Economics and the Real World

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Introduction

Economics as a science – or viewed from the perspective of scientists in other fields

As a discipline or field of knowledge, *Economics* is clearly not an experimental science. The possibilities in this respect are extremely limited[1]. When practised with scientific rigour it is, in essence, an *observational* science: we economists are confined to observing and analysing the workings of the economic system — of this or that market economy — and thus endeavouring to build a formal description of that conceptually and schematically. A description in which a significant part refers, if not properly to 'laws', to *patterns* observed in the behaviour of individuals as 'economic agents' — citizens, companies, governments, etc. — , as well as in the key magnitudes resulting from their activities and interrelations — production of goods, employment, prices, salaries, tax collection, etc. Ideally, in addition to specifying these socially significant magnitudes and patterns in the system, this necessarily schematic formal description should encompass a conceptual formulation of the most relevant causal relationships between them; such as, for example, between **interest rate** and level of the **total demand of goods**; or between **statutory severance pay** and **employment level**.

As in any field of knowledge, or of study, the first step in an explanatory theory of the functioning of a market economy is (or was) a previous conceptual, *deductive* formulation of its basic elements, as well as some assumptions about the mentioned patterns of behaviour and

[1] Basically, to *laboratory* experiments, with small groups of individuals who are presented with designed alternative-decisions that involve receiving more or less money.

interrelations. In other words, a certain general *theoretical framework*; a *previous* interpretative model based on presuppositions or *deductive hypotheses*. That is, a conceptual outline that pre-describes, — through making some simplifications and abstractions — what is considered at the time to be the essential elements of the reality under analysis: the workings of the market, capitalist, or private-enterprise-based economic system. This would be an initial, provisional, theoretical description that should allow the formulation of verifiable hypotheses and predictions about the dynamics, behaviour, and interrelations of these essential elements of the functioning of a society.

But, of course, this is, or should be, only the first step. From this stage, it is expected that this explanatory theory based on deductive assumptions be progressively revised as a result of being put to the test; that is, confronted with empirical observations, to be gathered. And so to check whether these observations confirm or refute — in what regard and to what extent — both the general theoretical framework, axioms, and hypotheses on which the theory is based, as well as the predictions derived from it[2]. However, there are elements to affirm – as it is subsequently argued– that the *standard model* of the conventional, orthodox economics currently dominant is still largely stuck at that first step; that of purely deductivist hypotheses or assumptions; in the sense that they are kept insulated from comparisons with the overwhelming empirical evidence available.

[2] We might draw a parallel between the application of the scientific method to explain the workings of market or capitalist economies — the ideal foundations of *Economics* as an academic discipline — and the pair of disciplines Anatomy and Physiology; of the human species, for example. Though there is a significant difference: while in physiology we can observe certain stable regularities or 'laws' (for instance, how a particular type of fat is metabolised), economies are dynamic systems, where regularities or patterns are subject to change over time. This is, partially, because these patterns are in fact made up (or determined by) socio-political decisions regarding what are collectively deemed appropriate or not (laws, regulations, etc.); and, partly, due to 'autonomous' dynamics, such as technological and demographic changes, changes in the level of knowledge, in citizens' tastes and preferences, and in the level of collective wealth (or degree of development).

Following the scientific method, it is the accumulation of observations about the economic reality — the patterns of behaviour of people and groups as economic agents as well as of the relevant quantitative variables involved — that allows us to refine, reformulate or change the initial hypotheses. Empirical observations are fundamental to drawing inferences or inductive propositions on the regularities that define the reality under analysis. A task that allows for revising, and improving, the previous theory; so giving way to a better, useful explanatory scheme — or theoretical model — of that part of the reality: the workings of a market economy based on private firms.

From this perspective, the essential rule of the scientific method — dealing with a discipline such as Economics (or *economic analysis*)[3] — is that any given explanatory theory is or is not good insofar as it succeeds in providing a satisfactory explanation of the reality in question. If reiterated observations of that reality show that such a theory does not explain it well, or does not explain it in a significant number of cases, that explanatory theory must be revised or replaced by another that better fits with the observed reality, the empirical evidence gathered.

There is no doubt that, in terms of the scientific method, a formal explanatory scheme on how market economies work, will never be perfect. Among other things because we are dealing with a reality whose patterns, ingredients, and structures may change over time. However, there is a broad spectrum between imperfection and misrepresentation. And, certainly distorted ideas of a given social reality — whether as a result of insufficient knowledge, misapplication of knowledge, or unrealistic assumptions — can easily lead to flawed,

[3] '*Economic Analysis*' is a term increasingly used by contemporary theoretical economists to refer to their academic activity.

if not counterproductive, collective decisions, policies, and practices. If such ideas are imparted as *the* standard academic description in textbooks, classrooms, and through papers by the corresponding scholars, the problem grows in implications. Something that is particularly relevant in social sciences fields.

The central paradigm of the orthodox or conventional economics, that is, the *standard model* in mainstream economics (hereinafter ESM) can be introduced, in a compact format as follows:

(a) If unconstrained by interventions from public authorities, the market for each good (product or service) will *spontaneously* end up being a competitive and in-equilibrium market. That means a large number of producer/seller enterprises, perfectly efficient, none of which holds market power; all of them selling at a price equal to their marginal cost, which in turn will be equal to their average cost. That applies to any good in the economy, with only a few exceptions: situations of 'natural monopoly'.
(b) If for Labour and other production factors the situation is also that of a free market, then the overall result of this free-playing of markets forces in the whole economy constitutes a social optimum of economic well-being. A social optimum characterised by full employment of Labour and the rest of country's resources; a certain composition of the basket of goods and services made available, that maximise 'social utility'; and a fair income distribution.

Facing this modern-neoclassical background, the first objective of this text is to underline that this ESM paradigm rests upon an explanatory theory that draws mainly on conjectures, hypotheses, and deductive assumptions, which are not supported by what observations of the reality of market economies show us; either in the present day or historically. The ESM is, indeed, an explanatory theory that fails to provide a proper explanation of how a market or capitalist economic

system operates in reality; or it does not explain well the workings of the economic world for the vast majority of cases, goods, sectors, or markets. Something that, moreover, I am far from being the first one to highlight.

> "Modern economics is not very successful as an explanatory endeavour. This much is accepted by most serious commentators on the discipline, including many of its most prominent (See, for example, Rubinstein 1995:12; Lipsey 2001:173; Friedman 1999:137; Coase 1999:2; Leontief 1982:104)"
> (Tony Lawson, "Modern Economics: the Problem and a Solution", in Fullbrook 2004:21)

(Note that the three last authors cited by Lawson in the above paragraph are Nobel Laureates in Economics).

That *deficiency* of the ESM has relevant implications. It is something more than a purely theoretical issue. The fact that this explanatory model of the academically mainstream economics (much dominated by *microeconomics*)[4] postulates that 'free play of markets' overall leads spontaneously to an *optimum of social utility* (as a result of a *general equilibrium* of competitive markets, GE)[5] has moreover implications beyond the economic discipline. In the political arena, neoliberalism draws on this postulate to defend its principles of no (or minimum)

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[4] For most mainstream academic theorists, *microeconomics* is in fact the basic component of orthodox modern-neoclassical mathematical economics. *Micro-foundations of economics* is the standard expression to refer to that.

[5] An *optimum* that, in short, is defined in this *theory of General Equilibrium of competitive efficient markets* (GE) as a situation in which the resources available in the considered economy (a country) are fully and efficiently used to produce what is preferred by the citizens, who then pay for every product or service a price equal to the respective unit-cost. I.e., it is assumed that the private companies of a market or capitalist economy do not earn any profit (sic).

A more precise formulation of the axioms, postulates, and assumptions upon which this *General Equilibrium Theory* draws on will be seen in Appendix A to chapter 1.

intervention by governments in the economy, of no (or minimum) regulation of markets; that is, to defend what lies behind the well-known expression 'the less State the better': minimum public expenditure, minimum taxes.

And, of course, the *General Equilibrium* theory that supports the referred postulate dominates the way economics is taught, how the workings of a market economy are explained in textbooks and university classrooms: conveying to readers and students a theoretical description based upon a set of axioms and deductive reasoning which do not actually fit, regarding fundamental elements, with the economic reality of our social world. They are unnecessarily unrealistic assumptions, in the sense of not coming justified on the grounds of the usual abstractions and simplifications any formal theory entails. It is a theoretical model which rather refers to an imagined market economy (Schlefer, 2012:25). It is quite significant in this regard the use, in neoclassical mainstream economics, of certain typical concepts such as '*imperfect* information', 'economics of *imperfect* competition', or 'market *imperfections*', to refer to features that in fact are normal, central to our market economies. Scientific colleagues in other fields — including other fields of social sciences — often find it *funny* that we economists consider the economic reality to be *imperfect* because it is bent on disagreeing with the description that the standard theoretical model in economics postulates.

Nevertheless, that is the theoretical paradigm that in general the economists who advise, recommend, or decide on economic policy measures (in governments as well as international organisations) have learned — and often also teach at universities. And to the extent that such a paradigm does not match the reality of how our economies function – regarding fundamental matters, not inessential or in-detail aspects, the economic policy measures that these professional economists design or apply by taking such a paradigm as a reference framework have a high risk of being wrong, useless, or

counterproductive for the collective wellbeing. In the same way that an 'anatomy & physiology' that would not describe well the functioning of a particular organism would lead to incorrect predictions or wrong diagnoses; and consequently to useless or counterproductive treatments or recommendations.

Thus, insofar the ESM is a theoretical framework that – as will be argued here – does not describe or explain well the reality of the workings of our market economies – mainly regarding the patterns of behaviour of the different economic agents (enterprises, consumers, investors, banks, employees, executives, etc.) – or that it explains such a social reality in a distorted manner, it easily leads to wrong deductions or diagnoses, or a lack of realistic predictions. Something that was dramatically highlighted by the global financial crisis unleashed in 2007-8 in the US when the finance and real estate bubbles 'burst'. A scenario that, at the time, most influential economists had not considered plausible, because simply, according to the assumptions of the models on which they were based, such a thing could not happen because 'markets self-regulate', 'investors assess risks perfectly, in their self-interest', etc.[6].

Economics, microeconomics, macroeconomics

Certainly, the 'standard model' (ESM/GE) –with the scope described in the previous paragraphs (as a construct that culminates in the paradigm of the General Equilibrium of Competitive Markets) – does

[6] Let us take into account that these models are based upon premises or assumptions, such as every market (the real estate market, the financial market, etc.) is 'by nature' efficient, it self-regulates, and spontaneously tends towards an equilibrium. In turn, this draws on the assumption that those, in the companies, who make the decisions are 'agents' who act with pure economic rationality, seeking to maximise their profits or utility in the medium and long term; and, thereby, they have incentives to be 'perfectly' informed, to 'perfectly' assess the current and future financial risks –of any operation, investment, etc.– before deciding on them; and so on.

(For most non-economist readers, the above may provide an insight regarding the 'peculiar' economic world that mainstream economics assumes as a 'base camp'.)

not encompass the whole of Economics; though it is the base. There is furthermore a set of specific autonomous theories, albeit connected to the GE paradigm. Theories not regarding the way markets function, the production world, companies' behaviour, prices, and profits, etc., but on the relationships between variables referred to the economy as a whole; they are theories mainly dealing with cause-and-effect relationships. For instance, the two opposed theories on the relationship between an increase in '**Public Deficit** financed by **Public Debt**' and the increase it induces in economic activity (**Gross Domestic Product** and, thereby, **Employment**) under a situation of economic recession. Two different theories that, in turn, give rise to formulating or defending opposite economic-policy measures: austerity, vs. expansionary policies.

To enumerate some of the most relevant of these specific economic theories on *causal relationships* – besides the above example –: The effect of (a change in) the **Rate of Interest** – applied by the banking system – on **Business investment** and on total **Saving**, (the 'IS model'); the effect of (a change in) **Money Supply** on the **Rate of Interest**, and of the latter on the **Demand for Money** (the 'LM model'); the cause-effect relationship between **Money Supply** and **Inflation Rate**, (a part of the 'theory of money'); the quantitative relationship between **(Personal) Income-Tax Level** and **(Business) Net Investment**; the causal relationship presupposed to exist between **Unemployment Rate** and **Inflation Rate**, ('Phillips curve' and 'Non-Accelerating Inflation Rate of Unemployment, NAIRU', theories). And so forth.

To conclude this merely indicative enumeration, there also are specific economic theories addressed to a previous analytical stage; for example, the *Economic Growth* theory. In this case, the issue is rather to identify the relevant explanatory variables that determine the economic-policy target variable, GDP, to thus assess to what extent each of those would-be independent variables (economic growth levers) co-determines the target variable in question. And something

similar happens regarding the *Business Cycles* theory, whose development plays, in turn, a fundamental role in the formulation of economic forecasting models at the country level. Both of these theories are widely used by governments' economic departments and international economic agencies to estimate future economic trends and/or design economic programmes and policies.

As it may have resulted obvious, these types of theories on *causal relationships* are among the topics that usually make up the bulk of what a reader might find in a standard *macroeconomics* textbook (or as part II of an introductory *economics* manual) – together with the corresponding conceptual framework and definitions of the macro-variables. The formal expression of the arithmetical identities used in *national accounts* plays a key role in the latter; notably, regarding the meaning of the variables and identities in the macroeconomic central and *popular* IS-LM model.

However, these '*macroeconomics* topics' do not come within the planned scope of this text, most of whose topics would fall into the conventional reach of *economics*/*microeconomics* – with some exceptions. Although in this respect it should be highlighted that most academic economists do regard *microeconomics* as the core of economics/economic theory itself. In this vein, it is worth making two remarks in this introductory piece.

First, *macroeconomic* theories such as those mentioned above are at the same time – or are widely used as a basis for – arguments recommending or defending specific *economic policy measures*. Thus, these *a-priori descriptive* theories – and, thereby, normally considered and presented by the scholars devoted to them as a corpus of *positive economics* (to explain) – easily slide towards *normative economics* (to prescribe). In any case, most macroeconomic theories are in practice closely related to *Economic Policy*, something that, on the other hand, is not only perfectly understandable but that justifies in a sense the very theorising efforts in macroeconomics.

> "Economic theory obviously is concerned with explaining how economy functions. *Relevant theory equips us to improve the instrumental functioning of the economy. This in turn requires institutional change in the form of public policy.* In short, the bedrock role of the discipline is to enable us always to do the best job assuring that, given our resources and the state of technology, we are deploying both to make economic aspects of the life process for all people as adequate and rewarding as they can possibly be." (Klein, p. 368) ; (italics mine).

Second, the determinant fact of these specific, a priori 'autonomous', theories having a clear connection with the ESM itself; and especially with its core paradigm, the general equilibrium theory. This is mainly apparent regarding the methodological approaches and the premises and assumptions that macroeconomic theorising tends to rely upon. Especially regarding assumptions like 'the one-dimensional economic hyper-rationality of citizens' (i.e., the *homo economicus* paradigm) and that of 'instant and free *perfect information*'. As well as regarding the predominance, in macroeconomic topics, of the idea of *equilibrium* (for example, the IS-LM model itself), together with the peculiar graphical-mathematical language of mainstream economics/ microeconomics – which we shall critically introduce in chapter 2.

Returning to the cornerstone of mainstream economics, the ESM, – and with a view on afterwards confronting its assumptions, axioms, and propositions with the respective empirical evidence – it is appropriate to start by highlighting here a core issue: The basis of the ESM is, apparently, aseptically 'technical'. It is specifically a deductive theory as to how business establishments – firms, enterprises, companies – work and behave; how, in general, their costs for a good vary with respect to the level of production; the way the product's selling price comes determined, and, as a result, the structure for the corresponding market. This is a deductive theory (the 'modern-

neoclassical theory of production') which, I will argue, is clearly and unnecessarily unrealistic. Among other things, but as a core piece, this theory assumes that in the production of any good (by any firm), economies of scale become exhausted for rather small volumes of production compared to the size of the total demand to be covered for the referred good; and that this general onset of *decreasing returns to scale* prevents companies from growing 'too much', and thus from holding market power; and, consequently, that 'without the need for any regulation from public authorities, the market of any good tends to be perfectly competitive, efficient, and in equilibrium'.

With this panorama as a backdrop, the present book builds on highlighting that the ESM – the mainstream deductive paradigm regarding how the economic world of production, enterprises, and markets works – cannot be sustained in the face of the overwhelming empirical evidence provided by observing the workings of our real market economies. The ESM does not respond to this observational evidence from real-life; this, not in terms of detail or because of excessive abstraction level but because of an as striking as unnecessary lack of realism regarding fundamental issues of economies' workings. A statement, moreover, that – as already pointed out – I am far from being the first one to underline: since the 40s of the last century, prominent economists already made similar remarks; though these have been generally neglected in mainstream economics.

To argue the above in an orderly manner, alongside the contrasting of the axioms and deductive assumptions of mainstream economics/microeconomics with the referred empirical evidence, an alternative *explanatory conceptual outline* of this part of the socio-economic real world – as well as of economics: its 'microeconomics foundations'– is also developed here. This, by simply following the scientific method: taking into account the vast empirical evidence available — both the results of specific studies and those provided by the direct historical

observations of the omnipresent realities of production, business workings, and markets' operation. All that, oriented to get inductive conclusions on the overall patterns regarding unit costs' behaviour and *economies of scale*, the usual economic behaviour of companies (prices determination and growth decisions), and the type of markets — of products and services — that really do exist or we can observe.

This is a book that I hope will be useful to *economics* students — whether or not they are pursuing a specific academic degree in this field. Though it is also written, of course, with economics professionals in mind; not only academics — albeit, in a way, the latter are the most directly appealed. Nevertheless, the text is drafted also with a view to concerned readers without specific training in *economics* but with an interest in the subject — hence the inclusion of appendixes, clarifying notes, and the simultaneous use of the standard terminology in the field along with a 'common knowledge' terminology. The standard paradigm under discussion has evident ideological implications that go far beyond economics. And some observational evidence presented here will even be familiar to a broad audience.

Chapter 1
Structure of the 'Standard Model' assumptions

To be confronted with observational evidence

> "All academic disciplines rely on assumptions, and economics is no different in this regard. But there are two kinds of assumptions: those written up explicitly and at times enshrined as axioms, and those that are built into the woodwork and thus hidden from view. While the explicit assumptions of economics have received a lot of scrutiny, those in the woodwork have largely gone unchallenged. Through force of habit many professionals have ceased to view them as assumptions, and regard them instead as immutable facts." (K. Basu, 2011, *Beyond the invisible hand*, p. 193)

To conceptually organise and better situate the referred confrontation with the wide range of empirical evidence available, it will be useful to start by making formally explicit, in a summarised way, the main assumptions and axioms that are the basis of the theoretical paradigm of the *Standard Model* in mainstream Economics (ESM). A model built around the theory of the *general equilibrium of competitive markets* and whose elements are then developed in chapter 2.

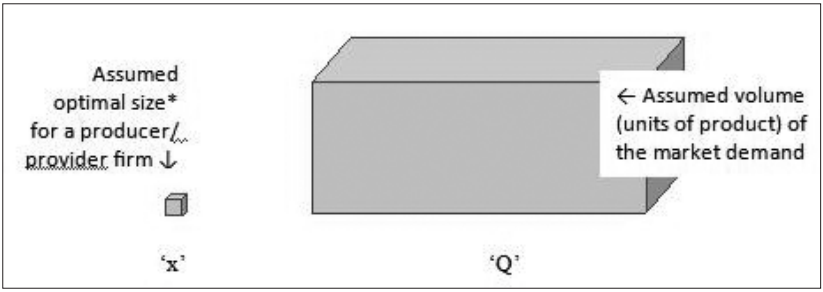
Chained premises, and oversimplifications

To start with, let us focus on the aforementioned postulate of this *economics standard model* regarding *decreasing returns*, which is used as a sort of general *law* of the economic world of production and the functioning of enterprises. A postulate that rests in fact upon premises that nevertheless are usually left implicit. Making them explicit, the summary could be as follow:

(I) A *deductive assumption*; 'deductive' in the usual methodological sense of not being presented in textbooks as derived from systematic observations of real cases (induction) but it is rather implicitly assumed like an axiom:

> in the production of any good (product or service), a comparatively small enterprise gets a lower average cost of the good as it grows in size (economies of scale). This growing path usually entails a higher degree of mechanisation and/or automation; and, of course, to produce larger quantities per period. This possibility, however, exists up to a specific dimension associated to produce 'x' units of the good. From this point on, there appear *decreasing returns to scale*: If the firm keeps expanding in order to produce more than 'x' units, then its average cost becomes to increase. Thus, there is a given dimension, size, or structure of the firm (that associated to efficiently produce those 'x' units of the good) for which the unit cost is the minimum possible one. Consequently, all enterprises engaged in the production of the good in question tend to adopt this *optimal dimension* and to produce 'x' units of product; and, therefore, to operate with the (same) minimum average cost

And (II), an *ancillary hypothesis*; it plays an instrumental role by presupposing that:



> the market demand for the good in question – when its price is close to the average cost of the producer enterprises, 'Q' units of the product or service, is – with rare exceptions (natural monopolies –) – many times greater than the 'x' units associated with the optimal scale of production for a firm.

Certainly, from the *deductive assumption* (I) about the world of unit costs of firms, and the *auxiliary hypothesis* (II) on the relative size of market demand for the concerned good – along with other more general assumptions, as that of "any (private) undertaking operates with full productive efficiency"– the theoretical proposition follows that:

> without any public intervention, the market for any good (product or service) will end up by having 'a great number' of firms supplying it; (as many as *Q*/x). All of them being as clones: the same, technology, size (that associated with producing 'x' units), and efficiency; and, therefore, they operate at the same (minimum) unit cost. A situation that gives automatically way to full competition in such a sector or industry (that is, to a 'perfectly competitive market'). And so for regarding any product or service – with some rare exceptions (natural monopoly situations)

These two core postulates underpin indeed the modern-neoclassical 'theory of production'; which, in turn, constitutes the cornerstone of mainstream economics' core model: the theory of *General Equilibrium of Competitive Markets*. A theory that can also be considered as an elegant way of formally expressing Adam Smith's metaphor of the *invisible hand* (when taking it to the letter[1]) by means of adding more assumptions and expressing it in mathematical terms. In Philip Klein's words:

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[1] "Adam Smith's remark that individuals seeking their own self-interest in markets are led "as if by an invisible hand" to promote the good of society has received mixed reviews—beginning with Adam Smith. His most important work, *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776), paints markets as powerful engines of growth but also of harm". (Schlefer, 2012:1).

> "A consensus presentation today of the central thrust of microeconomic theory, all derived from a vast elaboration of Smith's invisible hand, might run as follows. If we assume pure competition (that is, we consider many buyers and sellers, each too small to affect market price) of homogeneous products and assume as well that competition is perfect (resources are mobile, all agents have perfect knowledge of all alternatives available to them) then we can consider fairly completely the normative implications of (ESM) market adjustments." (P. Klein 2006, *Economics confront the Economy*, p. 20)

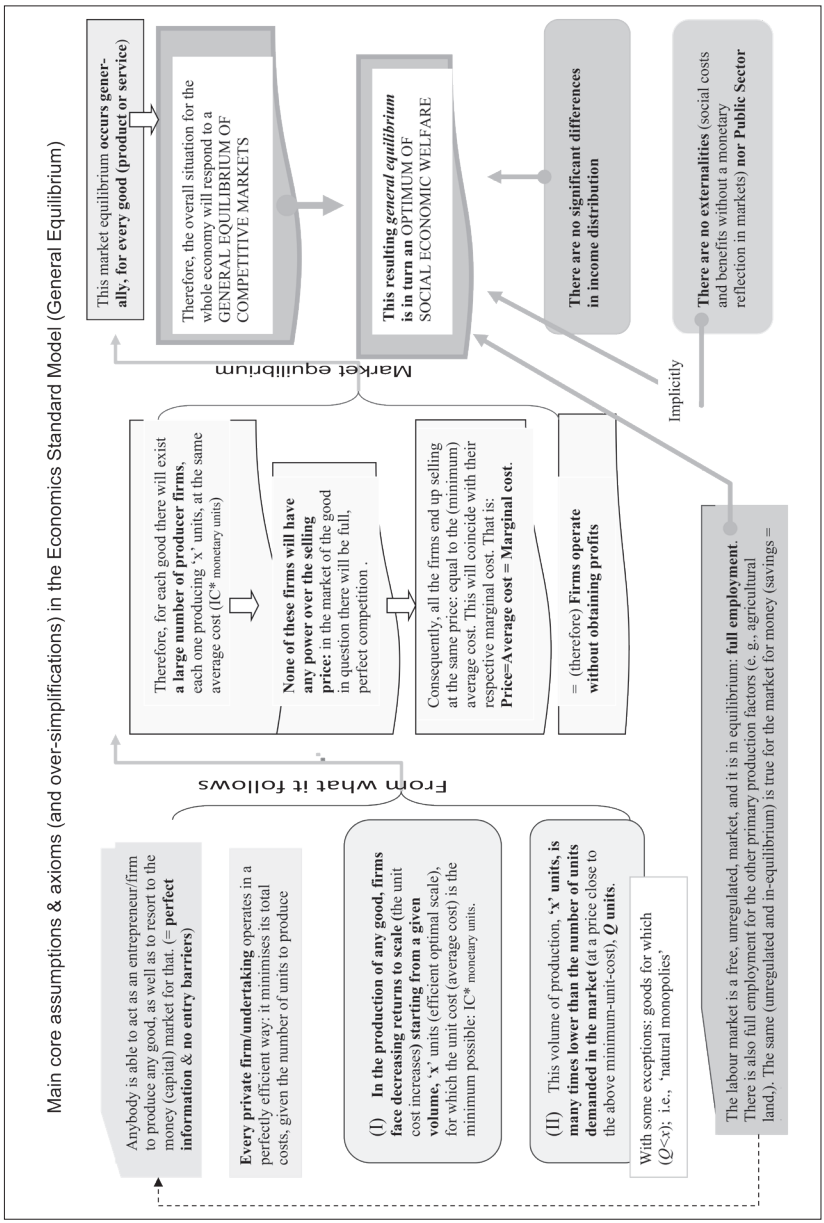
In addition to the aforementioned kernel – assumptions (I) and (II) – the ESM also rest upon other assumptions that are presented as mere simplifications. Two of these play a key role in the whole picture: the first one, that «*there is no inequality in income and wealth distribution in society*»; and the second one, that «*the labour market is also a free-market, (unregulated and without trade unions); and (thereby) there is full employment*». Though, actually, more than methodological simplifications, these statements[2] should be regarded rather as *oversimplifications*, since they strongly reduce the realism of the model's deductions.

Other actual simplifications must be added to those assumptions and oversimplifications, such as, i) 'there are *no externalities* in the economy' (those non-monetary *costs* and *benefits* generated by economic activities but that are not reflected by markets); ii) '*a firm produces one only product/service*'; iii) these are homogenous (in terms of quality, variants, performances, etc.) and *non-differentiable* in the face of potential customers; and iv) *there is no foreign trade*.

[2] Together with others; like 'perfect information', 'no-entry-barriers' for anybody becoming producer of any good, and 'homo-economicus behaviour'; which are detailed in Appendix A.

A more complete overall scheme, that gathers and connects all these assumptions, axioms, and simplifications the ESM rest upon – and that therefore are sustaining its propositions, conclusions, and postulates – is presented on the following page. A more precise narrative description in this respect is summarised in Appendix A, at the end of this chapter.

Main core assumptions & axioms (and over-simplifications) in the economics standard model (general equilibrium)



A glimpse on empirical contrasting

Having reached this point, any non-economist reader with some experience in the enterprises/business world will probably be surprised by this mainstream theory to describe/explain the workings of our market economies; especially taking into account that these are based on private – or, if preferred, capitalist – enterprises. Surprised, to start with, regarding the aforementioned deductive assumption (I), that states there is a 'natural' technical-economic ceiling to the size of any company, 'beyond which the firm is not interested in growing any further because its unit cost would soar'. To our non-economist, it will be quite obvious that this assumption does not generally correspond at all to the companies' functioning and market realities that can easily be observed (for example, simply as an employee). In fact, the dominant picture we may see in the real business world is rather the opposite: companies showing a tendency to sell as much as possible, increase their level of activity (structure, production, sales),* and ultimately grow as much as they can; precisely as a way of increasing their competitiveness (lower unit costs) and/or market share (i.e., obtaining market power) – in order so to increase or ensure their profits.

More precisely, as we will properly see in chapter 3, contrarily to what the aforementioned deductive assumption (I) postulates, there is no empirical evidence of decreasing returns to scale in the production of products or services by firms – aside from, perhaps, some exceptional cases[3]. There is no evidence that there exists an 'optimal volume or size' for the enterprises devoted to the production of this or that good; i.e. a supposed firm's size or productive dimension beyond which the firm will not be interested in growing because this would be antieconomical. Consequently, the mentioned theoretical

[3] As it could be the case for some rare minerals. We shall deal with this further on.

assumption (I) –which is a purely *deductive* assertion, since it has not been historically presented in mainstream neoclassical economics textbooks as a hypothesis inferred from the observation of real cases of firms or products – does not explain the economic reality well; or does not do so for the vast majority of final goods and commodities, whether material products or services.

In other words, the statement «decreasing returns always turn up, thereby, in any 'industry' there is always a given optimal size for the producer firms: that that minimises their average cost» relies on an assumption that cannot be sustained in the face of the reality that business and production activities show us. Thereby, the auxiliary hypothesis (II), «the relative size of the market demand for a (any) product or service will generally be much larger than the supposed *optimal* productive dimension for a firm in that sector: (whereby the resulting market structure will necessarily be one with many firms competing)» is meaningless. Therefore, the theoretical proposition deduced from assumptions (I) and (II), «the automatic, 'natural', trend toward perfectly competitive markets as a general rule in an unregulated capitalist market economy» is not sustainable.

Approach and book organisation

These previous assertions may sound somewhat categorical or unjustified for some readers; especially among academic economists. In fact, the proper argumentation of these statements put forward here, the references to the extensive empirical evidence they echo, occupies most of the following pages, especially from chapter 3 onward.

However, before moving on to this, it seems appropriate to begin (chapter 2) by properly developing the whole standard picture and specifying the essential of that mainstream theoretical explanation, currently *the standard model* in Economics, so far referred to only in

broad terms. This will consist of setting out in an orderly manner the basis of the present standard, 'modern neoclassical', economic theory – that mainly refer to the world of production, companies, and markets. Thus, the following chapter 2 is devoted to dissecting its key statements and getting familiar with its peculiar graphic language; to start with: how and with which concepts the ESM presents the theoretical assumption (I) and the auxiliary hypothesis (II) as well as its deductions from them. Although it must be underlined in this respect – as already pointed out – that, in the ESM, these concepts, assumptions, and hypotheses are not normally presented in such terms but rather - and implicitly - as simplifications of immutable facts, or 'stylised facts'. These topics about the world of production and firms' behaviour regarding the resulting markets' conditions use to be developed in most reference manuals within the sections devoted to *Theory of costs (or Production)*, *Theory of the Firm*, *Market Equilibrium Point*, and *Theory of the Competitive General Equilibrium*.

Once this conceptual framework of the standard paradigm has thus been summarised in chapter 2, the text steps to argue and present, comparably, the counterpoint we obtain when attending to the overwhelming empirical evidence about the same concepts. This means to induce – from observational empirical evidence – patterns of behaviour regarding economic variables, business undertakings, and other key elements of the world of production, enterprises, and markets (chapters 3, 4, and 5).

As the reader will have probably already guessed, in what follows some technicalities are going to be inevitable since the abovementioned explanatory paradigm of the ESM to be confronted with empirical evidence is based on concepts such as *marginal cost, average cost, size of a company, economies of scale, and market prices determination*. More specifically, it is based on a certain generic theoretical description of how the unit costs – of a (any) company that produces a certain good – are supposed to behave in relation to the volume of units of the good

such a firm produces in a given period. The standard paradigm also deals with the behaviour of enterprises in this respect – by relying upon 'technical' assumptions about–; mainly regarding their decisions on the volume of production (or sales), selling prices, and their productive structure and technology; and therefore on its dimension or size as a firm. All the latter is what in the economics/microeconomics manuals can specifically be found under the abovementioned denominations of the *theory of costs* and/or *theory of the firm*.

It may come as a surprise for non-economists the fact that all that ('variable/fixed costs, marginal costs, average costs, the scale of production, …') constitutes a set of quite 'technical' and at the same time very elementary concepts as to serve as a basis for a theoretical paradigm – that of the ESM – that concludes with such a general and transcendent proposition as that of 'the overall tendency to spontaneous equilibria of competitive markets'. Let us remind in this respect that this ESM's proposition, expressed less schematically, in terms of 'stylised facts', tells us that:

> (private) enterprises, since they tend to function efficiently (minimising their unit cost), if there are no institutional obstacles for them (intervention of public powers in the economy, prices regulation by governments, etc.), they as a whole generate, automatically, spontaneously, markets (for each good) that necessarily tend to be efficient and competitive (many companies competing by offering an identical product). Whereby, given this perfect efficiency and competition, each company ends up selling its product at a price equal to its marginal cost, which in turn will be equal to its average cost (the same for any producer firm in the market); i.e., that firms will not obtain any profit (sic)[4].

[4] For non-professional readers, a more systematic formulation of this set of pre-suppositions, assumptions and arguments of the mainstream economics' theoretical model is provided in Appendix A to this chapter.

Surprising or not, the fact is that the basis on which the construction of such a proposition (the general competitive equilibrium – and qualifying it as an optimum of social wellbeing–) rests is a deductive theory on the overall, generic behaviour of firms' unit costs. The relevant question in this respect is that – using the terminology of the scientific method– this theory does not explain such an economic reality well, as will be argued further on. Its descriptions and predictions do not correspond to the empirical observation regarding the more obvious aspects of the workings of firms and the overall behaviour of their unit costs. Moreover, this 'flaw' of being at odds with what the real economic world shows us do not refer to technical or of-detail aspects, but to key, basic points. Discrepancies with respect to empirical evidence on fundamental points are overwhelming, as we will see later.

Thus, lets us go step by step. Thinking also of readers not necessarily trained in economics – or who need to refresh their knowledge in this respect–, first, as already indicated, in Chapter 2 this standard 'modern neoclassical' *theory of costs, of the firm* – or *of production* –, and of the workings of markets is succinctly set out. That is, that part of the mainstream economic theory that leads in fact to the above-mentioned theoretical proposition on the 'spontaneity towards competitive markets', which, in turn, would flow out into 'an optimal social-economic well-being'. This summary will also serve to become familiar with (or recall) the aforementioned technical terms on unit costs and economies of scale.

In chapter 3, these core propositions of the ESM previously summarised are confronted systematically with the extensive empirical evidence available in this regard. Thus, firstly the purely theoretical assumptions, axioms, and hypotheses that underpin the ESM are put to the test by confronting them with the respective observational pieces of evidence available. This starts by confronting

its cornerstone assumption – that of 'decreasing returns to scale as something general, universal in a market economy' with direct evidence from the real world of production and firms. A crucial step since the conceptual pillar of the 'general equilibrium of competitive markets' rests upon such an assumption.

In parallel, and using the referred empirical evidence, an alternative formal description of the workings of firms, their unit-costs, and of the market's equilibrium point is presented. This empirical inductive approach relies thus on the historically and extensively observable empirical shreds of evidence about such economic-business reality. In other words, a theoretical-conceptual description, that explains reasonably well (in terms of the scientific method) the referred topics, is presented. That means to schematically explain the observable reality regarding: **i)** the general pattern of behaviour of enterprises' unit-costs, in relation to the total units produced (the topic of returns to scale), and consequently, **ii)** the overall pattern of behaviour and decision making of companies (of their managers) concerning the company[5] size, production scale, or dimension that is adopted, decided, or pursued.

Next, in chapters 4 and 5 the assumptions and axioms of the ESM that complete the sequence of its arguments (the standard explanation it gives on how prices, and therefore business profits, are determined, as well as on the resulting type of markets in the competition/monopoly axis) are confronted with the also overwhelming empirical evidence that the observation of business and markets reality offers to us in this respect. As a result of this confrontation, a remarkably different explanatory picture emerges of how that central part of a market economy based on private enterprises works.

[5] In this text the terms 'firm', 'enterprise', 'undertaking' and 'company' are used indistinctly.

Simultaneously, throughout these chapters, the essential features and core elements of such an alternative, new formal explanatory scheme are summarised. This, mainly by outlining the empirical inductive conclusions on the *general patterns of behaviour* of companies as regards: **iii)** how the prices they apply/require in the market are actually determined; and which the companies' *attitude* or typical *strategies* regarding their product's market are. This, in turn, leads us to pay attention to the relevance, regarding firms' behaviour and markets' running, of concepts such as 'market share', as well as of so generalised policies or practices like: 'growth orientation', 'product differentiation', 'diversification', 'market segmentation', or (searching for a) 'niche market'; together with the more traditional practices of marketing & advertising, taking-over other firms, etc.. And, as an overall outcome of all that, **iv)** an assessment about which market-structures – in the competition/monopoly axis – are most frequently observed in real economies is carried out.

The development of the above does not intend to theorise a new overall paradigm but simply to formulate a general theoretical explanatory *package* that be coherent with the omnipresent empirical evidence on the matter – some of which, on the other hand, is so obvious that it constitutes common knowledge. The choice has been just to specify a formal set of specific explanatory models that results simply from not being impermeable to evidence, that is, from covering the inductive phase of the scientific method.

Finally, in chapters 6 and 7, the different topics separately worked out throughout the prior chapters are connected by developing the main overall conclusions and findings, and discussing their implications beyond economics itself. These overall conclusions are organised and presented around an axis or argument: that of the outcome derived from the systematic confrontation of the core theoretical framework of the ESM (chapter 2) with the reality of the economic world, as carried out and schematised in chapters 3, 4 and 5.