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► To cite this version:

Emil Dinga. A comment on 'Comment on the law of supply and demand'. 2018, pp.81-94. 10.46298/jpe.10713 . hal-03721417

HAL Id: hal-03721417

<https://hal.science/hal-03721417>

Submitted on 12 Jul 2022

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THE JOURNAL OF
PHILOSOPHICAL ECONOMICS:
REFLECTIONS ON ECONOMIC
AND SOCIAL ISSUES

Volume XI Issue 2 Spring 2018

ISSN 1843-2298

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*A comment on 'Comment on the law
of supply and demand'*

Emil Dinga

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Abstract: The paper briefly discusses some issues approached in the study 'A comment on the law of supply and demand' by M. Northrup Buechner, published in this issue of *J Phil Econ*. The way of discussing is logical-theoretical, without bringing into attention empirical data. Even less than that, only a few of the issues debated in the original study are examined, namely those issues which appeared to this author as both the most problematic and susceptible to drive the future discussion in the matter.

Keywords: demand, supply, thrown price

Introduction

The current economic theory seems to have left aside in a determined way the reflections on the philosophical or praxeological bases of the economic theory. Although certain new directions in the matter could be extremely promising (for example the evolutionary economics, or the behavioural economics 'redivivus', the last even granted with Nobel prizes), many questions of the economic theory remain unsatisfactorily solved. Economic value (do not confuse it with economic price – as monetary expression of the utility), economic measurement, market structure, economic formalism (currently paying tribute to the mechanics formalism), the inherent teleology of the economic decision and action, the testing of economic theory/hypotheses etc., are still waiting for new and bold examinations. The study commented here returns our attention to some fundamental issues which are still unclarified or are hastily sent into ambiguous explanations. Unfortunately, some of these issues are currently substantiating the orthodox economic thinking and modelling. We think two of them are urgently required to be re-examined: the issue

Received: 13 April 2018

of economic value and the issue of economic price. The latter is just the subject of the present study.

The question of a general theory of the (economic) price

In a modern market, the economic exchange is generally intermediated through the currency (by its function as general means of exchange). The currency is not a measure of value, but it is only a common and generally accepted expression of utility. So, the price is not else than the monetary expression of utility.

In this context, a crucial question arises: how the price emerges in economic phenomenology? Since the price is simply a monetary expression of utility, the question changes in: how the utility emerges in economic phenomenology? In what follows, the term price will be used, but the utility will be always understood in the background. The author rightly denounces the lack of a general theory of price (we hurry to add that the generality of a theory is ensured not by its general applicability, as the author claims, but also, and especially, by its generality of explanation, which leads, by itself, to general applicability). There are only two ways to get a general theory of the (economic) price. a) By stating a general theory of economic value. As it is well-known, there were two historical proposals in this matter: 1) objective theory - Marxism: value-labour, and 2) subjective theory - marginalism: value-utility. The present paper does not develop more on these issues. b) By stating a general theory of what we'd call below the *thrown price* (TP). To get the concept of the thrown price, we'll discuss briefly the author's opinion regarding the phenomenology of the (economic) price.

The author puts the simple, but essential question: how could the equilibrium price of the market exist or emerge, where the equilibrium price is understood as impersonal, that is, as being imposed by the market forces (the classical invisible hand), if nobody can propose a price (if someone is presumed to be able to offer a price, then the price would no longer be impersonal)? Of course, the author argues, the price adjustment process is very understandable and even acceptable, but for an adjustment process we need, logically and chronologically, an initial price which, by the law of supply and demand (on this concept see below) be changed towards the market clearing. Starting from these questions, the author gets the conclusion (right, in my opinion) that the economic actors must be credited with market power. Since, in standard economics, by market power we understand the power to impose the price (what is properly true in the monopoly case only, or if a non-market

economy is considered – for example, in a socialist case), we'd introduce a new term for such a situation: *power of price initiation* (PPI). In fact, the author rejects the hypothesis of the impersonality of price in the market economy, accepting that the producer/seller comes into market with its own price regarding the good or services supplied (here, together with the author, we'll understand by goods and services those commodities called by von Mises as goods of first order, while the capital goods and labour force needed for producing the goods of first order should be counted as goods of second order). So, the power of price initiation is not the classical market power, because the former cannot establish the price of transaction (NB: do not confuse it with the cost of transaction), that is, it cannot establish the equilibrium price, but it only proposes a 'basis for discussion'. This price, based on the power of price initiation, we'd call *thrown price*. Regarding the concept of thrown price, three aspects are worth discussing: a) the inevitability vs. contingency of the thrown price; b) the ways in which the thrown price is determined; c) the generality of the thrown price.

(a) Is the thrown price inevitable or is it a simple possibility? We think (together with the author) it is inevitable, being generated by the fact itself of supplying. When the producer/seller provides the supply on the market, he/she cannot do this without indicating a price for which the supply can be acquired. Of course, we totally agree with the author that the producer/seller does not expose a 'map' of the price-quantity pairs, i.e. a schedule of the supply, but only a single price. Such a price only quantifies (but not measures at all) the monetary value of the supply utility, so it is a *supply thrown price* (STP). It expresses the monetary value the producer/seller hopes to recover from the consumer/buyer (usually, the final consumer/buyer). Since there is not a theory of economic value yet, it is presumed the producer/seller calculates its supply thrown price based on the monetary utility of the production factors (inputs) used/consumed in getting his/her supply. After the announcement of the supply thrown price, the market game of the supply and demand begins, leading the market to its equilibrium price. The way in which the equilibrium price derives from the supply thrown price is not problematic (except some aspects put into evidence by the author and which will be approached below). What is important here is that there is a price 'personalized', the supply thrown price, which is initiated in the market. The author points out that the here so-called supply thrown price is not a desire or a whim of the supplier. Such an assertion is not necessary from a logical point of view. Indeed, the supplier is free to propose in the market any price he/she wants, there is nothing to stop such a case. As even the standard modern economics assumes, the price of transaction, i.e., the equilibrium

price, will be established eventually by the consumer, so it is irrelevant to bind the supply thrown price level by the... rationality or the reasonability of the supplier.

(b) How the producer/seller calculates its thrown price? The common sense, but also many recent behavioural studies, argue that the criterion of supplier's economic behaviour is not at all the profit maximization (even in the monopoly case) but just the economic survival, i.e. recovering at least the total cost of production. Of course, even the economic survival implies the profit margin (either for the well-being increase of the supplier or for enlarging the business in case), but there is not something like a 'map' of profit-maximizing. It is non-excluded that the supplier would like to maximize its profit (the so-called first best decision), but such a case is accidental and, more certainly, it could not be kept *sine die*. As many of the greatest economists had over time argued, probably the economic/social cooperation, which is inherent for the market economy, consists more in a balanced economic survival than in a bitter economic competition. I consider this idea, which is rather implicitly suggested by the author, worthy to be continued within a structured theory of the economic cooperation.

(c) Is the thrown price specific to the producer/seller, or it is general, i.e., there is not only a supply thrown price, but also a demand thrown price? This time, the author is very explicit in supporting the idea that the consumer/buyer has not and cannot have such a price. In my opinion, the author is right. Therefore, there will be developed some supplementary arguments in supporting this result. One could say that the marketing studies aimed to identify either the kind, or quantity, or agreed price regarding a current or intentioned product, would bring to the supplier something what, in the present terminology, would be named as the demand thrown price (DTP). Apart from the fact that such a conclusion would lead to the concept of a 'map' quantity-prices of the consumer/buyer (an idea which is rejected, in a very conclusive way, by the author), many other questions arise in this point. For example, how could the demander know the acceptable magnitude order of such a DTP? Let's presume the supplier provide to the demander its schedule prices-quantities, inviting him/her to choose a point on the schedule (i.e. a pair price-quantity). To be observed that here is simply a list of STPs, so, choosing a STP from the list is not the same with providing a DTP. In addition, why the supplier schedule (which engages the production) would coincide with (or would be desirable for) the demander one? The most probable, the consumer/buyer is empowered with a simple structural quantity-based list of the goods and services needed, without allocated price correspondingly. Here, I come to the author's idea that the

consumer bids not by prices, but by quantities. This idea is so important in the study commented here, so I'll come back below. Any way, it seems that while the supply thrown price is inevitable in a possible theory of the price, the demand thrown price is both unnecessary and impossible.

These comments do not else than move forward the right idea of the author according to which on the market must necessarily exist a price before it will become an equilibrium price, otherwise it should be accepted something of a metaphysical price which waits for the economic actors to develop economic transactions to bring it into existence. In the absence of a general theory of the economic value, the proposal of the author seems to me very pertinent and I think it would not be bad such an idea to be thorough examined further.

The question of the schedule of supply or of demand

By schedule of supply (or demand) the author understands a 'map' in a bi-dimensional plan (with quantity supplied, or demanded on the horizontal axis, and the price on the vertical axis) or, in an algebraic expression, the set of all pairs 'price-quantity', in the positive area of the bi-dimensional plan. The author rightly argues that such a schedule is not possible (either in the pure competition or in the oligopolistic one) because the inherent interdependence among the competitors. In a more general terminology, imported from evolutionary economics, I'd talk here about co-evolution. Indeed, in the co-evolution context (to be mentioned that not only 'locality', as the author shows, but also globalization imposes interdependencies in the economic process, because globalization simply expands 'locality' until the so-called global village) a certain circularity emerges, both causal and functional. The author argues that game theory tried to solve the question of the mutual reaction-function (for example, in the oligopolistic structure of the market), but the results are pure mathematical speculations. I'd support the author's positioning by pointing out that, in an economic game in which everyone can calculate its own reaction-function based on knowing the rationality model of the others, then the profit will become null for all of them (bringing the economy to its stationary state).

As consequence, the arguments brought by the author in order to make non-necessary the schedule of supply or of demand are pertinent and logical. In this line, I'd wish to develop some considerations, including the issue of graphics or algebraic descriptions in this case. The author rejects any possibility to maintain in economic

theory such graphical representations, or algebraic descriptions. Let's analyse if this is the case.

First, nothing hinders the producer/seller to draw its internal schedule of prices-quantities regarding his/her supply. He/she is free to ante-calculate all the possibilities to realize his/her supply in the market. Of course, the supply thrown price will be the only price displayed to consumers/buyers and, as mentioned above, the STP is calculated on an accounting base and using the prices already paid in the past for inputs (in fact, we are simply talking here about the monetary cost of production) adding the desired profit margin. So, if the supplier wants to draw such a supply schedule, he/she is free to do that, but it is without any relevance in the supply process itself. As a result, I think a supply schedule, even in classical understanding, is, however, possible, but only having an internal signification and functioning.

On the demand side, however, it seems that no such a schedule is possible in principle. The explanation is very simple. First, the demander doesn't know anything about the magnitude order of the price before the supplier displays his/her STP in the market. Secondly, as the author shows, the demander (more even than the supplier) doesn't conduct his/her decision to buy based on 'own prices', but on his/her quantity.

(a) A visual representation of choosing the STP

Be c_i the accounting cost of production for a given product i , and π_i^j the j desired level of the profit margin associated with product i . Not be a simple game, the j level should gravitate around the average level of the profit margin of the industry in case. Assuming a Gauss curve displaying the j levels, the STP schedule could be imagined as in Figure 1.

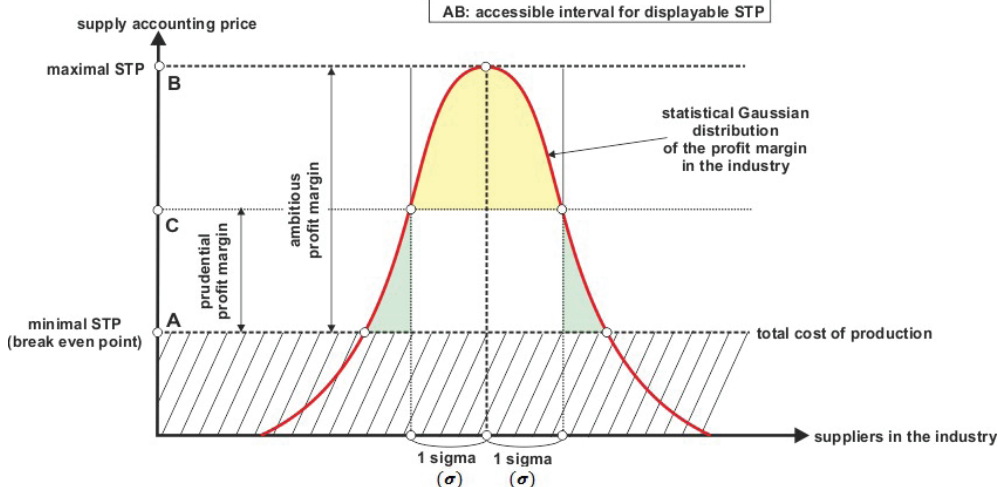


Figure 1 The accessible interval for displayable STP (i.e., for the j level of the profit margin)

According to the symbols above introduced, there is something like a fixed part of STP, at the level of the total cost of production (c_i), so $c_i = STP_{min}$ and something like a variable part of STP, by choosing of the value of the profit margin within the interval of displayable STP (π_i^j). So,

$$STP_i = c_i + \pi_i^j.$$

Do not confuse the fixed part of the STP with the fixed part of the cost of production. While the fixed part of STP means the minimal limit of STP, the fixed part of the cost of production means the invariant part of it. Consequently, while the marginal cost is calculated only on the variable part or the cost of production, the marginal STP is calculated only on the profit margin [1]. In fact, the supplier never takes its decision based on monetary equivalence between the marginal cost and the marginal revenues (i.e., he/she doesn't focus on profit maximizing), he/she simply chooses (most often by intuition, by experience or by contagion) a profit margin and then displays the result as STP.

(b) What finally about the supply schedule?

In such context, what could be said about a supply schedule? As mentioned before, what is in line with the author position, such a schedule is not necessary at all to choose the STP, because the quantity supplied has no relevance from the perspective

of the demander. As it will be seen in the next paragraph, the demander/consumer/buyer, will 'establish' his/her supply quantity appropriate for the market. As the author explicitly showed, the supplier never can establish simultaneously the price and the quantity supplied. He/she can, of course, establish the quantity, according to his/her investment and inputs quantities engaged. In a mandatory way, he/she will display then the STP in the market. But, never a 'map' of STP-quantity pairs could be offered. So, a presumptive supply 'schedule' could look like in Figure 2.

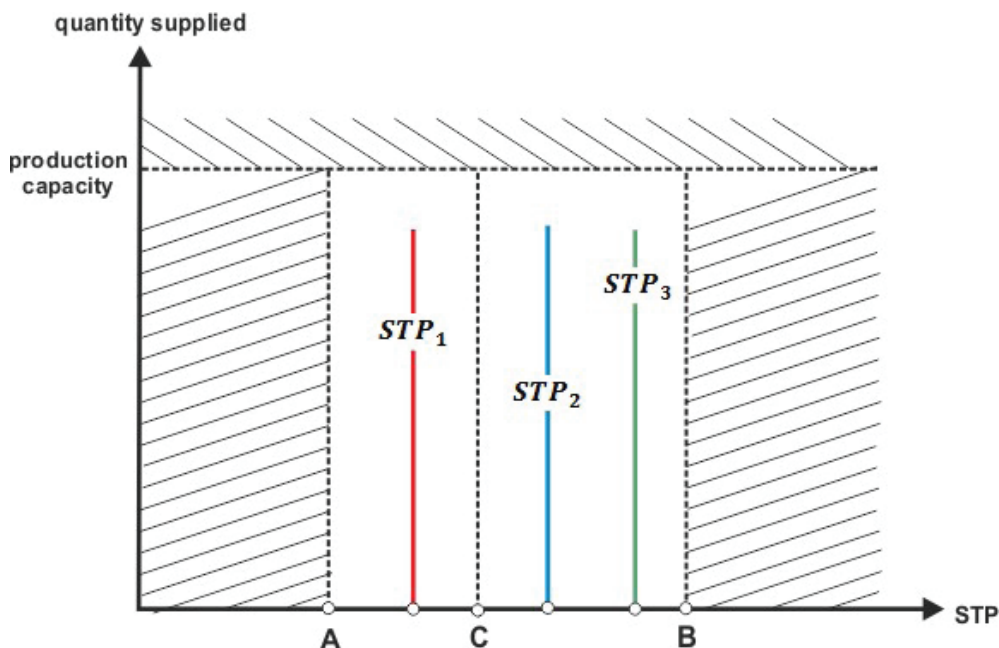


Figure 2 The STP is perfectly rigid (inelastic) related to the quantity supplied

The supply 'schedule' doesn't look like at all as a standard supply schedule, because the STP is perfectly rigid related to the quantity supplied. So, as the author says too, in fact we cannot have a supply schedule containing a set of price-quantity pairs. We have here a mechanism analogous with the mechanism of the money supply by a central bank: the money supply is rigid related to the interest rate.

However, what is the equilibrium price?

One of the most interesting idea of the author's study addresses the way in which the equilibrium price arises. As the author argues, even the equilibrium price is presumed to be imposed impersonally simply by the market forces, the question of how such a price (the price of transaction when the market clears) happens in the economic world remains. It is easy to explain how the actual prices tend to the equilibrium price through the interplay between excesses and shortages of the good considered, but how the market forces 'know' what is the equilibrium price to lead the market to it? It seems the equilibrium price exists as an 'apriori' price (probably something of transcendental nature), the same in the minds of all economic actors in the market; all decisions and actions will actualize necessarily such an 'apriori' price. As the author observes correctly, it must be an empirical price from which the interplay between excesses and shortages starts: such an empirical price is the price which the supplier introduces in the market with its supply (what I called in this paper, supply thrown price, STP). So, the economic mechanism of getting the equilibrium price starts with the STP. But what next? Here, the author makes another important proposal: the demander/consumer/buyer plays in the market not by bidding the price, but bidding the quantity. So, the demander has not a schedule, i.e., a 'map' of pairs of 'price-quantity demanded'. Since I totally agree with the author, I'll try to deliver some developments of such idea.

(a) The demander's purchasing program

The consumer wants to acquire a basket of goods and services according to his/her consumption needs. (I'll ignore here both saving and investment to simplify the analysis without diminishing the generality of results; also, I'll consider consumer's total disposable income without an interest in its sources – wage, interest, rent, etc.). According to, for example, Engel's curves, the demander designs his/her consumption program as a list of quantities. To know past prices and the corresponding quantities is not useful, because those prices cannot be maintained any longer by the sellers. Of course, like the supplier, the demander could design for his/her internal use a 'map' of 'price – quantity demanded' pairs (more exactly: 'price – quantity needed'), for example to see if the budget can cover the intended purchases. Other relevance of such a 'map' doesn't exist. Let's presume we are talking about a given good, and the demander needs a given quantity from that good. The demander comes into the market, where he/she meets the supplier. So, the economic variables which meet each other in the market are: the STP and the quantity

needed. If the demander is not an *Econ* [2], he/she has already decided on a budget to acquire the given good. Comparing the 'home price' with STP, the demander will find out if or not his/her budget can pay for the entire quantity desired. If not, a negotiation process between the supplier and the demander will lead them to the price of transaction. If such processes happen across the whole market, finally the equilibrium price will be stated. So far, nothing is new, except for the STP as output of the *power of price initiation* (PPI) of the supplier. But, the author suggests that the demander doesn't bid through the price, as above, but through quantity. Let us examine closer this suggestion.

(b) On the mechanism to get the equilibrium price

As the author seems to believe, the demander has his/her consumption program established as a list of quantities needed, not as a 'map' containing 'price – quantities needed' pairs, i.e., not a demand schedule. The author says that, on the market, a negotiation is initiated, based on the quantity and not on the price. It must be observed that the demander comes into the market only with his/her demand for a certain quantity of the given good. If such a quantity, multiplied with the STP, gives an amount under the allocated budget, the demander will not negotiate the price, simply will buy the desired quantity at the proposed STP. In this case, the STP is coincident with the price of transaction, i.e. the equilibrium price. If the amount to be paid is above the allocated budget, then the demander will negotiate the price of transaction. Indeed, as the author alleges, the demander will bid through the quantity: the demander informs the supplier that he/she has intended initially to buy more, but the STP is too high, so he/she will buy less. Since STP includes the profit margin, the supplier could agree to cut STP until the coincidence of the consumer's allocated budget with the value of the good sold. So, the STP changed under the 'threat' from demander to cut the quantity to buy. Mathematically, in contrast with standard economics, the price of transaction is a function of the quantity demanded, so the allocated budget for purchasing (planned as the 'home' quantity needed) remains unchanged (i.e., on its indifference curve): $p = f(q_N)$, where p is the transaction price, q_N is the quantity needed. The qualitative properties of the function $p(q_N)$ are: $\frac{\partial f}{\partial q_N} < 0$, $f(q_N) = STP$, $f(q_S) = STP_{min}$, where q_S is the quantity supplied (fixed). Nota bene: as shown before, a similar relationship between the quantity supplied and the STP does not exist. The supplier establishes his/her STP based only on the cost of production and the statistical distribution of the profit margin in the industry. Figure 3 synoptically shows these considerations.

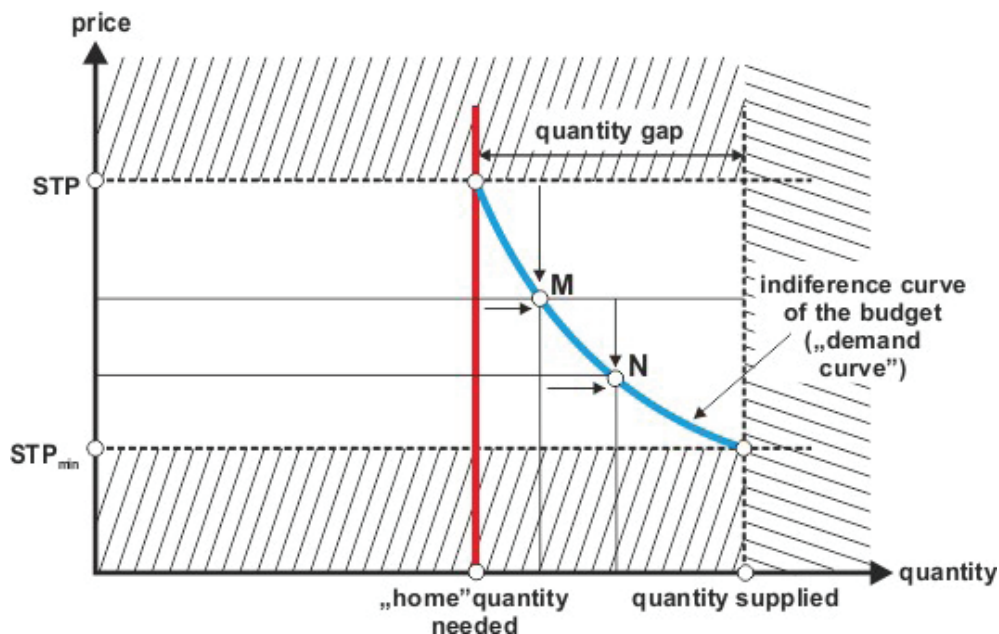


Figure 3 The mechanism of equilibrium price emerging based on the variation of the quantity demanded

Locality and globalization

The author argues, rightly again, that, even in pure competition, there are interdependencies among suppliers, as well as among demanders. In fact, the author asserts that across the economy as a whole there is just oligopolistic competition. This assertion, together with the impact of locality (for example, in monopolistic competition) on economic inter-actions, generate some interesting consequences on the mechanism of equilibrium price emergence.

(a) The impact of locality

Locality has at least two influences on setting the equilibrium price: 1) an informational exchange among STPs, which is facilitated by easy and cheap circulation of information in the market; 2) rapid adjustments of STPs. Note that there is no need for sophisticated models of rationality, like game theory, to get such rapid adjustments of STP levels; only accommodation to local economic

environment suffices, by simply observing the competitors. It is obvious that the locality effect contradicts one of the basic hypotheses of the pure competition model: the independence of economic actors (either suppliers, or demanders) from each other; it also contradicts another hypothesis of the pure economic competition: the homogeneity of the products supplied. Because locality provides information about competitors, each of them will try to attract the consumers by differentiating, however little, his/her product. So, as the author claims, the simplest market structure is not pure competition, but the monopolistic one.

(b) The impact of globalization

At first sight, globalization seems to be the opposite of locality. Indeed, globalization means a spatial extension of the market, an economic de-localization. At closer look, however, globalization is but an extension of... locality. Consequently, from a theoretical point of view, taking into account that the globalization process signifies a common world of information, the conclusion is that globalization just makes even more facile the emergence of locality.

On the supply's driver

A last issue I would comment on is that of the supply's driver. Pointedly, the author says the supplier doesn't modify his/her quantity supplied when the transaction price changes (namely, in a directly proportional way with the price change), but he/she modifies the quantity supplied as a result of variation of the quantity demanded. This elimination of the price from the mechanism of supply has to be examined more closely. For the moment, I'll provide a simple visualization of the mechanism, as in Figure 4.

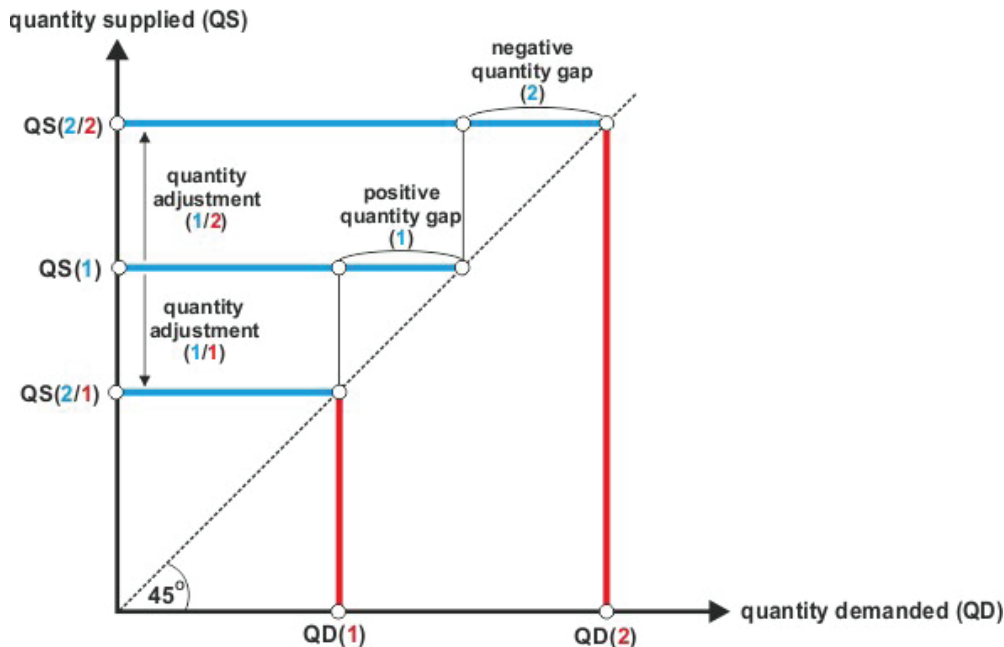


Figure 4 The supply's driver is not the price, but the variation of the quantity demanded

What's next?

The author omits deliberately to discuss at least four issues which could shed supplementary light on the subject of the law of supply and demand: a) the negotiation of price; b) the monopoly case of the market structure; c) the influence of time (discounting); d) the limits of the rational decision of the economic actors. [3] Further research on the four issues, at least, could make for a strong case towards a possible new general theory of price.

Endnotes

[1] The profit margin is here the difference between revenue and cost, that is, the absolute value of the profit, not its relative value.

[2] According to Richard H. Thaler, Cass R. Sunstein (2008), *Nudge. Improving Decisions about Health, Wealth, and Happiness*, New Haven & London: Yale

University Press. The term Econ signifies the individual generated by the homo oeconomicus model of rationality.

[3] The switch from price to quantity as anchor for the economic choice, i.e. for the equilibrium price emergence, could be worthily completed by integrating some theoretical acquisitions from behavioural economics.

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