Monetary theory of Price Formation: James Steuart proposal*

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Resumen

El objetivo de este ensayo es analizar una teoría de la formación de precios. Para conseguir este plan nos plantean dos cuestiones fundamentales, a saber: si los agentes son tomadores de precios, que fijan los precios, y cómo cambian de una época a la siguiente? Si los mercados no surgen espontáneamente, que crea los mercados? Nos indican que los mercados ni salir ni organizar espontáneamente sino que provienen de la existencia del intermediario, que fija los precios de las transacciones monetarias. Hacemos un llamado creador de mercado a este agente que lleva a cabo la tarea de intermediación entre productores y consumidores. Sin embargo, nuestra idea no es original, recientemente hemos descubierto que J. Steuart se unió dinero e intermediario en el proceso de formación de precios, y sus ideas, en relación con el proceso de negociación, también podría ayudar a entender cómo funcionan los mercados en desequilibrio y en equilibrio también. Por lo tanto, este autor ofrece interesantes pistas para responder a las preguntas de las que estamos hablando.

Abstract

The aim of this essay is to analyze a theory of price formation. In order to get this plan we pose two fundamental questions, namely: If agents are price takers, who fix the prices, and how they change from one period to the next one? If markets do not emerge spontaneously, who creates the markets? We indicate that, markets neither emerge nor organize spontaneously but come from the existence of the intermediary, who sets the transaction monetary prices. We call market maker to this agent who carries out the task of intermediation between producers and consumers. However, our idea is not original, recently we have found that J. Steuart joined money and intermediary on the process of price formation, and his ideas, concerning the trading process, could also help to understand how the markets work in disequilibrium and in equilibrium as well. So, this author offers interesting clues to answer the questions we are talking about.

Palabras clave:
- Mecanismos de formación de precios
- Creación de mercados

Keywords:
- Price Formation Mechanism
- Market Maker

JEL:B0, B11, D46, D50

1. Introduction

The existence of equilibrium, the stability of this one, and the price formation process, are essential subjects of the theory of value. Those subjects are indissolubly linked, all together, in the framework of price mechanism, and that is the reason why ancient economists always studied those issues as whole set. In fact, since the beginning of Political Economy, the standard argument of economist has been that, in the absence of competition, the problem of price formation does not exist, because in this circumstance, agents with the market power (in monopoly or monopsony), are «*price makers*». For example, Menger (Chapter 5: 208), explicitly says:

> Where a monopolist sets the price of a unit of the monopolized good […] the question of price formation is therefore excluded.

* I appreciate to Professor Carlo Benetti, who suggested me study James Steuart, in the framework of history of economic thought, as pioneer author of the price formation process. I'm also grateful to Professor Franklin Fisher, who advised me to call the intermediary market maker.

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The price formation process is a complex mechanism in which prices change due to economic system is in disequilibrium, so it means an adjustment process of economic magnitudes, namely, prices and quantities. First of all, price is an economic magnitude that emerges in the market because of the monetary exchange process. Therefore, prices, money and markets are indissoluble linked.

Basically, the nature of monetary price formation process has been associated with the market structure being analyzed. Literature that approaches this problem is scarce and, when we get it, it just appeals, erroneously, to the competitive structures of the market, because economists argue that the fundamental implication of perfect competition is that individuals are «price takers». Thus, this has led to the formulation of questions concerning who fixes the prices and how they change from one period to the next one (Koopmans 1957: 179). Obviously, in our opinion, another natural question emerges, namely, how are markets created and by whom? Those worries have led to troubles on the theory of value, due to they imply the fiction of the auctioneer.

> […] The central hypothesis of Pure and Perfect Competition (PPC) […] is the hypothesis of agents as 'price-takers', resulting in an object, the 'market', which may be easy for the economist to study, but which is fundamentally unacceptable, because the price is assumed to fix itself 'on its own', without the intervention of any agent (Jean Magnan de Bornier, 2007: 12).

The confusing and deceptive way that economists use to interpret and analyze the problem of price formation has led to the current state of affairs, in which this subject –so important for the theory of value– remains an enigma. Sometimes it turns into a deadlock, or it leads to the trap of *ad hoc hypothesizing*, in order to construct price variation rules. Nevertheless, even more appalling has been the almost absolute abandonment of research about this subject. The confusion stems from the analysis that has been made of exchange theory in the framework the theory of value. After the Koopmans' questions, this important subject of political economy was considered by a few authors like K. Arrow (1959), K. Arrow and F. Hahn (1971), F. Fisher (1983, 2011), L. Shapley and M. Shubik (1977), M. Shubik (1999), C. Benetti (2003), H. Glints and A. Mandel (2012).

2. The stability of Walrasian and non Walrasian equilibrium

In some sense, price mechanism is the analogy of energy of economic process; so there is very big deal to understand, namely, whether or not exist a missing stop of driving force of price mechanism? That is what Franklin Fisher wondered in his 1983 book. His answer is negative, insofar as prices stop moving on a rest point, equilibrium, usually non Walrasian, which means that capitalism is inefficient. The jobless is, by excellence, a greater economic inefficiency. That is the fundamental outcome of his proposal regarding "disequilibrium foundations of equilibrium economics". Certainly, by definition, economic equilibrium is a rest point characterized by stationary prices, namely, prices don't change. Franklin Fisher (2011: 42-3) is the author who clarifies this point, and warns us that stability problem could be deeper as equilibrium is about to be reached. Actually, he warned us to be careful in misleading describing non-Walrasian equilibria as instability (as opposed to Walrasian equilibria). That has been done elsewhere in the literature, but it seems quite confusing. Instability or stability driving force means that the system keeps on moving. Quite the contrary, Franklin Fisher talks about driving force it can certainly lead to the system getting stuck at non-Walrasian equilibrium (a rest point).

The classic representation of that is indeed Keynes' Liquidity Trap. Fisher commented on this in his book (1983) and in his Walras' paper (2011: 41). The Fisher's conclusion is that the *no favorable surprises* can lead the stability process to getting stuck, even in a Schumpeterian world. In light of those remarks, economists ought to understand the stability analysis in such a way that, the dynamic process of economies is such that the driving force leads the system toward Walrasian equilibrium, or leads it toward a non Walrasian equilibrium. Whatever happens, the system gets a rest point. So, Keynes' jobless equilibrium makes sense. So, Fisher's conclusion (2011: 43) is:

> The search for stability at great levels of generality is probably a hopeless one. That does not justify economist dealing only with equilibrium models and assuming the problem away. It is central to the theory of value.

3. Market structures and trading process: the figure of the market maker

Economists have always assumed that transactions are just confrontations between two types of agents, namely: *producers and consumers*. Thus, we are facing a hypothesis that omits an evident economic fact, that is to say, in all markets the agents involved are buyers and sellers. This is not the same as saying that agents involved are producers and consumers (who almost never confront each other directly). In the historical evolution of commerce, on supply side (selling to the consumer) or on the demand side (buying from the producer) intermediary agents have always existed. These agents play the crucial role as creators and organizers of the markets: transportation of commodities, product storage, buying and using inputs for the market operation, purchase and sale transactions, etcetera. We can summarize those operating expenses of market organization calling them «*transaction cost*».

If the question about who organizes the markets, and how they work, has been absent in the theoretical analysis of price formation, then, it is not surprising the confusion and enigmas which prevail on the matter, likewise the great difficulty in obtaining a satisfactory analytical outcome. To be fair, in their pure exchange model, Arrow and Hahn (1971: 346) are aware as regard the necessity to incorporate money and the intermediary (the speculative arbitrage), when production and consumption are present:

> The most conspicuous neglects in the analysis […] are speculative exchanges, mediation, and production […]. The conclusions that the necessity of mediation itself introduces a 'speculative' element into the process of exchange and that […] Speculation of the traditional kind, that is, purchases with a view to resale and vice versa, are best treated in a model that includes consumption and production

One of the most important questions of price theory is how they change, that's to say, what is the mechanism who explain the variation of the vector of prices from one period to the next one and, certainly it is a subject that presents great obscurity in its analysis. The first difficulty appears in the classical theory, because out of equilibrium, there is not uniformity of profit rates, so prices and quantities change. Therefore, the analysis could be inversion on the industry of each commodity or to study capital mobility.

Meanwhile, because in the framework of general equilibrium theory, the competitive agent is price taker, then, emerges the fiction of the Walrasian auctioneer. The first criticism was made by Koopmans (1957: 179), because of the variation of prices proposed by Samuelson's differential equation (the *tâtonnement process*) does not get a satisfactory solution. Arrow (1959) proposed a solution, where agents are not price takers out of equilibrium, hence, in disequilibrium they are price makers. Nevertheless, it is just assuming the problem away, because out of equilibrium we have a sort of market structure, non competitive one, which suddenly, when market gets equilibrium, becomes in another one, a competitive structure. Arrow assumes that out of equilibrium, producers are price makers, then the concerns of Koopmans automatically are excluded of disequilibrium analysis, it is a type of formal fallacy. Actually, a perfectly competitive market, quite irrespective the market structure, embodies the obscure assumption of agents price takers.

4. An outlook of commerce from history of economic thought: prices, markets and money

Since barter obstruct exchange, money is the universal medium of exchange. Thanks to K. Marx (Theories of Surplus Value, chapter XVII: 6, 7 y 8) we have an exhaustive study of the mechanism by which money allows separation between sales and purchases. R. Clower (1967) made a similar analysis of this subject. There is, however, another subject implicit in this separation between sales and purchases, namely *transaction costs*, due to indirect exchange of the agents, in order to get the commodities they need. In fact, producers and consumers need money in advance (trade in their own commodities), and later on they buy the things that they need, this indirect transaction means *transaction costs*. Nevertheless, producers do not produce money; money also is not an endowment of consumers. Money is issued by the central bank: money is an institutional product. For example, Arrow and Hand (1971: 349) say, in the framework of *the Keynesian Model*:

> […] one of the advantages of a monetary economy is that it makes it possible to have anonymous markets such that every agent need make, at most, two separate transactions if he desires to exchange a given 'non-money' good for another […] this does not entirely remove the speculative element from transactions, but it greatly economizes in the number of such transactions. In particular, only one transaction is needed in the exchange of money for any good. While a monetary economy greatly economizes in the number of transactions it does not make them costless, we still have wholesalers, retailers, and brokers, whose function it is to reduce the costs of transactions such as the search for information, but who themselves do not perform costlessly. Moreover, most transactions take time and perhaps some effort, such as traveling […] Let the subscript «*m*» stand for money that we now regard as the non-interest-paying debt or some agency outside our formal system, say the government

4.1. J. Steuart: a perspective from history of economic thought

The overwhelming dominance of the *Wealth of Nations* of Adam Smith, who eclipsed the work of other contemporary authors, in particular, that of James Steuart, led to preclude the possibility of a better understanding concerning the problem of monetary price formation within the framework of market trading process. According to Steuart (Book II, Chapter I), trade should be interpreted as consumers' *demand* that comes from *merchant*, meanwhile, *industry*, should be interpreted as *supply*, by means of *trade*, which comes from producers to merchant. Within the framework capitalism, where the social division of labour prevails, Steuart made a reciprocal connection between trade and industry:

> TRADE is an operation, by which the wealth, or work, either of individuals, or of societies, may, by a set of men called merchants, be exchanged, for an equivalent, proper for supplying every want, without any interruption to industry, or any check upon consumption. INDUSTRY is the application to ingenious labour in a free man, in order to procure, by the means of trade, an equivalent, fit for the supplying every want […] Industry, as I understand the term, must be voluntary […] therefore, is applicable to free men only.

Actually, Steuart posed a general interdependence between trade and industry, given that in treating of the reciprocal wants of a society, Steuart (Ibidem) supposed the transition to be direct from the manufacturer to the consumer, and both to be members of the same society. According to this author, Trade comes from a thousand hands, and then it reaches it as many consumers.

> To ask, whether trade owes its beginning to industry, or industry to trade […] A man must first exist, before he can feel want; he must want, that is, desire, before he will demand; and he must demand, before he can receive. This is a natural chain […] By a parallel reason it may be alleged, that as wants excite to industry, and are considered as the cause of it; and as the produce of industry cannot be exchanged without trade; so trade must be an effect of industry […] The object of trade therefore is no more than a new want, which calls for a set of men to supply it; and trade has a powerful effect in promoting industry, by facilitating the consumption of its produce.

Steuart (*ibidem*), sets out that the market maker (the merchant) come to light as consequence of the process of social division of labour, and he also, make a relation between trade and industry by taste: demand

> While wants continue simple and few, a workman finds time enough to distribute all his work: when wants become more multiplied, men must work harder; time becomes precious; hence trade is introduced. They who want to consume, send the merchant, in a manner, to the workman for his labour, and do not go themselves; the workman sells to this interposed person, and does not look out for a consumer […] We cannot therefore say, that trade will force industry, or that industry will force trade; but we may say, that trade will facilitate industry, and that industry will support trade. Both the one and the other however depend upon a third principle; to wit, a taste for superfluity, in those who have an equivalent to give for it. This taste will produce demand, and this again will become the main spring of the whole operation.

Steuart (Book II, Chapter II) proposed, by means of competition, an idea of the formation of economic magnitudes: prices and quantities. If consumers are on demand side and market makers on supply side, this author pointed out that, the competition among buyers and sellers adjusts prices. Demand can be high or low. Demand is high when the competition among the buyers is great, and the consequence of a high demand is a great price. Demand is low when the competition among the sellers is great and the consequence of low demand is a small price. In other words, according to Steuart[1], if buyers are on the long side of the market (sellers on the short side of the market), price tends to rise, because the agents on the long side of the market are facing quantity constraints. On the contrary, if buyers are on the short side of the market (sellers on the long side of the market), price tends to decrease, due to similar circumstances in terms of quantity constraints.

> Demand is either high or low. High, when the competition among the buyers is great; low, when the competition among the sellers is great. From these definitions it follows, that the consequence of a great demand, is a great sale; the consequence of a high demand, is a great price. The consequence of a small demand, is a small sale; the consequence of a low demand, is a small price.

Therefore, Steuart wrote that, the nature of demand is to encourage production (supply) and when supply fails, there is scarcity, so there is a high demand, and ordinary prices rise.

> The nature of demand is to encourage industry, and when, it is regularly made, the effect of it is, that the supply for the most part is found to be in proportion to it, and then the demand is commonly simple [...] when the usual supply fails; the consequence of which is, that the provision made for the demand, falling short of the just proportion, occasions a competition among the buyers, and raises the current, that is, the ordinary prices. From this it is, that we commonly say, demand raises prices. Prices are high or low according to demand. These expressions are just; because the sterility of language obliges us there to attend to circumstances which are only implied.

As points out Steuart (Ibidem), demand is understood to be high or low, relatively to its common rate, or to the competition between buyers, to obtain the provision made for it. When demand is understood to be relative to the quantity demanded, it is called great or small, by Steuart.

1 Invoking the models of non tâtonnenment of F. Hahn and T. Negishi (1962), K. Arrow and F. Hahn (1971), and F. Fisher (1978, 1981, 1983).

The next step proposed by Steuart (Book II, Chapter III) is the introduction of money and the agents' wants, such that it precludes bartering and enhances monetary trade, so it leads to division of labor, and the consequence is the explicit emergence of merchant. Hence, bartering becomes into trade by introduction of money. Steuart poses, what we called, three dualities, namely: merchant (market maker) and currency, which plays as intermediary among two dualities, the industry as spokesperson of producers and the wants as voices representative of consumers. Monetary prices also appear. Money, market and trade are a trinity coordinated by market makers by means of credit, and transactions attended supplies and demands.

> When wants are multiplied, bartering becomes (for obvious reasons) more difficult; upon this money is introduced […] the common price of all things […] this third person be brought into play, and the whole operation becomes clear […] wants, is here represented by the consumer […] industry by the manufacturer; money, […] by the merchant.

Finally, Steuart (Book II, Chapter IV) is ready to pose his remarkable theory of monetary price formation. As soon as money is introduced, it becomes in universal medium of exchange, and then monetary transaction produces many excellent advantages for market performance. Merchants (market makers) are regularly informed of every growth or shrinking of industry in every branch, and everywhere. From this knowledge they regulate the prices that they demand and that they offer; and because of they are many, from the principles of competition, they make a control upon one another. On the other hand, the manufacturers (producers) learn, by the sale of the commodities, the extent of the demand for them.

In matter of how the Prices of Goods are determined by Trade, Steuart consider two things, namely: real value of the commodity, and the profit upon alienation. Within the framework of his theory of value Steuart pointed out that

> […] first thing to be known of any manufacture when it comes to be sold, is how much of it a person can perform in a day, a week, a month, according to the nature of the work, which may require more or less time to bring it to perfection […] The second thing to be known, is the value of the workman's subsistence and necessary expence, both for supplying his personal wants, and providing the instruments belonging to his profession, […] The third and last thing to be known, is the value of the materials, that is the first matter employed by the workman […] where trade is established, manufactures must flourish, from the ready sale, the regulated price of work, and certain profit resulting from industry

In summary, we have learned, in the framework of the history of economic thought, that one of the most important contributions of neoclassical theory, maybe the most important, is the construction of the theory of demand. There is no question about the role played by authors like A. Cournot, L. Walras, C. Menger, W. S. Jevons, F. Y. Edgeworth, A. Marshall, etcetera, during the century XIX in the construction of demand theory. While, in century XX, J. Hicks, P. Samuelson, M. Morishima, H. Uzawa, T. Negishi, K. Arrow, T. Koopmans, F. Hahn, F. Fisher did remarkable developments on the matter. We are absolutely agree with this point of view, notwithstanding, we think that the history of economic thought did not recognize the role of Steuart, as the most important pioneer of demand theory.

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