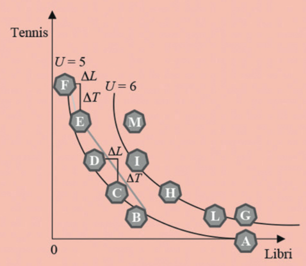
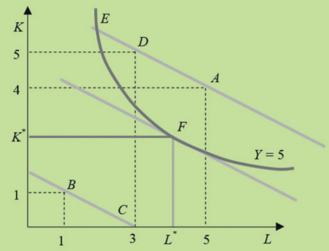
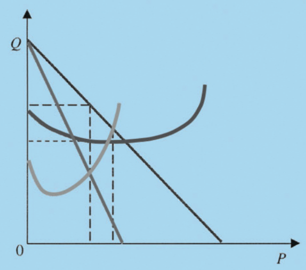
Gustavo Piga

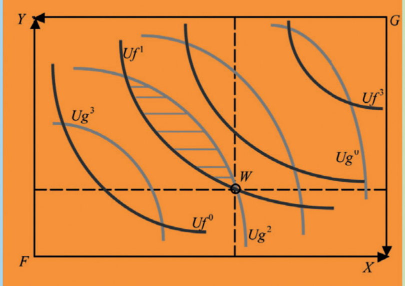
Principles of Microeconomics

Lectures









SECOND EDITION

Giappichelli

Chapter 1

Microeconomics and markets

Summary: 1. Introduction. – 1.1. Why choose. – 1.2. The choice in market regimes. – 1.3. What happens in a market regime. – 2. Microeconomics and the demand curve. – 2.1. The value of a good. – 2.2. The demand curve. – 2.2.1. To read a demand curve. – 2.2.2. The importance of the demand curve. – 2.2.3. Changes in the demand curve with respect to the price. – 2.3. Elasticity of the demand curve. – 3. The supply curve and microeconomics. – 4. Equilibrium and microeconomics.

1. *Introduction*

1.1. *Why choose*

Microeconomics is the social science that deals with **analyzing, predicting and evaluating** (with respect to some ideal outcome), the individual choices and/or choices of organizations whose agents are willing or called to achieve a common goal – such as the individual firm at the individual institution (political party, trade union, football team) – in given legislative, regulatory, social and moral contexts where they interact with other individuals and/or organizations. For this reason, microeconomics is often referred to as the "social theory of individual choices", distinguishing it from macroeconomics, which instead analyzes, predicts and evaluates the choices – within and between them – of communities (cities, regions, nations, federations, world) made up of heterogeneous individuals, also within a given regulatory, social and moral context [(1),(2)].

---

(1) The boundary is truly subtle between these two branches of knowledge. It is true that microeconomics takes care of making all these individual behaviors coherent in what is called the general economic equilibrium (see Chapter 5) which then, according to some believers of market dominance, manages to capture the functioning of national and international economies composed of many individuals and organizations: macroeconomics in this case is often deemed to be "micro-founded". Analogously, the study of the behavior of nations is sometimes carried out in the microeconomic sphere, especially if we are capable of providing each nation with a specific objective as if it were a single individual. Consider, for example, the microeconomic analysis of the

For microeconomics to be relevant, the problem of choice must therefore be relevant. To delimit the perimeter of action of microeconomics it is therefore necessary to first wonder in which situations the problem of choice is irrelevant. There are those who declare this challenge impossible from the beginning, and perhaps they are right: the 1915 Nobel Prize in Literature, Romain Rolland, argued that "we do not choose at all. Destiny chooses. And the wisdom is to show yourself worthy of its choice, whatever it is.".

In a totally different perspective, discussing the views of aderents to nationalistic theories, Yael Tamir, sustains that according to these the choice of where to belong is not only impossible but also that «elsewhere» any choice is impossible: (for them), «*by nature*, individuals are members of particular human communities. Outside such communities they cannot develop a language and a culture, *or set themselves aims* … Being situated, adhering to a particular tradition, and being intimate with a particular language, could therefore be seen as preconditions of personal autonomy».

But before shutting down and abandoning the turf, let's try to understand if we really have to be so fatalistic or if we can rather find ourselves in a situation of choice in which free will can play a role. After all, responding to nationalists, are we sure that, for example, «cultural memberships are beyond choice»?

In a dictionary I read that choosing means "distinguishing between several people or things to ... take that one that seems best to us".

It is clear therefore that choosing implies above all the ability to distinguish. But we must understand each other on this word, ability. We could understand this ability as a sort of rationality, a theme to which we will return. However, even a madman has his own logic, difficult perhaps for some of us to understand, which leads him to choose. So microeconomics can also end up dealing with irrational choices, even if we will see that many times along these chapters we will assume to be dealing with rational agents (and I will try to motivate you why, at least in the context of an introductory text like this). But at this moment I want to underline how microeconomics also deals with those «lack of ability» cases of the so-called "illusion of making a choice", those where in reality one does not distinguish: these are situations in which complexity or conditionings are such that others end up choosing for us, often giving us the (erroneous!) im-

---

Cold War in which the United States and the Soviet Union had to decide whether to bomb the respective enemy nation with the use of nuclear warheads.

(2) The economist's work must be divided into two possible major strands: – to describe how an individual would behave in a given situation (positive or descriptive strand of the economy: depicting accurately the world as it is); – to assert how the individual should behave in a given situation if he wanted to achieve a predetermined goal (normative or prescriptive strand of the economy: the world as it should be or, according to someone, the world as unfortunately it is not ...). This strand is often used by those who want to identify the best social action in the face of individual behaviors that are not always optimal from a social point of view.

pression that we are exercising our free will (advertising or endogenous addictions come immediately to mind, but also our limits of rationality, as we will see).

But let's go back to the dictionary. Because from that definition we understand that choosing also entails: a) having a goal (taking ... best) and also b) giving up something to get something else (that one). Choice therefore seems to generate a benefit (take ... best) but also a cost (not taking else from that one).

A definition of microeconomics

It is therefore the scarcity of resources that poses a problem of choice. Given that choosing involves a renunciation, in a situation of infinite abundance, as in the Garden of Eden, there would be no microeconomic problem, as nothing would be renounced in order to obtain something more. But that's not enough. Choosing, even in a situation of scarcity of resources, would not be relevant if we did not have needs to be met or goals to be achieved. **It is therefore the satisfaction of needs or goals in the presence of a scarcity of resources that poses a problem of microeconomic choice**.

A second definition of microeconomics

Others prefer different definitions of microeconomics. More and more, in choosing to achieve a certain goal or to meet certain needs, we depend on the behavior of others (think of a shareholder whose dividend depends on the effort of the manager who is entrusted with the management of the company or of the manager whose compensation, based for example on the profits made, depends on the effort of the employees who report to him or, again, to a voter whose satisfaction depends on how the party that he/she votes for will represent the mandate received more or less well): to them (the so called «agents») we often "delegate" in part or in whole the mission of maximizing our own (the so called «principal») well-being. These "others" delegated by us may in turn have objectives different from ours (the manager may endeavor his effort in a personal direction not appreciated by the shareholders; the workers may shirk too much compared to what the manager wishes; the political parties may consider more favorably the possibility to enrich themselves rather than trying to meet the goals implicit in the voters' mandate).

It is therefore natural and widespread to try, as principals, to generate the right incentives in the people (agents) we delegate so that they satisfy, with their actions and choices, the achievement of *our* objectives, not necessarily coinciding with their own. This often happens through contracts as much as possible 1) binding for the agent but also 2) «smart», because they are capable of stimulating the desired results of the principal. It makes little sense for a person to write for example a contract that says "you work for me at conditions that are worse than those obtainable elsewhere" or "I pay you to deliver a package and I still pay you even if you don't deliver it". **This is why microeconomics is often re-**

ferred to as "incentive theory" (3) **or "contract theory/design", where «smart» contracts, to be designed, help stimulate such «right» incentives**. Profit-based manager bonuses, productivity bonuses given to workers, elections that seek (but do not always succeed) to condition politicians' behavior are all «contractual» mechanisms designed by the principal to generate in the agent the right incentives to desire to carry out a certain type of action or choice, otherwise lacking, in the individual behavior of such delegated agent.

And yet, one must also know/want to desire. Psychological or physical illnesses sometimes even prevent us from wanting to desire. But knowing how to desire? Where does this ability come from? Speaking of conscience at this stage may seem premature if we do not analyze its definition: we could call conscience "the immediate faculty to be aware of, understand, evaluate the facts that occur in the sphere of individual experience or that are likely to occur in a more or less near future". Consciousness as an engine of desire? Nobel Laureate for Economics Aumann recently (4) defined consciousness as the ability to "face an experience" – sight, hearing, smell, touch, be touched – but also to "have a feeling" – hate, love, grudge, fear, pleasure, pain – and act willingly. But how does consciousness work? We don't know, says Aumann, it is one of the great mysteries left for science to unveil: it is totally subjective, you feel it inside of you, but only you (even though neurosciences is working hard on this too). Aumann focused rather on why it exists, and concludes: to make incentives work (so that the evolutionary chain, made up of nourishment, reproduction, self-preservation, would in turn work). One cannot desire without being conscious. With conscience, one wants and is led to do what is in the interest not so much of man, but of the evolutionary chain, Aumann says. When a person is not conscious, he does not want. With consciousness you experience the pleasure of eating and the pain of not doing it. Thus one eats. Those who do not feel pain do not survive for long: the awareness of pain provides an incentive to work to remove pain. From a religious point of view, which Aumann does not enter into in his «neutral» presentation (leaving undetermined who "evolution" is), would God have created conscience to make us desire, so as to make us ask the ethical problem of justice, of what is the right thing to do?

However it is, in order for the problem of choice to be a relevant problem, things do not end there. In fact, we must find ourselves in an environment where choice is possible. George Orwell in the novel "1984" or the film "The

---

(3) Also called "mechanism design": the art of "designing" economic systems/situations in such a way that participants want to do what the "designer" wants them to do. It can also be terrifying, can't it?

(4) The interested reader is invited to listen to his speech https://www.mediatheque.lindau-nobel.org/videos/37250/mechanism-design-consciousness/laureate-aumann.

Planet of the Apes" portray individuals who – although not infinitely wealthy and in any case eager to satisfy needs – do not face a choice problem as they are "obliged", by a master more or less human, to achieve only one result. But it is not always true, be careful, that choice takes place only where freedom of choice is facilitated. In its beautiful modern version, "The Dawn of the Planet of the Apes", the monkey Ceasar chooses not to follow the "father-master" out of prison and earns his (!) freedom by giving it up. It is in that context therefore that Ceasar makes his first choice and becomes an object of intellectual curiosity and study for us. Even in such extreme cases, therefore, a microeconomic issue remains: since, as philosopher Jean-Paul Sartre stated, "not to choose is nevertheless a choice.".

Another relevant but opposite case of choice "without freedom" occurs, we said it above, within the realm of complex choices, when this freedom is conditioned to the point of seeming irrelevant. We will discuss later the role of advertising and the power that modern technologies are taking in this direction, which exploit information that can also be (more and more) inferred from the cloud of social networks where many of you interact.

A third definition of microeconomics

In general, however, there is no doubt that in many circles choice is impossible although it would be desirable. In the Soviet Gulags or in the Nazi concentration camps there was no choice, except within very narrow microcosms such as those frescoed in such a pregnant way by Primo Levi in "If this is a man". We therefore end up being often interested in **the problem of individual choice in institutional situations that allow freedom of decision between different alternatives, in order to achieve satisfaction of needs in the presence of scarcity of resources**.

Institutions, preferences, resources: the three cornerstones of microeconomics that lie, more or less covertly, behind all our analyzes.

Between ethics and economics

But that's not enough. We also talked about a science that deals with "evaluating" individual choices. Evaluating them will imply first of all defining an ideal outcome with respect to their preferences, a so-called **«optimum»**: will «each individual be able to achieve its optimum» is a first question we will dwell into.

However, the sum of individual choices also leads to society outcomes. We will thus start learning how to judge various «social» outcomes, depending on the institutional context that we will create around individuals. Evaluate with which judgment parameter? That of the single person? But there are many single persons, with different preferences, which one do you give weight to for evaluating social choices for a community? Adding the well-being of each single individual belonging to that community, if ever possible, to determine the **optimal social outcome**, is not easy: if 9999 citizens are better in situation A than in B and only one is worse, can we say with certainty that situation A is preferable to that of B? Doing so will end up entering rapidly into other fields, such as philosophy, especially ethics, which looks for criteria for judging what is right and what it is not and how to resolve the dilemma faced by those who have to take a decision with the responsibility and the power to establish what context to create around the agents of an economy or of a society. And we will also face an apparent paradox: in the history of microeconomics we have been advised by some relevant thinkers, as we will study in chapter 5, to ... "turn away" and not to express social evaluations. Choosing not to choose, that is, to say what is good and what is evil. A nice paradox for the science of choices.

Examples of microeconomic choices

A few examples of microeconomic choice problems? Microeconomics is concerned with predicting and analyzing how an individual divides his limited (scarce) time between different alternative purposes: studying, working, or dedicating himself to free time and leisure. Or to forecast the possible choice of a not-infinitely rich consumer of how many and which goods to buy, or of a consumer in an uncertain environment about if and how much insurance to buy to protect herself from a possible but not certain negative outcome, or again an individual leaving more than one period who must choose between how much to save and how much to consume and, within the choice of savings, which risky or non-risky financial assets she must allocate her wealth in. Or to examine the choice of the potential thief who must decide whether to break through that door and steal many gold bars, risking ending up in prison or going home to eat the usual soup. Or the choice of the candidate who has to decide whether or not to lie during the interview for his hiring, or rather the employee, who has to decide whether to steal the pencil sharpener before returning home in the evening, both facing the risk of being discovered and punished. Or, again, the choice of the shareholder who must decide the best way to remunerate a manager in order to maximize the profits due to him in the form of dividends, bearing in mind that the manager's desire to work for him must be stimulated. Or of the public administration that hopes to find the contract that motivates the employee not to shirk or to refuse to be bribed. Or the prisoner locked up in a room that has to choose to confess whether he committed or not the offense, knowing that in the other room the questioning of his accomplice is happening at the same time.

1.2. *The choice in market regimes*

The microeconomics strand we deal with in this introductory part is concerned with analyzing, predicting and judging in the most effective way the choices of certain individual agents [5] potentially operating in a market regime [6]: in

---

[5] So not political, administrative, supranational organizations which also have an impact on a country's economy. We largely leave (see note 1) this analysis to macroeconomics.

particular, the entrepreneur or the producer[7] and its counterparts. **Market, market regime, counterparties**: many new concepts! We deepen them briefly.

The market ...

A market is a meeting place where you can voluntarily exchange a certain commodity or service with other individuals for something else in return. Notice therefore that this therefore presupposes an institutional development of society beyond a primitive world where each individual consumes his own resources obtained either through the misappropriation of other people's resources or through the consumption of goods obtained in turn through his own work (so-called auto-consumption). The analysis which will be developed during this introductory part is thus also important in this regard: to the extent that we can explain why people end up resorting to markets, abandoning therefore a primitive world of auto-consumption or of any unsanctioned abuse of power, for a world where the voluntary exchange of goods and services prevails, we will be able to understand at least in part the history of humanity we have witnessed over the centuries[8]. Anticipating the end of this "story", we will see how, in market economies, it is often true that more (appropriately defined) overall wealth and happiness are produced than in economies where market activities, and its related free and voluntary exchange, is banned or prohibited. But not always so.

Indeed, societies at times find it important to prohibit some markets, even if an exchange would take place there voluntarily if authorized: that is, it is the exchange between counterparts that is considered illegal. Often this is because some markets are characterized, if operating, by one of the counterparts participating in the exchange but in such an unfair and asymmetric condition as to the

---

[6] The term «potentially» refers to the fact that there are situations in which some market participants will not participate because it is not convenient for them. Sometimes their absence is motivated by their incapacity, other times by the inefficiency of the context. In the latter case, for example in the case of asymmetries of information, these actors literally disappear from the markets while their presence would have been useful, thereby causing damage to society and its components. In some other cases, the absence of participation in a market of, for example, an enterprise does not exclude that the latter is however capable of influencing the behavior of the other enterprises present in the market. For example, these might create barriers to entry to exclude specific firms: the latter, while not being in the market, affect the final outcome and behaviors in the market.

[7] As you may have noticed already, the figure of the entrepreneur and of the producer do not coincide in our terminology: the producer is an extreme figure with whom we tend to briefly identify the single individual who transforms products and services into a final good; the (more realistic) figure of the entrepreneur requires the presence of a company or an organization based on a complex set of contracts and interrelations within it, on whose genesis and development we will return to in another context later.

[8] This would also allow understanding why individual citizens agree to give up individual freedoms to transfer decision-making power to organizations above them to overcome problems of misappropriation of other people's resources (through laws, prisons, police, defense).

contractual power he/she is left with, to be considered *de facto* forced to do so. Other times because the trade is judged by third parties as immoral. Other times, markets can be prohibited because the object of the exchange itself, if asked, would object to such an exchange, because of being forced against its/his/her own will to be exchanged or again because it is judged in some way unfair or immoral by the members of the community that such object be traded.

... and the non-market

That morality plays a role is demonstrated by the fact that some markets that existed yesterday and which it seemed normal to encourage and protect then, today no longer exist: morality standards evolves. The slave market is perhaps the most relevant example, but also the child labor market, which still exists in some parts of the world, is now considered a remnant of the past. One could argue that these transactions were not voluntary in the first place because the object of the exchange, the (chained) owner of his/her free time did not approve of them, but it is certain that buyers and sellers of slaves and the institutions of the time approved it. Today these markets are considered morally reprehensible and are therefore prohibited: commoditizing and making people worthy of dignity and respect a mere instrument of profits prevents us from allowing the development of this market.

Other times it is not (or not fully) the object of the trade that people oppose, but rather that one of the counterparts is in the market, even if sometimes he/she him/herself does not or does not fully object to the trade taking place. An exchange between a child in a poor country who gives his kidney to a richer western child in need of one, in exchange for money: is it truly a voluntary exchange or rather is it an exchange so unfair and with such disproportion in the bargaining power of one of the two parties that it should be considered non-voluntary, unjust and morally objectionable?

Anyway, perhaps in 100 years there will be bans on markets that we consider normal to protect today, because they will go against our modified perception of what is right. As you often see, moral evaluations are therefore sometimes capable to justify/explain the existence/relevance or not of a market.

... and the society

In arguing so, note, we are introducing a hiatus between the economy and society: while in the former the concept of market prevails, in the latter it is not necessarily so. A given society may decide to limit the role of the market and sanction that some objects or services must not be subjects of an exchange, even when the two counterparts of the exchange appear to gain from it. A moral dimension sometimes suggests a ban or a reduction of the market (think of an usurer's loan in the credit market, where transactions at too high rates of interest are often prohibited, or minimum wage legislation that forbids labor agreements to take place at too low a wage).

Yet the size of the markets is widening all over the world and not just in the size of each market that already existed: from a market economy we are becoming a market society, political philosopher Michael Sandel reminds us, as markets are being created where they did not exist before, because it was then considered right that they did not exist. For example, increasingly we resort to selling citizenship permits to the richest bidder in exchange for guarantees that the latter brings with it an enterprise and new jobs. Is citizenship an asset to which the logic of the market can be extended, making it purchasable? While in many countries there is a ban on killing rare animals, in South Africa a number of licenses have been created to kill a limited number of endangered black rhinos for $ 150,000 each, so as to give landowners an incentive to breed them and protect them. Was there no other way, to safeguard their species, than to create a market to kill them? And how much does a female uterus of a poor woman cost to give birth to the son of a Western couple? 6.250 $, if we look at a legal market in India. What markets do we find normal to authorize and protect?

Among other criticized moral implications of the markets, there is that one which sometimes markets make income inequalities more dramatic, between those who can afford certain goods and those who cannot. Bruce Springsteen, intervening to regulate "his" market, sells tickets for his concerts at prices often much lower than those which the wealthiest individuals would be willing to pay, because his music wants to address a certain audience, that of the so-called "working class": some people willing to pay a lot are therefore prevented from entering a given concert, while others not willing to enter at the «market» price will be allowed to do so. Any reference to the current Covid crisis and the debate regarding the price of masks or bacteria-killing liquids is valid too.

But there is more to it. When markets enter the scene, with an exchange of goods or services and the related presence of a price, sometimes they change the nature of that good or service, "corrupting" it. So the American Catholic church had to object when the freely distributed tickets in the parishes on the occasion of the mass for the USA visit of Pope Benedict XVI found a large afterwards market, where tickets were exchanged for more than 200 dollars: a sacred good that acquires an economic component loses part of its sacredness.

Take the case of Barbara Harris (as told in "What Money Can't Buy", by Michael Sandel), founder of the "Project Prevention" Association in the USA. In fact she created a market: offering $ 300 to drug-addict women who agree to undergo sterilization or to submit to a long-term birth control therapy. More than 3,000 women have voluntarily entered this exchange since the beginning of the program. If these drug addicted mothers are so vulnerable, she argues, how can we expect them to make the right choices about raising and educating their children?

Rather than help them get out of their addiction, so argue some of the critics of the program, money subsidizes this dependence. But Harris, who recognizes this possibility, believes it is a cost to be born to avoid giving birth to children with drug addictions. A more substantial criticism, which also explains why some countries have banned such programs and markets, has to do not so much with an opposition on economic grounds, such as the one mentioned above, but on moral ones, exposing economic arguments to their incompleteness. First, there is the already mentioned issue of impending cohercion, especially because the program is aimed at vulnerable women in poor neighborhoods. It therefore concerns the conditions under which the exchange takes place. The other criticism looks instead at the price paid by the women as a ... bribe. What is a bribe? A price we pay to buy something that in society we believe should not be put up for sale (a public job? a public contract?). It is therefore not so much an objection about the conditions of the exchange as it is a problem that touches upon the nature of the good exchanged: even if this transaction was voluntary, like a bribe can be, like the bribe it offers something that we believe cannot be sold (the reproductive capacity of the woman, in this case, a public job up for competition, in the case of corruption) because it is degrading to do so. But what is degrading? Moral rules must or should tell us if this transaction can go on the market or if it should be prohibited from doing so.

Things related to market creation and morals don't always have to be viewed in this negative light. For example, ask yourself similar questions about the recent trend of rewarding the youngsters who live in disadvantaged contexts so as to overcome entry exams at the University, knowing that many young people from disadvantaged economic backgrounds often study more with such incentives. As you can see, a complex question, that of the existence of a market, which cannot be abstracted from the social context in which it is inserted and from the moral values that characterize that particular society at that particular historical moment.

Rules and markets …

Rules, also in the form of laws or decrees, can limit some market exchanges or delimit their areas: sometimes for a good reason, sometimes less. We have already seen moral rules (often becoming embedded in the law) that often set themselves the goal of not "commodifying" a given relationship between individuals, preventing the birth or limiting the development of the market. Some rules try to protect one or more counterparts from excessive and/or inequitable risk-taking (anti-usury laws prevent exchanges at too high interest rates to protect those (the debtors) who are in difficult conditions or in despair, and for whom therefore it is considered inappropriate to allow a free entrance in a market and transact). Rules that protect and allow trade-unions can also be seen in this light insofar as they allow wages not to decline excessively due to a disproportionate power of entrepreneurs with respect to workers, even if some workers would have competed away the salary of some of their fellow mates to obtain a job (the case of strikebreakers is de facto an example of market forces at work).

Sometimes, on the flip side, there are so many useless rules that end up actually preventing this theoretically possible freedom of exchange from manifesting (imagine red tape placed by the bureaucracy on businesses). Another example of too much State that can destroy the market is due to the need to tax by the State (possibly, but not necessarily, to redistribute the resources obtained, from the wealthiest to the most needy citizens), reducing the resources of individuals that will have a reduced incentive to produce, consume and work, given that they will no longer appropriate or be able to enjoy all the fruits of their activity. In an economy where by law business income is 100% taxed, no business will often see the light and there will be nothing to redistribute, just like in an economy where taxation is zero, but where total disposable income will instead be high [9].

... and a market regime

A given market for goods and services may be characterized by a different degree of contractual strength of the counterparties operating there. The concept of market regime identifies the contractual strength of its participants (we will give a more rigorous definition later). We will here study two market regimes: **monopoly**, where there is only one potential seller facing a myriad of potential buyers, and **perfect competition**, where there is a potentially large multitude of potential buyers and sellers. Once these market regimes are properly defined, we will find that in an exchange the sellers have more **bargaining power (contractual strength)** in the monopoly than in perfect competition.

Those two regime we will study toward the end of this introductory book are two market regimes that do not dominate nowadays out there market economies. Why?

For one, as we will see, often monopolies lead to inefficient outcomes for society. Not always, however, especially when technologies are such that it is advisable to let «one firm only» bear the (large) costs to enter such markets (for example traditional fixed phone lines). Monopolies' inefficient outcome can be replicated by cartels (or trusts), where several firms act like one, in full agreement and not competing against one another. The first law against groups of firms acting like monopolies was the 1890 Sherman Antitrust Act in the USA (Italy had its first law in 1990). Cartels have thus lost their pervasiveness because Antitrust laws have made them illegal and monopolies also because changes in technologies have made it less relevant to limit the market to one producer (e.g. the switch from fixed to mobile phone lines).

As for perfect competition, on the other hand, because of its restrictive assumptions, it remains in some sense only an ideal to be pursued, as we will see later on this quest for understanding how markets work. We will use perfect

---

[9] Each society establishes its desired mix between the size of the cake ("efficiency") and the sharing of the same ("equity"), having in mind that the richer an economy the more it will be possible to complete a given redistribution of resources with a lesser percentage of subtraction of resources, generating incentives to produce even more.

competition, for its ideal properties, as a benchmark with which to judge society's outcome under different market regimes.

What do market regimes have in common, for example competition and monopoly? First and foremost, they are characterized by the presence of a market, where the exchange between counterparties is voluntary. We can read this freedom to exchange with reference to the possibility of exchanging between counterparties only if mutually beneficial, compatibly with the existing rules prevailing in the (social, cultural, historic, political) context in which these markets are inserted. One cannot put the gun at the head of the consumer (producer) to buy (sell): we would not be in a market economy but in a predatory one. Indeed, as the Table below shows and as we will show, one exits a market with a smile, otherwise he/she would not enter an exchange in such markets (if you wonder why should that be, be patient). Notice however that the «size of the smiles» (something we will later call surplus) depends in which regime you buy or sell the good and whether you are a buyer or a seller. For example, consumers (entrepreneurs) exit from the purchase (sale) of a given apple happier if they are to buy (sell) it in a perfect competition (monopoly) regime.

Society	🙂	😃
	Monopoly	Perfect Competition
Entrepreneur	😃	🙂
Consumer	🙂	😃

One note of caution: freedom of exchange, and freedom not to exchange, in the shape of voluntary participation, extends also to the fact that one should avoid an exchange where parties do have erroneous and/or misleading information, without which one would have not entered into an exchange or contract and would have not left with regret the market. Both being forced in an exchange and regretting an exchange entered into because of or with misleading information lead to market disappearing for lack of trust and fear, often not to re-appear again.

For this to happen, something must generate this absence of regrets, so that markets are allowed to thrive. Most of the time this «something» takes the shape of an act of protection, that removes the fear that we instead would end-up regretting entering into one market. In the presence of such fear, markets tend to disappear. If that «something» allows involuntary exchanges to be discouraged and voluntary agreements to be respected by both parties, then markets thrive.

In the case of lack of information, for example, regulations that impose it often help the markets to survive and grow (a financial contract in which the security can be sold only if accompanied by adequate information can help to ensure that there is a greater market). The US financial crisis of 2008, and the related disappearance of entire markets and businesses that followed, has been attributed by many to the sale of securities to households and banks that were poorly informed of their value, due to poor control of regulators. Once the crisis hit, markets disappeared and prices collapsed as no counterpart wanted to buy them anymore, not trusting anymore their value. Sometimes solution to alleviate lack of information are found among market participants. When good cars circulate along with bad lemons, markets for good cars tend to vanish if contractual solutions, for example like warranties, are not created (as a purchaser, if I don't know the quality of a car, I am willing to pay little. As a seller, I am not willing to sell it at that low price, even though if we both had perfect information about quality we would trade and create a market that lack of information destroys in part or totally). Misleading advertising can be another example of the threats to market resilience.

In fact, it is true that markets in reality almost never completely disappear. They are present in all the economies of the world, even in extremely poor and developing countries. Get off a plane in an economically poor country, slip into a charming bazaar and you will find a frantic market activity, where even the merchants are offended if you do not negotiate the price of a good until the evening. Yet, many of these market economies function poorly and produce little wealth compared to other market economies, perhaps located a few kilometers away, divided only by a border or a wall. Why? Many answers are possible, but it is certain that the ability to protect – also by sanctioning behaviors that depress the exchange – that a trade is enforced at the agreed conditions through appropriate rules and institutions plays an important part. So: **«protecting and guaranteeing the respect of voluntary trades by enforcing the agreements made allows markets to grow and thrive»** is something that should not be forgotten ever, even when the invisible presence of the protector will seem forgotten, unnoticed or taken for granted.

Property rights

How do you feel when the bond you purchased has become worthless because the trader that sold it to you misled you into buying it, withholding key information about that asset, in the presence of which you would have not bought the bond? Not only angry, robbed. And you will hardly enter a market like that again in the near and maybe distant future.

For example, when bandits are not kept away and repelled. What do bandits do? They obtain resources without providing in exchange the price desired by the counterparty and end up even violating their property rights (more precisely, the so-called human rights on property) (10). What happens in the presence of so

(10) By property rights we mean the rules that determine the allocation of property. This alloca-

many bandits? The more an economy is dominated by these predatory behaviors (in terms of subtracted wealth), the lower the incentive for victims to produce and participate in commercial exchanges that do not enrich them, to the contrary: the size of the market of an entire economy shrinks when the negative reputation of key participants is well known.

Lack of a market. The absence of protection of private property rights

How can these predatory actions be fought? In small and cohesive communities, (opposite to those globalized), often there is not even the need of laws prohibiting and sanctioning such type of behavior: it is sufficient to let social stigma operate against those who commit predation to dissuade them from doing it. In more populous and anonymous communities, predatory opportunistic behaviors are more likely to arise (in the city, in the end, thefts are higher than in the countryside ...).

Indeed, more typically, in big cities, or where anyway an exchange involves a concern for opportunistic behavior, we will equip institutions (police, army, courts, etc.) so as to prevent, or at least make it very expensive to adopt, these predatory attitudes [(11)].

However, there are those who believe that to protect property rights there is no need for public intervention, but for simple arbiters capable of resolving disputes through so called arbitration procedures. In part this is already the case out there, and the simple fact that such figures exist often guarantees compliance with correct behavior. For example, in the case of penalties for unlawful agreements such as violations of Antitrust laws (e.g. illegal cartels) many companies fear – more than any fine of the Antitrust Authority itself – the lawsuit which will be filed by a damaged rival turning to arbitrators. Arbitration also has the great advantage of reducing costs and delays in litigation in public courts. They are based not so much on the arbitrator's strength (also physical) as a recog-

---

tion rule is necessary because: a) individuals have different views on what to do with "things" and b) resources are scarce. One way to solve this problem is allowing for the prevalence of physical force. It is an expensive method which, as David Friedman says, only "children and great nations" use, p. 4, *The Machine of Freedom*. We therefore prefer a set of rules for the use of these things. If every "thing" is used by an individual who has the power to transfer its use to another individual we speak of private property (typically via exchange or donations or inheritances). The public property foresees that the user is the political institution that uses it for its purposes, imposing a common goal for all for the use of such "things".

[(11)] Note that sometimes such institutions can even take on the "evil" face of criminal organizations rooted in the territory; what these institutions guarantee – compared to the bandit erratic passage that robs the victim of everything – is, in exchange for protection from these erratic bandits, a "contribution". Such contribution will not equal 100% of the resources of the protected party, so as to ensure a system where people are willing to trade and produce and not abandon it instead. This is nothing but the logical consequence of the fact that the criminal rooted in the territory has everything to lose from controlling a territory where there are no or little incentives to produce goods and generate opportunities.

nized judge but on the value of the clause in the contract which refers to the mandatory compliance with a possible arbitrator's decision: if you refuse to comply once found succumbent, nobody in the future will want to enter into contracts with you, due to the loss of reputation; if you agree to comply, therefore, you are more likely to continue to make exchanges.

The real problem arises in those cases where there is a violation and there is no contract in which an arbitrator can intervene: a theft for example. How to protect property rights? Do you need the public magistrate and the public police? In reality, private security agencies may, some say, suffice: everyone "buys" its own protection. But what if these agencies find themselves in disagreement? Would we have police wars? Contracts between security agencies referring to arbitration are likely to be sufficient. Would the richest individuals be favored? Perhaps (a problem, this, which exists in any case also, in part, with the public courts and the associated legal costs of a good lawyer ...). But if this were the case, the poorest would no longer adhere to an arbitration of this type and the arbitrators themselves would disappear. In general, however, it is true that most of the time the protection of property rights in these cases is left to the public force.

Anyway, in situations where it is easier to escape from sanctions, for example in global and anonymous markets as those which have been developed thanks to new information technologies (e-platforms such as E-BAY is a good example), we need new protections to ensure growth of a market through mutual trust. The bi-directional communication capabilities that the Internet allows to artificially generate very large word of mouth, where counterparts exchange views and experiences on a vast set of themes, in particular over the quality of sellers and buyers, are very much used and provide in many cases market protection and thereby a welcome trust. E-BAY, in particular, has a feedback (satisfaction) mechanism that allows to obtain honest behavior and reduce disinformation and therefore facilitate exchanges between strangers on the Internet. Such feedback mechanisms are the subject of careful study by the so-called microeconomists, or microeconomics scientists. They do not however guarantee perfectly honest behavior and respect of contractual agreements all the time, and not only in the case of new entrants but also in the case of old entrants with reputation that may happen to face a sudden need of behaving less than honestly, like in difficult economic times. In these difficult times feedbacks by E-Bay are typically shortened and only concentrate on recent evaluations to avoid the past biasing favorably what have become risky counterparts. Indeed, the (lack of) **reputation** of one of the players in the exchange often makes the market thin up to a full disappearance. E-Bay-style feedback can play an important role, bearing however in mind that they are not without defects: there is evidence that not all consumers provide ratings but, rather, leave the market, disappointed. Thus the whole platform is damaged rather than the individual seller, as is also the case in the presence of opportunistic evaluations on the platform itself by rivals or enemies (think of restaurant rating platforms…).

Platforms are no guarantee to lack of theft. Many user-generated content portals – such as You Tube (Google) – in recent years have been involved in some relevant cases where they have had to explain to the judge why they apparently benefited from other people's assets for free, by admitting on their platforms video clips of companies (in the media sector) which have not given their assent to this exchange and which in all probability would have requested a fee for this possibility. Companies that have not given their assent argue that in the event of "thefts" of this type, incentives to generate expensive videos are lost, destroying a market for lack of sufficient protection. Judges have been involved in determining if such activity is more akin to theft or instead simply to correct behavior.

One reminder. Goods and services may see the contractual obligations develop over a long-span of time. For example, if maintenance is part of the product. In this case, an exchange can then turn out to be undesirable (or less desired than expected) not immediately but during or at the end of the same, due to the incorrect behavior of a counterpart who will not comply with his/her contractual duties: this eventuality too will lead a market to thin out in the absence, again, of institutions that prevent incorrect behavior.

Nor should one exclude that the public sector itself does not maintain its contractual obligations. The scandalous example of late payments by the Italian Public Administration, which pays with huge delays compared to what is promised, is another example. This failure to comply with the contractual terms of paying within 60 days destroys companies and therefore the market itself (by thinning it), where many small companies will no longer want to sell to the Public Administration or sell at higher prices to compensate for delays, again thinning the market as the public sector may not have the money to pay such higher prices.

The lack of a market: too little state?

Beyond cases where the state guarantees with its effective presence that private individuals populate a market, a market can also die for "too little state" also when private sellers have no interest in producing that good. In particular, there are some very specific goods – called public goods – which enjoy two particular characteristics: they are 1) non-excludable, that is, they do not allow the buyer, when consuming it, to potentially exclude others from enjoying their benefits too and 2) they are also non-rival, that is, they do not allow those who consume them to reduce the consumption others (as instead happens for the consumption of an apple!). Note that if the consumption of a good cannot be excluded, no one will be willing to give up something to buy it and, as such, it will not be supplied by any firm (for lack of profits), unless the State intervenes, by taxing citizens and then "giving the good away" to all users. A lighthouse, a typical non-excludable good, will not be traded in a market system, if left voluntarily to the initiative of private operators: who would ever pay to receive a light that already exists for all? That's why a public lighthouse is born, that is, available for everyone to enjoy freely. The study of the so-called public goods will often be studied in the subjects of Macroeconomics and Public Finance.

The lack of a market: too much state?

The table below shows how it is not so much the public or private ownership of companies that characterizes a market economy, where the two can coexist, but rather the possibility of exchanging in them thanks to effective social rules of the game that allow for mutually satisfying interaction to occur. Where such rules are built imperfectly (inefficient institutions), the market will function worse than where those rules are carefully studied (efficient institutions).

Pubblic Sector / *Private Sector*	YES	NO
YES	**Market economy (prevalent worldwide)**	**Pure market economy** Incentive to produce public goods? Property rights enforcement? Incentives to exchange?
NO	**Planned economy** Incentive to produce properly (what and how much?)?	**Banditism and Prevarication**

1.3. *What happens in a market regime*

In order for exchanges to take place, the entrepreneur or producer interacts with other subjects; in particular, the entrepreneur counterparties may find themselves in:

1) the market for consumer goods, as "consumers." In this market, **entrepreneurs (or producers)**, we will see, express **a desire to supply goods** and **consumers** express **a desire to demand those same goods**.

A particular consumer market, which we will not study in this introductory part, is the one of deferred consumption over time. In this market some counterparties will offer "current goods", desiring to "demand" the postponement to the future of their consumption (and expressing the desire of an act called savings) to other counterparts. They are called savers or creditors. The counterparts of savers instead desire and demand those "current goods" so as to anticipate their