1,58%	2,18%
Current ratio	1,50%	1,28%	1,53%	1,57%	1,45%	1,41%	1,33%	1,41%	1,30%	1,20%

FIGURE 106: PROFITABILITY INDEXES AND CURRENT RATIO OF COIND FROM 2011 TO 2020, SOURCE: ORBIS-BVDINFO.COM

5 The external environment and industry analysis

In order to assess from a qualitative point of view the main characteristics of the industry in analysis and to explain the way in which there is value creation, it is important to better understand the external environment in which a firm takes its decisions. The main tools that support the analysis of the world surrounding a company operating in this market are the PEST analysis and Porter's Five Forces.

Value is created when the price the customer is willing to pay for a product exceeds the cost incurred by the firm, but creating customer value does not necessarily yields profit. The value created is distributed between customers and producers by the forces of competition: the stronger the competition among the producers, the more value is received by customers as customer surplus, the less is received by producers as producer surplus. Hence, the profits earned by the firms in an industry are determined by three main categories of factors:

1. The value of the product to the customer (namely the customer's willingness to pay);
2. The intensity of competition;
3. The bargaining power of industry members relative to their suppliers and buyers.

In the following paragraphs both PEST and Porter's Five Forces will be used to understand the context in which a firm, both in the coffee and coffee machines markets, is operating and to assess the attractiveness of the industry. The main location focus of the external analysis will be Italy.

5.1 PEST analysis

PEST is an acronym which stands for "political, economic, socio-cultural and technological". This analysis is constituted by a framework of macro-environmental factors used in strategic management. The main point is that the environmental influences can be classified by source, so the PEST analysis approaches the Macro Environment by keeping a firm alert to what is happening in the world.

5.1.1 Political factors

For the coffee industry, trade relationships among the Countries are fundamental: coffee is produced on the equatorial line, but it is mainly consumed in northen Countries. In 2018, Starbucks and Nestlé announced to have formed the Global Coffee Alliance, in order to support Starbuck's expansion worldwide, with a shared commitment to sustainable and ethical coffee sourcing. Nestlé holds the right to market, sell and distribute the following Starbucks' brands: Starbucks, Starbucks Reserve, Seattle's Best Coffee, Starbucks VIA, Torrefazione Italia and Teavana, by paying 7.15 billion USD to Starbucks, which will be the main stake as licensor and supplier of roast, ground and other

products. The two Companies, according to the deal, will work in synergy with a focus on innovation and go-to-market strategies. (Stories.starbucks.com, 2018)

From a political point of view, there are no relevant factors that may induce, in Italy, customers to buy or not to buy coffee machines. All the subsidies provided by the State aim to help people in a situation of unemployement (e.g. the so-called "Reddito di Cittadinanza", that allow people to buy also small household appliances like a coffee machine, but it is very unlikely that one could spend half of the subsidy, and in some cases all the money of the subsidy, to buy a coffee machine) or, alternatively, a subsidy to substitute only big appliances in case of home renovation. It must be underlined that, in the last years, there was a high pressure toward the ecological transition by the Government. Considering for example the Bean-to-cups, their strength is, precisely, the lower environmental impact that they have in the daily consumption. There is the elimination of waste with respect to other popular products for the consumption of coffee, namely capsules: they are made by aluminum (or plastic) and is differentiated by the pod because of a filter of non-rigid paper. The same reasoning can be applied for pod coffee machines, since pods are made by coffee powder surrounded by a recyclable envelop.

5.1.2 Economic factors

It is common knowledge that the COVID-19 crisis brought the economy to its knees all over the world, and Italy has not been spared. The Spring 2020 lockdown is considered to be the direct cause of the negative shock of the offer, due to the sudden disruption of the producton chains with the factories and plants closure. The decline in tourism, retail, mass entertainment and transportation led to a drop in consumption; the temporary closure of the activity caused the "income effect", in which there is a decay of disposable income and a consequent decrease of the demand of some products and services; the financial crisis has also had an impact called "wealth effect", because financial assets held by individuals may have lost value due to the collapse of financial markets. All these factors led, also, to a shock of the demand. (Consob, s.d.)

By analyzing the data discussed in the previous chapters, it is clear that the income effect did not influence that much the coffee and coffee machines market.

5.1.2.1 Macroeconomic indicators

In the following graphs it is possible to see the trends of some macroeconomic indicators, useful to assess the economic landscape in Italy.

The inflation rate is calculated by considering a product basket made of several products and services, it illustrates the price trends of private consumption expenditure. In 2020, it dropped below 0% reaching -10%, and there was a change in the customer behaviour. The inflation rate is going to increase this year and next year (+0,7% in 2021 and +1% in 2022): this clearly states that prices will tend to rise a bit, there will be a little increase in households' wealth and savings will decrease with respect to 2020 (figures 107 and 108), evidence that people will be more interested

in spending more money. It is true that GDP and household wealth are going to improve, but the crisis that followed the COVID-19 pandemic had caused a huge disaster to the economy: from a value of 1,771,063.1 million €, GDP fell down to 1,651,595 million € (figure 111). The unemployment rate in Italy stood at 9.2% in 2020, while in 2021 forecasts say that it is going to rise up to 10.3% (figure 109). Due to the uncertainty of the economic situation, people in 2020 spended less money due to a more precautionary behaviour. The proof lies in the development of the savings rate of Italian households, that in 2020 reached 17.5%, decreasing in 2021 reaching 13.10% and it is forecasted to reach, in 2022, the value of 10.80% (more aligned with the pre-pandemic situation).

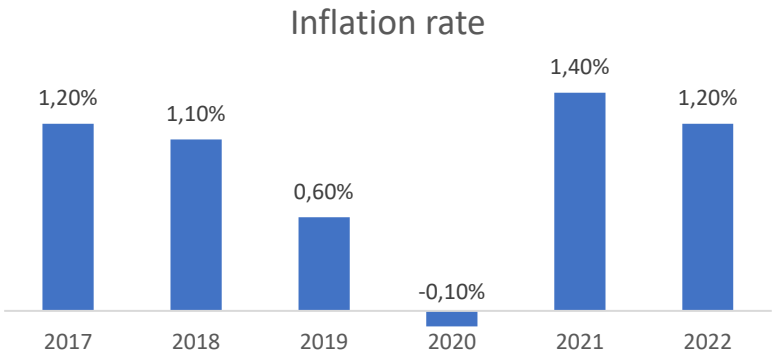


FIGURE 107: INFLATION RATE IN ITALY, WITH A FORECAST FOR 2021 AND 2022 (STATISTA RESEARCH DEPARTMENT, 2021)

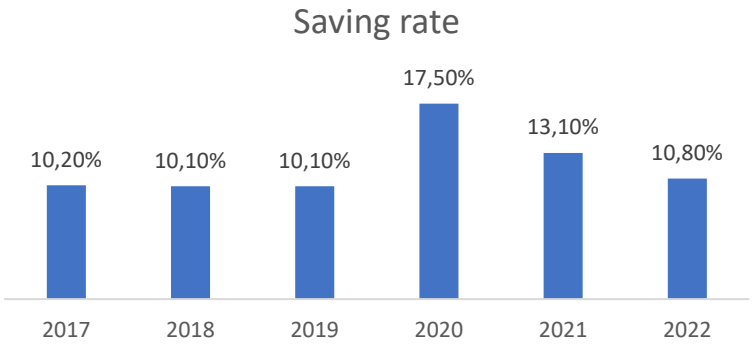


FIGURE 108: (VARRELLA, SAVING RATE OF HOUSEHOLDS IN ITALY FROM 2016 TO 2020, WITH A FORECAST FOR 2021 AND 2022, 2021)

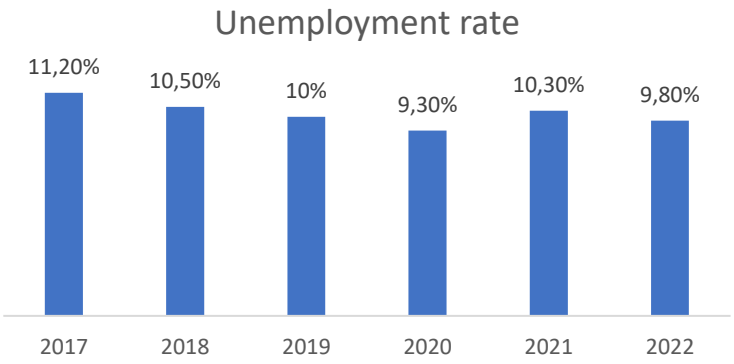


FIGURE 109: UNEMPLOYMENT RATE IN ITALY, WITH A FORECAST FOR 2021 AND 2022 (STATISTA RESEARCH DEPARTMENT, 2021)

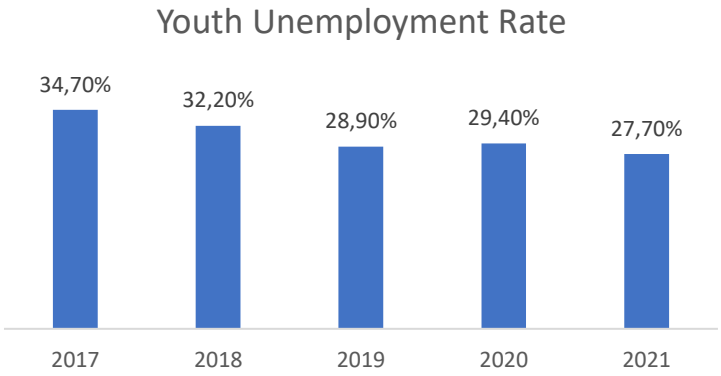


FIGURE 110: YOUTH UNEMPLOYMENT RATE IN ITALY (18-24 YEARS OLD), WITH A FORECAST FOR 2021 (STATISTA RESEARCH DEPARTMENT, 2021)

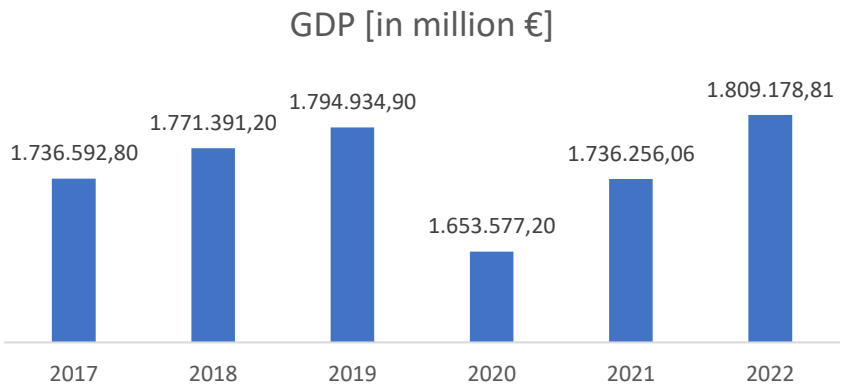


FIGURE 111: (VARRELLA, REAL GROSS DOMESTIC PRODUCT (GDP) VOLUME GROWTH IN ITALY IN 2020, WITH A FORECAST FOR 2021 AND 2022., 2021)

It is interesting to notice that the overall unemployment rate in 2020 did not decrease in spite of the crisis, but young people aged between 18 and 24 were very penalized: the youth unemployment

rate in 2020 increased up to 29.4%. The unemployment rate is expected to increase in 2021: people are experiencing the aftermath of the pandemic crisis more than the last year.

5.1.2.2 The impact of the crisis on prices of raw materials

"Market conditions are driving up the cost of many raw materials, currently buyers are bombarded with price increases across multiple products", writes Maurizio Bragagni – Chartered Director and Fellow Member of the Institute of Directors, Chairman and CEO of Tratos Ltd – on his paper.

The LME (London Metal Exchange) is the world's largest market consisting in the exchange of forward contracts, futures contracts and options whose underlying assets are base metals, ferrous metals and precious metals. The LME index recorded a growth of 47% at the end of 2020.

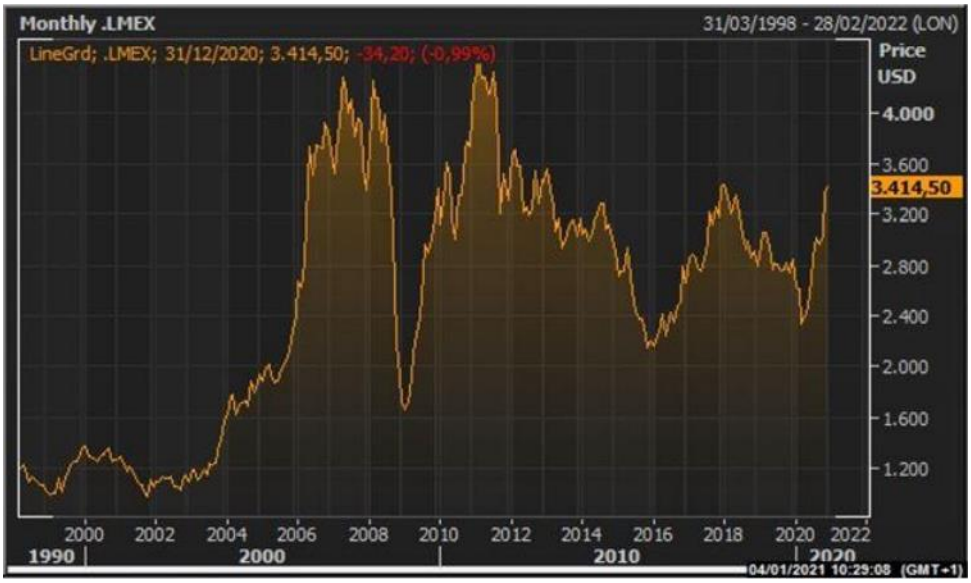


FIGURE 112: LME INDEX AT THE END OF 2020

Several factors incurred in the hike of prices:

- The negative shock of the offer of copper and iron ore, mainly produced in Chile and Australia respectively. Moreover, the price of the secondary aluminum closes the year with a spike of 80% increase in price. The situation is particularly serious in the steel sector, both for raw materials and semi-finished products. Iron ore has risen more than 70% since March 2020 due to China's infrastructure demand. Steel raw material prices have also increased by 68%. Therefore, the rise in steel raw material prices has paved the way for rolling mills to raise prices significantly;
- The container crisis. Rising Chinese exports and strong demand from U.S. consumers have flooded United States ports with containers from Asia, causing a ship stranding crisis in China. As a result, the cost of transporting containers from China to the US East Coast has risen by

5000 USD since June 2020 until the end of the year. As a result, some major shipping companies are shipping their largest 40-foot containers from the U.S. coast to China and not to agricultural areas in the American hinterland, to the detriment of local exporters. For the same reason, Italian shipping company Evergreen, on behalf of the Ocean Alliance consortium, has informed shippers that it temporarily suspended the acceptance of 40-inch containers due to high demand for empty containers from China, although 20-inch containers can still be accepted. (Apindustria, 2021)

This situation also translates in the scarcity of microprocessors, fundamental for the functioning of electronic appliances. Smartworking and distance learning made the demand spike, but the increase is not balanced by a growth of the offer, as already analyzed: the shortage of the necessary components lies also in the restrictive measures to curb the contagion curve.

The trend of the prices hike and of the scarcity of offer is still an issue affecting the productive sector in 2021. The acceleration on the vaccination plan makes the end of this global situation more closer, so the following questions come automatically in mind:

- When will the economic recovery happen? How strong will it be?
- Did the pandemic situation cause irreversible damages to the economy? How will the "normality" look like?

In Italy, the Manufacturing PMI (Purchasing Management Index) on March was a little lower than 60%, in August it reached 60.9% and in September declined to 59.4% (figure 113). It took a big leap, thinking that in April 2020 it was few points above 30%. From an economic point of view, the interpretation of the PMI is the following: whenever the index is above 50%, it is a good news since it means that the economy is recovering, under 50% it is a representation of an economic collapse. According to a survey on European companies, factories in Italy and Spain are increasing production to meet rising demand, but are facing a lack of raw materials and higher production costs.

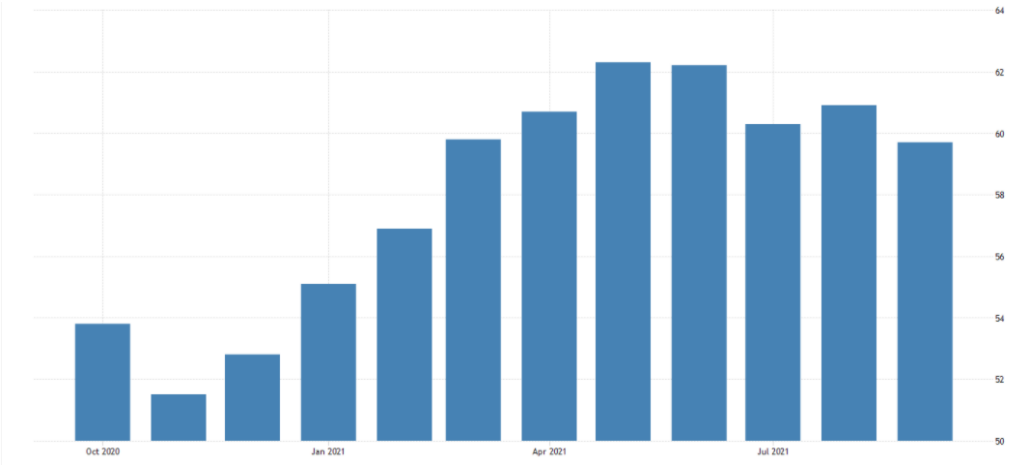


FIGURE 113: ITALY MANUFACTURING PMI (TRADINGECONOMICS.COM, 2021)

Chris Williamson, Chief Business Economist at HIS Markit commented the PMI data: "Producers are benefitting from resurgent demand for goods in both domestic and export markets, linked to post-

COVID recovery hopes driving renewed stock building and investment in business equipment and machinery, as well as improved consumption. The solid manufacturing expansion is clearly helping to offset ongoing virus-related weakness in many consumer-facing sectors, alleviating the impact of recent lockdown measures in many countries and helping to limit the overall pace of economic contraction. The growth spurt has brought its own problems, however, with demand for inputs not yet being met by supply. Shipping delays and shortages of materials are being widely reported, and led to near record supply chain delays. Prices paid for inputs are consequently rising at the fastest rate for nearly a decade, hinting at further increases in consumer price inflation in coming months, at least until supply and demand come back into balance" (excerpt from the paper "Raw material price increase", Dr Maurizio Bragagni on LinkedIn). The shortage in supply of raw materials directly impacts the price paid by the consumer, pushing the eurozone inflation to higher levels. The common thought is that this situation is not going to be solved in the short run, hence managers are striving to cushion rising prices. The scarcity of many products, from semiconductors to steel, has again caused some manufacturers to reduce the level of production, leaving them re-stocking and unable to meet the growing demand.

Commodity prices have risen particularly steeply for metals. The price of copper, the baseline from an economic point of view for its many uses, has nearly doubled in one year, reaching its highest level in about nine years. Prices for hot-rolled steel in Europe are at their highest level since 2008, while prices for polymer resins used in the manufacture of plastics have surged by a quarter since December. So far, the rise in raw material costs has only been partly reflected in higher prices for consumer products, and has not been offset by higher costs in other areas. In the manufacturing sectors, it impacts a lot also the increase in price of energy.

FIGURE 114: PRICE FLUCTUATIONS OF COPPER (ON THE LEFT), PRICE FLUCTUATIONS OF ALUMINUM (ON THE RIGHT) (BRAGAGNI, 2021)

FIGURE 115: PRICE FLUCTUATIONS OF STEEL SCRAP (BRAGAGNI, 2021)

5.1.3 Social factors

During the last years, the society has become aware of the importance of climate change. To support this thesis, two surveys available on Statista.com show how the environment is a concern for more and more Italians. In 2019, a survey was conducted about the frequency of "sustainability talks" in Italy. 1000 people, aged above 18, were involved and answered the question: "How often do you talk, discuss with family, friends, colleagues about issues related to the environment, sustainability?". The answers are illustrated in figure 116

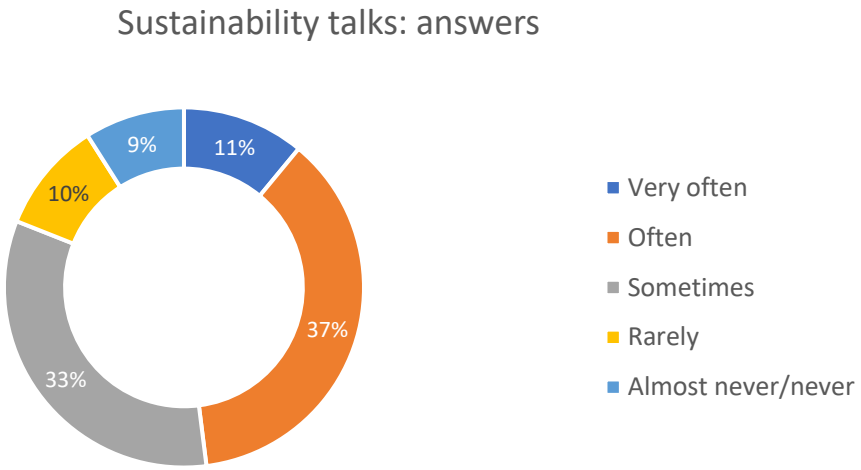


FIGURE 116: ANSWERS TO THE SURVEY ON SUSTAINABILITY TALKS (VARRELLA, HOW OFTEN DO YOU TALKS ABOUT TOPICS RELATED TO SUSTAINABILITY WITH YOUR FRIENDS, RELATIVES, AND COLLEAGUES?, 2021)

With the second survey, also this made by a sample of approximately 1000 people, aged between 18 and 75 and interviewed in different time periods, declaired that the environmental cause is their main concern (figure 117).

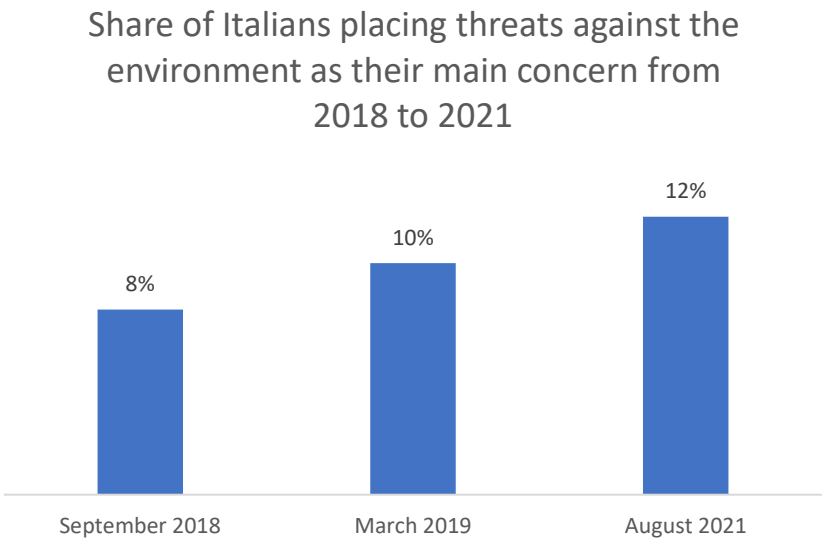


FIGURE 117: SHARE OF ITALIANS WORRIED ABOUT THREATS AGAINST THE ENVIRONMENT (STATISTA RESEARCH DEPARTMENT, 2021)

Regarding the coffee industry, the sustainability is one of the latest hot topics. Coffee production and processing must consider environmental needs: ICO contributes to improving coffee quality through projects aimed at improving cultivation, processing, storage, transportation and marketing. It also promotes efforts to build local capacity in coffee certification and verification through multinational projects in East Africa, the establishment of regional certification centers and producer awareness programs.

A number of adaptation and mitigation measures have been proposed to address challenges in the coffee sector. Short-term adaptation strategies include improved agricultural practices and post-harvest management. As regards long-term strategies, the focus is on capacity building, better monitoring of climate data, improved soil fertility, introducing or maintaining alternative production models, and developing drought-resistant and disease-resistant varieties. If this should not be enough, diversification or shifting coffee production to more suitable areas is the solution. Mitigation measures include reducing or mitigating on-farm greenhouse gas emissions and promoting carbon sinks. (Ico.org, n.d.)

Talking about coffee machines, the strength of the Bean-to-cups and pod machines is, as already discussed, the reduction of the waste produced during the daily consumption, and this might induce in the future more and more people to buy this typologies of appliance, as well as coffee drinkers that start wanting to avoid the costly and non-eco-friendly habit of buying capsules. (Gilbert, 2021)

5.1.4 Technological factors

The technological trend that is shaping the coffee industry environment is the one of the genetic engineering, whose aim is to improve yield by modifying genetically the product: the focus is on the genetically modified coffee (GMO). Due to the dire prospects for the future of coffee cultivation in the coming decades, the cause of which lies in climate change, it seems clear that scientific research including genetic engineering, as a potential tool in the fight to save coffee, must be understood and accepted. The environment can be a source of genetic mutations. Natural selection works precisely by means of genetic variations which give advantageous traits. it is true mutations happen naturally, but this process is slow, and it is nothing but a great disadvantage for the producer, who has to deal with the changing cultivation conditions of today. Coffea arabica is one of the least genetically diverse types of coffee, and this is not helping the species and its ability to overcome threats caused by climate change. CRISPR (clustered regularly interspaced short palindromic repeats) is currently a trending topic in the laboratories of molecular biologists and geneticists. Bacteria, being vulnerable to viral infections, have developed an intelligent molecular mechanism, called CRISPR, to defend themselves from viruses that attack them. Recently, researchers at the University of California, Davis, were able to sequence the genome of Coffea arabica, finding that there are approximately 70,000+ genes in the coffee genome. The scientists' goal is to edit the coffee genome and select the most evolutionarily advantageous traits through the use of genomic sequencing and CRISPR, although there is no evidence of practical applications of this technique in cultivation at this time. In addition, there are not many regulatory hurdles required for using CRISPR to modify the coffee genome at this time. Many crops have been genetically modified via CRISPR, such as the white mushroom crop, which has been modified to slow down the browning process, as for consumers typically the lack of browning is seen as an indication of freshness. However, not all researchers agree on the usefulness of CRISPR in addressing climate change threats, such as researchers at World Coffee Research (WCR). Both robusta and arabica have been genetically sequenced, the problem is that researchers still don't understand which genes control which traits. They also have no guarantee that even targeting the correct genes will have the desired effect. Modifying the coffee genome using CRISPR (or other agricultural biotechnology) is a subject of debate involving all participants in the coffee industry, from producers to consumers. (Bowles, 2018)

As already said, the coffee market is strictly related to the coffee machines market. In the previous chapters was mentioned the Home coffee machine “Lavazza A Modo Mio Voicy”, a clear example of innovation in the whole coffee machines industry, and there are actually other brands that are commercializing “smart” coffee makers (some names are: “Atomi Smart Coffee Maker”, “Hamilton Beach”, “Nespresso Expert by Breville”, “GINA Smart Coffee Instrument”). By now, all the networking technology should be taken into account when projecting a new appliance: bluetooth, Wi-Fi connections, the compatibility with a mobile app, that allows the consumer to connect the coffee machine to her/his smartphone and to prepare the coffee “at distance”, with the main Operating Systems (iOS and Android). It is implied that the level of technological innovation and integration of the appliance directly influence the cost and the price. So, a process of cost engineering is necessary to control the final production budget.

5.2 Coffee market: Porter's five forces

5.2.1 Competition from substitutes

The main substitute product of coffee is tea, even if this is a weak substitute product. There is a mathematical relationship between the prices and demands of the coffee and its substitute products, which is represented by the cross-price elasticity of demand. Considering product A (coffee) and product B (tea), the cross elasticity of demand ε_{AB} represents the sensitivity of demand of A when the price of product B changes. Being substitute products, ε_{AB} is positive and can be expressed in the following way:

$$\varepsilon_{AB} = \frac{Percentage\ change\ in\ quantity\ of\ A}{Percentage\ change\ in\ price\ of\ B} = \frac{\Delta Q_A / Q_A}{\Delta P_B / P_B} =$$

$$= \frac{\Delta Q_A}{Q_A} \times \frac{P_B}{\Delta P_B} = \frac{\Delta Q_A}{\Delta P_B} \times \frac{P_B}{Q_A} > 0$$

Since ε_{AB} is greater than 0, whenever the price of the product B increases, also the demand of product A increases, because consumers switch to a more economical alternative than product B: in the formula both the denominator and both the nominator increase. Two products that have a high cross elasticity of demand are considered to be *close* substitutes, while if the index is low they are considered *weak* substitutes.

The main reason why tea is considered to be a coffee substitute, is because it apports the same benefits of coffee to the human body, since it contains the same alkaloid: the caffeine, even if in the case of tea it is also known as theine (but it is the same chemical product).

5.2.2 Threat of new entrants

The threat of new entrants is high, since the capital requirement to enter the market is not high: coffee shops or supply can be easily started at local level, by opening a small shop. Doing scale-up could be a problem for a small entrepreneur, who has to face the competition of big firms to be affirmed, at least, on the national territory. This could take time, of course, because an entrepreneur does not face directly that level of competition, but it could be easily done at small level. CAGR, equal to 5%, is attractive to entrepreneurs. New entrants could rely on the high degree of product differentiation typical of the coffee industry: coffee espresso, cappuccino, frappuccino, American coffee, Turkish coffee, and all the gourmet versions associated to the preparation.

Taking into account the threat of new entrants in the Italian territory, one of the main competitors that entered the market was Starbucks, landed in 2018. It offers a huge varieties of coffees: from the most "Italian" typologies to frappuccino, vanilla latte, caramel macchiato, iced latte. Moreover, thanks to the Global Coffee Alliance, it is possible to drink Starbucks coffee directly at home thanks to the distribution from Nestlé of Starbucks-branded capsules.

5.2.3 Industry rivalry

First of all, the competitive dynamics of the coffee industry will be analyzed at a global level.

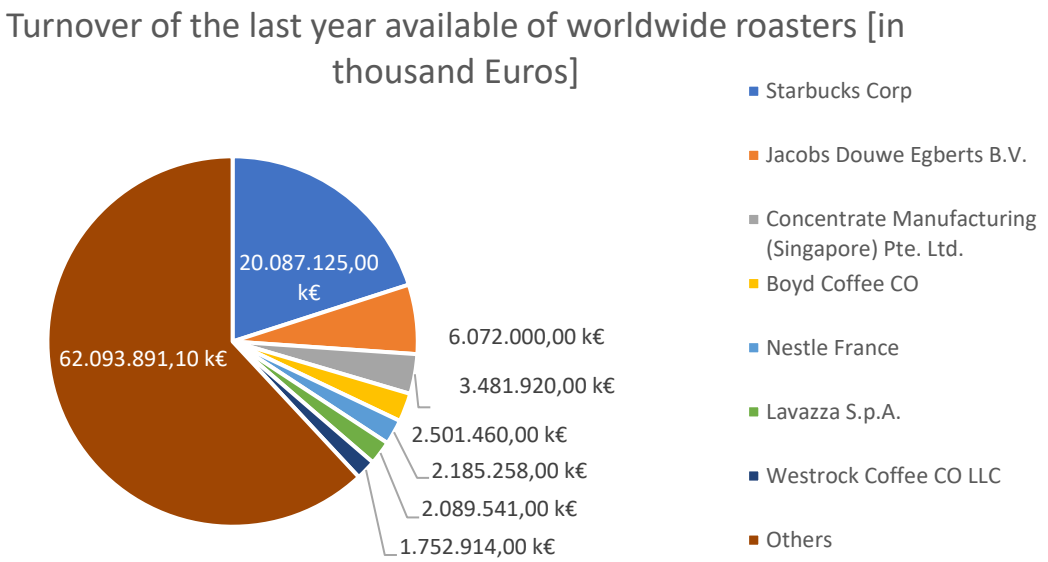


FIGURE 118: GRAPHICAL REPRESENTATION OF THE MARKET SHARE OF THE FIRST SEVEN COFFEE ROASTERS BY TURNOVER. SOURCE: ORBIS-BVDINFO.COM

It is possible to compute the four-firms concetration ratio CR_4 and the Herfindahl-Hirschman index. Considering that:

- The total market revenue is 100,264,109.10 k€
- The market shares of the biggest four firms are:
  - Concentration of Starbucks, $s_1 = 20.30\%$
  - Concentration of Jacobs Douwe Egberts, $s_2 = 6.06\%$
  - Concentration of Concentrate Manufacturing (Singapore) Pte. Ltd., $s_3 = 3.47\%$
  - Concentrarion of Boyd Coffee CO, $s_4 = 2.49\%$,

$$CR_4 = \sum_{j=1}^{4} s_j = 32.06\%.$$

The Herfindahl-Hirschman index is computed in the following way:

$$HHI = \sum_{j=1}^{N} s_j^2 = 0.129067,$$

where N is the total number of firm considered. CR_4 tells that in the market there is not high concentration, the main player is Starbucks for sure with the highest market share (considering the market share of the single firm), but there are a lot of other large and very large players that play

the competition game. This is confirmed by the Herfindahl-Hirschman index, which is below the threshold of the oligopolistic competition: there is a high degree of competition in the coffee market.

Orbis gives the possibility to draw the Lorenz curve, illustrated in figure 119, related to the total turnover of 2020 (keep in mind that data for some firms are not available, like data of Jacobs Douwe Egberts and Concentrate Manufacturing). On the vertical axis there is the total market turnover espressed as percentage, on the horizontal axis it is projected the total number of firms, also this in percentage. More than 30% of worldwide revenues is captured by Starbucks, highlighted with an orange line.

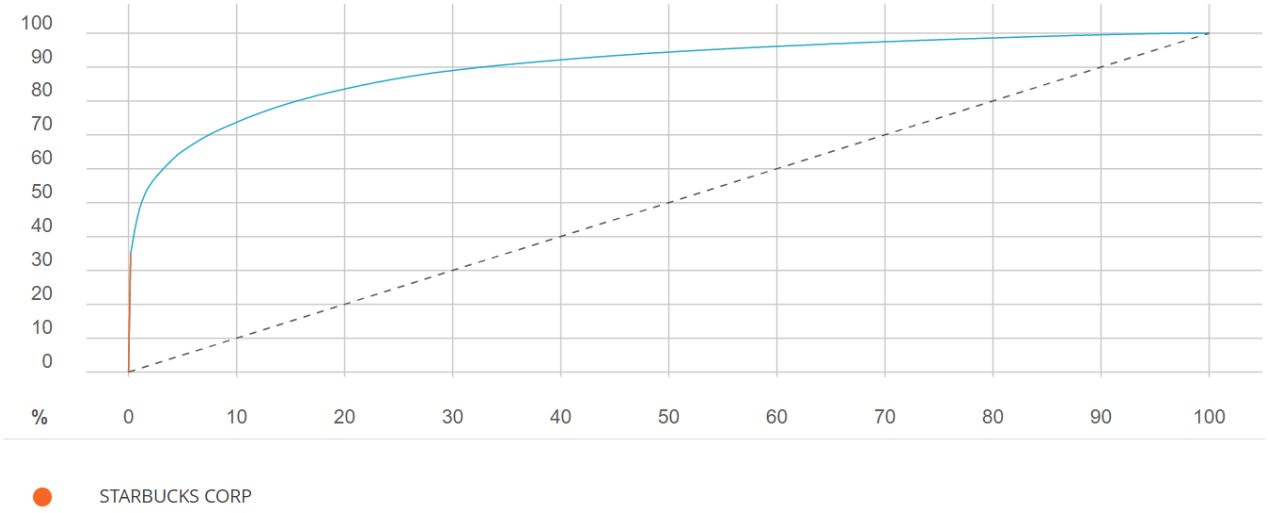


FIGURE 119: LORENZ CURVE FOR THE WORLDWIDE MARKET CONCENTRATION. SOURCE: ORBIS-BVDINFO.COM

Gini coefficient *G* measures the inequality of a distirbution and it assumes values between 0 and 1. In this case, it is used as a concentration index to measure inequality in the distribution of worlwide revenues. If the value is close to 0, there is homogeneity in the distribution; if the value is close to 1, revenues are concentrated in the hands of few players. The latter is the case of the coffee market: there are few firms that take the lion's share of the revenues, the other players gain lower quantity of revenues.

Orbis allows the computation of *G* for the years 2017, 2018, 2019, 2020 (table 28). The revenues distribution has been stable during the years, a little bit more concentrated in 2019.

	2017	2018	2019	2020
G	0.81	0.81	0.83	0.8

TABLE 29: GINI COEFFICIENT FOR WORLDWIDE COFFEE MARKET FROM 2017 TO 2020. SOURCE: ORBIS-BVDINFO.COM

Once determined what is the model that better describes the competition level in the coffee market, it is interesting to analyze the drivers of this competition.

Worldwide speaking, there is a huge variety of products offered by firms, since every Country has its own preferences for coffee, as already discussed in the demand analysis. But to be successful, serving a good coffee is not enough. A clear example is given by Starbucks, that offers an experience to the customer, not only tasty products.

Considering the Italian market only, it is possible to study as well the industry rivalry and the seller concentration.

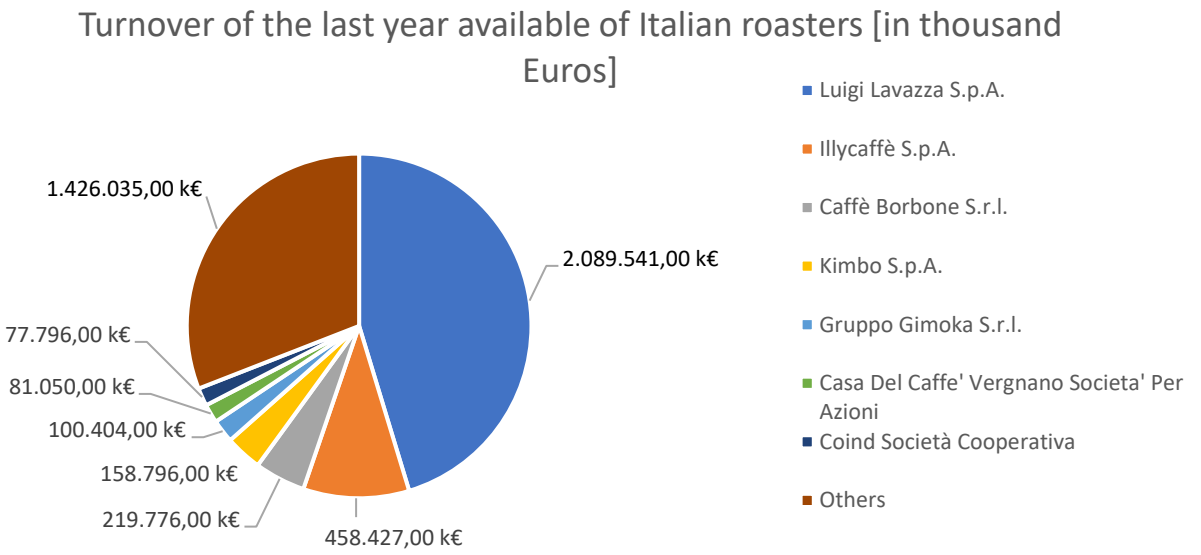


FIGURE 120: GRAPHICAL REPRESENTATION OF THE MARKET SHARE OF THE FIRST 7 LEADING ROASTERS IN ITALY BY TURNOVER. SOURCE: ORBIS-BVDINFO.COM

To evaluate the market concentration, CR_4 and HHI are computed:

- The total Italian market revenue is 4,611,825.00 k€
- The market shares of the biggest four firms are:
  - Concentration of Lavazza, $s_1 = 45.31\%$
  - Concentration of Illycaffè, $s_2 = 9.94\%$
  - Concentration of Caffè Borbone, $s_3 = 4.77\%$
  - Concentrarion of Kimbo, $s_4 = 3.44\%$,

$$CR_4 = \sum_{j=1}^{4} s_j = 63.46\%.$$

The Herfindahl-Hirschman index is equal to:

$$HHI = \sum_{j=1}^{N} s_j^2 = 0.221653,$$

where N is the total number of Italian roasters. In Italy, the leader is Lavazza for sure, directly followed by Illy, and the concentration idexes say that the model of competition can be described by the one of the oligopoly.

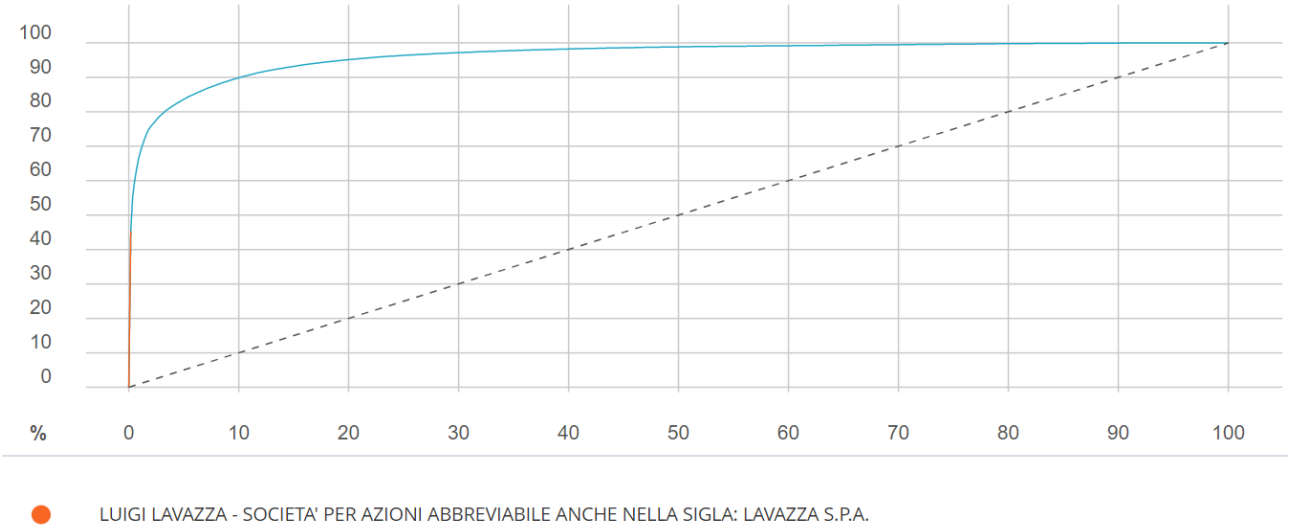


FIGURE 121: LORENZ CURVE FOR THE ITALIAN MARKET CONCENTRATION. SOURCE: ORBIS-BVDINFO.COM

For the Italian market, the Lorenz curve, related to the total revenues realized in 2020 is more precise than the Lorenz curve related to the worldwide market, due to the fact that the data are available for relatively more Companies. More than 40% of the Italian market revenues is captured by Lavazza, highlighted with an orange line. It is also possible to compute the Gini coefficient for the time period 2017 – 2020. Gini coefficient increases a little bit in the time frame illustrated in table 29, passing from a value of 0.91 in 2017 to a value of 0.93 in 2020, indicating the fact that revenues are going more and more in the hands of few players in the market.

	2017	2018	2019	2020
G	0.91	0.91	0.92	0.93

TABLE 30: GINI COEFFICIENT FOR THE ITALIAN COFFEE MARKET FROM 2017 TO 2020. SOURCE: ORBIS-BVDINFO.COM

5.2.4 Bargaining power of buyers

The very first thing that must be checked whenever the bargaining power of buyers is analyzed, is the relative number of buyers with respect to the relative number of suppliers (and the same applies while studying the bargaining power of suppliers). The golden rule is that the smaller the number of buyers and the bigger their purchase, the greater the cost of losing one of them. In this case, considering the domestic consumption, potential buyers are all the households of a Country. As already discussed, the demand is price inelastic, hence consumers are willing to buy coffee even if

the price increases or decreases, due to the fact that coffee is considered to be a primary good. For this reason, customers' bargaining power is not high. It is also true that customers are willing to spend less money if they can, and this compensates and increases their level of bargaining power. For example, if a consumer has to buy capsules for its branded coffee machines, he has many choices offered by different coffee roasters: the capsules branded by the firm that branded also the coffee machines (that are usually high-cost capsules), and the capsules branded by another, low-cost firm. The average person will choose the low-cost capsules. This aspect could be a problem for a company, that faces this type of competition from competitors.

5.2.5 Bargaining power of suppliers

A coffee roaster benefits of a high bargaining power towards its supplier. It is true that is the supplier that sets up the coffee price, but the pricing decision also depends on the roaster he is dealing with. A large roaster has a high bargaining power, since it purchases a higher quantity of raw material, and if the deal is not convenient he has the option to buy coffee directly from the producer. This is the classical case present in the literature, in which the supplier of a commodity lacks bargaining power.

5.3 Coffee Machines market: Porter's five forces

The framework of Porter's five forces of competition aims to assess the attractiveness of an industry. The profitability of an industry (indicated by its rate of return on capital relative to its cost of capital) can be estimated through five sources of competitive pressure. These five forces of competition include, by definition, three sources of "horizontal" competition (competition from substitutes, competition from entrants, competition from established rivals) and two sources of "vertical" competition (suppliers' bargaining power and buyers' bargaining power).

5.3.1 Competition from substitutes

Basically there are two possibilities for the choice of the place for the coffee consumption: at home or away from home. If people decide to consume coffee at home, there is a huge variety of coffee machines that can be used for the preparation of this beverage; if people decide to consume coffee away from home, they have a great level of offering among bars, their workplace offices and the vending machines. Starbucks, for example, is a new substitute very successful in Italy because it offers a new drinking experience to the consumer: its critical success factor is the comfort offered through the café, combined to the variety of products and taste. (Conway, Opinions about Starbucks cafes in Italy as of 2018, 2020)

The growth of the Ho.Re.Ca. sector is attributed to the growing trend of consumption away from home, especially for breakfast, and the expansion of consumption scenarios, such as the

popularization of cup coffee as a product available at fast food restaurants, one of the most dynamic sectors of the restaurant industry. Consumption away from home also includes consumption in the automatic distribution channels (Vending) and OCS (Office Coffee Service). According to Confida, Vending and OCS express annually approximately 4.6 billion coffee consumptions (2.8 billion in vending and vending and 1.8 billion in the OCS, through the system of capsules), for an estimated quantity of 32.2 million kg of roasted coffee. Anyway, a research declairs that the 75% of the coffee consumption in Italy takes place at home (the time span of the analysis runs from 2016 to 2020, source: Mordorintelligence.com), where people tend to prefer coffee capsules thanks to the variety of the offer and the easiness of usage. More than capsules, the roast coffee is the typology of product asked the most by consumers, especially the moka roast coffee as illustrated in figure 5, chapter 1. Another substitute that can be considered is the tea maker. Coffee and tea are considered to be substitute products, since they provide to the consumer the same effect. Therefore, this reasoning can also be applied to coffee machines and tea makers (although it is true that a lot of coffee machines now provide the possibility to make hot tea, there are still on the market tea makers only and, thinking about it, integrating the possibility of making hot tea in the coffee machine is a brilliant way to reduce the competition from substitutes).

In this specific case, weak substitutes could be coffee maker and tea maker, whilst coffee makers (for example, capsules coffee makers) and bars can be considered close substitutes. Being capsules coffee makers close substitutes of one coffee at the bar, an increase in price of one coffee at the bar will have a higher impact on the sale of coffee machines with respect to an increase in price of tea makers. The problem is that it is true also the opposite: if the price of coffee machines increases, consumers will switch more easily toward drinking a coffee at the bar, and this is an issue that must be faced when determining the price of the product. One way to limit the effects of a possible increase in price of coffee machines is to build customer's loyalty and to highlight, through advertising, the benefits that the product brings to the customers and the advantages that it has with respect to substitutes.

In the end, there could be also a problem of product cannibalization: the competition from substitutes may come from the inside of the firm. Keeping into account the different typologies of coffee machines (capsules, pods, Bean-to-cups, Moka), it should be considered that every typology is actually a substitute of the other typology. For example, Lavazza sells capsules coffee makers and pods coffee makers. They are, actually, close substitutes products and if Lavazza planned to introduce a different type of coffee machine on the market, it would face a high level of competition with capsules and pods coffee machines.

5.3.2 Threat of new entrants

In the literature, there are several factors that may generate the threat of new entrants. In general, the home coffee machine market is characterized by a high degree of product differentiation: starting from the technology used to produce a cup of coffee (capsules, pods, beans, coffee powder), up to the features proper of the product that communicate a unique customer experience (Alexa connection, bluetooth, customized mobile application). Established firms, that already commercialize these appliances, have the brand recognition and customer loyalty by their side and

a new entrant must spend disproportionately heavily on advertising and promotion. Hence, if an entrant wants to put on the shelfs its new coffee maker, must spend a lot in advertising to recover the disadvantage toward the incumbents. This is, actually, not a big problem for a large company that already have a brand recognition and already built a customer loyalty, but is expanding its business to the coffee machines market.

Also, for a large company is not a problem to gain more access to the distribution channels, such as the shelf space in a supermarket: this could be a problem for a small firm. Internet gives the chance to circumvent barriers to distribution also to a small firm, that in turn should spend heavily in advertising for being known by customers.

Incumbents have the possibility to enjoy more favourable contractual conditions with respect to new entrants: they are able to make contracts with suppliers in which the more they purchase from suppliers, the less they pay for every single unit. This clearly discourages potential new entrants, since they will have lower market share once entered and are forced to accept higher unit costs.

A barrier to entry to be considered is also the one related to possible retaliation by incumbents. There are no evidence in the past that a retaliation in the form of undercutting has been put in place. But it could be possible that an uncumbent may increase the level of advertising or sales promotion when it is threaten by a new entrant, in order to cut it out of the market.

Anyway, the effects of a barrier to entry has a high correlation with the resources and capabilities that the new entrant possess: an established company that is trying to diversify its business may not be threatened at all by incumbents or by the industry characterisitcs (e.g. high capital requirement or economies of scale).

5.3.3 Industry rivalry

The main producers and vendors in the market of coffee machines are De'Longhi, Smeg S.p.A., Philips S.p.A., Evoca S.p.A., Beko Italy S.r.l., Gruppo Cimbali S.p.A., Rheavendors Industries S.p.A., Gaggia S.p.A., Carimali S.p.A., La Pavoni S.p.A., Lavazza S.p.A. and Nespresso. The dynamic of this sector is the following: the producers sell their product directly to the customer, but has also deals with major coffee producers (e.g. Lavazza and Nespresso) to sell them "branded" appliances.

Aida and Orbis, the databases provided by Bureau van Dijk for the analysis of Italian Companies, are the instruments used to analyze the seller concentration in the industry, in association with Statista.com, where possible. Indeed, some of the aformentioned companies operate in the industry of household appliances in general, not only in the market of coffee machines: thanks to Aida and Orbis it was possible to retrieve the Sales Revenues from the Income Statements of 2020, whilst, through Statista.com, Sales Revenues can be disentangled by product category, and this was the case of De'Longhi. About Smeg S.p.A., the Sales Revenues reported in the Income Statement regard the sales in Italy and abroad: in the notes to the accounts it is stated the percentage of sales in the Italian territory. It is not possible, however, to determine the quota of sales related to the sole coffee machines, but this is not going to change the results of the analysis. The same reasoning applies to Philips S.p.A., but it was possible to retrieve the percentage of sales related to the coffee machines.

Beko Italy S.r.l. was excluded by the analysis to avoid errors because, although there are data about the Sales Revenues of 2020, it is not possible to establish the share of sales related to the coffee machines.

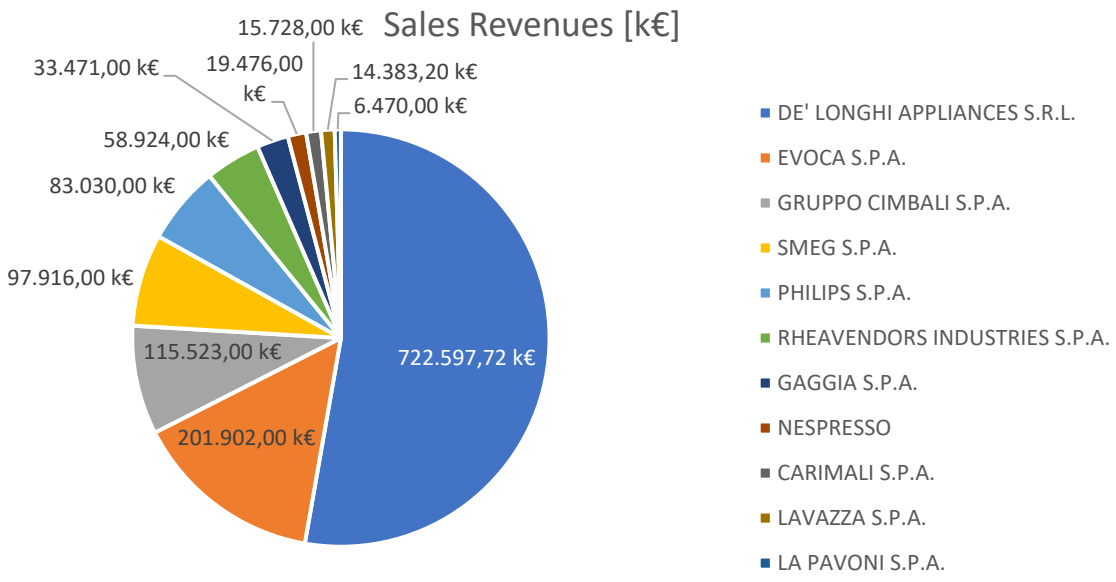


FIGURE 122: SALES REVENUES OF THE MAIN COFFEE MACHINES PRODUCERS AND VENDORS IN ITALY, 2020

By this way, it is possible to compute the CR4 (four-firms concentration ratio), considering that:

- The total revenue is 1,355,562 k€
- The market shares of the biggest four firms are:
  - Concentration of De'Longhi, $s_1 = 54.10\%$
  - Concentration of Evoca S.p.A., $s_2 = 15.12\%$
  - Concentration of Gruppo Cimbali S.p.A., $s_3 = 8.65\%$
  - Concentrarion of Smeg S.p.A., $s_4 = 8.52\%$,

$$CR_4 = \sum_{j=1}^{4} s_j = 85.20\%.$$

With these available data, it is also possible to calculate the Herfindahl-Hirschman index:

$$HHI = \sum_{j=1}^{N} s_j^2 = 0.32,$$

where N is the total number of firm considered. By observing both these indexes, it is clear that the market concentration is high, and both indicate that there is a situation of oligopoly, in which few firms have significant market share: in fact, the reference value to say that, through HHI, there is a case of oligopoly is $HHI > 0.25$, while for CR_4 the relationship that must hold is $CR_4 > 40\%$. Theory says that, whenever the market is dominated by few companies (for example the soft drinks market

dominated by Coca Cola and Pepsi), prices tend to be similar and the competition focuses on advertising, promotion and product development. In the moment in which the number of firms playing in the same market increases, the probability that one firm will start to undercut will increase as well, because it becomes more difficult this price coordination. In the situation described above with the CR_4 and the HHI, it is difficult that the competition is focused on price cutting: there are few firms that really lead the market, moreover products are differentiated: the competition is more focused on quality, brand promotion and customer service.

According to a statistic conducted in 2017, with a sample of people from different Countries such as United States, United Kingdom and Germany, the main two aspects took in consideration when buying a new coffee maker are the ease of coffee preparation and the taste of the coffee. Although Italy is not considered in this statistic, this could be also applied to the Italian people, very proud and uncompromising on the taste of the coffee and with very hectic work rythms. The price, in this statistic, is not even among the first four concernings when buying a coffee maker: that is the reason why the market is not governed by a price war.

Hence, even though the competition is not "strong" for a technical point of view, it can be said that there is a high level of competition from rivals, also because there is a brand and "product" loyalty by consumers: there are switching costs for moving for one type of coffee machine to another, which are basically the cost of the new appliance that must be bought and the value lost for giving up the old one.

5.3.4 Bargaining power of buyers

The coffee machines market, in general, is not a niche market and is not targeted to few customers. Moreover, being the product differentiated, customers are less willing to switch product on the basis of the sole price, but this is mainly due to the needs of the customer himself/herself, and this factor increases the competition to focus on the product differentiation rather than price competition. But this does not mean that the customer does not have any bargaining power at all: in fact, there is a high degree of information symmetry between buyer and seller thanks to internet. It is common knowledge that the consumer, once the typology of the desired coffeemaker is identified and the technical characteristics are identified, has the chance to compare the prices of similar appliances (similar under the technological point of view) and choose the most convenient one.

5.3.5 Bargaining power of supplier

For assessing the degree of bargaining power of the supplier, it must be said that majority of the problems derive from the information asymmetry. At first, a Purchasing Department of a coffee producer company will be considered. It is true that, in a phase of Request for Quotation of the negotiation, the cost of raw materials are often disclosed (and there is an intern process of cost engineering to assess whether the cost proposed by the supplier is acceptable or not). The

asymmetry lies in the Overhead costs and profit margins, which cannot be directly assessed since every firm decide to allocate these costs in a different manner. It is relevant, in this case, to analyze the average level of cost in the industry and to try to extrapolate the information required from the data available. A distiction must be done between Italian suppliers and foreign suppliers, because in Italy there is the obligation to disclosure the Financial Statements and it is easier to obtain the required data (while abroad this is not mandatory everywhere). Even in this case, starting from the Financial Statement it is very difficult to separate direct cost from indirect cost, hence a direct knowledge of the supplier is needed in order to have a critical eye on the ongoing analysis. This increases a lot the bargaining power of suppliers.

Also in this case, the relative number of suppliers with respect to buyers is a fundamental variable. The sector of the manufacturing of coffee machines is a "closed" sector, in the sense that there are, in Italy, few producers that, beyond selling their appliances to coffee firms (like Lavazza or Nespresso), sell to retailers and, therefore, directly to the customer. For this reason, there is a duality in the study of the bargaining power:

- taking into account the Purchasing Department of a coffee producer, it has a weak bargaining power with respect to their supplier for the reasons described above (therefore, the supplier's bargaining power is high);
- taking into account the manufacturer of the coffee machine that sells directly to the customer, the bargaining power of their supplier is quite low, since there are several companies that produce the materials needed (mainly aluminum and plastic).

5.3.6 The sixth force: complementary products

From the analysis carried out, it emerges that the existence of substitutes reduces the value of a product. It is the opposite for complementary products: they increase the value. For example, the case of Bean-to-cup coffee machines is a case in which coffee machines and coffee beans are strong complements, so that the two product lose value if considered alone, since customers value the whole system. This means that the demands of these two products are positively correlated: if the price of, for example, coffee beans decreases, then the demand increases both for coffee beans and both for Bean-to-cups (negative cross-price elasticity of demand): they often belong to the same product family, i.e. a group of related goods produced by the same company and marketed and sold under the same brand. This is also a way to create a loyalty of the consumer to the brand.

If the cross-price elasticity of demand was positive in case of substitute products, here it is negative. It follows that this measure must be taken into account when calculating the price of both products. For a company that captures more value with the sale of coffee (and not with the sale of coffeemakers, like Lavazza or Nespresso), this index is fundamental because it says that the company can leverage on a decrease in price of the coffee machine to enjoy an increase in sales of coffee (in the form of capsules, pods, beans or roasted), i.e. the future complementary good.

5.4 Industry key success factors

To identify the coffee industry critical success factors, the customers' needs and the way in which firms can survive competition must be understood.

The difficult thing is not opening a coffee shop or entering, in general, into the coffee business: how can a startup scale up? What are the things on which a company, that is trying to expand its business, should concentrate on? How can largest roasters be successful and stay ahead of the curve?

It is true that customers are willing to pay for coffee, but they are also searching for two different things:

- A customer experience;
- Feel familiar with a company that shares their own value.

With the last point, a good marketing strategy is essential: the focus should rely on the sustainability of the product and on the quality offered. Social media can be a useful instrument to ensure success. Take into account one of the latest Nespresso's strategy: a collaboration with the most famous Instagram influencer, Chiara Ferragni, realized by opening the NespressoxChiaraFerragni Temporary Cafè in the center of Milano; or before her the collaboration with George Clooney and the famous question:

"what else?".

The analysis of the demand points out that customers are, especially in this period, very interested in the purchase of coffee makers, and their main concern is finding a coffee maker that returns a good taste to the palate, preserves the flavors and is easy to use. The connectivity is also a fashion trend in the last years, so establishing parterships with communication giants is important and it transmits a sense of quality and reliability to the customer. Hence, quality is the key: offering to the customer a premium product trying to keep costs down, not an easy task during these years (due to the growth of raw materials price). So, efforts should be focused on marketing, with an eye on customer relationship and advertising to expand the customers pool, and on the relationship with the suppliers. Talking about the advertising, one of the trends that is gaining popularity at the moment is the 3D advertising. On average, people see a number between 4000 and 10000 images per day, and 3D images find their places as a mainstream advertising tool (Marketing Espresso, 2021). The opportunities that gives 3D advertising are:

- finding a definite place favoring the user experience, now saturated with images;
- creating a new reality inside the reality itself, by catching the attention through optical effects: not only the attention of the customer is focused on the billboard, it is easier to get viral on social media since people are willing to share moments that particularly get their attention and give them a "wow" effect, giving higher visibility to the Brand.

Moreover, the sustainability is one of the topics at the center of the public debate. Producing sustainable products and using sustainable packaging is a way to attract more environment-concerned customers and to wink at green investors.

6 Market competitive strategies

After having discussed about the positioning of the main players on the market, it is interesting to analyze the competitive strategies that allow them to be the larger roasters worldwide. Those who will be analyzed in this chapter are Starbucks, Nestlé, Lavazza and Illycaffè.

6.1 Starbucks case

Starbucks' mission is as follows: "to inspire and nurture the human spirit - one person, one cup, and one neighborhood at a time". Since its foundation in the early 1990s, Starbucks' goal has always been to build its brand identity by offering customers a relaxing and enjoyable experience. Unlike other competitors in the market, Starbucks has never focused on aggressive advertising. The company aims to make its employees parters by offering them stock, stock options and health insurance (in the US), while also focusing heavily on their education: in 2014, it announced that it would pay for college studies for its US employees to allow them to get an online degree at Arizona State University. The Starbucks brand philosophy is founded on another pillar: that of being a socially ethical and responsible company, which translates into the implementation of responsible purchasing practices, support for loans to farmers and strategies to limit deforestation, strong leverage on education and employment. It also aims to reduce its environmental footprint in its production processes, put into practice through energy and water conservation, green construction, and recycling. (Martinroll.com, 2021)

From a theoretical point of view, Strabucks' strategy falls in the generic differentiation strategy theorized by Porter, concentrating the value proposition in the uniqueness and quality of the product and of the service offered, applying a premium pricing strategy and innovating its product mix and supply chain in order to be less imitable by competitors. The four cornerstones that constitute Starbucks' strategy are:

- The customer service
- Sustainable innovation
- Expansion
- Vertical integration.

6.1.1 The customer service

Starbucks' customer service is one of the main aspects that give the firm a competitive advantage. What is the very first thing that comes in one's mind when thinking about Starbucks? When a consumer orders a coffee at Starbucks, the barista asks the name of the client and writes it on the cup. The "first name initiative" was introduced in 2012 to create a personal connection with the customer, by making the order more than a simple transaction. Not considering that it is useful for the barista to remember who ordered what.

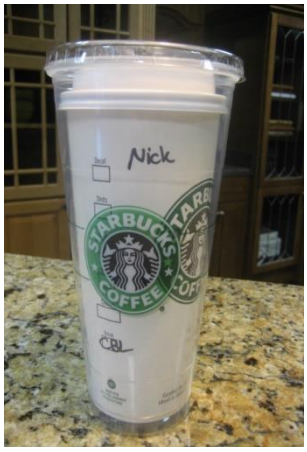


FIGURE 123: NAME ON STARBUCKS' CUP

The product differentiation lies also in this aspect: other coffee shops do not do this (even though it was imitated later, but Starbucks remains the first mover and the most appreciated). Being part of a community is the key of this success: the barista knows the consumer's name who, in turn, knows the barista name since, due to this initiative, also baristas write their name on the badge. Moreover, Starbucks stores are designed to give to the consumer a place of relax, in which he can escape from the daily problems and can find a safe place, alone or with friends. Starbucks' customer service is one of the main aspects that give the firm a competitive advantage, creating a solid base for a brand loyalty. Also important is Starbucks' approach toward gathering information and feedback from customers: going against rigorous and complex marketing surveys, Starbucks has opted for casual, informal chats with customers. That's not to say that the company doesn't conduct quantitative market surveys, but it also relies heavily on this type of approach to shape market entry strategies in different countries.

6.1.2 Sustainable innovation

The Company works with the U.S. Council, where it applies Leadership in Energy and Environment Design in all of its stores, publishing the Global Social Impact Report each year. In a letter to shareholders dating back to 2019, Starbucks said it wants to store more carbon than it emits during production, reduce waste and focus on a green turnaround through a few steps:

- Eliminating single-use packaging by introducing reusable packaging;
- Investing in innovative agricultural practices, reducing water waste in the supply chain and fighting deforestation;
- Expanding the portfolio of plant-based products on its menu;
- Eliminate food waste by investing in waste management practices;
- Give a green turn to manufacturing.

The strategy has evolved by keeping up with the times, taking advantage of new social platforms to be able to interact even more with the customer. Starbucks has developed a mechanism to reward its most loyal customers through points and rewards, the so-called Starbucks Rewards, reaching a number of Rewards users of 17 million in the US and 10 million in China. All this mechanism is integrated in the mobile app. In fact, the Company launched its own mobile app in 2015, combining the company's pre-existing payment system with new features to order in advance and pick up the purchased product at a later date, leveraging on AI to allow customers to send an order via voice command or, simply, a chat integrated in the mobile app. The result is a 20% increase in Starbucks Reward member spending. In order to provide a better customer experience, Starbucks in 2015 established a partership with Duracell Powermat to integrate wireless charging stations into its UK stores to digitally innovate its stores.

6.1.3 Expansion

Starbucks is implementing a global expansion strategy, reaching as many European and Asian countries as possible (especially China), in order to recreate the Starbucks experience all over the world. For this reason, consumers will live the same experience whether they are in New York, London, Milan, Shanghai or Moscow, localizing some elements present inside the stores but not distorting the design of the brand. The goal is opening 55,000 coffee stores by 2030. By now, in Italy there are 15 stores that the Company opened starting from 2015: 10 in Milan, 1 in Turin, 1 in Assago, 1 in Malpensa airport, 1 in Serravalle Scrivia and 1 in Campi Bisenzio. (Truenumbers.it, 2021)

The main problem of the expansion in China is that coffee is not the preferred beverage of the population, but tea is. The result is a level of sales below the expectations, and the Company should exploit the tea opportunity in this sense. In the US, the majority of Starbucks' stores will become drive-through, increasing the horizon of the customer experience. The main problem in US is the product cannibalization caused by oversaturation. In fact, the majority of Starbucks' stores is located there, and there are too many stores one close to another. The consequence is that there are some stores that gain more and some stores that gain less. For this reason, the Company had to close the less profitable ones in 2018 (causing, at the same time, a drop in stock price equal to 11.38% and a market growth of 4.10%). (Kader, 2020)

Thanks to the collaboration with Nestlé, Starbucks is becoming more and more established in the home sector, by producing coffee capsules and pods compatible with Nespresso coffee machines.

Over time, the brand's focus has shifted beyond just coffee, expanding the menu to other beverages and food products: a visible sign was given with the change of the company's logo in 2011, removing the words "coffee" and "Starbucks".

FIGURE 124: STARBUCKS OLD LOGO (ON THE LEFT) VS NEW LOGO (ON THE RIGHT)

6.1.4 Vertical integration

Starbucks relies on a vertically integrated supply chain, therefore it does not buy coffee from the exchange market. The benefit of vertical integration is to lessen the impact of sudden supply chain shutdowns, as occurred during the pandemic period, other than making convenient agreements

with farmers and brokers to keep competitive prices. The company is involved in all stages of sourcing, from the time of cultivation to customer service. It deals directly with its 300,000 coffee growers to make sure the standards of the product are high, while also committing to ethical standards. In fact, the company has its own standards to comply with: the Coffee and Farmer Equity (CAFE) and the Coffee Sourcing Guidelines (CSG). The objective of these guidelines is to respect ethical, quality and sustainability standards, rigorously controlling the entire production process to ensure compliance by all operators involved. These standards also protect the rights of workers, guaranteeing safe and humane working conditions, a minimum wage and preventing the exploitation of child or forced labor. Thus, training and education programs are provided, as mentioned above.

In 2008, Peter Gibbons, Starbucks' executive vice president of global supply chain operations, grouped the supply chain steps into four categories:

- Planning;
- Sourcing;
- Production;
- Delivery.

Moreover, Gibbons developed a centralized logistics system to be able to manage the global network by implementing a binary system, called "scorecard", to evaluate the different activities performed in the supply chain through 4 indicators:

- Safety in operations;
- Service as measured by on-time delivery and order fill rates;
- Total supply chain costs;
- Business savings.

All of this is monitored, of course, through an automated information system that takes care of demand measurement, inventory and scheduling in real time, adjusting its plans as needed.

6.2 Nestlé case

The three most iconic brands of Nestlé in the coffee market are Nespresso, Nescafé and Starbucks. Nespresso and Nescafé have been created in order to differentiate the product portfolio offered by Nestlé. In fact, in the Nestlé Investor Seminar of 2019, both the company have been described as follows: Nescafé products are “mainstream, everyday premium, approachable, versatile and universal”, while Nespresso products are “the everyday affordable luxury, stylish, [have a] European flair, [with] undisputed superior quality”. (Rennie, 2019)

Nescafé was originally created to market instant coffee under the Nespresso brand, then separated because it served two different market segments. Nespresso serves, in fact, a niche market, whilst Nescafé is targeted to mass market. This is the way in which the product cannibalization between the two brands is avoided. (Cherian)

6.2.1 Nespresso

FIGURE 125: NESPRESSO LOGO

Nespresso is an autonomous business unit, globally managed by Nestlé. It sells single-serve coffee pods, capsules and brewing machines. The strategy adopted by Nespresso can be schematized in four points:

- Branding with storytelling;
- Razor-blade model;
- Exclusivity;
- Sustainable innovation.

6.2.1.1 Branding with storytelling

Nespresso relies heavily on advertising to communicate a feeling of exclusivity and quality to the consumer, offering them a premium experience and making them feel like a sophisticated connoisseur. In fact, Nespresso is the luxury coffee brand of Nestlé, and this idea is remarked calling its stores “Boutiques”. Boutiques allow the Company’s coffee specialists to come into direct contact with the consumer, listening to their needs and expectations, thus offering personalized services. The website has also been implemented in such a way as to replicate the feeling experienced in the Boutiques. As an example of the importance that the brand gives to the storytelling and the advertising, until a few years ago, it was possible to see in the TVs the advertising with George Clooney, which was the main character of a story focused on indulging in a moment of relaxation while enjoying a prestigious coffee. In this case, the innovation was hiring a famous character for a coffee brand advertising: in those times, celebrities were involved only in other typologies of premium products, like watches or parfumes.

In more recent times, the focus shifted on the collaboration with the most popular influencer of social media, the celebrity of the moment, whose brand is also considered a premium and luxury one, Chiara Ferragni. As already discussed, the partnership with Ferragni consisted in opening a temporary coffee shop in the city center of Milan, other than creating coffee machines branded, of course, Nespresso and Ferragni (as illustrated in figure 126, the Virtuo Next coffee machine).

FIGURE 126: NESPRESSO COLLABORATIONS WITH GEORGE CLOONEY AND CHIARA FERRAGNI. VIRTUO NEXT IMAGE (ON THE RIGHT) SOURCE: SCATTIDIGUSTO.IT

6.2.1.2 Exclusivity and innovation

This strategic pillar is strictly related to the previous one. In fact, Nespresso offers special editions of its various products the customer (see figure 126 for an example of a coffee machine special edition). These special editions are always accompanied by the use of storytelling: take for example the "trubute to Milano" and "tribute to Trieste" coffee capsules, marketed during 2014/2015. "Tribute to Milano" represents the elegance of the city, it is constituted by a highly aromatic blend of Arabica and Robusta coffee, with fruity and sweet cereal note.

Special editions are sold at premium: in fact, "trubute to Milano" and "tribute to Trieste" were sold at 17% price premium. The strategic goal of introducing limited editions is to propose to the consumer the idea of exclusivity and rarity, stimulating curiosity. It leverages on the psychological aspect of the limited product, focusing on the impulsive purchase of the consumer of a product of which there is scarcity on the market. Even the packaging makes the difference: the focus is on bright products and a clean design.

6.2.1.3 Razor-blade model

The razor-blade model consists in making the customer purchase a good at low price, in order to make him buy its complementary goods and to make higher margins on the latter. This model became popular thank to Gillette, which offered the razor at a very attractive price, gaining profits on the blades by leveraging on the continuous and repetitive nature of the purchase. The main goal of this strategy is to lock-in the customer: Gillette exploited this by the use of patents, by effectively ensuring competitors not to sell cheaper blades for Gillette razors.

This strategy is adopted by different companies, such as Kodak and, also, Nespresso. Kodak's main business, in fact, was not the sale of cameras, but the sale of films (before the digitalization era). Nespresso has two different programs for the razor-blade strategy, both based on subscription plans that usually last one year: this subscription is paid on the basis of the coffee consumption, but if the

customer does not have a coffee machine, he/she gets it for free (of course by paying a premium on the subscription fee).

6.2.1.4 Sustainable innovation

Sustainability is the common thread among all the strategies under analysis. In the Nestlé Investor Seminar of 2019, one of the main goal decided by the Company was to design sustainability as a source of competitive advantage. This is articulated in three points:

- Boosting high-quality coffee production in areas where it was at risk;
- Increasing the knowledge of customers on coffee sourcing practices;
- Becoming leader in responsible aluminum sourcing and recycling.

As it was in the Starbucks' case, customers are involved in the decisions taken by the Company. In this case, customers get the knowledge of the sources used to retrieve coffee, what are the practices put in place and which are the workers' conditions. Involving the customer is a fundamental step in order to make the business successful: it is an era in which people are becoming more aware and sensitive to the problematics related to the labour exploitation and the climate change, and of course they want to know for who they are spending money, if it is worthy doing an investment. For a household, buying a coffee machine and the related capsules/pods/ground coffee is a real investment, and more and more families are becoming green investors from a practical point of view.

6.2.2 Nescafé

As already discussed, Nescafé was born from a rib of Nespresso, as the main brand of decaffeinated coffee. A curiosity is that Nescafé in Hebrew means "miracle coffee" (נסקפה).

Three are the main customer segments targeted by the brand:

- Young people: the Company always tried to associate the brand with youthfulness, that is why in most advertisings the main character is a young man or a young woman;
- The "common" man: it is the common man that everyday drinks its cup of coffee;
- Working executive: coffee has the property to energyze people, that is why it is also targeted to people that work very hard, like executives.

Being part of Nestlé Company, Nescafé shares some strategic aspects with Nespresso, but the main aspect of the strategy regards patents. It must be said that the company is still weak on the coffee bean front, and it does not seem that it wants to develop it by now.

6.2.2.1 Patented technologies

The main strategic tool of the brand is constituted by patents to lead innovation. The first patented technology regards the “cold brew”. Nestlé has, in fact, proprietary in-house manufacturing of Cold Brew, a cold extraction method. The instrument used to brew this coffee is called Toddy and it is made of three parts: an upper glass one where cold water is placed, a central container for ground coffee and a lower carafe to collect the final product. Coffee is crossed by water one drop at a time with a slow percolation in order to have a perfect tasting. (Nestlé)

Cold brews are also used to penetrate Asian markets, in particular China and Japan. Nescafé Cold Brew is, in fact, the first coffee brew sold in China and Japan.

The second one regards the preparation of an indulgent mix low in sugar and fat, the main brews are Nescafé GOLD and Nescafé Latte Caramel. The third patented technolgy regards, instead, coffee machines. A smart connectivity technology was patented and included in the new coffee machines.

6.2.2.2 Razor-blade model

Also in this case, the Brand adopts the razor-blade model to increase the sale of coffee through the sale of coffee machines, that, taken alone, actually does not generate the same value generated by the sale of coffee, but one must look at the whole situation. For this reason, Nestlé launched the brand Nescafé Dolce Gusto, developed with a collaboration with Nespresso.

6.3 Lavazza case

Lavazza has consolidates its presence both in Italy and worldwide, becoming one of the larger roasters. Its competitive strategy can be summarized in three points:

- Also in this case, sustainable innovation;
- Expansion;
- Customer service;

6.3.1 Sustainable innovation

Lavazza has been a pioneer in the field of sustainability, starting in 1935 to care about the economic and human conditions of coffee farmers. Lavazza's commitment is reflected in the creation in 2004 of the Giuseppe and Pericle Lavazza Onlus Foundation, whose aim is to promote projects with a high social impact in coffee-growing countries. This culminates in the drafting of the Sustainability Report, drawn up starting in 2014. In this document, the Company is committed to achieving the Sustainable Development Goals, the SDGs, United Nations Agenda 2030. Goals are the following: gender

equality, decent work and economic growth, responsible production and consumption, climate action. (Stragiotti, 2021)

Sustainability starts directly from the management. In fact, the new headquarter Nuvola gained the Platinum level of LEED certification, i.e. Leadership in Energy and Environmental Design, being one of the greenest building in Europe.

The R&D strategy is focused on sustainability, innovation, market competitiveness and quality. This strategy is naturally followed in all production processes, such as packaging, design and engineering of coffee machines, leading to the continuous acquisition of new patents. The patents obtained are 170, about half of which date back to the last 10 years. They focus on technologies related to innovations on coffee machines (to improve efficiency, sustainability, and add new features such as the simultaneous delivery of hot and cold drinks), on the design of the machines (also improving efficiency and functionality). Quality control is an essential element in the coffee supply chain, implementing more than 100,000 coffee-side checks and over 1.5 million machine-side checks. The partnership with EcoVadis is fundamental for the continuous improvement of sustainability. EcoVadis is a provider of environmental, humanitarian and ethical performance ratings. (Luigi Lavazza S.p.A., n.d.)

6.3.2 Expansion

Through multiple alliances, mergers and acquisitions, Lavazza has achieved a high level of internationalization, especially since 2015. The following brands have been acquired: Merrild (leading company in Denmark and the Baltic countries), the French Carte Noir, Mars Drinks for the OCS and vending market in the United States, Japan and Europe. The factories of Lavérune in France, Basingstoke in the United Kingdom and West Chester in the United States were acquired. It is important also the joint venture with Yum Chine Holdings made in 2020 for the expansion of the Company in China, with a stake of 65% Lavazza and 35% YCH.

Lavazza's expansion strategy is not focused on takeovers only. In September 2021, the Company opened its flagship store in London on Great Marlborough Street, to bring the Italian coffee culture in the UK. The novelty is the partnership with Yahoo Creative Studios, which integrated in the coffee shop an augmented reality experience though interactive games that give the chance to the client to win the Lavazza A Modo Mio Voicy coffee machine. Also in this case, involving the customer is the key. The joint venture between Lavazza and Yum China Holdings has the aim to open new stores in China, for an amount of 1000 stores by 2025 with a deposit of 200 million USD. The very first Chinese Lavazza flagship store opened in Shangai in April 2020. Other stores opened in Hangzhou, Guangzhou and Beijing. (Hafactory.com, 2021)

6.3.3 Customer service

One of the aspects of communication between the company and the consumer is personalisation. in fact, the responsiveness of the website and advertising in general via e-mail and SMS is

personalised. The fact is that mere advertising is no longer enough, especially if you want to make inroads into the younger target audience: Lavazza has in fact begun experimenting with the production of new content under the Lavazza brand, which is able to involve young people.

In order to measure the performance of the Customer Experience, Lavazza has adopted the NPS (Net Promoter Score), which quantifies the consumer's perception of the brand. It therefore becomes important to reach the consumer by leveraging the right touchpoint, which is why Lavazza's advertising has evolved over time, keeping pace with customer needs. It is here that sustainability and customer relationship are bound together. Let's look at the Lavazza calendar. The calendar is one of the marketing tools used by companies. Since 1993, Lavazza has been delivering its calendar to its institutional customers, partners, employees and suppliers. It is a tool that cultivates relationships by following the marketing principle. From 1993 to 2001, the protagonist is the cup. The environment becomes more dreamlike, but always with a component of the cup, from 2002 to 2014: it is in these years that the color comes back and a dreamlike environment in shapes and colors comes back, but the cup is always there.

FIGURE 127: LAVAZZA CALENDAR 1999 (ON THE LEFT) AND LAVAZZA CALENDAR 2003 (ON THE RIGHT). SOURCE: LAVAZZA.IT

The cup has been out of the picture since 2015, starting with the Expo.

FIGURE 128: DECEMBER MONTH IN LAVAZZA'S 2015 CALENDAR

Lavazza was one of the major sponsors of the Expo, and the 2015 calendar came out where the cup is no longer there but the coffee producers are. This is because, at the time, not everyone knew that coffee was produced in the equatorial belts, where there are questionable social conditions, the Countries are not rich and there is a climate change problem going on. Lavazza had the opportunity to raise awareness of some issues that sooner or later will have a direct impact on the coffee market. The author of this image is Steve McCurry, who was not chosen at random: the image was designed for outward dissemination.

In the various calendars, coffee will be talked about, but it will be done until 2018. In 2018 there is the Platon calendar, which portrays 17 champions (well-known people) chosen to represent a certain goal. Massimo Bottura was chosen to represent the no-hunger goal (reducing world hunger). There's a reason Bottura was chosen: he's a chef who bases his entire menu on his grandmother's pantry, which by definition is a pantry that goes to use and not waste.

In 2018, there are still no cups and coffee. Topics change starting from 2019, when Ami Vitale photographs artists who integrate their artwork with the land, the territory. 2019 is the year that Lavazza kicks off all the street art contests to redevelop many parts of, very trivially, a forgotten Turin (but also not only in Turin). There is the involvement of young people, of communities; in that year Nuvola, Lavazza's headquarter, became active, not by chance in the Aurora neighborhood (which is anyway a neighborhood to be redeveloped). In 2020 it's time to return to the cup with David LaChapelle reconnecting to the dreamlike environment by integrating these two elements with all the messages launched from 2015 onwards: respect for the earth (Earth CelebrAction), working for the good of the earth. In 2021 there is still this return to the cup. Companies are facing a new era of marketing, it's all about relationships.

FIGURE 129: LAVAZZA CALENDAR 2020. SOURCE: LAVAZZA.IT

6.3.4 Razor-blade model

The razor-blade model was adopted by Nestlé as well as Lavazza. Not only Lavazza develops coffee machines for the home market, but more in general for the Ho.Re.Ca and vending segments, covering the whole market offer. Also in this case, it must be underlined that the main business of the Company is coffee, for this reason coffee machines business is considered to be a complementary one. The product innovation is the key, as already discussed: the recurring example is Lavazza A Modo Mio Voicy.

6.4 Illy case

The two pillars of Illy's strategy are the quality of the product and the type of coffee offered to the consumer, which is naturally reflected in the pricing strategy. The two pillars of Illy's strategy are the quality of the product and the type of coffee offered to the consumer, which is naturally reflected in the pricing strategy. While other companies in the sector compete on several fronts (home sector, Ho.Re.Ca., OCS and Vending), Illy's focus is on the home and professional market.

Also in this case, communication with the consumer is fundamental and takes place through the product labels, which contain information that is not required by law concerning the blend used, made up of 100% Arabica beans selected electronically and individually, traditional roasting, the cooling method used, the amount of caffeine contained, the dry residue and the shelf life. As already mentioned, the price is greatly influenced by these factors. Considering the Arabica species is the most expensive on the market, it is natural that the price of the product is high, thus doubling the price of other competitors. For this reason, the Company is actually positioned in a more niche market, dedicating itself to real coffee connoisseurs who are looking for higher quality. It is interesting, in this case, to study Illy's strategic history.

At the beginning, the Company was completely focused on the production and distribution of coffee, and then expanded into other sectors. The quality of the product has been its workhorse since the '30s, setting as its goal the expansion to international markets. To achieve this, Illy has always focused on three strategic aspects: giving the brand a global identity, differentiating the product and concentrating on a premium segment. What differentiates Illy from other competitors is above all the type of blend used, which contains as many as nine different Arabica qualities. The production process plays a fundamental role in the realization of this objective: it is important to take care of the phase of the choice of coffee beans, as this is the one that affects the final result the most.

Starting from 2000s, the phase of product diversification began, going beyond the core business of the Company (i.e. is coffee production and distribution). The product portfolio is expanded, setting up a Holding Company. Chocolate, preserved fruit, wine and tea are added. The reasons which pushed Illy to this diversification are to be found in the will of widening the range of consumers, always keeping in mind the high quality of the product. (Stragiotti, 2021)

6.4.1 Sustainable innovation

Also in this case, sustainability is one of the most important aspects in the strategic plan. In order to follow its path toward sustainable innovation, the Company is going to face different challenges in the next years:

- A changing contex;
- Carbon neutrality by 2033;
- The creation of a culture of sustainability;
- The promotion of new models;
- Strategic partnerships.

The main Illy's stakeholder is the customer. According to a matrix published on the Company's website, it is possible to notice that sustainability is the most important theme of discussion for stakeholders. Therefore, the goal of the Company is to build a sustainable supply chain starting directly from the farmer: this is done by promoting global partnerships to boost sustainability and international awareness. Moreover, a sustainable product portfolio must be considered, it must be coherent with the criteria of the circular economy and must be done by improving the energy efficiency and lessen water waste in the production phases.

Hence, there are three main fronts in which the Company is active: the first one regards the environment, related to water management and quality, preserving biodiversity and careful recycling; the second one regards the employment, in order to ensure decent working conditions, health and safety on work area, and the use of agronomic practices; the third one is related to the product, keeping into account its traceability, hygiene and the equipment used in the preparation. (Illy.com, 2019)

7 Empirical analysis

In order to have a higher degree of comprehension of the industry dinamics, an econometric analysis was carried out through the statistical tool STATA, focusing on the Italian market. The aim of the analysis is the determination of the existence of economies of scale.

Economies of scale are fundamental to elaborate a correct strategic plan and can be source of competitive advantage, since they give a cost advantage to incumbents that are able to exploit them and, moreover, can create a barrier to entry. In fact, while incumbents enjoy cost advantage on the mass production, new entrants may have difficulties in taking advantage of economies of scale, since they typically have lower market share. This is very intuitive, thinking about the fact that economies of scale matter in large businesses: the larger the business, the higher will be the cost saving. Economies of scale have various causes. They may result from the physical properties of processing units that give rise to increasing returns to scale in inputs. Economies of scale can also arise due to specialization of labor. As the number of workers increases with the output of the firm, workers can specialize on tasks, which often increases their productivity. Specialization can also eliminate time-consuming changeovers of workers and equipment. This, too, would increase worker productivity and lower unit costs. Economies of scale may also result from the need to employ indivisible inputs. An indivisible input is an input that is available only in a certain minimum size; its quantity cannot be scaled down as the firm's output goes to zero. An example of an indivisible input is a high-speed packaging line for breakfast cereal. Even the smallest such lines have huge capacity - 14 million pounds of cereal per year. A firm that might only want to produce 5 million pounds of cereal a year would still have to purchase the services of this indivisible piece of equipment. Indivisible inputs lead to decreasing average costs (at least over a certain range of output) because when a firm purchases the services of an indivisible input, it can "spread" the cost of the indivisible input over more units of output as output goes up. For example, a firm that purchases the services of a minimum-scale packaging line to produce 5 million pounds of cereal per year will incur the same total cost on this input when it increases production to 10 million pounds of cereal per year. This will drive the firm's average costs down.

For the conduction of the analysis, Aida was used to retrieve financial data of the Italian firms operating in the coffee industry. The research was conducted by filtering firms for the Ateco 2007 code 108301, the Italian correspondent of the Nace code 1083, which identifies the sector "tea and coffee processing". Aida returns financial values from 2011, but it was possible to retrieve also data starting from 2005, in order to conduct a more complete analysis. Other data were retrieved from Istat, and are:

- The index of contractual remuneration of economic sector, used to deflate the labour cost. In the analysis, this index will be called PRE;
- Producer prices of industry with Ateco 108301, used to deflate the added value. It will be called PINV;
- Producer prices of industry with Ateco 0050, used to deflate the cost of capital goods. It will be called PP.

In fact, added value, labour cost and cost of capital goods must be deflated in order to create a mathematical model of the economies of scale. The goal is to obtain a production function, represented by this general formula:

$$q = f(x_i),$$

where *q* represents the output of the production in terms of quantity, *i* is an index that represents the number of production factors, x_i represents the contribution of the i-th factor and *f* is the technology used. Starting from the production function, it is possible to estimate the presence of economies of scale. The selected mathematical model is the Cobb-Douglas function, which defines a relationship between the production output quantity *f(K,L)*, the capital *K* and the labour *L* employed:

$$f(K, L) = \beta K^{\alpha} L^{\gamma}$$

Economies of scale are estimated by considering the following index (if >1, there are economies of scale, the opposite if <1):

$$ES = \frac{\partial logy}{\partial logL} + \frac{\partial logy}{\partial logK}$$

First of all, the three deflated variables were created:

1. added_value_def = (added_value_/PP)*100
2. tot_lab_cost_def = (tot_lab_cost_/PRE)*100
3. tot_tang_asset_def = (tot_tang_asset_/PINV)*100.

Only the first 100 firms (by revenues in 2020) were considered. Through the command *sum* it is possible to see the descriptive statistics of these data:

For the variable added_value_def there are 1,085 observations, the mean is 9,633 k€ and the standard deviation is 36,015.33 k€ (also the variance is reported). The skewness indicates the degree and the direction of the asymmetry. This data tells that the distribution is not normal, because a normal distribution has skewness 0. It is positive, hence this means that mean is higher than median. This is also confirmed by the 50% percentile, which corresponds to the median: it is possible to see that it is lower than the mean. Moreover, the distribution of data has heavy tales: when the kurtosis is equal to 3 the distribution

added_value_def

Percentiles		Smallest		
1%	2.582688	-635.9881		
5%	334.8517	-206.681		
10%	609.512	-126.1297	Obs	1,085
25%	1235.744	-79.87064	Sum of Wgt.	1,085
50%	2424.82		Mean	9633
		Largest	Std. Dev.	36015.33
75%	4792.109	323333.8		
90%	13795.42	336378.7	Variance	1.30e+09
95%	22965.82	349504.8	Skewness	7.106161
99%	261575.8	352766.6	Kurtosis	56.14684

is normal, in this case kurtosis is equal to 56.14684, meaning that there is a heavy tale. Only 1% of data present negative added value, the remaining data are positive.

tot_lab_cost_def

	Percentiles	Smallest		
1%	17.72011	0		
5%	156.5049	0		
10%	305.8839	0	Obs	1,085
25%	585.5558	0	Sum of Wgt.	1,085
50%	1243.875		Mean	4121.818
		Largest	Std. Dev.	14777.88
75%	2305.479	126285.4		
90%	5466.059	133481.1	Variance	2.18e+08
95%	10880.86	150444.2	Skewness	6.986815
99%	104703.2	153794.6	Kurtosis	54.89037

The same reasoning can be applied to the variable tot_lab_cost_def. There are 1,085 observations and the mean is 4,121.818 k€, while the median is 1,243.875 k€: therefore, the distribution is not normal and the skewness is higher than 0, and it is equal to 6.986815. Also in this case there are heavy tales, looking at the kurtosis.

tot_tang_asset_def

	Percentiles	Smallest		
1%	94.54298	0		
5%	268.1486	0		
10%	573.6254	0	Obs	1,085
25%	1219.21	0	Sum of Wgt.	1,085
50%	2781.618		Mean	10007.61
		Largest	Std. Dev.	32310.44
75%	6771.771	297401.4		
90%	14758.76	306187.7	Variance	1.04e+09
95%	34309.75	309369.5	Skewness	7.401226
99%	244493.4	364624.9	Kurtosis	63.21081

Also tot_tang_asset_def was displayed. The number of observations is 1,085, the mean is higher than the median and the skewness is bigger than 0. Tails, also in this case, are heavy: kurtosis is way higher than 3.

After data cleaning, regression can start. From the analysis were excluded:

- firms whose deflated added value is lower than 10 k€
- firms whose deflated total labour cost is lower than 200 k€
- firms whose deflated cost of capital is lower than 100 k€.

For the regression, logarithms were created starting from the variables created previously, in order to avoid abnormous data:

1. $logy = \log(added\_value\_def)$
2. $logk = \log(tot\_tang\_asset\_def)$
3. $logL1 = \log(dipendenti\_)$
4. $logL2 = \log(tot\_lab\_cost\_def)$

7.1 Multiple regression: added value, cost of capital and number of employees

The very first regression line is the following:

$$logy = \beta_0 + \beta_1 logk + \beta_2 logL1 + \varepsilon$$

In order to be responsive to the Cobb-Douglas function, the relatioship between the added value, the capital employed and the employees themselves must be studied. The output of the regression is the following one:

```
. reg logy logk logL1
```

Source	SS	df	MS	Number of obs	=	1,097
				F(2, 1094)	=	3435.96
Model	1331.44285	2	665.721424	Prob > F	=	0.0000
Residual	211.963905	1,094	.193751284	R-squared	=	0.8627
				Adj R-squared	=	0.8624
Total	1543.40675	1,096	1.40821784	Root MSE	=	.44017

logy	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logk	.2537908	.0183466	13.83	0.000	.2177923	.2897893
logL1	.8216617	.0240127	34.22	0.000	.7745456	.8687779
_cons	3.157595	.0941076	33.55	0.000	2.972943	3.342247

Data cleaning led to 1097 observations. The variance that can be explained by the model is contained in the row “Model”: in fact, the total variance is portioned between Model and Residual, which contains the variance not explained by the regression model. The value of F(2, 977) is computed dividing the Mean Square Model and the Mean Square Residual, and it is equal to 3435.96: a significance test of the independent variables was done, and this value must be read coupled with the p-value, contained in Prob > F. The p-value is 0, lower than 0.05, this means that the independent variables chosen can reliably forecast the dependent variable. This is also confirmed by the value R-squared, which represents the quota of variance in logy (the deflated added value) that can be predicted from logk (the deflated value of tangible assets) and logL1 (the employees): it is equal to 86.24%. R-squared is a normalized index that ranges between 0 and 1, but its value will increase whenever the number of predictors increases (even if some of the new predictors are not significant). This is why the Adjusted R-squared is calculated: it takes into account only the predictors that explain the variability, and this is the index that must be used as a benchmark for the comparison of different models.

Now, it is time to look at the table that contains the parameters' estimates, β_0, β_1 and β_2. β_0 is the intercept, and its value is contained in the row "_cons" under the column "Coef.", and it is equal to 3.157595. As it is easy to guess, it is the value assumed by the dependent variable when all the independent variables are equal to 0. The value of β_1 is contained in the row of *logk*, under the column "Coef.", and it is equal to 0.2537908: this means that for every unitary increase in *logk*, keeping the other variable constant, *logy* will increase of 0. 2537908. It represents the effect on *logy* of a change in *logk*, holding *logL1* constant. The same can be said about the coefficient of *logL1*: by holding constant *logk*, the effect of a change in this independent variable on the dependent variable is equal to 0.8216617. To these coefficient values, a standard deviation is associated. In this table there are other two columns: "t" and "P > |t|". Here, the following null hypotheses are tested:

$$H_0: \beta_0, \beta_1, \beta_2 = 0$$

with the alternative hypotheses:

$$H_0: \beta_0, \beta_1, \beta_2 \neq 0$$

Hence, the hypothesis test is a two-tailed test, with $\alpha = 0.05$, and the null hypothesis that the independent variables have no effect are tested. All the coefficients present a p-value equal to 0, hence they are all statistically significant and it is possible to reject the null hypothesis. This is also confirmed by the Confidence Interval of every parameter, which do not contains 0. Overall, it seems that *logk* has lower impact on *logy*. Therefore, this output is helpful to understand whether economies of scale are present or not. In this case, it cannot be rejected the null hypothesis of presence of economies of scale.

```
. test logk+logL1=1

 ( 1)  logk + logL1 = 1

       F(  1,  1094) =   31.18
            Prob > F =    0.0000
```

A more detailed analysis can be conducted through the introduction of a new regressor, *trend*, which indicates the trend of technological progress in the sector during the year. It is a useful variable, since it impacts for sure the development of economies/diseconomies of scale and it is a determinant of the degree of competition.

```
. reg logy logk logL1 trend
```

Source	SS	df	MS	Number of obs	=	1,097
				F(3, 1093)	=	2469.09
Model	1344.94933	3	448.316445	Prob > F	=	0.0000
Residual	198.457419	1,093	.181571289	R-squared	=	0.8714
				Adj R-squared	=	0.8711
Total	1543.40675	1,096	1.40821784	Root MSE	=	.42611

logy	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logk	.2468229	.0177789	13.88	0.000	.2119382	.2817076
logL1	.8325582	.02328	35.76	0.000	.7868797	.8782367
trend	-.0260649	.0030221	-8.62	0.000	-.0319947	-.0201351
_cons	3.433397	.0965509	35.56	0.000	3.243951	3.622843

Also in this case, a significance test of the independent variable was done. The value of F(3, 976) is equal to 2469.09, with a p-value of 0: the independent variables chosen can reliably forecast the dependent variable. The Adjusted R-squared is higher than the previous test, meaning that this model is more fitting than the other. The p-value of the new independent variables is higher than 0.05, meaning that the null hypotheses can be rejected: the coefficients listed in the column "Coef." are significant and different than 0, as also illustrated in the confidence interval, with $\alpha = 5\%$. It is interesting to notice that there is an overall negative trend of technological advance considering the years between 2005 – 2020, but a more detailed analysis that better explains this regressor will be conducted later.

Also in this case, the output reveals that there are economies of scale.

```
. test logk+logL1=1

 ( 1)  logk + logL1 = 1

       F(  1,  1093) =   36.78
            Prob > F =    0.0000
```

Is there an unbalance in the previous outputs due to the different size of the Companies in analysis? To answer to this question, it is interesting to analyze the first 50 companies by turnover. It is interesting to notice that in this case there are no economies of scale. The same result is obtained if excluding the first 50 companies from the analysis. The main point is that, considering the first 50 companies, there are constant return to scale, but economies of scale are loss. The last 50 companies present diseconomies of scale. It is possible to understand whether there are economies of scale only by looking at the whole Companies segment in analysis.

7.2 Multiple regression: added value, cost of capital and of labour

The following variables were tested, in order to understand whether the cost of labour has an impact on the economies of scale:

$$logy = \beta_0 + \beta_1 logk + \beta_2 logL2 + \varepsilon$$

The output is the following one:

```
. reg logy logk logL2
```

Source	SS	df	MS	Number of obs	=	1,141
				F(2, 1138)	=	5235.86
Model	1430.06947	2	715.034737	Prob > F	=	0.0000
Residual	155.41075	1,138	.136564807	R-squared	=	0.9020
				Adj R-squared	=	0.9018
Total	1585.48022	1,140	1.39077213	Root MSE	=	.36955

logy	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logk	.1517794	.0157021	9.67	0.000	.1209712	.1825877
logL2	.8409167	.0179785	46.77	0.000	.8056419	.8761915
_cons	.6824918	.0737059	9.26	0.000	.537877	.8271066

This model better explain the whole variablity, since the Adjusted R-squared is higher than the analysis done with the number of employees. Moreover, the coefficients of the two independent variables are greater than 0, under the assumption of α = 0.05, but the sum of the two logarithms is lower than 1, and diseconomies of scale are detected.

```
. test logk+logL2=1

 ( 1)  logk + logL2 = 1

       F(  1,  1138) =    0.57
            Prob > F =    0.4520
```

Also in this case, the analysis was conducted more in detail by adding the *trend* variable, but the output is always the same: no economies of scale are detected, more in detail there are negative return to scale.

7.3 Multiple regression excluding Lavazza

It could be interesting to observe the impact that Lavazza, the first coffee roaster in Italy, has on the economies of scale estimation. Could Lavazza unbalance the output? The first analysis is conducted by using the cost of capital and the number of employees as independent variables. The result highlights the fact that this model describes in a more imprecise way the overall variance, being the Adjusted R-square minor than the other models. It is possible to see that the cost of capital has a very slight major impact on the dependent variable, as well as the number of employees, but it can be said that the situation does not change dramatically. It is excluded, also in this case, the possibility that the coefficients of *logK* and *logL1* are equal to 0 with a 95% certainty.

```
. reg logy logk logL1 if ranking!=1
```

Source	SS	df	MS	Number of obs	=	1,081
				F(2, 1078)	=	2596.80
Model	1011.81197	2	505.905984	Prob > F	=	0.0000
Residual	210.014889	1,078	.194819007	R-squared	=	0.8281
				Adj R-squared	=	0.8278
Total	1221.82686	1,080	1.13132116	Root MSE	=	.44138

logy	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logk	.2545557	.0184096	13.83	0.000	.2184329	.2906784
logL1	.8031936	.0251012	32.00	0.000	.7539408	.8524465
_cons	3.211084	.0973375	32.99	0.000	3.020092	3.402077

Looking at the return to scale, it is possible to see that the sum of the two logarithm is greater than 1, and considering the regression model with the number of employees, there are still economies of scale. This means that the output does not depend by the presence of Lavazza.

```
. test logk+logL1=1

 ( 1)  logk + logL1 = 1

       F(  1,  1078) =   14.19
            Prob > F =    0.0002
```

What it is interesting to analyze is wether there is a change by regressing the cost of capital and the cost of labour. The impact that the independent variables have on the dependent variable is pretty the same of the previous model including Lavazza, but the Adjusted R-squared is a little bit lower.

Also the values that can be assumed by *logK* and *logL2* are almost identical, for this reason it can be said that Lavazza has no such an impact on the stability of the model.

```
. reg logy logk logL2 if ranking!=1
```

Source	SS	df	MS	Number of obs	=	1,125
				F(2, 1122)	=	4029.92
Model	1105.71347	2	552.856734	Prob > F	=	0.0000
Residual	153.92493	1,122	.137187994	R-squared	=	0.8778
				Adj R-squared	=	0.8776
Total	1259.6384	1,124	1.12067473	Root MSE	=	.37039

logy	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logk	.1520672	.0157548	9.65	0.000	.1211551	.1829793
logL2	.8276956	.0186592	44.36	0.000	.7910846	.8643065
_cons	.7728774	.0817682	9.45	0.000	.6124415	.9333132

Still, diseconomies of scale are detected by the regression output. The same can be said adding to the model the *trend* variable.

```
. test logk+logL2=1

 ( 1)  logk + logL2 = 1

       F(  1,  1122) =    3.43
            Prob > F =    0.0643
```

7.4 Panel data model

What are missing in the previous models are some variables that cannot be observed or measured, like cultural factors as well as differences in business practices across the several Companies operating in the market under analysis. It is possible to create a Panel data model which comprehends all of these aspects, by simply declaring *ranking* as a Panel data and *year* as the time variable.

7.4.1 Random effects with number of employees

As always, the first regressors taken into account are *logy*, *logk* and *logL1*. 980 observations are considered, for a total number of 99 firms of which, on average, are available data for 9.9 years. The X-squared is 1343.76 and its p-value is 0, meaning that the model is correctly specified. There are three different R-squared: within, between and overall. "within" describes the variation within one individual over time, "between" describes the variation between individuals. The random effect uses both within and within R-squared, for this reason it is useful to look at the overall one, that it is equal to 0.8652, meaning that this model performs a little bit worse than the very first regression model and in almost a little bit worse of the first model containing *trend*.

In this model, the error is disentangled into ν and ε. ν indicates the unit-specific error term, whilst ε is the common error term normally distributed, with mean 0 and variance σ_ε^2. The standard deviations of ν and ε are estimated in the fields *sigma_u* and *sigma_e*, respectively. It is interesting to notice a slight change in coefficients of *logk* and *logL1*: in the first regression model, β_1 was equal to 0.2537908 while here is 0.1533121, β_2 was 0.8216617 and here is 0.814525: the effects of both the independent variables decreases (for *logK*, keeping constant *logL1*, the opposite for *logL1*).

```
. xtreg logy logk logL1

Random-effects GLS regression                   Number of obs     =      1,097
Group variable: ranking                         Number of groups  =         99

R-sq:                                           Obs per group:
     within  = 0.5282                                         min =          2
     between = 0.8763                                         avg =       11.1
     overall = 0.8602                                         max =         16

                                                Wald chi2(2)      =    1827.23
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000
```

logy	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
logk	.1533121	.0212086	7.23	0.000	.111744	.1948801
logL1	.814525	.0320229	25.44	0.000	.7517612	.8772887
_cons	3.951592	.1282431	30.81	0.000	3.70024	4.202944
sigma_u	.34941616					
sigma_e	.29065296					
rho	.59104023	(fraction of variance due to u_i)				

If in the very first model analyzed, there was evidence of economies of scale. Here it is the opposite.

```
. test logk+logL1=1

 ( 1)  logk + logL1 = 1

           chi2(  1) =    1.93
         Prob > chi2 =    0.1648
```

Then, an analysis that considers *trend* was conducted. The overall R-squared is a little bit smaller then the one obtained with the first analysis that contained *trend*, hence the model describes a little bit worse the overall variance. β_0 and β_1 present a bigger effects than before.

```
. xtreg logy logk logL1 trend

Random-effects GLS regression                   Number of obs     =      1,097
Group variable: ranking                         Number of groups  =         99

R-sq:                                           Obs per group:
     within  = 0.5510                                         min =          2
     between = 0.8838                                         avg =       11.1
     overall = 0.8691                                         max =         16

                                                Wald chi2(3)      =    2018.57
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000
```

logy	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
logk	.1700148	.0206531	8.23	0.000	.1295354	.2104943
logL1	.8836606	.0321019	27.53	0.000	.820742	.9465792
trend	-.0203957	.0024229	-8.42	0.000	-.0251446	-.0156468
_cons	3.799522	.1255397	30.27	0.000	3.553469	4.045576
sigma_u	.33982399					
sigma_e	.28363943					
rho	.58939091	(fraction of variance due to u_i)				

In this case, there is evidence of the presence of economies of scale.

```
. test logk+logL1=1

 ( 1)  logk + logL1 = 1

           chi2(  1) =    4.75
         Prob > chi2 =    0.0293
```

7.4.2 Random effects with cost of labour

The effects of *logk* decrease and the effects of *logL2* increase. Despite this, it is possible to reject the hypothesis that their coefficients are equal to 0 with α = 5%. Also in this case, the model highlights the presence of diseconomies of scale.

```
. xtreg logy logk logL2

Random-effects GLS regression                   Number of obs     =      1,141
Group variable: ranking                         Number of groups  =         99

R-sq:                                           Obs per group:
     within  = 0.6663                                         min =          2
     between = 0.9135                                         avg =       11.5
     overall = 0.8996                                         max =         16

                                                Wald chi2(2)      =    3183.90
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000
```

logy	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
logk	.0681938	.0170713	3.99	0.000	.0347347	.1016528
logL2	.8966993	.023557	38.07	0.000	.8505284	.9428701
_cons	.9520053	.1276735	7.46	0.000	.7017699	1.202241
sigma_u	.29254421					
sigma_e	.24547755					
rho	.58681656	(fraction of variance due to u_i)				

```
. test logk+logL2=1

 ( 1)  logk + logL2 = 1

           chi2(  1) =    4.21
         Prob > chi2 =    0.0401
```

The introduction in the model of *trend* also suggests the absence of scale economies, as well as the removal of Lavazza from the data pool.

7.4.3 Fixed effects with number of employees

While for the random effects the R-squared that must be taken into account is the “overall”, for the fixed effects the “within” R-squared is considered. It is possible to notice that the within R-squared

is different in this regression model, and in terms of overall fit, the estimates are worse. The coefficient of *logK* is higher in this case, if compared to the r.e. model, while the coefficient of *logL1* decreases, but still higher than 0 with α = 5%.

```
. xtreg logy logk logL1, fe

Fixed-effects (within) regression               Number of obs      =       1,097
Group variable: ranking                         Number of groups   =          99

R-sq:                                           Obs per group:
     within  = 0.5287                                         min =           2
     between = 0.8723                                         avg =        11.1
     overall = 0.8581                                         max =          16

                                                F(2,996)           =      558.66
corr(u_i, Xb)  = 0.4512                         Prob > F           =      0.0000

------------------------------------------------------------------------------
        logy |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        logk |   .1204446   .0226888     5.31   0.000     .0759213    .164968
       logL1 |   .7957782   .0361111    22.04   0.000     .7249156    .8666408
       _cons |   4.337731   .1433264    30.26   0.000     4.056475    4.618987
-------------+----------------------------------------------------------------
     sigma_u |  .41476376
     sigma_e |  .29065296
         rho |  .67065704   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(98, 996) = 15.44                     Prob > F = 0.0000
```

The output reveals that is possible to reject the null hypothesis that *logK* + *logL1* = 1, they are lower than 1 and diseconomies of scale are detected.

```
. test logk+logL1=1

 ( 1)  logk + logL1 = 1

       F(  1,    480) =    4.87
            Prob > F =    0.0278
```

This result is sustained also by adding *trend* to the analysis or excluding Lavazza.

7.4.4 Fixed effects with cost of labour

The within variablity, if taken into consideration the cost of labour instead of the number of employees, is higher. Overall, the fit of the fixed effects model is quite the same of the random effects one. Also here, the impact of *logK* decreases if compared to the random effects model, the opposite can be said of *logL2*. Anyway, β_1 is not 0 with $\alpha = 5\%$. The presence of economies of scale is excluded. The same can be said adding *trend* to the model or excluding Lavazza from the analysis.

```
. xtreg logy logk logL2, fe

Fixed-effects (within) regression               Number of obs      =      1,141
Group variable: ranking                         Number of groups   =         99

R-sq:                                           Obs per group:
     within  = 0.6667                                         min =          2
     between = 0.9115                                         avg =       11.5
     overall = 0.8984                                         max =         16

                                                F(2,1040)          =    1040.02
corr(u_i, Xb)  = 0.1161                         Prob > F           =     0.0000
```

logy	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
logk	.0488579	.0180612	2.71	0.007	.0134173	.0842985
logL2	.9117466	.0269985	33.77	0.000	.8587688	.9647244
_cons	1.002891	.15566	6.44	0.000	.6974472	1.308334
sigma_u	.31937677					
sigma_e	.24547755					
rho	.6286272	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(98, 1040) = 15.70                     Prob > F = 0.0000
```

7.4.5 Fixed effects robust with number of employees

In order to be sure about the heteroskedasticity of residuals, it is possible to conduct another regression analysis in STATA by adding the command *robust*. In fact, in the output table, the column of standard errors is replaced by the column of rubust standard errors, which takes into account the heteroskedasticity between each entity. It can be noticed that the coefficients of the logarithms and the constant are equal between the analysis with *robust* and the analysis without *robust*, but what changes are the standard errors and, by extension, the confidence intervals. The robust estimator generates higher standard errors.

```
. xtreg logy logk logL1, fe robust

Fixed-effects (within) regression               Number of obs      =       1,097
Group variable: ranking                         Number of groups   =          99

R-sq:                                           Obs per group:
     within  = 0.5287                                         min =           2
     between = 0.8723                                         avg =        11.1
     overall = 0.8581                                         max =          16

                                                F(2,98)            =       85.24
corr(u_i, Xb)  = 0.4512                         Prob > F           =      0.0000

                                    (Std. Err. adjusted for 99 clusters in ranking)
------------------------------------------------------------------------------
             |               Robust
        logy |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        logk |   .1204446   .0429298     2.81   0.006     .0352519    .2056374
       logL1 |   .7957782   .0718843    11.07   0.000     .6531262    .9384302
       _cons |   4.337731   .3561904    12.18   0.000     3.630883    5.044579
-------------+----------------------------------------------------------------
     sigma_u |  .41476376
     sigma_e |  .29065296
         rho |  .67065704   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

The output states that, also in this case, the hypothesis of the presence of economies of scale can be excluded.

```
. test logk+logL1=1

 ( 1)  logk + logL1 = 1

       F(  1,     91) =    1.43
            Prob > F =    0.2344
```

As usual, the analysis is conducted by including in the regression model *trend*, and by doing this, the null hypothesis of presence of economies of scale cannot be rejected.

7.4.6 Fixed effects robust with cost of labour

The following output reveals the results of the analysis conducted by considering the robust standard error in the fixed effects analysis, with indipendent variable the cost of labour. Also in this case, the coefficients remain stable, despite of the robust standard error that is higher than the standard error found in the simple fixed effects analysis.

```
. xtreg logy logk logL2, fe robust

Fixed-effects (within) regression               Number of obs      =       1,141
Group variable: ranking                         Number of groups   =          99

R-sq:                                           Obs per group:
     within  = 0.6667                                         min =           2
     between = 0.9115                                         avg =        11.5
     overall = 0.8984                                         max =          16

                                                F(2,98)            =      165.37
corr(u_i, Xb)  = 0.1161                         Prob > F           =      0.0000

                                          (Std. Err. adjusted for 99 clusters in ranking)
------------------------------------------------------------------------------
             |               Robust
        logy |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        logk |   .0488579   .0371366     1.32   0.191    -.0248385    .1225544
       logL2 |   .9117466   .0632241    14.42   0.000     .7862804    1.037213
       _cons |   1.002891   .3888354     2.58   0.011     .2312595    1.774522
-------------+----------------------------------------------------------------
     sigma_u |  .31937677
     sigma_e |  .24547755
         rho |   .6286272   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

The hypothesis of existence of economies of scale can be rejected, also if adding to the regression model the *trend* variable.

```
. test logk+logL2=1

 ( 1)  logk + logL2 = 1

       F(  1,    98) =    0.56
            Prob > F =    0.4577
```

7.5 Trend analysis

The variable *trend* contains a lot of different information: particular macroeconomic conditions that verified each year and that have an impact on the added value, the presence of new technologies that realize a technical progress which, in turn, influence the sales revenues and firm performances, eventually the consolidation of a particular know-how that translates into a better resource exploitation. It is interesting to notice that this variable assumes a negative value if considering the

period between 2005 and 2020. Of course, during these years something happened: a phoenomenon (or more phoenomena) that impacted negatively the added value.

The very first thing to do is to give an overlook to the data collected, and it must be considered that 2020 was a particular year due to, of course, the pandemic situation. This is the reason why it can be considered an outlier, and should be excluded from the analysis. For simplicity, it will be considered one regression model for the evaluation of *trend*, i.e. the panel data model with fixed effects on regressors *logK*, *logL2* and *trend*.

By doing this, it is possible to observe that 2020 distorts the output, with a delta on *trend* of 45% circa:

- $Trend_{2004 < year < 2021} = -0.017$
- $Trend_{2004 < year < 2020} = -0.0092$

It is possible to focus the analysis on different time frames, considering first the years between 2013 and 2019, and then widening the observations period:

- $Trend_{2012 < year < 2020} = -0.0022$
- $Trend_{2011 < year < 2020} = 0.0057$
- $Trend_{2010 < year < 2020} = 0.0084$
- $Trend_{2009 < year < 2020} = 0.0025$
- $Trend_{2008 < year < 2020} = -0.0026$
- $Trend_{2007 < year < 2020} = -0.0041$
- $Trend_{2006 < year < 2020} = -0.0071$

It is clear that there is no technical progress in the coffee industry that may influence the firm performances, but there were such a macroeconomic conditions that have a non negligible effect. It is interesting to notice that there could be a correlation between the coffee price trend and the behaviour of the variable under analysis. As illustrated in chapter 1, coffee price increased a lot between 2000 and 2010, but it decreased as well in the next decade (the fluctuation is recalled in figure 130, where it is illustrated the coffee Arabica price trend).

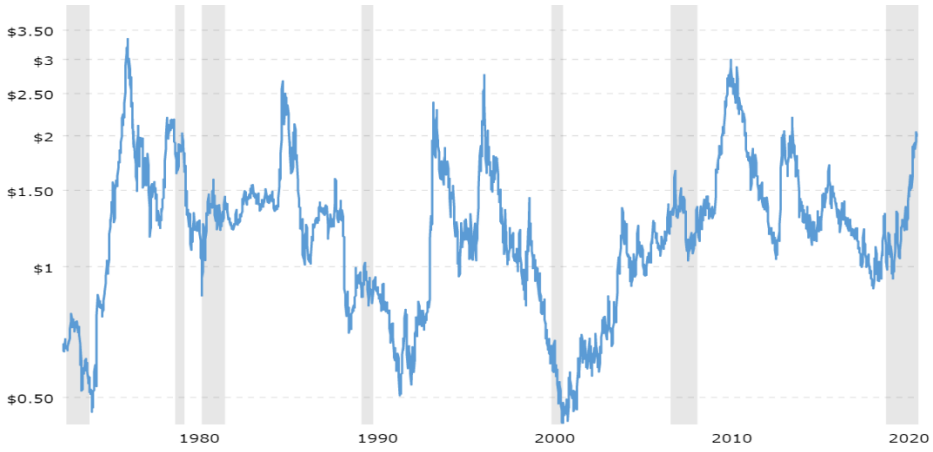


FIGURE 130: PRICE FLUCTUATION OF COFFEE ARABICA

8 Conclusion

This paper supplements the existing literature on the topic, by analyzing the coffee market, the environment and the factors that influence the strategic choices of the firms operating in the sector. From the analysis of the financial data of the big players, it emerges that Starbucks is the uncontested leader, if taking into account the worldwide market, while Lavazza is the main player in the Italian landscape. By comparing the two aforementioned firms, it is possible to notice that Lavazza's ROA is below the industry average, except for 2015 when there is a spike, due to the fact that there is an increase in net income. During that year, Lavazza used more stocked materials with respect to the other years, and this impacted the net income, moreover there is a huge increase in extraordinary revenues for capital gains from the sale of equity investments (i.e., the sale of 13,075,333 shares of Keurig Green Mountain Inc), according to its annual report. The same can be said about ROE and ROCE, which are below the industry average. In turn, Starbucks' ROA, ROE and are way higher than the average. The reason of Lavazza's poorer performances in the worldwide market lies in the fact that the firm is more focused on operations on the Italian market: in this case, the Company is well positioned under the profitability point of view. ROA is generally higher than the average, meaning that Lavazza is able to exploit its own assets better than the Italian average, as well as ROCE and ROE, meaning that the Company is in a good position to exploit its sources of profitability.

By analyzing the strategic choices of the main roasters all over the world, it is possible to notice that there is a particular aspect that they all have in common: the focus on sustainability. Companies are investing more and more in the implementation of green processes with lower environmental impact, whose goal is to achieve zero carbon dioxide emissions along all the processes of the supply chain, focusing also in recyclable packaging and the reduction of waste. In the formulation of strategic choices, economies of scale must also be taken into account, as they greatly influence the degree of competitiveness and profitability of an industry. The evaluation done through the software STATA points out that there are no economies of scale in the coffee roasting process, and there are some events that clearly influence the added value generated by the firms: the increase in the price of green coffee is not transferred to the consumer, i.e. the selling price increases less than the price of the raw material. This reduces the added value and may explain the trends found as the output of the econometric analysis.

Moreover, the analysis points out that customers are willing to pay for a product that has at least two different characteristics: it must be sustainable and it must offer high quality. For this reason, also a good marketing strategy is essential: the focus should rely on the sustainability of the product and on the quality offered. Social media can be a useful instrument to ensure success. Take into account one of the latest Nespresso's strategy: a collaboration with the most famous Instagram influencer, Chiara Ferragni, realized by opening the NespressoxChiaraFerragni Temporary Cafè in the center of Milano; or before her the collaboration with George Clooney and his famous question:

"what else?".

References

AngryEspresso. (n.d.). *Why Starbucks writes your name on the cup*. Retrieved from Angryespresso.com: https://www.angryespresso.com/post/why-starbucks-writes-your-name-on-the-cup

Apindustria. (2021, January 18). *Materie prime: la tabella previsionale 2021*. Retrieved from Apindustria.bs.it: https://www.apindustria.bs.it/wp-content/uploads/2021/01/COMMODITIES.pdf

Armstrong, M. (2020, October 01). *The Countries Most Addicted to Coffee*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/chart/8602/top-coffee-drinking-nations/

Avatrade.it. (2021, October 23). *Caffè C*. Retrieved from Avatrade.it: https://www.avatrade.it/trading-info/financial-instruments-index/commodities/coffee-c

Beverfood.com. (2020). *Coffitalia, Annuario 2020 Directory.*

Blázquez, A. (2021, July 26). *Coffee sales in office in selected European countries in 2018*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1072887/coffee-sales-in-office-in-selected-european-countries/

Blázquez, A. (2021, July 26). *Share of out-of-home coffee consumed in office in selected European countries 2018*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1072906/share-of-out-of-home-consumed-coffee-in-office-in-selected-european-countries/

Bowles, A. (2018, January 29). *Understanding GMOs: Genetic Engineering and the Future of Coffee*. Retrieved from Dailycoffeenews.com: https://dailycoffeenews.com/2018/01/29/understanding-gmos-genetic-engineering-and-the-future-of-coffee/

Bragagni, D. M. (2021, May 04). *RAW MATERIALS PRICE INCREASE*. Retrieved from Linkedin.com: https://www.linkedin.com/pulse/raw-materials-price-increase-dr-maurizio-bragagni-mba

Buchholz, K. (2019, October 01). *How Many Cups of Coffee Do Americans Drink Each Day?* Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/chart/19524/cups-of-coffee-drunk-by-americans-per-day/

Caffè Borbone. (n.d.). *Caffeborboneonline.it*. Retrieved from Caffeborboneonline.it/: https://www.caffeborboneonline.it/

Cherian, G. T. (n.d.). *A STUDY ON NESPRESSO'S BUSINESS MODEL AND ITS STRATEGIES.* Retrieved from Webthesis.biblio.polito.it: https://webthesis.biblio.polito.it/13450/1/tesi.pdf

Cialda.com. (n.d.). *Come viene prodotta la cialda caffè*. Retrieved from Cialda.com: https://www.cialda.com/prodotta-cialda-caffe

Coffeeinformer.com. (n.d.). *How Modern Technology Has Affected the Coffee Industry*. Retrieved from Coffeeinformer.com: https://www.coffeeinformer.com/modern-technology-coffee/

Coind.it. (n.d.). *Coind*. Retrieved from Coind.it: https://www.coind.it/

Comunicaffe. (2020, Giugno 15). *Nel mercato dei consumi tecnologici le macchine per il caffè da casa centrano un +33%*. Retrieved from Comunicaffe.it: https://www.comunicaffe.it/mercato-consumi-macchine-caffe-lockdown/

Consob. (n.d.). *DALLA CRISI SANITARIA ALLA CRISI ECONOMICA*. Retrieved from Consob.it: https://www.consob.it/web/investor-education/crisi-sanitaria-economica

Conway, J. (2020, November 26). *Espresso machine usage among past day coffee drinkers in the United States from 2010 to 2020*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/456294/espresso-machine-usage-among-us-past-day-coffee-drinkers/

Conway, J. (2020, December 10). *Import value of coffee in Italy in 2019, by country of origin*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/653307/import-value-of-coffee-by-country-in-italy/

Conway, J. (2020, November 26). *Opinions about Starbucks cafes in Italy as of 2018*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/875011/opinions-about-starbucks-cafes-in-italy/

Conway, J. (2020, November 26). *Past-day coffee consumption in the United States in 2020, by type of coffee*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/250064/us-roasted-coffee-consumption-by-type-of-coffee/

Conway, J. (2021, May 25). *Average price of coffee worldwide from 1998 to 2019, by type of coffee*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/250186/average-price-of-coffee-worldwide-by-coffee-type/

Conway, J. (2021, March 26). *Coffee price trends in Italy in the first half of 2019, by coffee type*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1068278/coffee-price-by-coffee-type-in-italy/

Conway, J. (2021, 02 04). *Global coffee consumption 2012/13-2020/21*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/292595/global-coffee-consumption/

Conway, J. (2021, June 23). *Robusta coffee production worldwide from 2005/06 to 2021/22*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/225402/world-robusta-coffee-production/

Conway, J. (2021, June 23). *Total coffee imports and exports worldwide from 2005/06 to 2021/22*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/225403/total-global-coffee-imports-and-exports/

Conway, J. (2021, June 23). *World Arabica coffee production from 2005/06 to 2021/22*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/225400/world-arabica-coffee-production/

Coppola, D. (2021, March 5). *Coffee consumption habits in Italy 2020, by time of the day*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1193341/coffee-consumption-habits-in-italy-by-time-of-the-day/

Credenceresearch. (2018, August). *Bean To Cup Coffee Machines Market By Machine Type*. Retrieved from Credenceresearch.com: https://www.credenceresearch.com/toc/bean-to-cup-coffee-machines-market/table-of-content

De' Longhi. (2001, July 05). *De' Longhi IPO final prospectus*. Retrieved from Borsaitaliana.it: https://www.borsaitaliana.it/borsa/prospetti-informativi/534pros_1_it_pdf.html

De'Longhi. (n.d.). *Il nostro percorso verso la sostenibilità*. Retrieved from Delonghigroup.com: https://www.delonghigroup.com/it/sostenibilita/il-percorso

Dietabit.it. (n.d.). *Caffè espresso: calorie e valori nutrizionali*. Retrieved from Dietabit.it: http://www.dietabit.it/alimenti/infusi/caffe-espresso/#:~:text=Caff%C3%A8%20espresso%3A%20calorie%20e%20valori%20nutrizionali%20%20,%20%20g%20%2070%20more%20rows%20

Gilbert, A. (2021, September 14). *12 of the best bean-to-cup coffee machines*. Retrieved from BBCgoodfood.com: https://www.bbcgoodfood.com/review/best-bean-cup-coffee-machines

Gruppogimoka.com. (n.d.). *Gruppo Gimoka*. Retrieved from Gruppogimoka.com: https://www.gruppogimoka.com/it/

Gundersen, M. P. (2020, January 08). *Coffee Culture in Norway*. Retrieved from Life in Norway: https://www.lifeinnorway.net/coffee-culture-in-norway

Hafactory.com. (2021, September 28). *Lavazza focuses on an expansion strategy*. Retrieved from Hafactory.com: https://www.hafactory.it/2021/09/28/lavazza-continues-its-expansion-strategy/

Holst, A. (2020, September 24). *Household ownership rate of small kitchen appliances, toasters and coffee machines in most populous countries in Europe in 2020*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/forecasts/1174519/small-kitchen-appliance-toaster-coffee-machine-ownership-rate-european-countries

Holst, A. (2021, May 04). *Household ownership rate of small appliances in selected countries worldwide in 2021*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1117096/small-appliances-ownership-selected-countries/

Holst, A. (2021, June 08). *Share of De'Longhi's revenue by product category in 2020*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1233682/de-longhi-revenue-share-by-product/

Huff Post. (2021, October 21). *Vaccini, ai paesi poveri consegnato solo il 14% delle dosi promesse.* Retrieved from Huffingtonpost.it: https://www.huffingtonpost.it/entry/vaccini-ai-paesi-poveri-consegnato-solo-il-14-delle-dosi-promesse_it_61715bd6e4b065735737bfff

Ico.org. (2021). *Historical Data on the Global Coffee Trade*. Retrieved from Ico.org: https://www.ico.org/new_historical.asp

Ico.org. (n.d.). *Developing a sustainable coffee economy*. Retrieved from Ico.org: https://www.ico.org/sustaindev_e.asp

Illy.com. (2019). *Sustainable value report 2019*. Retrieved from Illy.com: http://valuereport.illy.com/index.php?lang=en

International Coffee Organization (ICO) and International Food Policy Research Institute (IFPRI). (2020, May). *VOLATILE COFFEE PRICES: COVID-19 AND MARKET FUNDAMENTALS.* Retrieved from ebrary.ifpri.org: http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/133746/filename/133956.pdf

Investing.com. (2021, October 26). *US Coffee C Futures - Dec 21 (KCZ1)*. Retrieved from Investing.com: https://www.investing.com/commodities/us-coffee-c

Kader, N. (2020, June 23). *Internal Analysis of Starbucks' Competitive Advantage*. Retrieved from LinkedIn.com: https://www.linkedin.com/pulse/internal-analysis-starbucks-competitive-advantage-naimul-kader

Killian, A. (2019, February 26). *How to trade coffee*. Retrieved from Ig.com: https://www.ig.com/uk/trading-strategies/how-to-trade-coffee-190219#:~:text=%20Four%20steps%20to%20start%20trading%20coffee%20,yourself%20with%20the%20different%20ways%20to...%20More%20

Koptyug, E. (2020, October 13). *Per capita consumption of hot beverages in Germany from 2000 to 2019, by type*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/508268/hot-beverages-per-capita-consumption-by-type-germany/

Koptyug, E. (2021, April 19). *Most popular coffee and tea drinks (consumption at least once a week) in Germany from 2018 to 2020*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/553033/ranking-most-popular-hot-drinks-germany/

Koptyug, E. (2021, January 07). *Number of people consuming roasted and ground coffee in Germany from 2017 to 2020, by frequency*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/555560/roasted-and-ground-coffee-consumption-frequency-germany/

Lavazza.it. (2021). *Caffè in grani*. Retrieved from Lavazza.it: https://www.lavazza.it/it/caffe/grani.html

Luigi Lavazza S.p.A. (n.d.). *Where we are*. Retrieved from Lavazzagroup.com: https://www.lavazzagroup.com/en/who-we-are/where-we-are.html

Macrotrends.net. (2021, October 26). *Coffee Prices - 45 Year Historical Chart*. Retrieved from Macrotrends.net: https://www.macrotrends.net/2535/coffee-prices-historical-chart-data#:~:text=Coffee%20Prices%20-%2045%20Year%20Historical%20Chart.%20Interactive, of%20August%2014%2C%202020%20is%20%241.1470%20per%20pound.

Marketing Espresso. (2021, October 19). *Marketing Espresso*. Retrieved from LinkedIn.com: https://www.linkedin.com/company/marketing-espresso/

Martinroll.com. (2021, February). *The Secret to Starbucks' Brand Success*. Retrieved from Martinroll.com: https://martinroll.com/resources/articles/strategy/secret-starbucks-brand-success/

Milton, J. (2021). *25 Top Coffee-Producing Countries in 2020*. Retrieved from Elevencoffees.com: https://elevencoffees.com/top-coffee-producing-countries/

Mordorintelligence. (2020). *ITALY COFFEE MARKET - GROWTH, TRENDS, COVID-19 IMPACT, AND FORECAST (2021 - 2026)*. Retrieved from Mordorintelligence.com: https://www.mordorintelligence.com/industry-reports/italy-coffee-market

Nestlé. (n.d.). *Cold Brew.* Retrieved from Dolce-gusto.it: https://www.dolce-gusto.it/coldbrew

Oloruntoba. (2020, August 26). *Revenue of the coffee market worldwide by country in 2019*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/forecasts/758662/revenue-of-the-coffee-market-worldwide-by-country

Ourworldindata.org. (2021, October 26). *Population, 1959 to 2039*. Retrieved from Ourworldindata.org: https://ourworldindata.org/grapher/projected-population-by-country?time=1959..2039

Paige, M. (2020, December 02). *Starbucks' (NASDAQ:SBUX) 100% Return Could Be Coming At A Cost*. Retrieved from Simplywall.st: https://simplywall.st/stocks/us/consumer-services/nasdaq-sbux/starbucks/news/is-starbucks-nasdaqsbux-negative-shareholders-equity-an-issu

Pecchi, A. (2018, October 01). *Miglior macchina da caffè automatica del 2021*. Retrieved from Recensum.it: https://recensum.it/cucina/macchina-da-caffe-automatica/?msclkid=3270b488e73114568857d5e64cbffc67

Philips S.p.A. (2020). *Bilancio ordinario al 31/12/2020.*

Qualescegliere.it. (2018, March 06). *Caffè, quanto mi costi? Scopri quale macchina ti fa risparmiare di più*. Retrieved from Qualescegliere.it: https://www.qualescegliere.it/costo-caffe/#:~:text=Costo%20medio%20macchina%3A%20l%E2%80%99elemento%20del%20design%20incide%20in,capsule%20sono%20la%20tipologia%20di%20caff%C3%A8%20pi%C3%B9%20costosa.

Rennie, D. (2019, May 07). *Leading the world of coffee.* Retrieved from Nestle.com: https://www.nestle.com/sites/default/files/asset-library/documents/library/presentations/investors_events/investor-seminar-2019/coffee.pdf

Ridder. (2021, January 11). *Per capita consumption of roasted coffee in Sweden from 2009 to 2019*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/560194/per-capita-consumption-of-coffee-in-sweden/

Seudieu, D. (2010, March). *Coffee consumption in selected importing Countries.* Retrieved from Ico.org: http://www.ico.org/presents/0910/icc-104-1-consumption.pdf

Severins, J. (2015, August 31). *The Amazing Supply Chain of Your Morning Coffee*. Retrieved from Allthingssupplychain.com: https://www.allthingssupplychain.com/the-amazing-supply-chain-of-your-morning-coffee/

Shahbandeh. (2021, February 05). *Global leading countries based on coffee area harvested in 2019*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/279162/top-countries-worldwide-based-on-coffee-area-harvested/

Smeg S.p.A. (2020). *Relazione di bilancio al 31/12/2020.*

Statista Consumer Market Outlook. (2021, January). *Household Appliances Report 2020*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/study/55489/household-appliances/

Statista Research Department. (2020, September 03). *Retail sales revenues of coffee in Italy in the first quarter of 2020, by product*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/891048/coffee-sales-revenues-by-product-in-italy/

Statista Research Department. (2020, September 03). *Sales volume of coffee in Italy in the first quarter of 2020, by product*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/891130/coffee-sales-volumes-by-product-in-italy/

Statista Research Department. (2021, June). *Coffee Machines*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/outlook/cmo/household-appliances/small-appliances/coffee-machines/worldwide?currency=EUR#volume

Statista Research Department. (2021, May 14). *Coffee machines market revenue worldwide from 2012 to 2025*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/forecasts/1235594/coffee-machines-market-size-worldwide

Statista Research Department. (2021, October 04). *Forecasted unemployment rate in Italy in 2021 and 2022*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1097840/forecasted-unemployment-rate-in-italy-2/

Statista Research Department. (2021, September 09). *Inflation rate in Italy in 2020, with a forecast for 2021 and 2022*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1115247/forecasted-inflation-rate-in-italy/

Statista Research Department. (2021, May 26). *Per capita consumption volume forecast of coffee in Italy from 2012 to 2025*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/forecasts/710396/per-capita-coffee-consumption-italy-european-union-eu

Statista Research Department. (2021, October 02). *Share of Italians placing threats against the environment as their main concern from 2018 to 2021*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1261738/share-of-italians-worried-about-threats-against-the-environment/

Statista Research Department. (2021, January 07). *Value of home coffee machines produced in Italy from 2014 to 2018*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1169486/home-coffee-machines-production-value-italy/

Statista Research Department. (2021, September 02). *Youth unemployment rate in Italy from 2004 to 2021*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/776931/youth-unemployment-rate-in-italy/

Statista survey. (2017, March). *Why would you buy this kind of coffee maker next?* Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/697454/coffee-maker-purchase-reasons-by-country/

Stories.starbucks.com. (2018, May 06). *Starbucks and Nestlé Form Global Coffee Alliance to Elevate and Expand Consumer Packaged Goods*. Retrieved from Stories.starbucks.com: https://stories.starbucks.com/press/2018/starbucks-and-nestle-form-global-coffee-alliance/

Stragiotti, M. (2021, October). *The Italian coffee market. Competitive strategies in a saturated market.*

Torchiani, G. (2007, June 22). *StarBucks ed Etiopia: è finita con un accordo tra le parti la "guerra del caffè"*. Retrieved from Ilsole24ore.com: https://st.ilsole24ore.com/art/SoleOnLine4/Economia%20e%20Lavoro/2007/06/starbucks-etiopia-guerra-caffe.shtml

Torriani, L. (2021, February 08). *Mercato del caffè in Italia. I dati 2021*. Retrieved from Universofood.net: http://www.universofood.net/2021/02/08/mercato-del-caffe-in-italia-2021/

Trademap. (n.d.). *List of products imported by Italy*. Retrieved from Trademap.org: https://www.trademap.org/Bilateral_TS.aspx?nvpm=1%7c381%7c%7c076%7c%7c09%7c%7c%7c4%7c1%7c1%7c1%7c2%7c1%7c1%7c2%7c1%7c1

Tradingeconomics.com. (2021). *ITALY MANUFACTURING PMI*. Retrieved from Tradingeconomics.com: https://tradingeconomics.com/italy/manufacturing-pmi

Truenumbers.it. (2021). *Quanti Starbucks ci sono in Italia? Soltanto 15*. Retrieved from Truenumbers.it: https://www.truenumbers.it/starbucks-in-italia/

Varrella, S. (2021, October 04). *Gross Domestic Product (GDP) of Italy from 2010 to 2020*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1201202/gdp-italy-current-prices/

Varrella, S. (2021, May 11). *How often do you talks about topics related to sustainability with your friends, relatives, and colleagues?* Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1103305/frequency-of-sustainability-talks-in-italy/

Varrella, S. (2021, February 03). *Inflation rate in Italy from 2004 to 2020*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/630925/inflation-rate-italy/

Varrella, S. (2021, September 09). *Real Gross Domestic Product (GDP) volume growth in Italy in 2020, with a forecast for 2021 and 2022.* Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1109195/forecasted-gdp-growth-in-italy/

Varrella, S. (2021, September 09). *Saving rate of households in Italy from 2016 to 2020, with a forecast for 2021 and 2022*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/1115319/saving-rate-of-households-in-italy/

Varrella, S. (2021, September 03). *Unemployment rate in Italy from 2008 to 2020*. Retrieved from Statista.com: https://www-statista-com.ezproxy.biblio.polito.it/statistics/531010/unemployment-rate-italy/

Weller, K. (2020, September 18). *What is the difference between green and brown coffee beans?* Retrieved from The Daqian Times: https://daqiantimes.com/difference-green-brown-coffee-beans/#:~:text=Difference%20between%20green%20and%20brown%20coffee%20beans%20,Chlorogenic%20Acid%20Level%20%201%20more%20rows%20

Westrockcoffee.com. (n.d.). *Our Company*. Retrieved from Westrockcoffee.com: https://westrockcoffee.com/pages/our-company

Wikipedia. (2021, October 01). *Caffeina*. Retrieved from Wikipedia.org: https://it.wikipedia.org/wiki/Caffeina

Wikipedia. (2021, June 28). *Capsula di caffè*. Retrieved from Wikipedia.it: https://it.wikipedia.org/wiki/Capsula_di_caff%C3%A8

Wikipedia. (2021, September 20). *Coffea arabica*. Retrieved from Wikipedia.org: https://en.wikipedia.org/wiki/Coffea_arabica

Wikipedia. (2021, August 31). *Coffea canephora*. Retrieved from Wikipedia.org: https://en.wikipedia.org/wiki/Coffea_canephora

Wikipedia. (2021, July 19). *Coffea charrieriana*. Retrieved from Wikipedia.org: https://en.wikipedia.org/wiki/Coffea_charrieriana

Wikipedia. (2021, May 13). *De' Longhi*. Retrieved from Wikipedia.org: https://it.wikipedia.org/wiki/De%27Longhi

Wikipedia. (2021, September 18). *London Metal Exchange*. Retrieved from Wikipedia.org: https://en.wikipedia.org/wiki/London_Metal_Exchange

Wikipedia. (n.d.). *Storia del caffè*. Retrieved from Wikipedia.it: https://it.wikipedia.org/wiki/Storia_del_caff%C3%A8#Primo_utilizzo_e_leggende

Wikipedia.it. (2021, August 16). *Kimbo Caffè*. Retrieved from Wikipedia.it: https://it.wikipedia.org/wiki/Kimbo_Caff%C3%A8

Wikipedia.it. (2021, September 30). *Nescafé.* Retrieved from Wikipedia.it: https://it.wikipedia.org/wiki/Nescaf%C3%A9

Wikipedia.org. (2021). *Caffè*. Retrieved from Wikipedia.org: https://it.wikipedia.org/wiki/Caff%C3%A8

Wikipedia.org. (2021, October 12). *Jacobs Douwe Egberts*. Retrieved from Wikipedia.org: https://en.wikipedia.org/wiki/Jacobs_Douwe_Egberts

Wikipedia.org. (2021, September 18). *Luigi Lavazza*. Retrieved from Wikipedia.org: https://it.wikipedia.org/wiki/Luigi_Lavazza_(azienda)

Wikipedia.org. (2021, September 11). *Starbucks*. Retrieved from Wikipedia.org: https://it.wikipedia.org/wiki/Starbucks

William Byrnes and Nima Khodakarami. (2016, August). *The value chain: A study of the coffee industry*. Retrieved from Researchgate.net: https://www.researchgate.net/publication/326786435_The_value_chain_A_study_of_the_coffee_industry