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Daniel Durán Sandoval, Francesca Uleri, Gemma Durán

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Abstract

The concept of scarcity has been studied by different economic schools reaching different explanations in this regard. This article attempts to clarify the characteristics of scarcity in the Classical School of Political Economy, the Marginalist School of Economics, and the Marshallian synthesis from a new ontological and epistemological path. Accordingly, the discussion underlines that for the Classical School of Political Economy scarcity is considered as an empirical fact in contrast to the Marginalist School which instead considered it as a theoretical consequence derived from its axioms, while Marshallian theorists in their analytical scenario referred to both schools by introducing an ontological and epistemological ambiguity about scarcity. The article concludes by highlighting that the scarcity characteristics of the mainstream economics neglect the sociocultural, historical, and political dimensions, making the consideration to abolish them through social, political, and economic changes, as a difficult and –at times – vain option.

Keywords: Scarcity, Abundance, Sufficiency, Social Needs, Individual Wants, Classical School of Political Economy, Marginalist School of Economics, Marshallian synthesis of economics.

JEL Codes: B41 Economic Methodology, B10 General.

1. Introduction

The object of study of contemporary Mainstream Economics (ME), which is understood in this article as Neoclassical economics (Schiffman 2004; Dzeraviah 2018), is defined as the study of the problem of the satisfaction of multiple needs and wants of the people from scarce resources. This object of study can be found in current economics textbooks, such as Mankiw (2009: 4): “*Economics is the study of how society manages its scarce resources*”. Building upon this conceptualization, it is possible to observe that the concept of scarcity plays a crucial role within the ME since only scarce resources are considered as the objects of study of economics. According to Daoud (2007) the notion of universal scarcity, in the form of the scarcity postulate, is a main axis in the contemporary ME.

Nevertheless, scarcity did not always have the same relevance in the definition of economics as it does today. Thus, in the definition of the economics of the Classical School of Political Economy¹ (CSPE), the scarcity of resources and goods was not considered as a crucial concept. This is observed in the Mill’s definition of economics:

“The science which traces the laws of such of the phenomena of society as arise from the combined operations of mankind for the production of wealth, in so far as those phenomena are not modified by the pursuit of any other object.” (Mill 2000 [1844]: 99).

In Mill definition of economics, the focus of the object of study of economics was on production and social relations of production rather than allocation of scarce resources and goods. Although some economic schools of thought have focused on the concept of scarcity to explain economic phenomena, today the concept of scarcity plays a fundamental role in many ecological, economic, and social theories (Daoud 2018).

¹ In this article Classical School of Political Economy refers to the set of economic theories postulated by the political economists of the 18th and 19th centuries, in particular Adam Smith, David Hume, Jean Baptiste Say, Thomas Malthus, David Ricardo, John Stuart Mill, and Karl Marx.

However, the concept remains unclear and suffers from a set of limitations that can lead to dead end conceptualizations (Buechner 2014) and/or hinder the understanding of the relations between society, environment, and the economy in a system of connected causalities and network complexities (Jennings 2021). These limitations may include the multitude of scarcity concepts and approaches that may cause ineffectual entanglements (Daoud 2018), the respective unclear understanding – and in some cases absent consideration – of the sociocultural dimensions that drive scarcity (Daoud 2010), and the theoretical and practical consequences of assuming different concepts of scarcity (Matthaei 1984). To overcome these limitations, some previous studies have approached the concept of scarcity from different perspectives. For example, Matthaei (1984) drawing upon the economic debate animated by Neoclassical and neo-Malthusianism schools about the concept of scarcity, criticizes their essential assumption of the inevitability of scarcity by proposing an alternative conception of economic life under capitalism, based on the Marxian theoretical tradition. Baumgartner, Becker, Faber, and Manstetten (2006) identify and analyze some difficulties with the interdisciplinary integration between economics and ecology when studying the loss of biodiversity. They focused their analysis on the concept of relative scarcity and absolute scarcity, arguing that economic science limits its analysis to the former one and ecology to the latter. Likewise, Buechner (2014, p.13) emphasizes the concept of relative scarcity by stating that absolute scarcity refers to an *“aspect of individual goods considered in isolation, that is, the quantity of a good is insufficient to reach one’s end. Relative scarcity is about the prices of goods in relation to one another. Replacing either concept with the other is not a meaningful idea. The purpose rather is to move scarcity to the sidelines of economics and to give relative scarcity a central place”*. Tchipev (2006) analyses the concept of scarcity and its consequences within the Neoclassical economic paradigm. Daoud (2007) formulated a sociological critique of the concept of scarcity in ME, he moreover explored firstly the views

of Robbins and Malthus on the concept of scarcity, abundance, and sufficiency and how they overlap and vary, and then the idea that socioecological research would benefit more from analyzing the dynamics between states of scarcity, abundance, and sufficiency, rather than viewing them as distinct branches of research (Doud 2010; 2018). Likewise, this article proposes an analytical framework that systematizes these types of studies. Other studies, such as Mehta, Huff, and Allouche (2019) explore the cross-scalar dynamics of what they consider as new scarcity policies, which consist of the configuration of new social and economic relations of domination and control around scarcity events. Finally, Scoones, Smalley, Hall, and Tsikata (2019) analyze the policy-related narratives of scarcity on the global phenomenon of the land rush.

Building on this background, this article attempts to clarify the ontological and epistemological characteristics of the concept of scarcity in the CSPE, Marginalist School of Economics (MSE), and the Marshallian Synthesis of Economics (MSHE), then discussing new ontological and epistemological way of understanding scarcity. Resultantly, the article is guided by the following four research questions: (a) which are the analytical elements that have characterized the evolution of the concept of scarcity through the CSPE, MSE, and the MSHE²? (b) what is the ontology of the concept of scarcity in the schools mentioned above? (c) what are the consequences of accepting different ontologies in the concept of scarcity? (d) what alternative economics scarcity concept can be proposed to capture a broader spectrum of economic phenomena than the ME scarcity concept?

By answering to these research questions, the following sections corroborate the existence of ontological and epistemological differences in the concept of scarcity adopted by the CSPE and MSE, by discussing firstly how this ontological difference remains in the MSHE in a

² Marshallian synthesis of economics is considered as the starting point of the Neoclassical School of Economics (Dimand 2000).

form of ontological and epistemological ambiguity; secondly how the concept of scarcity of the ME leaves important dimensions of economic phenomena on the margin of the economic science; and, finally, exploring new knowledge trajectories about the concept of scarcity from a sociocultural, political, and historical perspective.

Accordingly, the structure of the article is divided as follows. From section two to four, the text will be focused on the concept of scarcity in the CSPE, MSE, and MSHE. The fifth section analyzes the consequences of adopting the concept of scarcity of ME in the explanation of the economic phenomena and, finally, the last section delineates possible perspectives for a new conceptualization of scarcity in economics.

2. Classical School of Political Economy and the scarcity as an empirical fact

In his book, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Adam Smith laid out his ideas on the division of labor and market. For him, the idea of scarcity within developed societies was meaningless since these were societies that reached both a high division of labor and a considerable expansion of the market. The impact of these two conditions is that societies, by achieving a high division of labor, can considerably increase their productivity (Pohoățã, Diaconășu, Crupenschi 2018), therefore scarcity becomes an unreal configuration.

Furthermore, if the market frontier continues expanding, the division of labor will not be limited but, on the contrary, will increase. Smith (2007 [1776]:13) expressed the fact that developed societies should not suffer from scarcity:

“It is the great multiplication of the productions of all the different arts, in consequence, the division of labor, which occasions, in a well-governed society, that universal opulence which extends itself to the lowest rank of the people.”

In the light of this, Smith pointed out that societies could experience progress by moving from a condition of scarcity to a condition of abundance. In the literature (Myrdal, 1965; Dobb, 1975; Hill, 2007), it is argued that Smith reached this conclusion because his methodological analysis was at the global level, that is, understanding society as a complete entity, and at the historical level, that is, understanding by historical a period that is broad enough to allow observing changes in social and productive structures. This progress can be reflected in Smith's empirical exemplification of the pin industry. Only by changing the level of the analysis, that is – in this case – locally and temporally contextualized, Smith considered the scarcity condition as a realistic hypothesis. In this sense, local means a unique good that is traded in a specific market, and temporal means a limited period where the conditions in the social and productive structures do not change.

These different levels of analysis allowed Smith to explain the difference between natural and market prices. The former is the price at which the goods tended, from a theoretical point of view it was the price originating from the relation between the natural rates of wages, capital benefits, and land rent. The latter was instead the observed price that gravitates around the natural price, but it differs for it due to the differences between the effective supply and demand. Therefore, for Smith, the discussion on scarcity acquires sense and relevance only in a localized and temporally contextualized analysis: in this case it is possible that at a certain moment, in a specific market, an increasing demand for goods for facing insufficient supply could generate a relative scarcity. However, such scarcity could not last long because having an excess of demand, would raise the prices of commodities above the natural price, and, consequently, the capitalists would be interested in transferring their capital to the industries

with supernatural prices. This situation would increase the supply hence equaling it to the demand, which would finally redirect the market price at the level of the natural price. The relevant conclusion here is that, for Smith, scarcity is derived from an empirical situation, in the short term, where demand exceeds the supply of a particular good.

Ricardo considered that scarcity plays two roles. First, scarcity serves as the basis for the exchange value of some goods, and second, following Smith, it determines the market price. Ricardo pointed out that a necessary condition for goods to have value in exchange is that they must satisfy some needs. Only after the above condition is met, the exchange value is derived from two causes, scarcity and the amount of labor required to produce the goods. In this sense, Ricardo pointed out that there are some goods whose exchange value is derived solely from scarcity because no amount of work can increase their supply. For instance, statues, sculptures of merit, old books and coins, and wines of some special quality. These goods, whose value is independent of the amount of work required to produce them, will vary in price only according to the degree of wealth and inclinations of those who wish to possess them (Ricardo, 2004 [1871]). However, for Ricardo, as for Smith as well, the case of scarce goods is not the focus of his research because goods with this characteristic are the minority of goods. According to Ricardo (2004 [1871]), most of the goods can be produced and reproduced by human industry so that eventually scarce goods could not exist.

Ricardo adopted the same explanation as Smith when scarcity regulates the market price. The explanation lies in the market price that is around the natural price, but this is a temporary and local situation. If market prices are higher than natural prices, there is an incentive for capitalists to transfer their capital to that industry where there are profits. This causes an increase in production and therefore an effective supply and demand adjustment. Finally, this mechanism tends to equalize the market price with the natural price. However, what mattered to Ricardo was explaining the determinants of the natural price of goods.

Hence, until now, for Smith and Ricardo, scarcity is derived from empirical facts and allows them to explain the market price. Scarcity is not a postulate, and it is not universal. Consequently, the Ricardo and Smith's certainty about the productive progress of society was based on the empirical observation that societies were undergoing an accelerated transition from a society of scarcity to a society of abundance thanks to the strong division of labor and the accelerated industrial revolution (Postel, Sobel 2009).

Contrariwise, Malthus's position on scarcity was developed in opposition to the Smith and Ricardo's optimistic prefiguration. Malthus began his reflections considering an unstable political environment, full of promises for the future and social changes derived from the French Revolution (Becker, Faber, Hertel and Manstetten 2005). That is why in his book "*An Essay on the Principles of Population*" part of open dialogue, contrasting the position of those who adhere to the old political regime against the revolutionaries. The specific aspect that Malthus was interested in, concerns the perfectibility of humanity. According to Malthus (1998 [1798]), the perfectibility of humanity was the possibility that constitutes a society whose members could have a life of rest, happiness, and relative laziness, and who did not feel anxious about the difficulty of providing the means of subsistence that they and their families need. Malthus rejected the perfectibility of humanity arguing its impossibility of reaching a state of abundance.

Malthus based his argument on two postulates: (a) food is necessary for man's existence and (b) passion between the sexes is necessary and will remain nearly in its current state (Malthus 1998 [1798]). Based on these postulates he arrived to the conclusion that the population increases in a geometric progression, while food production increased in arithmetic progression, thus the population grew faster than food production causing scarcity.

Malthus, unlike Smith and Ricardo, conceived scarcity as an inevitable condition in human societies. For him, even in developed societies, scarcity remained an unavoidable fact of the two postulates discussed above. He pointed out that a society that begins the process of development or a society that has already developed requires more labor to sustain that development. The high demand for labor increases the worker's salary. This creates an incentive for the population not to control the birth rate, since it has sufficient resources to support newborns. However, in the medium-term, the increase in the birth rate causes an increase in the workforce as societies have more people willing – or who need – to work. In turn, the increase in the workforce produces a decrease in wages. Finally, it causes a scenario where there is an over-demand for food and an excess population, which, according to Malthus, generates an inevitable misery. In short, the new scenario is characterized by more food-demanding people, high food prices, and low-wage workers. In this new scenario, some people die of hunger, and many have difficulties starting a family, which discourages marriages and slows the growth of the population.

Malthus considered scarcity an unavoidable fact, but it is important to note that in his theory scarcity remains as an empirical fact, this implies that scarcity is considered as a historical hypothesis derived from empirical observations. For example, assessing or quantifying the amount of a certain good needed to satisfy a specific number of people. Methodologically, the postulates about the human need for food and passion between the sexes are postulates based on empirical observations. Furthermore, the arithmetical ratio of growth of food and the geometrical ratio of growth of population is based on empirical observation too. Therefore, because of his theory, Malthus asserted that society oscillated between periods of scarcity and abundance of food. Although Malthus's conclusion is pessimistic if it is considered the optimistic conclusion of Smith and Ricardo, it is possible to point out that for them scarcity and abundance are empirical states of society. In addition, with the adoption of a historical

approach, there is for them a clear differentiation in time and geographical scale of the analysis. In this perspective, scarcity could occur only locally and in a certain specific time, hence it has a relevance in the explanation of the market price (Smith 2007 [1776]; Ricardo 2004 [1871]). Therefore, globally, and historically, for Smith and Ricardo, scarcity could be overcome, while for Malthus, society oscillates between periods of scarcity and abundance.

3. Marginalist School of Economics and the scarcity as a theoretical consequence

In this section, the focus of the discussion moves to the presentation of the radical change introduced by the MSE in the way of understanding the concept of scarcity since – for its theorists – scarcity ceased to be an empirical fact, as understood in the CSPE, and became a theoretical consequence. It can be conceptualized in terms of theoretical consequence when the scarcity can be derived as a logical consequence of a set of axioms, for example, through the postulation that people have innumerable needs and wants, which implies that innumerable goods are required to satisfy them, consequently it is possible to witness a state of permanent scarcity.

According to Menger (2007 [1871]), Jevons (1888 [1871]), and Walras (1926 [1874]), the basis of the human economy is the satisfaction of human needs and wants through the production of goods. For the representatives of the MSE, there is a relationship between needs, wants, and goods. Quantitatively, this relationship can take the following three forms:

- (a) Abundance: human needs and wants are quantitatively more than the available quantity of goods that can satisfy them.
- (b) Scarcity: human needs and wants are quantitatively less than the available quantity of goods needed to satisfy them.

(c) Sufficiency: human needs and wants are quantitatively equal to the number of goods that satisfy them, that is, a sufficient situation.

According to Menger (2007 [1871]) in real life, the most common situation is (b), and the goods that are in this quantitative relation are economic goods. He considered the goods found in the quantitative relations (a) and (c) non-economic goods. Consequently, he argued that in a situation of abundance there is no need for people to economize because the needs of all members of a society can be satisfied without any problem. Therefore, these types of goods are not subject to the human economy.

The Austrian economist also introduced the difference between low and high orders of goods. The former refers to goods that directly satisfy a human need. The latter is composed of goods that indirectly satisfy a human need, namely this type of good must be processed in combination with other goods to be transformed into a low-order good.

The fundamental law in the economic theory of Jevons, Walras, and Menger is the law of variation of utility, which defines that the degree of utility³ varies in relation to the variation in the number of goods. In other words, the level of utility decreases as the quantity of goods increases, and vice versa. The logic behind this is that the more a need is satisfied, the more the utility of an additional quantity of the good that satisfies this need decreases. This law is what is known today in the ME as the principle of marginality, probably the hallmark and undisputable legacy of the MSE. Jevons (1888 [1871]) argued that the utility variation law is not only applicable to a good that satisfies a particular need, but also when hierarchies between needs are established. For example, a good that satisfies two or more needs will

³ Jevons defined utility as the abstract quality whereby an object serves human purposes and becomes entitled to rank as a commodity (Jevons 1888 [1871]: 38). He defined the degree of utility as the utility that the consumption of an additional unit of the same good generates for a person and, the final degree of utility as the utility that the last unit of that good consumed generates for a person (Jevons 1888 [1871]).

cause a greater utility to the person when it is used to satisfy a need in a high hierarchy than a need in a lower one.

In summary, in the MSE, scarcity is derived from the quantitative relationship where needs and wants are more than the goods that satisfy them. However, the important question here is how do Menger, Jevons, and Walras understand the nature of needs and wants? According to Jevons (1888 [1871]), needs are susceptible to satisfaction sooner or later, but the degree of utility does not always arrive at a zero level, because the more refined and intellectual the needs are, the less capable they are of satisfying them.

For Jevons, the more societies advance, the better means of production they have, especially in industries that produce basic goods such as food or housing. Therefore, advanced societies have more capacities to satisfy basic needs that he calls "*simple animal requirements*". However, also in new and advanced societies more sophisticated needs and wants are generated. In this sense, people always need "*something*". Menger is even more explicit than Jevons. For him, not only the needs developed over time, but also the human being, today, has multiple needs that together seem limitless. Therefore "*any advance provision by men with respect to their requirements would be made utterly impossible.*" (Menger 2007 [1871]: 75).

This concept of necessity seems to be conceived as the fact that "*someone*" lacks "*something*", which in this case are economic goods. The point here is that "*something*" is always external to "*someone*" who needs or wants it. Consequently, the "*someone*" who needs or wants it, after completely consuming that "*something*", will be in the same situation of scarcity as before obtaining it. However, this theory of needs does not shed the light on the formation of such needs. Then, the statement that people eventually have "*an almost limitless variety of needs*" or "*needs are capable of infinite growth*" is simply a postulate about human nature.

Furthermore, these theories assumed a methodological individualism if the will or inclination of the person is taken as the sole criterion of what is (or not) useful (Jevons 1888 [1871]). In this respect, Jevons extended this postulate to a whole society, understanding by society a set of people added to each other. In the philosophy of science, there is a controversy with this methodological approach because it leaves out the possibilities of emergent properties (Johnson 2006).

Therefore, it is possible to conclude that it is perfectly probable, at least theoretically, everyone can manifest that desire or need for any type of good, and in any quantity, because there would be no external parameter to judge the desire or need more than the subjective opinion of each person. Thus, for example, there would be no reason to doubt someone who claims to need to own a spaceship parked in his backyard. Furthermore, following the methodological individualism principle, the same phenomenon would occur at the society level. Hence, from the previous postulates, it can be concluded that if the needs or desires of people are innumerable and capable of infinite growth, then people and societies are always in a condition of scarcity.

To sum up, in a way of conclusion of this section, with the MSE needs and wants become a cornerstone of the economic theory, and thus, scarcity became universal; last but not least that the possibility of empirical abundance decays since it could always be argued that a person needs or want more of the available goods.

4. Marshallian synthesis and an ontological-epistemological ambiguity in the concept of scarcity

As argued so far, scarcity for the CSPE was an empirical fact, while for the MSE it derives as a theoretical consequence of its postulates. In this section, it will be argued that Marshall's

economic theory, by making a synthesis between both schools, introduced an ontological and epistemological ambiguity about the concept of scarcity, which oscillates between an empirical fact and a theoretical consequence.

Marshall's pinnacle work was the book *"Principles of Economics"* published in 1890. In this book, he exposed his ideas about demand, supply, the relationship between them, and the distribution of wealth. Marshall developed his theory of demand by taking two theoretical ideas from the MSE. First, he accepted the relationship between needs, wants, and goods that satisfy them and argued that this relationship is the foundation of the consumption theory. Second, he adopted the principle of marginality. However, he does not opt for measuring the utility a person receives from consuming a good, as instead marginalist thinkers did. He argued that the intensity of desires cannot be measured directly and, consequently, the satisfaction or usefulness of the good to satisfy a need is not quantifiable either. He opted for a different methodological path. He pointed out that the only empirical variable that can be measured is price. He proposed that demand prices are a measure of how much a person is willing to pay for the consumption of a good. In other words, price is an empirically verifiable indirect measure of the consumer's utility. Consequently, Marshall stated that: *"The price will measure the marginal utility of the commodity to each purchaser individually."* (Marshall 1920 [1890]: 52). Then, he applied the principle of marginality to the prices and not to the utility itself.

By combining the demand price with the marginality principle, Marshall defined what is currently known as the Marshallian demand function, a function that specifies the quantity of a good that consumers would buy at any price level. Furthermore, he postulated the total demand function as the linear sum of individual demand functions. In this sense, Marshall had the same idea as Jevons about methodological individualism. Once the total demand function has been postulated, he related it to the desires and needs of consumers, introducing the

concept of elasticity, which is defined as the percentage change of a variable X to another variable Y. In general, this concept serves as a sensitivity measure of the variation of one variable in relation to another. For example, in the case of the demand function, elasticity would measure the percentage change in the quantity of some good that a person demands a change in its price. Therefore, the concept of elasticity serves to introduce the impact of wants and needs in the demand function: if a person wants or needs more goods, the variation in the quantity demanded will be less in the face of an increase in its price than if the goods were less wanted or needed.

Needs and wants are a cornerstone of Marshall's consumption theory, but how does Marshall understand the nature of needs and wants? He considered that needs and wants are varied in type and number and grow as societies develop (Marshall 1920 [1980]). According to him, this occurs because people in civilized societies have satisfied their basic needs, which leads to the development of other types of need. Therefore, people not only need more of those goods that satisfy their needs but also more variety of goods to choose from. Furthermore, Marshall explicitly holds, as a principle of human nature, that people always desire more and more goods, due to the desire for distinction and variety.

Therefore, from the Marshall's theory of consumption it is possible to derive the same conclusion as from the MSE, that is, if "*human wants and desires are countless in number and very various in kind*", then people and societies are always in a condition of scarcity because they also require a countless number of goods to satisfy them.

According to Marshall (1920 [1890]), although wants and desires are innumerable, also "*they are generally limited and capable of being satisfied.*", which transfers the analysis to the supply function. Marshall took the production costs of the theory of value from the CSPE and incorporated the principle of marginality. On this, he laid the foundations of his theory of

supply. Marshall (1920 [1890]) pointed out that people obtain utility when they satisfy their needs and desires through the consumption of goods. But also, this is only part of economic activity because people must sacrifice discommodities to produce goods.

This discommodity comes from the dilemma that people face when they must work now to produce goods or not work now and to endure the sacrifice of postponing consumption. In this sense, Marshall agreed with Jevons (1888 [1871]), who, in turn, takes this doctrine from Bentham (1834) that work generates pain and consumption pleasure. Once Marshall postulated that work generates disutility, he applied the marginalist principle arguing that the disutility of work increases proportionally more with each increase in the severity and duration of work. Therefore, according to him, the more a person works, the more remuneration he should receive. After this subjectivist foundation of the disutility of work, following the CSPE, he argues that goods cannot be produced only with work alone, other factors such as land or machines are necessary. But following Ricardo's labor theory of value, he proposed that ultimately the other supplies necessary for good production can be reduced to labor. Following this path, he formulated the supply function, where he related the supply quantities of goods to their supply prices.

In Marshall's theory, the quantitative relationship between supply and demand defines a state of scarcity, abundance, or sufficiency. The state of abundance is defined when supply is greater than demand. The state of scarcity is defined when demand is greater than supply. Finally, goods are sufficient when supply and demand are equal. According to Marshall, the market oscillates between disequilibrium and market equilibrium throughout the price adjustment. For example, if the market price of apples falls, farmers will be less willing to maintain the equilibrium supply of apples in the market because this probable price may be too low to cover their marginal cost of production. In this case, farmers will offer fewer apples to the market, causing the quantity supplied to fall below the quantity demanded.

Therefore, the scarcity of apples forces the price to rise, expecting that the price will increase to the equilibrium price. This quantitative relationship between supply and demand is empirically testable. Consequently, it would also be possible to determine empirically whether there is scarcity, abundance, or sufficiency.

In summary, the concept of scarcity in Marshall's theory could be interpreted as an empirical fact or a theoretical consequence. The way out of this ontological ambiguity could be to: assume that there are empirical periods of scarcity, abundance, and sufficiency only for certain local markets and certain specific periods; or assume that (globally and historically) societies are in a condition of universal scarcity because "*human wants, and desires are countless in number and very various in kind*". It seems that Marshall opted for this second solution by postulating a relationship between needs and wants and activities that made them codetermine one another since needs and wants generate activities and, these generate again needs and wants. In Marshall's words:

"Speaking broadly therefore, although it is man's wants in the earliest stages of his development that give rise to his activities, yet afterwards each new step upwards is to be regarded as the development of new activities giving rise to new wants, rather than of new wants giving rise to new activities." (Marshall 1920 [1890]: 48)

5. Consequences of assuming the scarcity as an empirical fact or a theoretical consequence

Assuming scarcity as an empirical fact or a theoretical consequence has been correlated with the object of study of economics and, therefore, its definition indicated by different economic schools of thought. If scarcity is assumed as an empirical fact, then it is possible to assume that societies could eventually be in states of scarcity, abundance, and sufficiency. Therefore,

it makes sense to consider the object of study of economics, the social relations of production and distribution of wealth to overcome scarcity, moving societies towards abundance. This was the object of study of the economy of the CSPE. For example, according to Say (1971 [1803]: 99), the definition of economics is:

“...political economy, which unfolds the manner in which wealth is produced, distributed, and consumed.”.

According to Ricardo (2004 [1817]: 18):

“To determine the laws which regulate this distribution⁴ is the principal problem in Political Economy.”.

However, if scarcity is assumed as a theoretical consequence, then scarcity is universal due to innumerable needs and wants in the face of limited resources and goods. Therefore, it makes sense to consider as an object of study of the economy the maximization in the allocation of scarce resources and goods. For example, according to Robbins (1932: 16):

“Economics is the science which studies human behavior as a relationship between ends and scarce means which have alternative uses.”.

According to the current economic textbooks, such as Nicholson and Snyder (2007: 17):

“Economics is the study of how scarce resources are allocated among alternative uses.”.

Hence, if the ontology of scarcity is assumed as empirical, the object of study of the economy will focus more on the production and distribution of wealth, while if it assumed as theoretical on the consumption of resources and goods.

⁴ Ricardo refers to the distribution of the society production between the three social classes, i.e., the landowner, the owner of the stock or capital and the labourers.

Changing the focus of the object of study of the economy also the target changes from social production and distribution of wealth to individual consumption. This implies that the level of the economic analysis moves from a general social level to the individual level. This level of analysis creates difficulties in the differentiation between needs and wants because there would be no external parameter to judge what is a need and what is a want rather than the subjective opinion of each person. In other words, it seems necessary for an outside judge to assess what is a need and what is a want. If it is not possible to distinguish between these concepts, it also does not seem possible to differentiate between social needs and individual wants. According to McGregor, Camfield, and Woodcock (2009) when basic needs are expanded to include relational and psychological aspects, the theoretical distinction between needs and wants begins to fade because social meanings and subjective interpretations come into play.

Furthermore, assuming universal scarcity it is not possible to assess the sociological, political, and ethical aspects of scarcity. This is because in this case scarcity is not a decision, but a condition derived from the human nature of innumerable needs and wants in the face of limited resources and goods. According to Scoones et al. (2019), neither the absolute nor relative conceptualization of scarcity consider the political nature of scarcity. Therefore, it is not possible to address questions such as: how scarcity is perceived and created to satisfy interests (Mehta 2001); how scarcity narratives unfold in political contests for resources (Scoones, 2010); or how scarcity arises in conflict situations, such as wars. In this sense, economic theories that assume scarcity as a theoretical consequence lack of an explanatory position on why scarcity arises (Daoud 2018).

6. Towards a new ontology of the scarcity

The core of a more holistic ontology of scarcity is proposed to include at least the following elements.

Firstly, there is the need to focus the attention on the differentiation between social needs and individual wants. The scope of this article is not to establish a clear and definitive definition of social needs and individual wants. However, a social need is preliminary understood as a specific need that society considers that each person should have satisfied. Therefore, this definition of social need considers a social dimension because society defines what this concept is; a historical dimension because what society considers a social need can change over time; and a geographical dimension because it depends on what a society with a specific culture, placed in some locality, considers a social need. For example, a specific society might now consider – as a social need – access to water or achieving food security for each person in the community. In turn, it is considered that an individual wants or desire of a person that is not essential for the person's survival and is merely subjective to the person who has the desire. Despite these previous preliminary definitions, the issue of what constitutes need *versus* want and how it is possible to distinguish them are subjects of considerable controversy (McGregor et al. 2009).

The ME assumes the sovereignty of the consumer, that is, the only person who can judge what is considered a need or want is the person itself, and the revealed preferences, which means that the person declares the preferences throughout the mechanism of market prices. This assumption dilutes the debate on the differentiation between needs and wants because it is the market rather than the government that provides the most appropriate mechanism to satisfy both (McGregor et al. 2009). However, a clear differentiation between social needs and individual wants could introduce the political, sociological, and ethical dimensions of scarcity into economic analysis. This happens because if an event of scarcity is produced by countless individual wants of one person, then neither the society nor another person can

judge the political and ethical dimension of that scarcity event. However, if a scarcity event is produced by a lack of satisfiers of a social need, then it is possible to introduce the role (political dimension) and responsibility (ethical dimension) of the government and other social and economic institutions as suppliers and distributors of satisfiers of the social needs of society. For example, it is possible to argue that the political, social, and ethical dimension of wanting a luxury car (individual want) is different compared to the need for water (social need). In this sense, future researchers could investigate more the ontology of what could be considered as a social need and individual want.

Secondly, a holistic scarcity ontology will consider scarcity, abundance, and sufficiency as one ontological entity, and will be susceptible to empirically testing. Scarcity, abundance, and sufficiency derive from the quantitative relationship between the number of needs, wants and the number of goods-resources available to satisfy them. According to Daoud (2018: 211), the definition of scarcity is:

“a situation in which an agent controls insufficient direct satisfiers to satisfy his or her wants; or when the agent controls insufficient indirect satisfiers to exchange or produce satisfiers. A combination of these two situations also qualifies a case of scarcity.”

However, as Daoud (2018) pointed out, this definition, like the Neoclassical School of Economics, does not differentiate between human needs or desires. The reason is that scarcity will arise regardless of whether the situation concerns essential or non-essential goods. According to Daoud (2018), this definition focuses on the identification of a scarcity, abundance, and sufficiency event rather than causal connections. However, it is argued that the causal mechanism that explains an event of scarcity and its consequences differs if the scarcity is related to social needs or individual wants. How is it different? It is a subject for further research, but it is preliminarily suggested that when scarcity derives from insufficient

satisfaction of social needs, it is directly related to the political and ethical dimension of scarcity. This led us to ask, what needs does society consider as social needs? How does society produce and distribute goods to satisfy the social needs of the entire population? Who has the responsibility to do it? How do planetary boundaries hinder the satisfaction of social needs? etc.

In this approach, the concept of absolute scarcity plays an important role because it could be evaluated as an ethical trade-off between the environment and the necessity to satisfy the social needs of the entire population. In turn, it is suggested that when scarcity derives from insufficient satisfaction of individual wants, this is related to individual consumption choices given a specific budget. In this approach, relative scarcity plays an important role because it is possible to assume the universal scarcity postulate due to innumerable wants in the face of limited resources and goods. But at the same time, it is possible to assume a relative scarcity, abundance, and sufficiency due to the empirical satisfaction of some of these innumerable but limited wants.

Therefore, it is proposed to keep Daoud's (2018) definition of scarcity for individual wants, but changing it for social needs, as follows:

Definition 1: Scarcity is a situation in which society controls insufficient direct satisfiers to satisfy the social needs of each person in the community; or, when the society controls insufficient indirect satisfiers to exchange or produce satisfiers. A combination of these two situations also qualifies a case of scarcity.

Table 1 summarizes the ontological and epistemological characteristics of the concept of scarcity given by the different schools of economic thought.

Table 1: A comparison of the concept of scarcity between different schools of economic thought

	Classical School of Political Economy	Marginalist School of Economics	Marshallian Synthesis	Towards a new concept of scarcity
Unit of analysis	Society	Individual	Individual and Society as a linear sum of individual agents	Society considers as a complex entity with emerging properties for social needs and individual for individual wants
Ontology	Materialistic	Idealistic	Idealistic for the side of demand and materialistic for the side of the supply	The socio-cultural, historical, and political construction of social needs and individual wants
Origin of scarcity, abundance, or sufficiency	A relationship between one kind of resources/goods and one kind of needs/wants	A relationship between one kind of resources/goods and several competing needs/wants	A relationship between one kind of resources/goods and several competing needs/wants	For social needs a relationship between one kind of resources/goods and one kind of social need. For individual wants a relationship between one kind of resources/goods and several competing individuals wants
The character of needs/wants and resources/good relation	Needs/wants and resources/goods are changing over time and space	Both needs/wants and resources/goods are given	Needs/wants and resources/goods are changing over time and space	Needs/wants and resources/goods are changing over time and space
Main research problem	Social relations of production and distribution to moves societies from scarcity states to abundance states	To find the optimal allocation of resources/goods related to countless needs/wants	Find optimal allocation of resources/goods related to countless needs/wants at the consumers level and maximize the production given a budget at the supply level.	Social relations of production, distribution, and consumption to moves societies from scarcity states to sufficiency states considering planetary boundaries, circular economy, and ecology perspectives
Kind of analysis	Causal	Rational (optimal) choice	Rational (optimal) choice	Causal
Disciplinary affinities	Politics and economics	Economics	Economics	Politics, economics, circular economy, sociology, psychology, biology, ecology, ethics, philosophy.

<p>The human condition and the view of scarcity, abundance, and sufficiency</p>	<p>Scarcity is not naturalized (inevitable) and universal.</p> <p>Scarcity is an Empirical fact</p> <p>Abundance may be reached in growth economies</p>	<p>Scarcity is naturalized (inevitable) and universal.</p> <p>Scarcity is a theoretical consequence</p> <p>Abundance is unattainable</p>	<p>Scarcity is not naturalized (inevitable) and universal. There is a co-determination between needs/wants and the activities to produce resources/goods to satisfy them</p> <p>Scarcity is an empirical fact for the side of supply, but a theoretical consequence for the side of demand</p> <p>The abundance of certain resources/goods may be reached in growth economies, but this causes more need/wants</p>	<p>Scarcity is not naturalized (inevitable) and universal. Scarcity is socio-cultural, historical, and political.</p> <p>Scarcity is an Empirical fact</p> <p>Sufficiency may be reached in steady-state economies</p>
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Source: Own elaboration.

7. Conclusions

The main purpose of this article was to analyze the ontological and epistemological characteristics of the concept of scarcity in the CSPE, MSE, and the Marshallian synthesis. Furthermore, we have tried to explore a new ontological and epistemological way to understand scarcity. According to the introduction, the article has been guided by four research questions, the first two questions were: (a) what was the evolution of the concept of scarcity through the CSPE, the MSE, and the MSHE? And (b) what is the ontology of the concept of scarcity in the schools mentioned above? Regarding these two questions, the previous sections defined that that in all these schools of economic thought the concept of scarcity differs in several ontological and epistemological characteristics. These differences are summarized in table 1.

Throughout history, different thinkers have tried to explain the economic phenomena, such as value and price, social and economic development, poverty, social production, and distribution of wealth, among others. In this sense, the concept of scarcity has played a central role in theories that have tried to explain these economic phenomena. However, different schools of economic thought have pointed out different concepts of scarcity, arriving at different explanations. A clear understanding of the ontological and epistemological characteristics of the concept of scarcity given by different thinkers and schools of economic thought helps to understand at least two important points. On the one hand, what was specifically the economic phenomenon that the thinker has tried to explain. All scientific theory tries to explain a part of reality, economics is not the exception, but reality itself changes with time and space. Hence, it is common to think that theories in different times and contexts try to explain different economic phenomena. On the other hand, a deep understanding of the key concepts of a theory helps to clarify the logic and causal relations of the theory itself. In this sense, it is possible to conclude that in each school of economic thought presented in this article, the concept of scarcity helped to explain different parts of the different theories. For example, the concept of scarcity has explained the price markets in the case of the CSPE or the principle of marginal utility in the case of the MSE.

Focusing on the third question namely, “(c) what are the consequences of accepting different ontologies in the concept of scarcity?” It is possible to state that depending on the ontology of scarcity that it is assumed, the object of study of the economy can focus more on the production and distribution of wealth or the optimal allocation of resources and goods. Therefore, the sociocultural, historical, and political dimensions of scarcity are neglected. The problem is when scarcity is not considered as a social product, it is the same as admitting that scarcity cannot be abolished through social, political, and economic changes. Consequently, the last research question proposed in this article becomes relevant “(d) what alternative

concept of scarcity in economics is it possible to propose to capture a broader spectrum of economic phenomena than the concept of scarcity in the ME?” Answering to this question is a matter of further research, but preliminarily, we can assert that new concepts of scarcity should at least consider the sociocultural, historical, and political dimensions of this condition. This would once again re-embed in society the ethical responsibility to provide the resources and goods necessary for the subsistence of humanity. Furthermore, it would hold us responsible for the trade-off between producing and distributing enough goods to meet our basic needs and the negative implications this has for the environment. In summary, new insights into the concept of scarcity could give us new highlights of how to design innovative and sustainable logic of production, distribution, and consumption to achieve the long-awaited sustainable development.

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