2. What a lawyer needs to know about economics: a rational (?) eye on everything

Economic theory offers a realistic view of the way in which humans act when they make rational choices to cover their needs (section 1). It evaluates the efficiency of their decisions, private or public, in pursuing social welfare (section 2). However, rationality is not a panacea. On many occasions, it does not protect us, or may even lead us to inefficient options (section 3).

Lawyers cannot ignore the advantages and the limits of rational choice. This knowledge helps them to better approach their field of research and to understand that law exists as a means for achieving optimal results.[1]

1. RATIONAL CHOICE, AND THE LOST PARADISE OF THE LOTUS EATERS

1.1 Starting Point and Methodology

1.1.1 Needs, goods and scarcity of resources

Economic theory commences at a point of harsh reality. There is no Paradise on Earth and no Land of the Lotus Eaters, no place where the honeyed fruit of the lotus does away with all concerns, as in the Odyssey. Man is called upon to live on an 'accursed' earth; to satisfy his hunger with grief and sweat, before returning to the ground whence he emerged, as written in Genesis.

Humans have needs of all kinds, ranging from the tangible (food) to the intangible (social recognition). Needs are unlimited. When humans cover the most basic needs, they immediately add to them others. In modern western societies, following a healthy diet and dressing in fashionable clothes are priorities which require that we already have what we need to eat and wear.

Needs are satisfied by acquiring various *goods*, tangible (products) or intangible (services), whether provided in return for a consideration or not. Economic theory separates private from public goods, based on two criteria. The first is whether a person is in the position to acquire rights of *excludabil-*

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[1] *Posner* 2014a; *Ulen* 2017; *Parisi* 2017a.

ity over the particular goods. The second is whether their users enjoy these goods in conditions of *rivalry*. A car is something for which its owner holds excludability (property rights). Moreover, when passengers are inside, it is impossible for any third party (rivals) to use it. National defence presents the exact opposite characteristics. It protects all people within a country's borders, without excluding anyone (non-excludability and non-rivalry conditions). Cars are a private good, while national defence is a purely public good.

Economic analysis of public law also focuses on two other sub-categories of goods: *merit goods*[2] and *commons*.[3] Merit goods, such as education or health, are not purely public goods; they can be offered in conditions of excludability and rivalry (such as a private school or hospital). Nevertheless, such conditions do not sufficiently cover the needs of a whole society. Public interventionism may be necessary to redress this problem. Commons are specific public goods that may involve rivalry. Using a non-renewable resource – drawing water from a river – deprives other potential users of it; the same may be true when occupying a public infrastructure (such as a square or a highway). For this reason, commons are more exposed to abuse. We will return to this problem in the following pages. The opposite situation may also occur. There are goods (such as scientific developments or patents) that are not accessible to third parties in a way that would serve their most efficient use due to obstacles arising from the fact that they can be excludable (*anticommons*).[4] In that case, public law should promote the universal use of such goods (such as a patented coronavirus vaccine).

Producing goods to satisfy needs has a cost; it requires specific resources, the thorny earth and human sweat of Genesis. Contrary to needs, resources are limited. *Scarcity of resources* is the starting point of economic theory, a reality that law scholars tend to forget. It is even more certain than taxes and death, to paraphrase Benjamin Franklin. Even the richest man in the world cannot fulfil all his wishes during his lifetime; if nothing else, covering needs involves a cost in time.

1.1.2   Rational transactions: the answer to scarcity and to uncertainty

Making choices is crucial in order to address some needs before others, due to the scarcity of resources. Selection is based on comparing *opportunity costs*, a key notion in economic theory. Opportunity cost is what I must sacrifice to acquire what I choose instead of something else: the particular car I purchase

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[2]   *Musgrave* 1959, 2008.
[3]   *Hardin* 1968; *Aligica/Cox* 2019 and the selected articles in *Heller* 2009.
[4]   *Heller* 2009; *Murray/Stern* 2007. On both commons and anticommons, *Heller* 2009; *Buchanan/Yoon* 2000; *Parisi et al.* 2005.

instead of another model; dinner with friends instead of working, watching a football match or going to bed early. The process of selection is not easy. It often entails uncertainty – the impossibility to foresee in advance the risk of a negative outcome.[5] Covering needs involves risk, which increases over time. Uncertainty is a cost inherent in our choices. People do not react to it in the same way. Some tend to assume risks; they are risk friendly. Others, the vast majority, are risk averse. The allocation of uncertain risk is familiar to us lawyers, especially in the context of contract or insurance law.[6]

How shall we act in conditions of scarcity of resources and uncertainty? According to microeconomics, the scientific branch that studies our behaviour in such conditions,[7] we do this by using our brain. We perceive reality with our senses, but we have a comparative advantage over other beings; *we adapt and evolve through rational choices*.[8] We decide by reacting to positive or negative incentives through our reasoning.[9] Those choices are subjective; they depend on how each one of us prioritises needs in conditions of freedom. Due to its utilitarian origin, microeconomics opts for subjective preferences as the background for rational choices.

Placing subjective preferences first is also important for another reason. It means that *there is no 'objective' or 'fair' value for each good*. Price depends on each person's preferences: the amount he or she is willing to pay or accept for it (willingness to pay [WTP], willingness to accept [WTA]).[10] For example, the price of a second-hand car results from what the owner asks for it (WTA) and what the potential buyers offer (WTP). Everything has a price, however blasphemous this may sound. Acquiring every good involves cost – even security, tranquillity, 'quality of life', life expectancy, human life itself. Economics tries to quantify the price and cost of all goods by using a universal metric system, which is none other than money. It does so not to render everything an object of trade, but to *calculate the cost and benefit of choices*. This process makes a bad impression on some, especially when it converts to dollars or euros something that we rightly consider above price.[11]

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[5]   *Tversky/Kahneman* 1974; *Kahneman et al.* 1982; *Bernstein* 1996; *Munthe* 2011; *Balint et al.* 2011.

[6]   *Cheung* 1969.

[7]   *Cowell* 2018; *Schneider* 2019.

[8]   *Elster* 1986; *Hogarth/Reder* 1986; *Riker* 1990; *Posner* 1998, 2014a; *Cooter/Ulen* 2012.

[9]   *Becker* 1976; *Acemoglu et al.* 2008.

[10]   *Hoffman/Spitzer* 1993.

[11]   See Chapter 5, section 2.1.2.

1.1.3   Freedom and information: the ingredients of rational, effective and efficient decisions

To be rational, choices require two elements: freedom and appropriate information.

Freedom to decide, which Adam Smith considered the basis of prosperity as early as 1776, allows us to prioritise and satisfy needs. It seems, therefore, important to remove all obstacles that hinder a consensual transaction. However, life is full of such obstacles, and this increases the cost of choices. The law sets some, via mandatory rules that introduce prohibitions and conditions to transactions. This explains, to a certain extent, why economists do not always like lawyers.

Freedom alone is not enough for making rational choices. Individuals also need full access to the information required, so that their decisions serve their interests. A correct decision depends on whether one really knows what is at stake. If information is missing – either due to uncertainty, or because it is unavailable or hidden by other parties – choices will not be optimal. This is the case when I buy a second-hand car without knowing that it was severely damaged,[12] or when two persons decide to marry until death does them part, without knowing of their partner's dark side or health problems.

Microeconomics presumes that choices made freely and with the appropriate knowledge are rational; that they allow persons to acquire, at the minimum cost, the goods to fulfil their needs in conditions of scarcity and uncertainty. Rational choice theory relies on two assumptions. First is the *assumed rationality of choices*: a free person, having his own benefit as an incentive, will act rationally. Second is the *assumed efficiency of choices*: by acting rationally, as *homo oeconomicus*, this person will succeed in satisfying individual needs at the minimum cost and without wasting scarce resources.

This approach aspires to understand not only economic transactions, but the totality of human relations. Economic analysis, as an application of the rational choice theory, transcends the world of economy. It examines everything through the lenses of rationality and efficiency. It provides answers as to how individuals participate in collective actions, in State authorities, in pressure groups or political parties. It assesses the outcome of every decision, individual or collective. Its starting point was to examine the efficiency of economic systems. Today, it evaluates legal institutions, political processes, administrative models and all types of collective action. The idea is simple: the best way to improve an institution (law, representative democracy, public health) or to

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[12]   *Akerlof* 1970.

counter pathologies (maladministration, tax evasion, crime[13]) is to assess it objectively; to understand how individuals interact in those fields.

1.2 Beyond Strict Rationality: Game Theory and Behavioural Economics

Two other academic schools, more recent than classical economics, attempt to shed more light on human logic. The first is game theory, which examines 'strategic' decision-making. The second is behavioural economics, which focuses on the inherent boundaries of human rationality. These approaches seek to critically evolve rational choice theory, not to overturn it altogether.

1.2.1 Game theory

Classical economics describes human decisions as purely individual and utilitarian choices that persons reach irrespective of others. For game theory,[14] this description is too narrow. Individuals do not act alone; they determine their behaviour in correlation to that of others. They use their reasoning for 'strategic' action. We all have to co-exist with others, a fact which creates situations (games) with various characteristics, in which we participate as 'players'.

In some of these games, strategy consists of 'co-ordinating' behaviours: choosing the side of the road on which to drive, or a meeting place. Other games apply 'co-operative' or 'not co-operative' models: these depend on whether the players have (or can acquire) sole control over something they need, or whether they must collaborate with third parties. In these games, strategy takes on various forms (violence, consent, deception, reciprocity, retaliation, unilateral or collective action, keeping promises or not). Several factors are important: whether the resources to be shared may or may not increase during the game (zero sum or non-zero sum games); the duration of the game; whether the game consists of one or several rounds. Even basketball teams shape their strategy on similar criteria: on whether they are the favourite or the underdog; on how they are treated by the referees or the federation; on whether they are about to play a knock-out game, a best of seven series or a regular season game. People, companies and States act in the same way.

Focusing on strategic games is crucial for comprehending how institutions operate in practice. Game theory is related to institutional economics.[15] It examines the social and collective aspects of human behaviour (*homo socio-*

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[13] *Becker* 1968.
[14] *Mackaay/Rousseau* 2008.40; *Posner* 2014a; *Baird et al.* 1998; *Cooter et al.* 1982 and the collected articles in *Rasmusen* 2007.
[15] See Chapter 3, section 1.1.

logicus apart from *homo oeconomicus*). For this theory, law is an institution that plays various roles. It harmonises behaviours through legal rules (imposing a 'co-ordination' game). It enhances co-operation by granting rights (fundamental freedoms) or through games of reciprocity and mutuality (contractual clauses). In some cases, law makes official social norms and the 'spontaneous order',[16] which people shape via horizontal strategies. For example, driving on the right side of the road was a custom that many legal systems converted into a compulsory norm. On other occasions, the law intervenes to correct non-co-operative behaviours, such as the 'prisoner's dilemma', a famous game which we shall discuss below.[17]

Game theory is of fundamental importance for public law. It explains the *raison d'être* of the State and reveals the serious inefficiencies that arise in collective decision-making.

1.2.2   Behavioural economics

Behavioural economics[18] is more recent and iconoclastic. It started with Herbert Simon's theory on bounded rationality.[19] According to that theory, individuals have a limited capacity to comprehend reality due to the cognitive restrictions of the human mind and the narrow timeframe for reaching a decision. Even when we get almost unlimited access to information – there is a huge amount of available data on the performance of investment products, or property for rent in London – we are only able to process a small part of it. Many economists and legal theorists broadened this critical approach to human rationality and enriched it with scientific findings from cognitive and social psychology. Some of them (Richard Thaler, Daniel Kahneman) won the Nobel Prize.

Behavioural economics indicates that we often act non-rationally; we fall victim to a range of cognitive and volitional weaknesses, errors or distortions.[20] People display inherent weaknesses, which prevent them from serving their interests, or undergo distortions of perception that do not allow them to make correct assessments.[21] They show limited self-control and self-interest; they are influenced by positive or negative instincts and inclinations. For example,

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[16]   *Barry* 1982; *Hayek* 1978–1981; *Carbonara* 2017; *Mercuro* 2016.
[17]   See Chapter 2, section 3.2.1.
[18]   *Simon* 1959; *Sunstein* 1997, 2000, 2011b; *Thaler* 1986; *Tversky/Kahneman* 1986; *Kahneman* 2012; *Jolls et al.* 1998; *Wright* 2007; *Wright/Ginsburg* 2012; *Zamir/Teichman* 2014; *Bubb/Pildes* 2014; *Alemanno/Sibony* 2015; *Ulen* 2017; *Jolls* 2017; *Leeson* 2019, and the collected articles in *Rachlinski* 2009.
[19]   *Simon* 1959, 1972.
[20]   *Karampatzos* 2020.
[21]   Or memory distortions, *Nocetti* 2008.

xenophobia may hinder someone from buying from a shop that employs immigrants. Rather than being perfectly rational, it seems more accurate to refer to human behaviours as 'quasi-rational' and, why not, as 'rationally imperfect'. Behavioural deviations from the rational model are not random or merely circumstantial; they are *predictable* to a considerable degree. That is why the study of behavioural economics offers a safe basis for understanding or even predicting human action.

In conclusion, opinions differ as to whether rational choice alone can (and, if so, up to which point) offer solutions to problems, or whether rationality needs enrichment and adjustments (and up to which point, as well). In real life, logic is not always present but presumed; it is what is sought, not a given. Yet, and despite justified reservations, most economists continue to use it as a starting point. To a certain extent, rational choice occupies a similar place in economic theory as the one which democracy occupies in public law. Neither are perfect; even so, they are the best available models in addressing two fundamental questions: how to efficiently satisfy human needs and how to exercise public authority in the service of social welfare.

2.   MARKETS, EFFICIENCY AND SOCIAL WELFARE

2.1   The Market Mechanism

For economists, individuals serve their interests through *transactions* that reflect rational choices. All the transactions required to satisfy a specific need constitute the *relevant market* for this good or service. Those terms can be used in a much broader sense, beyond strict economic exchanges: 'transactions', as a synonym for 'individual choices'; 'markets', as a synonym for 'private society'. In this sense, even elections constitute a market.[22] Voting is a form of transaction; candidates offer promises to be elected (supply) and voters choose among them who to best serve their interests (demand). Choosing a lover is also a transaction (although money is not necessarily involved); the potential partners and love affairs of all participating players are the relevant market. Economic analysis can describe almost everything as transactions and markets.

2.1.1   The theoretical superiority of free markets
The rationale of (micro)economic analysis is simple – some say naïve.[23] Each isolated transaction is the best mode for acquiring goods at the lowest cost.

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[22] *Parisi* 1997.
[23] *Sen* 1996.

The market, being the sum of such transactions, reflects cumulatively the maximum production of goods with the minimum sacrifice of resources. In this way, markets are the optimal mechanism for serving individual needs and allocating resources in a society. Demand and supply direct goods to those that desire them the most:[24] to those who, following their subjective preferences, are willing to pay the relevant price. This price represents the perfect balance between the needs to be satisfied and the goods on offer (equilibrium price).

According to the above theory, markets are superior to any other system for producing and distributing goods in a society, especially that of a centrally controlled economy. Markets operate 'bottom-up'. They allow for the free and consensual expression of subjective preferences. They diffuse the necessary information – the needs to be covered – for optimal production and supply. In contrast, paternalistic systems operate 'top-down' and suffer from an inherent information deficit. They depend on 'wise men' – politicians or technocrats – who are called upon to plan the economy. Those persons do not have a natural access to individuals' subjective preferences, which they are supposed to satisfy. This deficit generates inefficiencies in using and allocating resources.

The first theorem of welfare economics (the balance between demand and supply) is supposed to confirm the superiority of the market mechanism. Acting rationally, each person tries to cover his or her needs at the lowest cost and at the lowest price. The *demand curve* reflects the relationship between the price and the quantity of the acquired goods; if the price rises, buying becomes less attractive. The *supply curve* operates inversely. The producers have an incentive to make goods available at a quantity/price ratio, in which their cost is *marginally* lower than the benefit. Supply and demand curves meet at a certain point. This point indicates both the equilibrium price and the optimum conditions for using resources to cover social needs. It describes an *ideal market* with *perfect competition*[25] – a market that supplies as many product units as needed to cover demand at the lowest cost, where the price is equal to the marginal cost. Such a market is presumed to produce an overall benefit for society. This benefit is called 'social surplus', which the participants in the market share among themselves. It arises from the optimal price/quantity ratio, at which consumers buy and producers sell.

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[24]   *Hart* 1983.
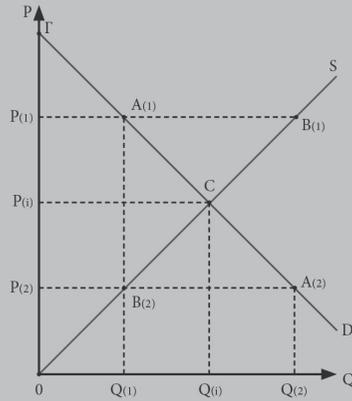[25]   *Ali Khan* 2008.

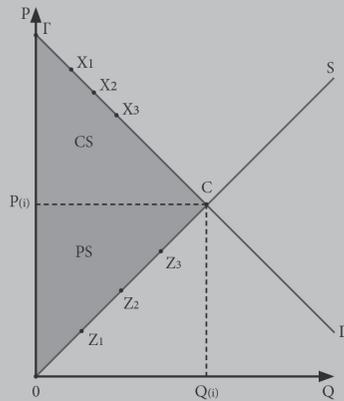*Figure 2.1   Demand and supply in ideal conditions*

Figure 2.2   Consumer and producer surplus

Figure 2.1 depicts the ideal market. The horizontal axis (Q) refers to the quantity of the good or service; the number of units produced. The vertical axis (P) illustrates the various prices at which the commodity is demanded and supplied. The curves ΓD and OS (shown as straight lines for simplification) represent, respectively, demand (D) and supply (S). The demand curve indicates how many units of the product consumers are willing to acquire depending on the price: when it is extremely high (point Γ on axis P), no one will buy. As the price drops moving to point D, buyers are ready to purchase. Supply operates inversely. At point O, where price is equal to zero, no rational producer will participate. As the price rises moving to point S, supply increases.

Demand and supply intersect at point C, which symbolises conditions of ideal competition. It expresses the ideal quantity (Qi) and price (Pi) ratio. This price is equal to the 'marginal price' for the production and the acquisition of the commodity. Suppliers have an incentive to lower their price to the point at which the cost for any additional production unit would put them in the red. The free market game forces them to cover as many needs as possible at the lowest cost.

Any other quantity/price ratio would not be optimal. If price was set higher than P(i) – in Figure 2.1 it is given as price P(1) – many producers would be willing to offer the product; they are shown at point B(1) of the line OS. But their products would go unsold, because of insufficient demand; the high price P(1) attracts only those buyers located at point A(1), who will acquire small quantities [Q(1)]. There is over-supply but reduced demand. If price was set lower than P(i), at point P(2), we would have the inverse phenomenon. Demand would be high [point A(2)] but supply would be low [point B(2)]. Demand [for a quantity of goods equal to Q(2)] would remain unsatisfied, because of the lack of supply. In both cases, the allocation of resources is far from optimal. In the first case, supply is higher than Q(i) but will not be met by demand. In the second, demand exceeds Q(i) but there will be no supply to meet it.

The perfect market avoids the above inefficiencies; it creates a welfare 'surplus' to be shared to both consumers and suppliers. This is better shown in Figure 2.2. The triangle created by points Γ, C and P(i) corresponds to the *consumer surplus* (CS). It refers to the consumers that are located along the entire length of side ΓC (indicatively, at points x1, x2 or x3), willing to buy the commodity 'inefficiently' at a price higher than the competitive price. The market will drive them to avoid making this error; acting rationally, they will procure it at price P(i). Conversely, the triangle created by points C, O and P(i) corresponds to the *producer surplus* (PS). It refers to the producers in the area of side CO (points z1, z2 and z3) – those who will avoid selling at a price lower than P(i).

2.1.2 Markets and social welfare: a controversial relationship

Free and competitive markets are supposed to ensure 'social welfare' (whence the term 'welfare economics'). They seem to maximise wealth in a society and to diffuse it objectively via the price mechanism; to optimally allocate the cost of creating a commodity to the producers and the benefit from its use to the

consumers; to achieve Jeremy Bentham's utilitarian ideal: 'it is the greatest happiness of the greatest number that is the measure of right and wrong.'[26]

But is this so? A system that increases wealth, but distributes it among those able to pay, may not be the best. It disregards inequalities or even aggravates them. It ignores the *diminishing marginal utility of assets*: the more money and goods I accumulate, the less necessary they are to me. Allocating them through the price mechanism is not always efficient; it allows their acquisition by those who are able to pay but need them less. A wealthy person with a full wardrobe has the money to buy another tie. However, the 'social' utility of this purchase would be much higher if made by someone who owns no such garment, needs it, but is unable to pay.

Identifying social welfare with perfect markets suffers from a redistributive weakness that entails inefficiencies as to resource allocation. Economic science is aware of this problem.[27] State intervention to correct market failures could be the solution for its cure. Nevertheless, views are not unanimous as to what sort of actions to take. For some, it suffices to redistribute wealth through taxation. Others demand a more aggressive (and restrictive) regulation of the markets. Let us assume that a State wishes to reinforce neighbourhood pharmacies. Should it do so by prohibiting the sale of all drugs and cosmetics in supermarkets to increase the turnover of small points of sale? The Chicago School and the EU would be against such a tactic,[28] but not all European States are opposed to it.[29]

This is an interesting debate, juxtaposing two major lines of reasoning: on the one side, those who perceive welfare mainly as the attainment of more wealth and its 'Darwinian' redistribution via the market (with some minor corrections by the State); on the other, those for whom social welfare constitutes an equation with additional parameters – beyond economic efficiency, it should reflect other fundamental priorities, such as equity, solidarity and environmental sustainability.[30]

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[26] *Bentham* 1776; *Posner* 1979.

[27] Not only economists but the general public as well, which made Thomas Piketty's book *Capital in the Twenty-first Century* (2014) a global bestseller.

[28] *Kaplow*/*Shavell* 1994, 2000, 2002.

[29] In Greece, milk powder for newborns was sold only in pharmacies (and was excessively expensive). The CJEU held that this protectionist measure infringed free movement of goods as established by the EU Treaty (see CJEU judgment in case C-391/92, *Commission v Greece* [1995]).

[30] A summary of this debate can be found in *Hackney* 2003. See also *Nussim* 2007.

2.2   About Effectiveness and Efficiency

In economics, the above debate revolves around the concepts of effectiveness and efficiency. It is important to study their definition and the methods for measuring them in order to evaluate whether a transaction or action really serves social welfare, however we define it.

2.2.1   What term to use?

Rationality, effectiveness and efficiency share common ground: all three refer to how 'successfully' a decision attains its objectives. They differ as to the degree of such success. In rationality, the connection between intentions and result is relatively weak. Those who behave rationally maximise their chances of a positive outcome. If they act effectively, the possibility of achieving their objective is transformed into certainty. Efficiency corresponds to the highest success ratio. It ensures the optimal conditions for meeting a goal, with the lowest cost and the highest benefit. In other words, *efficiency is the strongest possible form of effectiveness and rationality – synonymous with full or optimal effectiveness*. Usually, economists insist on efficiency; merely reaching an objective without an optimal allocation of resources is not sufficiently 'successful' for them. For economic analysis, each individual is supposed to behave as *homo oeconomicus*; as someone who acts rationally, effectively and efficiently.[31]

I use all three notions in this book, despite my preference for the term 'effectiveness'. In its broader sense, effectiveness is the common denominator, the concept that includes the other two: what is effective is also presumed rational; if it is efficient, it is fully effective as well. Compared to efficiency, effectiveness is less ideologically coloured. We shall see below that efficiency is often connected to a narrow definition of social welfare; it is used to identify the latter only with profit maximisation. Nevertheless, since efficiency is the term most widely used today, this book cannot do otherwise. Yet, the reader must keep in mind that this term does not always bear the exact same meaning. It may vary, depending on how academics or legal orders define it, in connection with welfare.

2.2.2   Methods for measuring efficiency: from Pareto to Kaldor/Hicks

Vilfredo Pareto (1848–1923) made the first attempt to measure efficiency.[32] A choice or decision regarding two or more persons is Pareto superior when

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[31]   For the various and conflicting approaches on efficiency, see the collected articles in *Zerbe* 2014.

[32]   *Endres/Radke* 2012.78.

it improves the condition of at least one of them without worsening that of the others. Pareto superior choices lead to a status quo, a situation that cannot change without being detrimental to someone. That situation is Pareto optimal (efficient): it is impossible to improve it further. At first sight, Pareto's criterion seems attractive and logical. Such is the case when a teacher decides to organise a visit to a museum instead of having a class: it is 'Pareto optimal' for the pupils, all of whom prefer an excursion over maths or history. However, it does not seem realistic to assimilate efficiency with a status quo that all wish to preserve. It may breed blackmailing behaviours, since everybody holds a veto right. During the excursion, I refuse to consent to opening the windows of the school bus, though all the others want to; or, conversely, I do not agree to closing the already opened windows, even though all the others are freezing. The Pareto criterion may lead to paradoxes[33] and to preserving situations that benefit those who are 'better off', but remain unfair and ineffective for the rest of the society.[34]

This problem ceases to exist if we accept that the decision should not be unanimous – that it may not satisfy everyone. According to the Kaldor–Hicks (KH) efficiency criterion (named after the British economists Nicholas Kaldor [1908–86][35] and John Hicks [1904–89]), choices shall meet the following two conditions: (a) the benefit for those who improve their position therefrom is bigger than the harm to those who are made worse off; (b) the 'winners' can (but don't have to) compensate the 'losers'. Such compensation is not mandatory; otherwise, the situation is Pareto optimal, since it satisfies everyone (including those receiving compensation). A decision is KH efficient if it is not open to further improvements, following the above criterion, even if it never attains Pareto's unanimous consent. The KH method is far more practical and easier to apply. It allows for decisions and policies that make some unhappy. In contrast to Pareto, it leaves room for a more open and evolving perception of social welfare, as the already privileged might be the losers from a new public policy.

These two methods for measuring efficiency exceed the economic field. They offer objective means for assessing the quality of every act or action, public or private; for evaluating the impacts of individual transactions or new legislation and the performance of public institutions. To a certain extent, public law has always applied them intuitively, as, for example, in the field of fundamental rights. Expropriation is allowed only following compensation

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[33]   As in the famous 'liberal paradox' of Amartya Sen, which showed that following the Pareto criterion to aggregate preferences does not lead to satisfactory social choices compatible with the principles of liberalism. *Sen* 1970; *Chang* 2000.

[34]   *Calabresi* 1991; *Kaplow/Shavell* 2002.

[35]   *Kaldor* 1939.

(Pareto criterion).[36] The proportionality principle for assessing whether regulatory restrictions are in conformity with the constitution, the ECHR or the EU Treaties constitutes a transposition of the KH criterion in the legal field. The same goes for cost–benefit analysis (CBA),[37] an instrument for establishing that policies – such as the construction of a sewage plant or the introduction of new fiscal legislation – present advantages that outweigh their negative consequences. If so, they are 'KH efficient'; those who obtain the advantages (city residents, beneficiaries from tax reductions) could potentially compensate those negatively impacted (people living near the plant, taxpayers).

2.2.3   How measuring efficiency interacts with the definition of social welfare

Again, of course, assessing efficiency is not an entirely neutral task. Ideological conflicts over which values to prioritise (freedom or equity, profit maximisation or solidarity) affect the calculation of costs and benefits. This debate is directly linked to the definition of social welfare. If welfare is nothing more than wealth maximisation, cost–benefit analysis is applied differently than it will be if it also includes elements of social justice.

In the first case, it is sufficient to compare the goods produced to the resources expended, irrespective of which part of the society enjoys the benefits. This is the definition of social welfare according to Bergson and Samuelson.[38] Such a definition has the advantage of simplicity: it is suitable for a universal application though a uniform mathematical model. Most economists use it for measuring the gross national product (GNP), by adding up the 'wealth' annually produced in a State. In the field of law and economics, the Chicago School and academics such as Ronald Coase and Richard Posner adopt a similar, narrow definition of welfare (together with a narrow definition of economic efficiency).[39]

In the second case, defining efficiency and welfare does not ignore to whom the benefits go. This approach considers it inefficient to exclude as recipients of the wealth produced those who are in the least advantageous position.[40] Public policies should redistribute a large part of it to the less privileged members of society and actively care for them. This approach is close to the 'justice as fairness' theory of John Rawls and to Jürgen Habermas' perception of solidarity and justice.[41] In economics, Amartya Sen combines efficiency

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[36] See Chapter 7, section 1.4.
[37] See Chapter 5, section 2.1.
[38] *Bergson* 1938; *Samuelson* 1983, 1977.
[39] *Posner* 1979, 1985; *Kronman* 1980; *Zerbe* 2014.
[40] *Arrow* 1979.
[41] *Rawls* 1999 (1971), 2001; *Mathis* 2012; *Habermas* 1986; *Sugin* 2004; *Riza* 2019.

and equity[42] in describing welfare, taking into account factors such as poverty and social inequality.[43] Several law and economics authors, including Guido Calabresi, follow similar paths.[44]

The broader the definition of social welfare, the more difficult and controversial it is to assess efficiency by weighing costs and benefits. There arises the need to measure goods and goals to which it is difficult to attribute a pecuniary value. How can one compare costs arising from a piece of legislation imposing upon the automobile industry the use of airbags, with the benefits of reducing accidents? We shall return to this riddle in Chapter 5.

2.2.4   What does economic theory teach law about the pursuit of welfare?

Irrespective of how constitutions (and the EU Treaties) describe and establish social welfare, the dominant economic theory has four lessons to offer.

First, there can be no welfare without efficient use and allocation of resources. Even legal orders that express social or environmental concerns cannot ignore the economic and utilitarian aspect of welfare. The efficient satisfaction of needs, both individual and collective, is a *sine qua non* parameter of the equation.

Second, perfect and competitive markets are, in theory, the optimal mechanism for the use and allocation of resources. Even those who approach them critically recognise their superiority *in vitro*. If there were a perfect Agora made of supermen, champions of rationality and philosophy, acting efficiently and understanding the importance of justice, solidarity and sustainability, nothing more would be needed. However, ideal situations exist only in theory. This leads us to the next two lessons.

Third, free markets may, up to a certain point, promote social goals (provision of merit goods, protection of the environment). The pursuit of welfare shall, therefore, be market oriented. This does not mean that markets operate perfectly, nor that they alone take us to 'welfare island'. Nevertheless, they may serve some of the social aims in the most efficient way.

Fourth, the mechanisms of the market and rational choice are imperfect by nature. The Agora has weaknesses, precisely because human rationality also has its limits. Economic analysis promotes markets in the name of efficiency, while not turning a blind eye to their numerous inefficiencies.

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[42]   *Farber* 2003.
[43]   *Sen* 1999, 2009; *Fabbri/Britto* 2017. On the costs of inequality, *McAdams* 2010.
[44]   *Calabresi* 1991; *Mathis* 2009; *Ekardt* 2012; *Cooter* 1987; *Klick/Parisi* 2005. A very interesting collection of articles regarding the relationship of fairness and efficiency is found in *Fennell/McAdams* 2013.

3.   THE NUMEROUS FAILURES OF RATIONALITY AND MARKETS

Rationality alone does not ensure happiness (welfare, if you like). Humans are not sufficiently rational. Their logic cannot overcome all difficulties, nor does it always offer the best solutions. This chapter classifies such pathologies under four categories. There are conditions that prevent people from making the perfect individual choices (section 3.1). These imperfections increase as the number of the persons involved rises; as a strategic player, man often tends to take even more ineffective actions (section 3.2). Furthermore, there is no optimal process for reaching collective decisions that serve the common good (section 3.3). Markets are also problematic. In several cases there is no, or there cannot be a, competitive market; even worse, the free market system periodically fails to serve social welfare (section 3.4).

We often define these shortcomings as *market failures*.[45] They reflect the causes that render it impossible to achieve welfare via a system of horizontal, consensual transactions. Another term to describe them outside the context of economics is rational choice failures or limits;[46] they prevent us from taking the best options when selecting a house, a holiday destination or a partner. In modern economic theory, it is common to refer to them as *transaction costs*, a notion introduced by Ronald Coase as early as 1937.[47] Coase separates such costs into three categories based on the stages of the choice/decision process: whether the costs concern the stage before the transaction (search and information costs), during it (bargaining costs), or after concluding an agreement (policing and enforcement costs). More broadly, we may include in transaction costs every obstacle that hinders optimum choices between two or more individuals – something equivalent to friction in physics.[48]

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[45]   *Cowen* 1988; *Ledyard* 2008.

[46]   *March* 1986.

[47]   *Coase* 1937; *Cheung* 1969; *Williamson* 1979, 1999; *Klaes* 2008; *Anderlini/Felli* 2006; *Candela/Geloso* 2019.

[48]   *Williamson* 1985.19. These costs are many and varied, for example, upon constructing the house of one's dreams: a) Finding the suitable plot, a bank to offer a housing loan, an architect, an engineer, workers and materials: these actions involve various search and information costs. b) Negotiations with the above professionals (bargaining costs). c) Supervision of the construction stage so that the house is built without any unpleasant surprises (policing and enforcement costs). There are also external costs, less directly connected to the construction as such. Beyond the expenses for lawyer and notary fees, there are tax burdens, both direct (transfer tax) and future (property tax, inheritance tax). One should not ignore numerous forms of red tape (administrative) costs: issue of construction permit, approval of plans, on-site inspections, forestry and archaeological service permits, formalities concerning local authorities,

Irrespective of the terminology used, public law should not ignore these failures or costs. On the one hand, they are its *raison d'être*; they justify public intervention to redress the problem. On the other, public law must realise that State institutions are equally problematic. It is not only the Agora that may be ill; the Demos, acting as the doctor from above to cure it, may manifest similar diseases.

3.1 Failures upon Reaching Optimal Individual Decisions

3.1.1 Reduced knowledge: uncertainty, information asymmetries, concealed information and behaviour, adverse selection and moral hazard

In many cases, those who make individual choices lack the necessary information. To begin with, they are not all-knowing, as God is supposed to be. Knowledge limits or gaps render it more difficult to identify the most efficient solution.[49] The simple fact that we do not know what the future holds increases the cost of our choices, or in other words, the risk of not making the best one. Moreover, knowledge and information are not equally available to all. *Information asymmetries* may exist between those entering into a transaction; such asymmetries constitute a motive for opportunistic behaviour. When the parties do not share the same information (as often happens), the one with the more privileged access will use this advantage to the detriment of others – as in the case of a seller of a used car who omits information on existing mechanical problems to achieve a higher price. Concealed information leads those who lack it (the buyer of the car) to 'bad' (inefficient) choices; or, as economists put it, to adverse selections.[50]

Another form of opportunistic behaviour due to information asymmetry is to conceal future behaviours that will take place after the conclusion of a transaction – for example when, after signing a car insurance policy, the insured party becomes more 'prone' to accidents. The driver has the moral hazard[51] to drive recklessly, since somebody else will pay the bill. In public law, concealing future inefficient behaviours is what politicians do when they fail to keep their promises after election.

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connection to public utility networks, delays in all the above, and so on. The list is so long that someone may prefer to either buy a finished apartment or rent a property, or even abandon the entire venture.

[49]   *Akerlof* 1970; *Mackaay* 1982; *Hirshleifer* 1971; *Stigler* 1961; *Klick/Mitchell* 2006.

[50]   *Wilson* 2008.25.

[51]   *Kotowitz* 2008; *Klick/Mitchell* 2006.

3.1.2   Negative and positive externalities

Redressing information asymmetries is not enough. Let's imagine a transaction between two well-informed parties ready to enter a mutually beneficial agreement. Narrowly seen, this transaction is ideal for both. However, it may cause external negative consequences for third parties, or perhaps for all of us. These consequences are called *negative externalities*.[52] The parties will 'prefer' to disregard them when signing the contract. For example, producing a commodity may have an adverse environmental impact.[53] Both the supplier and the purchaser have no incentive to incorporate environmental costs (the expenses for preventing pollution) into the sale price. They prefer to conclude the transaction at the lowest private cost. Similarly, the tobacco industry and smokers would not voluntarily agree to internalise within the price of cigarettes the 'external' costs of the national public health system. Negative externalities correspond to the increased social cost of the transaction. If not internalised (often through public regulation), that cost will affect the efficiency of the transaction and deflect it from the optimum allocation of resources.

Internalisation is also necessary if an agreement encompasses *positive externalities* – if a major part of its benefit ends up in the hands of third parties. When the private benefit that the parties expect from a transaction is lesser than the social benefit, such transaction may never take place; the involved parties have no sufficient incentive to proceed. This discrepancy between private and social benefit affects merit goods in particular: education, health, social security. The 'consumption' of such 'goods' creates considerable positive externalities for society: its members become healthier and better educated and cultivated. Nevertheless, short-sighted individuals may not include them in their priorities. Why go to school and pay for it? Why pay social security contributions (if they are not compulsory) instead of making more pleasant choices, such as going on holiday? Many of those socially important activities require an external (public) intervention in the name of the general interest to render the 'transaction' obligatory and to reduce its private cost: examples include free and mandatory education and vaccinations.

3.1.3   Behavioural irrationalities: endowment effect, confirmation bias, hyperbolic discounting, sunk costs, gambler's fallacy

Let us forget about externalities or inadequate information and think of ourselves as the ideal disciples of Descartes, Newton or Archimedes (which we are not). Even so, how rational can man be? Did not Archimedes himself

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    52   *Cornes/Sandler* 2008; *Dahlman* 1979; *Laffont* 2008; *Canterbery/Marvasti* 1992; *Epstein* 1993.
    53   *Faure/Skogh* 2003; *Endres/Radke* 2012.

behave irrationally when he shouted 'Do not disturb my circles!' before dying from a Roman sword? Did he not reduce his chances of surviving and continuing his scientific research? Behavioural economics reveals our inherent bounded rationality and a number of behaviours that reduce the efficiency of private or public decisions.[54]

For instance, the *endowment effect*[55] is a form of imperfect rationality, which we display when evaluating a commodity we possess at a higher price than we would pay to acquire it. Our closet is full of clothes that we will never wear again and would not pay one euro to buy today, but we do not donate them or sell them at a cheap price. The same goes for a plot of land that we inherited and refuse to sell for 100,000 euros, even if we would not spend half that amount to buy it. This predisposition proves classical economic theory wrong. There are no fully rational players that buy and sell the same commodity at the exact same price. Willingness to pay (WTP) is not equal to willingness to accept (WTA).

Man is irrationally attached not only to the goods he has acquired, but also to the ideas he has already assimilated. Therefore, he selectively processes new information, subconsciously trying to confirm the views he already has *(confirmation bias)*.[56] In other cases he only receives selective information, either because it is the first accessible information (a front-page article in a newspaper) or because it generates intense emotions (reading about airplane crashes increases our fear of flying, though we know that it is the safest way to travel). People also like to assess facts using 'their own lenses', overrating their skills and role. For example, they consider themselves better drivers than they actually are (as compared to their objective performance on the road). This 'distorted' optimism causes more accidents and erroneous decisions when insuring a car.

The problem is even greater when decisions extend over time. Overoptimistic future projections *(hyperbolic discounting)* encourage us to underestimate the long-term adverse consequences of a choice, thus leading to decisions that our future self would not have made. Our lives are full of false future 'discounts': unfavourable bank loans, health problems, marriage to the wrong person.[57] Moreover, we fail to correctly assess not only the future but the past as well. People often stick to the non-recoverable costs (sunk costs) of a choice

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[54] *Kahneman* 2012; *Zamir/Teichman* 2014. See also *Langevoort* 2002 (stock markets); *Bar-Gill* 2008 (consumer contracts); *Ross-Ward* 1995 (dispute resolution); *Hamilton-Krieger* 1995 (discriminations on employment opportunities); *Rachlinski* 2000 (climate change).

[55] *Curran* 2000; *Kahneman et al.* 1990; *Rachlinski/Jourden* 1998.

[56] Database tools may also create such biases: *Harvey/Woodruff* 2013.

[57] *Ainslie* 2012.

previously made, which is wrong. Rationality requires that, before we reach a decision, we only weigh its expected (future) utility, which alone determines its efficiency henceforth. It is not a good idea to continue an activity only in the name of the large investment already made in it. Similarly, it is not a successful policy to decide who will play on a football team by putting on the field the most expensive players rather than those who are performing better. Another erroneous psychological preconception is the *gambler's fallacy*,[58] the tendency to predict what will happen based on what has already happened. If the roulette wheel stopped on red five consecutive times, this does not mean that black has now more of a chance of winning; the odds for black or red are again, on the next spin, exactly even.

Concisely, we fail by nature to behave in a sufficiently rational mode that would allow us to always make optimal choices.

3.2   The Problems of Collective Action due to Opportunism

Real life encompasses a complex network of relationships, which exceeds bilateral, independent and fragmented transactions. Humans have to operate in a broader institutional context, whether economic, social, political or legal. Unfortunately, the greater the number of people participating in this framework, the more inefficiencies increase. In addition to the failures of isolated transactions, multilateral relationships are open to the problems of collective action. These problems are due to *opportunism*. Individuals have an inclination to act on their own even in situations where co-operation would help them reach the optimum outcome.

3.2.1   The prisoner's dilemma, free riders and hold out

A well-known game called 'the prisoner's dilemma'[59] illustrates this major shortcoming of collective action: our tendency not to co-operate. Imagine two suspects under interrogation, separated in different rooms and unable to communicate. The prosecution gives them the option to betray each other and receive a reduced sentence. The game mathematically explains why both will go for betrayal, since they cannot fully trust each other.[60] Such choice is at first sight rational; but it is not optimal. Both are incriminated, while, if they remained silent, the police would not have the evidence to prosecute them for a serious crime. This game proves that players opt for an egoistic, narrow-minded strategy with negative results, both individually (since each

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[58]   *Kahneman/Tversky* 1971; *Tversky/Kahneman* 1974.
[59]   *Peterson* 2015; *Kuhn* 2019; *De Jasay* 1998; *Parfit* 1981; *Poundstone* 1992.
[60]   *Nash* 1951.

one ends up in prison) and collectively (since all members of the 'community of suspects' end up in prison).

Inefficiencies arising from the failure to co-operate emerge when collective action involves a great number of persons. In these cases, the prisoner's dilemma takes the form of two catastrophic behaviours. The first is that of the *free rider*,[61] a player who tries to make the others bear his part of the costs, like the fare-dodger on the subway. The second is that of the *hold out*,[62] a party who vetoes a joint decision expressing the common interest unless it obtains the lion's part of the social surplus. This would be the case for the co-owner of a house that holds only 5 per cent of the property but is reluctant to sell unless he gets more than 5 per cent of the price. In both these behaviours, the opportunistic strategy superficially appears to be the most clever. It obtains a benefit for the player, to the detriment of the others: a free subway ride or a bigger share of the price. However, this is subject to the condition that the other members of the community will not prove equally opportunistic. Yet, this condition will never exist. All players are 'clever enough' to prefer a free ride or a hold out. Therefore, everyone will lose with this strategy. At the end of the day, the subway will stop operating because nobody pays for it, and there will be no agreement to sell the property.
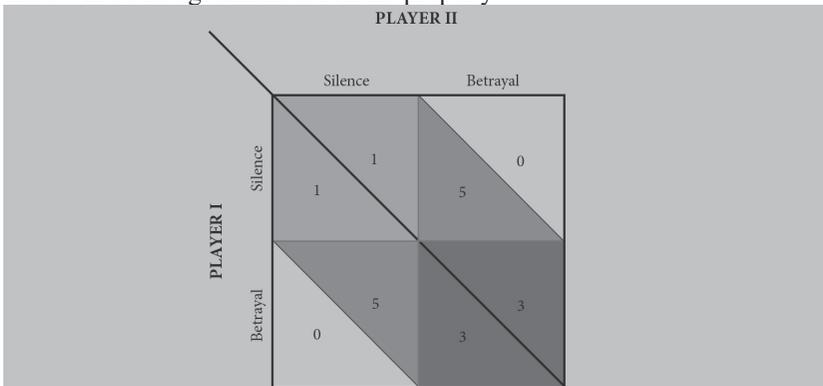

Figure 2.3   The prisoner's dilemma

Two suspects were arrested while entering a property with the intention to steal. However, the prosecution lacks evidence to convict them of theft, which bears a sentence of five years' imprisonment. They can be only accused of trespassing and sent to jail for just one year. The suspects are held

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61   *Molander* 1992; *Pettit* 1986.
62   *Epstein* 1993.

An economic analysis of public law

in separate rooms. Prosecutors make a similar offer to each of them to betray the other in exchange for acquittal. However, if both opt for betrayal, they will be sentenced for theft under mitigating circumstances (three-year sentence). Figure 2.3 shows the choices for each player depending on whether they choose 'silence' or 'betrayal'. In all scenarios, the outcome depends on what the other suspect will do. The silence scenario has two outcomes for each player: imprisonment for one or for five years. In the betrayal scenario, the outcome is either 0 (acquittal) or 3 (conviction with mitigating circumstances and three years' imprisonment). In the end, each suspect chooses the betrayal scenario to avoid the worst outcome – that of his partner betraying him. This leads to the square at the bottom right of the figure: three years' imprisonment for each (3/3). Nevertheless, the optimum solution for both, if they could co-operate, would be the one in the upper left square: one year's imprisonment for each (1/1).

3.2.2 Tragedy of the commons and the negative consequences of opportunism for social welfare

The misfortunes of collective action mostly affect common goods, such as flora, fauna, landscape, water, non-renewable resources and air quality. These goods are vulnerable to the pathology that Garrett Hardin called the tragedy of the commons.[63] Since we all have free access to them – there are no ownership rights and restrictions – everyone has the tendency to use such resources selfishly; to disregard their sustainable preservation and leave this task to the other members of the community. It is sad but true: we all have the inclination to behave as free riders when it comes to common goods. If others take care of the resource, our irresponsibility will have negligible consequences. Conversely, if we assume our responsibilities – entailing increased costs for ourselves – while others do not, the benefit for preserving the common good will be insufficient. For example, if I do not recycle my waste but the rest of the community does, the environment is protected without any cost to me. If I recycle and others don't, the environment is degraded anyway. Therefore, it is 'egoistically logical' for me to neglect recycling, which finally harms everyone.[64]

Opportunism puts at risk not only common goods, but most public goods too:[65] justice, quality of administrative services, public infrastructure. Tax evaders, those parking on the pavement and those hampering courts with manifestly inadmissible cases are all free riders. It is particularly difficult to

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[63]   *Hardin* 1968, 1998; *Heller* 2009.
[64]   To a large extent, environmental protection policies aim to deal with such problem. *Endres/Radke* 2012; *Faure/Skogh* 2003.
[65]   *Groves/Ledyard* 1977; *Friedman* 1987; *Vanni* 2014.

deal with the above issues. The greater the number of those acting altruistically (there are some – environmental organisations, for example), the greater the incentive for some others to behave opportunistically. Civil society is unable to suppress this phenomenon on its own. The great number of potential free riders requires continuous supervision and a deterrent system of sanctions. In principle, such mechanisms do not exist spontaneously or operate consensually, without public intervention.

Moreover, opportunism provokes a plethora of adverse socio-economic effects, refuting the ideal world described by classical economics. Various trends, priorities or instincts influence human behaviour and dilute the rationality of choices. Even before the economic crash of 1929, Thorstein Verblen noted that such choices do not necessarily aim at attaining objectives at the lowest cost.[66] Instead of operating in a utilitarian way, individuals use their resources to become members of the 'ostentatious wealthy class' through conspicuous consumption (as in F. Scott Fitzgerald's novel *The Great Gatsby*). When consumption is converted into an economically irrational means for acquiring social prestige, it becomes inefficient, with grave consequences for both the economy and society. Moreover, as John Kenneth Galbraith puts it in his book *The Affluent Society*, people prove to be careless about solidarity. Those crossing a certain threshold of affluence tend to use their vote to promote collective decisions that allow them to retain their high incomes, even contrary to the common good.[67] They reject policies for wealth redistribution and public investments that would be better for meeting not only collective needs but also their individual needs, such as personal healthcare at a lower cost, through the economies of scale that an efficient public health system would achieve.

3.2.3   Principal-agent problem

The principal-agent problem[68] is another major inefficiency resulting from the even more complex character of human relationships. It emerges in all situations where an individual (principal) is not in a position to act alone directly but must rely on others that provide assistance or expertise (agents). In these cases, the interests of the agent are not identical to those of the principal. The agent is exposed to a *conflict of interest* – whether to serve his/her own interest rather than that of the person he/she represents. Despite acting in the principal's name, the agent does not always make the optimum choice for him/her. This inefficiency increases transaction costs, rendering agent supervi-

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66 *Veblen* 2012 (1899).
67 *Galbraith* 1958.
68 *Laffont*/*Martimort* 2002; *Gailmard* 2010; *Leruth*/*Paul* 2007; *De Jasay* 1998.95; *Stiglitz* 2008; *De Chiara*/*Manna* 2019.

sion necessary. This policing problem is due to the fact that agents may take advantage of the information asymmetry in their favour; they possess crucial information, of which the principals are unaware. As principal, I don't know whether the lawsuit that my lawyer urges me to file is indeed in my best interest. All agents face, by definition, the moral hazard of not perfectly honouring their assignment.

Principal-agent inefficiencies are present everywhere. They multiply in conditions of collective action and multi-member institutions, whether public or private. For the owner of a small shop, the problem is exhausted in his relationships with lawyers and employees. For a multinational corporation, the situation is far more complex. Shareholders, senior managers and executive officers, administrative employees, industrial workers or branch managers do not all share the same interests. They act as principals and/or agents of others, and all of them as agents of the company itself. As we will further analyse in Chapter 4, the same problem is endemic in public institutions, given their size and complexity.

3.3   Problems in Taking Collective Decisions

3.3.1   Where shall we go for our holidays? Deadlocks in a simple, collective decision

Three friends, Jim, George and Nick, wish to choose between three Greek islands for their holidays: a cosmopolitan destination (Mykonos), a lesser known destination (Serifos) and one off the beaten track (Anafi). Jim prefers Mykonos (option A) over Serifos (option B) and Anafi (option C). George prefers Serifos (B), then Anafi (C), and places Mykonos (A) last. Nick opts for Anafi (C), Mykonos (A) and finally Serifos (B). The problems start when they decide to vote and transform their personal preferences into a collective decision.

For starters, they cannot hope for a unanimous decision. Unanimity would allow for a perfect match between individual and collective preferences. But this is impossible if all three insist on their first choice. The quest for unanimity risks creating a deadlock, thus leaving them without a summer destination at all.

Moreover, they notice that if all islands are put to the vote on an equal footing – the question being 'shall we go to Mykonos, to Serifos, or to Anafi?' – they will receive the same number of votes: one first option vote, one second option vote and one third option vote each. If each island is examined alone – the questions being 'shall we go to Mykonos?' 'Shall we go to Serifos?' 'Shall we go to Anafi?'– all options will be rejected: each will receive only one out of three votes. Someone has to retreat from his first choice to reach a collective decision.

To sidestep these problems, they think of changing the 'agenda', to instead compare two islands. That is, to decide whether they should go to 'Mykonos or Serifos?' 'Serifos or Anafi?' 'Anafi or Mykonos?' They also agree that the person who does not propose either of the two islands as first choice will not participate in the vote. This process leads to a majority: for each pair there will be an island with one 'first option' vote and one 'second option'. But the destination will vary, depending on the pair of islands under comparison. In other words, their collective choice becomes cyclical and random; it depends on which question is asked first.[69]

Since voting cannot make everyone happy, it is rational for each one of the three to influence the procedure to promote his own preferences. To succeed in this, he will bargain with the others through exchanging and mutually support-ing choices. Jim will try to come to an arrangement with George, so that this year they travel to Mykonos and the next year to Serifos. They will succeed if they manage to set a question that is favourable to that end ('let's choose a destination for the next two summers').

The moral of this short story is not very … moral. Collective decisions are not without problems, friction and disappointments. There is no objective and coherent mode with which to reach them. They depend on how the parties negotiate and manipulate the process, advancing their egoistic preferences. The devil is in the detail of the voting process. Procedural mechanics are more important than the decision itself. Jim, George and Nick face serious obstacles in choosing their summer destination. In the case of a persisting deadlock, they may return to last year's option, when they spent their holiday in Paros, another Aegean island – even though this decision does not reflect the actual preference of any of the three.

3.3.2 Collective decisions and cardinal utility of individual preferences

Voting mechanisms are imperfect for yet another reason: they do not fully reveal the real wishes of the voters. They merely reflect the *ordinal* and not the *cardinal utility* that each option has for each voter. In our summer story, voting puts individual preferences (islands) in order; it does not record *how strongly* each of the three friends wishes to travel to each island. However, the intensity of the preferences impacts the strategic behaviour of the voters and the outcome of the collective decision.

For example, the issue at stake for Jim is not the same if his preferences regarding the three islands are almost identical on a scale of intensity from 0

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[69]   *Levine/Plott* 1977. The problem is not resolved even if the parties choose a dif-ferent mode of voting. Once again, the result shall present a similar randomness: it will depend on how the question is set and on the criteria of the vote.

to 10 (Mykonos = 6, Serifos = 5, Anafi = 4) than it is if they vary greatly (for example, Mykonos = 10, Serifos = 5, Anafi = 0). In the first case, he will be a rather passive participant in the bargaining. In the second case, his role will be vital; he will do everything to promote Mykonos and avoid Anafi. The intensity of his preferences correlated with the intensity of the others' choices may lead to very different results. If the other two hold rather neutral positions (George: Serifos = 6, Anafi = 5, Mykonos = 4; Nick: Anafi = 6, Mykonos = 5, Serifos = 4), Jim has a good chance of imposing the choice of Mykonos.[70] He will persist in his first option and will make concessions in other issues (date of the holiday, offering to bring his car, and so on). The story changes if another party (Nick), apart from Jim, has equally intense but opposite priorities: he wants Anafi badly (= 10) and absolutely hates the idea of going to Mykonos (= 0). Jim and Nick will be unable to impose their preferences on each other. They also face the risk of a 'total defeat': that the island they want to avoid at all costs wins the race. Such risk may force them to a compromise; to George's 'median choice' (Serifos).

3.3.3   The scientific aspect of the above findings: Arrow's impossibility theorem

In economic theory, our summer story has a name: Arrow's impossibility theorem.[71] Arrow extended Condorcet's paradox about the cyclicity of voting. Condorcet noted that, if more than two voters are invited to choose among more than two choices, the majority system fails to produce a rationally coherent decision that represents their individual preferences.[72] According to Arrow, a system for reaching collective decisions is optimal only if it cumulates a number of properties: (a) it is not dictatorial (one player cannot impose his preferences on the others); (b) it is Pareto efficient (it reflects the preferences of all the participants); (c) it is deterministic in representing individual choices (if all prefer choice A over choice B, then A always prevails); (d) it is consistent and transitional (it does not display problems of cyclicity – if option A prevails over option B and option B over option C, then option A is always superior to option C); (e) it is independent of irrelevant alternatives (adding an option C to the vote does not affect the hierarchy between options A and B). Nevertheless, Arrow proved that such a decision-making system simply does not exist: there is no voting mechanism that meets all the above requirements. For public law, this means that even democratic institutions, established to

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[70]   Mathematically speaking, Mykonos presents the highest collective cardinal utility (10+4+5=19) compared to Serifos (5+6+4=15) and Anafi (0+5+6=11).

[71]   *Arrow* 1950; *Arrow et al.* 2002; *Olson* 2002 (1965).

[72]   *Marquis de Condorcet* 2014 (1785).

produce public decisions in the name of the general interest, face serious inefficiencies. We will come back to that problem in Chapter 4.

3.4 Structural and Systemic Market Failures

Isolated transactions and collective human action are imperfect. Their failures render it impossible to create an optimal, consensual structure for allocating resources. In other words, markets forming an ideal Agora simply do not exist.

3.4.1 Missing markets and monopolies

The streets of the Agora are unable to satisfy all human needs. Or, as the Romans used to say, some goods are *extra commercium*.

First, it is impossible or extremely risky to create free markets for providing public goods.[73] Private producers are willing to supply only if they can ask for a price that covers their costs. This is possible in the case of private and not of public goods; the latter cannot be offered in conditions of excludability and rivalry. State intervention is, therefore, indispensable to guarantee the sustainable satisfaction of needs, such as national defence, public order or legal certainty; it does so through public institutions acting monopolistically. Merit goods (public health, education, transport) face similar problems.[74] In this field too, private initiative and free transactions are far from ensuring those goods on a constant basis and in optimal social conditions (quantity, quality, price).

In other cases, supplying a good requires exclusive control of a specific resource or infrastructure, outside of any competitive market. Such resource constitutes a *natural monopoly*.[75] Examples include the networks in the fields of transport (railways) and energy (electricity grid, gas pipelines). Their operators face extremely high construction and maintenance costs. This activity is viable only though economies of scale, if entrusted to a monopoly: there is only one network of railway lines or pipelines, to which all train or gas transport is directed. Apart from being bad for the environment, allowing for a competitive network would lead to the economic collapse of both operators. Natural monopolies cannot afford destructive competition.

But if there can be no open market, the exclusive exercise of an activity by one entity only – whether public or private – is exposed to monopoly inefficiencies.[76] In the absence of competition, it is impossible to achieve the optimum satisfaction of needs at the lowest cost. Monopolies impose their

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[73] *Touffut* 2006.
[74] For health as global public good, *Smith et al.* 2003.
[75] *Sharkey* 1982; *Berg/Tschirhart* 1988; *Maresca* 2013.
[76] *West* 2008; *Cowling/Mueller* 1978; *Tullock* 1967, 1986.

conditions, with which their clients comply in the face of a lack of alternatives. They do not have to adapt and evolve their production in line with consumer needs, nor sell at the marginal price, as they would do if there were competitors. Monopolistic prices are higher than the marginal ones and provoke a loss of social surplus, which ends up in the pockets of the monopoly. Apart from being more expensive, monopolies present additional efficiency deficits: they invest less in innovation; they are reluctant to any change that would risk their exclusivity; they have the tendency to exploit those consumers that are more dependent upon them.[77]
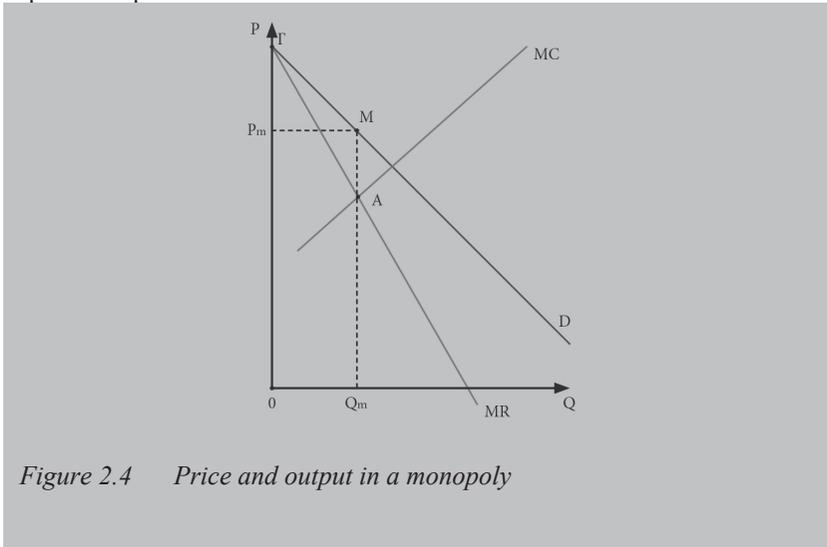

Figure 2.4   Price and output in a monopoly
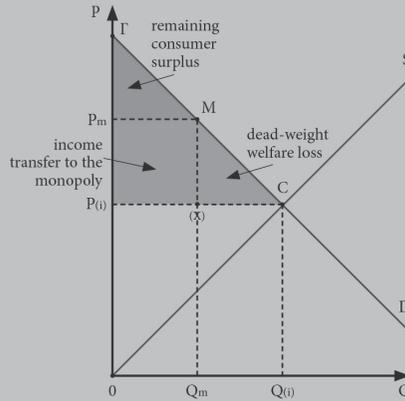

Figure 2.5   Monopoly inefficiencies

Figures 2.4 and 2.5 explain why monopolies are inefficient compared to ideal markets, as presented in Figures 2.1 and 2.2.

In Figure 2.4, there is a demand curve (D, depicted as a straight line) but no supply curve. The monopoly covers demand on an exclusive basis, free from any competitive pressure. It aims at ensuring that its revenue (MR, marginal revenue) exceeds its costs (MC, marginal cost). That is the only quantity/price ratio crucial for the monopoly. This ratio is shown at point A, where the MR and MC lines intersect. By projecting point A on the demand curve – which gives us point M in Figure 2.4 – it is possible to understand how the monopoly will behave. It will make available to the market only the quantity of goods that corresponds to point Qm at the price indicated by point Pm. It will only satisfy those from the demand curve that can pay that price.

However, this quantity/price ratio is inferior to the ratio that an open market would achieve. The social surplus losses due to the monopoly in-efficiencies are shown in Figure 2.5. If there were competition, the point where supply and demand intersect would determine the optimal quantity/price ratio, as in Figure 2.1. The two curves would meet at point C, the price would be P(i) and the quantity would be Q(i). In the absence of competition, demand is met only at point M, for a higher price (Pm) and a lower quantity (Qm). The losses are of two kinds. First, there is an income transfer from the consumers to the monopoly; it corresponds to the difference between P(i) and Pm. The difference is equal to square Pm, M, (x), P(i). Second, there is a dead-weight welfare loss because the monopoly does not meet demand needs. There is a difference between the quantity it produces and the one

that competition would cover (difference between Q(i) and Q(m)). This loss corresponds to the triangle M, C, (x).

3.4.2   Distortions due to the power and size of firms

Open markets may encounter similar problems if one or several undertakings acquire 'excessive' market power. This risk is not theoretical. Those who participate in the market aim to abolish competition. They rationally desire to eliminate their competitors, to become a monopoly and enjoy the corresponding advantages – just as poker players would like to take all the money on the table and finish the game.

Thus, firms that hold a dominant position in the relevant market have the incentive to abuse it. They become strong enough to behave independently of any other competitor, consumer or supplier. Abuses of dominance may take various forms.[78] For example, dominant players may 'tie up' their customers with excessive offers or advantageous long-term contracts, so that they don't switch to another supplier; or they may refuse to sell raw materials to their potential competitors. Players with a smaller market share may restrict competition collectively, through horizontal (cartels) or vertical collusion.[79] They may participate in (illegal) agreements or concerted practices that allow them not to compete among themselves using various methods (exchange of information, market allocation, price fixing). By doing so, they set the conditions of the market (product characteristics, price, terms of sale) at an equilibrium other than if there were free competition.[80] In this way, they appropriate a part of the surplus that would normally accrue to the consumers. Abuse of dominance and collusion are forms of exploiting market power. They differ only as to whether the opportunistic behaviour comes from one or several players. One thing is certain: open and competitive markets are neither a given nor exist forever, at least if not subject to some form of public supervision.[81]

Apart from distorting competition, corporations acquiring too much power may provoke additional negative effects. Big firms at a multinational or global scale that accumulate human resources, technology and capital often use their strength inefficiently. They possess the power to overturn the starting point of classical economics, according to which suppliers depend on demand and operate in a neutral political environment. Powerful corporations may alter

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[78]   *Lianos et al.* 2019; *Whish/Bailey* 2018; *Parcu et al.* 2017; *Frenz* 2016.
[79]   *Lianos et al.* 2019; *Whish/Bailey* 2018; *Frenz* 2016; *Wijckmans/Tuytschaever* 2015.
[80]   *Joskow* 1991.
[81]   Comparative analysis of the EU and the US competition policies in *Markovits* 2014; *Bartalevich* 2017.

consumer preferences through aggressive and constant advertising. They can also get privileged political or regulatory treatment though lobbying and funding.[82] By doing so, they promote the production of goods that serve supply rather than demand and social welfare. For example, the major players in the automobile, pharmaceutical or mobile telephony industries have the means to advance specific technologies and patents to the detriment of better solutions, in which they have not sufficiently invested. In addition, big firms suffer from various organisational inefficiencies because of their size: complex bureaucratic structures, lack of incentives to innovate, principal-agent costs (since senior management officers aim at increasing their remuneration for as long as they are in the driving seat), and so on. The greater the power of an undertaking, the greater the incentive for opportunistic behaviour seems to be. A recent example is that of 'systemic' ailing banks. The State (both in the US and in the EU) applied the 'too big to fail' motto and saved them. However necessary in order for the economy not to collapse, such compulsory bailout entails a moral hazard: a firm may become inefficient where both the Demos and the Agora depend on it due to its size.

3.4.3   Macroeconomic market failures

Markets on their own do not have the ability to remedy their problems, nor to keep functioning properly in the long run. Since they are largely interdependent (a banking crisis affects the industrial sector or real estate prices, and vice versa), their failures have *systemic* negative consequences, which affect public economics and the Demos itself. In other words, free transactions do not ensure the 'Wealth of Nations' proclaimed by Adam Smith. Macroeconomics (rather than microeconomics) is a theory that focuses on the systemic failures of the market model.[83] It reveals the existence of cyclical and conjunctural economic crises. Such crises, as recorded after 1929 and the Great Depression by John Maynard Keynes (and, before him, by Karl Marx), are inherent in free markets. In cycles of recession, supply shrinks, often to a level lower than that of reduced demand. Producers are afraid to invest due to uncertainty about when growth will recover. The immediate result of this behaviour is the reduction of job offers. Unemployment is a negative externality with considerable social repercussions. It traps the economy in a vicious circle. Low production and high unemployment reduce wealth and purchasing power, leading to even lower demand and supply, to even higher unemployment, and so on. The opposite cycle is that of a booming economy, which risks overheating. Excessive optimism provokes an unjustified increase in production and consumption; this

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[82]   *Galbraith* 1967.
[83]   *Mishkin* 2014; *Blanchard* 2012; *Burda/Wyplosz* 2017; *Williamson* 2017.

causes inflation, which is a pathology of the price mechanism. Inflated prices create artificial values for goods, obstructing their proper allocation to society. Overheated economies are vulnerable to painful 'crashes', when the bubble becomes unsustainable.

Macroeconomic failures require remedies coming not from the Agora but from the Demos, such as incentives to invest, price control and public regulation. Nowadays, they have become even harder to resolve at national level. The retreat of State sovereignty and the advent of globalisation made traditional macroeconomic tools for countering crises – imposition of taxes and duties on imports, devaluation of the national currency, strengthening internal production through subsidies – less functional or even rendered them unavailable. In the eurozone, such measures would be impossible or contrary to EU law, given that the latter prohibits custom duties and state aid. In any case, they seem insufficient, especially when crisis acquires a transboundary, epidemic form. Moreover, national policies are unable to counter global environmental problems, such as the exhaustion of non-renewable resources and the greenhouse effect. States alone cannot ensure sustainable growth. Sustainability has become a global macroeconomic target that exceeds horizontal transactions and national borders. It is a modern challenge for both economic analysis and public law.