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The Classical Theory of Normal Prices and the Analysis of Economic Changes: A Comment on D'Orlando

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ABSTRACT This paper examines the critical remarks that D'Orlando (2005) addresses to the classical theory of value based on 'normal' positions and briefly comments on the alternative dynamic analysis of short-run prices that he recommends. In particular, the first part refutes D'Orlando's considerations about the method traditionally adopted in classical analysis and discusses the claim that the characteristic structure of classical theory prevents consistent determination of the normal prices. The second part moves on to consider the basic elements of D'Orlando proposed short-period analysis and argues that they appear problematic on both theoretical and methodological grounds.

JEL CLASSIFICATION: B 41, B 51

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Introduction

In a recent contribution to the *Journal of Post Keynesian Economics*, Fabio D'Orlando (2005) criticizes the classical theory of value based on the long-period or 'normal' positions of the economy as defined by Sraffa's equations of production. He addresses his critical remarks to both the method and content of the theory. As an alternative to traditional classical theory, he then puts forward elements of a dynamic analysis of short-run prices that would, in his opinion, guarantee meaningful correspondence between

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theoretical and observable magnitudes. In this paper we shall argue that neither the critical nor the constructive part of D'Orlando's contribution rests on firm foundations.

The paper is structured as follows. Section 1 refutes D'Orlando's remarks concerning the method traditionally adopted in classical analysis. Section 2 discusses the claim that the characteristic structure of classical theory gives rise to a serious problem as regards the determination of normal prices. Section 3 goes on to develop a critical examination of the basic features of D'Orlando's proposed dynamic analysis. Section 4 recapitulates the discussion developed in the paper and draws conclusions.

1. D'Orlando on the method of normal positions

In the first section of his article, D'Orlando discusses the methodological view predominantly held among the scholars influenced by Sraffa's work, i.e. that the study and comparison of 'normal positions' of the economy characterized by a uniform rate of profit constitutes the appropriate way of relating the theory of value to observable phenomena (cf., for example, Garegnani, 1976, 1990a; Vianello, 1989). He claims that this view ultimately rests on two elements, each in fact amounting to an assumption about the actual economy. The first is 'the *belief* that, in a freely competitive system, there are forces that drive the system toward long-period equalization of the rate of profits and that, as a result, [...] actual [...] prices tend to long-period [...] prices' (D'Orlando, 2005: 635, emphasis added). The second is that the circumstances taken as independent variables in the classical normal position—outputs, production methods and one distributive variable—will prove sufficiently persistent in the actual economy as to allow for both the 'convergence' of market prices towards their normal values and compensation of the accidental factors that may affect those prices (D'Orlando, 2005: 636). Given this interpretation, D'Orlando objects that both assumptions are arbitrary. As to the first, he states that 'no proof of convergence of actual reality toward [normal] positions exists' (2005: 637, n. 8). As to the second, he argues that the presupposed persistence in time of the independent variables appears to be contradicted by the facts, and especially by the 'rapid rate of modern technical change' (2005: 638). According to D'Orlando, these observations provide sufficient grounds for doubting whether

traditional classical analysis can really ensure correspondence between theoretical and actual magnitudes.

It can be argued, however, that the reliance of both the ‘old’ and the modern classical economists on the method of normal positions is by no means founded on the beliefs or a priori assumptions listed by D’Orlando. First of all, we may recall that, in introducing the concept of ‘natural prices’ as central values toward which all commodity prices are constantly gravitating, Adam Smith certainly did not rely on any ‘belief’ concerning the gravitation process. As is well known, the tendency of observable prices toward their natural or normal values was asserted by Smith on the basis of a non-trivial *theoretical argument* (Smith, [1776]: Book I, ch. VI), which was later accepted by Ricardo and Marx. Moreover, the logic of that argument has recently been the object of intense debate, in the course of which some of the objections raised have prompted interesting *generalizations* of Smith’s original formulation.¹

As regards the second element mentioned by D’Orlando, it is intuitively obvious that a theory of value developed in terms of normal prices requires that the circumstances assumed to govern the exchange ratios of commodities should be persistent over time. D’Orlando is definitely mistaken, however, when he states that the scholars involved in the modern reappraisal of classical theory assume *a priori* that ‘the [actual] economic system guarantees the [...] persistence’ of those circumstances (2005: 636). Contrary to this claim, the requirement of persistence that a theoretical position defined along Sraffa’s lines must fulfil in order to qualify as a normal position (centre of gravitation) has been carefully examined. Moreover, arguments have been put forward indicating that this requirement can be met in a wider range of situations than one might think. Let us review the main points that have been stated.

To begin with, it has been pointed out that a consistent definition of the classical normal position is compatible with some tendency of the independent variables to change in time, provided that this tendency can be considered sufficiently slow *in relation to the*

¹ The argument for the tendency of the market price of a generic commodity to move toward its natural value was formulated by Smith under the implicit hypothesis that the prices and produced quantities of all other commodities are, on average, at their normal levels. Debate has thus recently arisen as to whether Smith’s conclusions could be confirmed when that hypothesis is dropped and simultaneous adjustments in all markets are taken into account. The doubts advanced in this respect by Steedman (1984), Nikaido (1985) and Lippi (1990) have been countered by Garegnani (1997) on the basis of a clarification of the essential premises of Smith’s argument.

forces that are supposed to engender the gravitation of the actual prices toward their theoretical levels (Garegnani, 1990b: 348). This means that, in the applications of classical theory, the normal position will be properly defined whenever it refers to a time interval during which (1) the circumstances regulating the relative prices remain practically unchanged and (2) adequate mobility of capital and repetition of transactions obtain at the same time.

Building on the foregoing general considerations, it has then been argued that proper determination of the classical normal position can prove viable not only in the case of economies where outputs remain approximately constant in time, as is sometimes maintained,² but also in the case of economies characterized by intense and protracted growth. The reason for this lies in the fact that when growth is sustained, the flow of investment in *additional* capital goods is necessarily larger, in proportion to the existing stock, than in times of slow growth. And insofar as that larger flow will tend to be directed primarily toward the most profitable branches of industry, it can be presumed that profit differentials across sectors will be corrected more quickly. A shorter time interval would accordingly suffice to fulfil condition (2) on capital mobility and, by referring the theoretical position to that shorter interval, condition (2) could be reconciled with the condition (1) of moderate output changes and hence of negligible changes in the production methods in use (Ravagnani, 2002: 377-78; cf. also Piccioni, 2003: section II).

A similar argument has been put forward to counter the claim that the classical normal position cannot be consistently defined when the economy displays rapid technical progress and therefore ‘quick’ changes in the dominant production methods.³ As noted by Piccioni (2003: section II), a faster rate of technical innovation generally entails shorter economic life of plant and higher depreciation allowances per unit of time, thereby increasing the flow of capital susceptible of being directed toward the most

² For example, Hicks (1990: 100) takes it for granted that the theoretical positions defined in *Production of Commodities* (Sraffa, 1960) can only be regarded as abstract representations of *stationary* economies. The same opinion seems to be held by D’Orlando himself, as he writes that in Sraffa’s equations ‘quantities [of output] are not only known but also given, *in the sense that the system will reproduce them identically*’ (2005: 639, emphasis added). See Ravagnani (2002) for a critique of this restrictive interpretation.

³ It should be noted in passing that this claim is just about as old as classical theory itself. For example, Hollander (1985: 41) reports that the treatment of rent in the *Principles of Political Economy* (Ricardo, 1821) was criticized shortly after Ricardo’s death on the grounds that ongoing technical change prevents analysis in terms of ‘comparative statics’, i.e. based on the comparison of normal positions.

profitable sectors. It can be accordingly presumed that when technical progress accelerates, a shorter time interval will be sufficient to meet the condition (2) of adequate capital mobility and, as has just been seen in connection with growth, this will allow for definition of a theoretical position complying with both that condition *and* the condition (1) of practically unchanged production methods.

From what has been said so far, it should be clear that the confidence in the method of normal positions traditionally held in the field of classical analysis is based on genuine economic arguments and not on arbitrary assumptions about the actual economy. Those arguments can of course always be discussed and criticized, but should certainly not be ignored.

2. The alleged ‘theoretical problem’ with the classical normal positions

2.1 D’Orlando’s statement of the problem and an initial comment

After expounding his views on the method of analysis, D’Orlando addresses his criticism to the structure of classical theory. In particular, he claims that a characteristic feature of the classical approach, namely the determination of outputs carried out separately from the relative prices, gives rise to a serious theoretical problem (D’Orlando, 2005: 638). To substantiate this assertion, he first points out that the produced quantities taken as ‘given’ (separately determined) in Sraffa’s normal positions cannot be *arbitrarily* given but must coincide with the respective effectual demands, i.e. with the quantities demanded at the relative prices and values of the distributive variables determined by the equations of production. If this were not the case, he notes, outputs would tend to change together with production methods and the theoretical position of the economy would thus lack the persistence required to qualify as a centre of gravitation (D’Orlando, 2005: 639-40). Starting from this premise, D’Orlando then argues that Sraffa’s followers should explain how an output vector consistent with effectual demands that in turn depend on endogenously determined prices could be identified separately from, and prior to, those very prices (2005: 638, 640). Finally he claims that those scholars, instead of admitting the problem, postulate that the actual economy is usually close to a normal position and conclude on these grounds that the appropriate output vector can be legitimately inferred

from reality, in particular by taking averages of observed outputs (2005: 640-641).

Let us pause to consider the points put forward by D'Orlando. To begin with, it should be noted that the issue he raises is not new and has certainly not been neglected by the theorists involved in the modern revival of the surplus approach. The question of the necessary 'coherence', within the classical normal position, between the separately determined outputs (effectual demands) and the prices resulting from the equations of production was indeed pointed out by Garegnani about two decades ago (cf. Garegnani, 1990a: 137, n. 30) and has been repeatedly examined since then (cf., for example, Mongiovi, 1991; Piccioni, 1998). It should also be noted, contrary to D'Orlando's claim, that in the contributions tackling this question it is never suggested that the theoretical outputs should be simply deduced from 'observed market realizations'.⁴ On the other hand, this is hardly surprising. It would be nonsensical to assume that the actual economy is close to a normal position and maintain that the outputs to be taken as 'data' in the determination of the normal prices can accordingly be drawn from reality, since under that assumption the normal prices themselves could be inferred from observed market prices with no need for a theory determining them.

It must therefore be stressed that the classical theory of normal prices does not aim at providing an abstract representation of observed circumstances. As has been convincingly argued, the purpose of the theory is to analyse the changes in value and distribution that an autonomous change in one independent variable would tend to bring about, and especially at determining *the sign* of those induced changes (Garegnani, 1997: 143-44, 2003: 25, n. 40; cf. also Blaug, 2002: 239, on Ricardo's concern with the sign of the changes in distribution originated by accumulation). This point is particularly important for proper discussion of the problem mentioned by D'Orlando, which can be adequately assessed only in connection with the real aim of the theory. We shall accordingly focus in the rest of this section on the procedure that has been suggested for

⁴ This is confirmed by the fact that D'Orlando can provide no real textual evidence to support his claim. He only quotes a footnote from a well-known essay by Garegnani in which the author summarizes the views of the 'old' classical economists on the circumstances determining the volume and composition of the social product (Garegnani, 1984: 296, n. 12). As the paragraph to which the footnote refers makes clear, those views are recalled in order to show that the early classical scholars did not dismiss the analysis of produced quantities, but thought that such analysis is best carried out separately from the study of the division of the product among the classes. With a striking *non sequitur*, however, D'Orlando (2005: 641, n.

dealing with the mutual dependence of outputs and prices within the framework of the classical analysis of changes. In particular, we shall examine the objections raised by D'Orlando.

2.2 The analysis of economic changes carried out in separate logical stages

It has been argued by Garegnani (1990a: 131) that, within the classical approach, the absence of demand and supply functions determining both the reward and the quantity employed of each 'factor of production'—and hence the constellation of individual incomes—entails that the dependence of commodity demand on the relative prices cannot be expressed in terms of definite mathematical relationships (demand functions for products). This in turn implies that the effects of a change in one independent variable on value and distribution cannot be ascertained by determining the normal prices after the change simultaneously with the new quantities demanded and produced but must be analysed in a different way. In this regard, Garegnani (1990a: 130) has suggested that the analysis of those effects could be appropriately carried out in separate logical stages alternating the use of the exact relationships established by Sraffa's equations with more inductive methods.

D'Orlando criticizes the above-mentioned procedure in the article under discussion through reference to a hypothetical application. He imagines that analysis in separate stages is carried out to evaluate the consequences of an exogenous shock that disrupts the initial normal position of the economy by altering the effectual demand for some commodities. In the first stage of the analysis—as he states, following Garegnani—it will be assumed that outputs are adjusted to the new levels of effectual demand and that production methods are in turn adjusted, under 'variable returns to scale', to the new outputs. The effect of the shock will then be provisionally assessed by applying Sraffa's price equations to the 'system of production' thus determined. It is, however, clear that the demand for the different commodities will tend to change again at the new prices identified in the first stage, and that this 'feedback' of prices on demand will prompt a corresponding further change in outputs. The second stage of the analysis, he continues,

15) deduces from the footnote that, according to Garegnani, the actual economic system is generally close to a 'long-period equilibrium' (normal position).

should accordingly determine those ‘secondary’ output changes, which will, however, stimulate further changes in the technical conditions of production and therefore in both the relative prices and the quantities demanded, and so on. At this point, D’Orlando raises the following objection. In the presence of this repeated interaction among output levels, production methods and relative prices, how can one be sure that the analysis in separate stages will ‘converge’, i.e. lead to the determination of a final position of the economy characterized by full coherence between the price system and the quantities demanded and produced? He contends that there is no way of ascertaining ‘convergence’ when it is held that the feedbacks of prices on demand cannot be expressed through ‘formally specified functional relationships’, and concludes on these grounds that the analytical procedure suggested by Garegnani proves totally useless for identification of the normal prices after the shock (D’Orlando, 2005: 644).

It can be argued, however, that D’Orlando’s drastic conclusion derives from an artificial view of the relations between outputs and production methods and above all from a misconception of the purpose of the analysis in separate stages. As regards the first aspect, D’Orlando reasons throughout his article as though only two hypotheses could be conceived about the influence of output levels on the methods in use: either that the latter remain strictly invariant irrespective of the quantities produced (‘constant returns to scale’)⁵ or, at the opposite extreme, that any change whatsoever in outputs will automatically prompt significant changes in the technical conditions of production (‘variable returns’). When this doubtful view is abandoned, however, and it is instead acknowledged that *substantial* output changes are generally required in order to trigger appreciable changes in methods, it appears clear that analysis in separate stages will lead to definite results in a relevant class of applications.

Suppose, for example, that we wish to evaluate the persistent effects of a technical improvement in the production of a non-basic commodity traditionally consumed in the economy. In the first stage of the analysis, the effect on the relative price of that commodity, and possibly on the prices of other non-basics, will be initially assessed by placing the new method within the framework of Sraffa’s equations while at the same

⁵ Consider, for example, the following passage: “In the case of constant returns, Sraffa’s [system of equations] generates the *same* vector of prices for *any* vector of [produced] quantities” (D’Orlando, 2005: 639, n. 12, italics in the original).

time keeping the output of the non-basic commodity at its original level. In the second stage, the feedback of those price changes on the quantities demanded and produced will be estimated, and it can plausibly emerge that these ‘secondary’ output changes are not sufficient to prompt further significant modifications in production methods. In that case, the theoretical prices initially determined would be fully consistent with the new outputs (effectual demands) identified at the second stage and could therefore be legitimately regarded as the normal prices after the technical change. In the same way, the new system of normal prices could be consistently determined when the analysis in separate stages focuses on the effects of comparatively limited changes in effectual demands due to gradual modifications of consumers’ habits or on the effects of a change in the independent distributive variable, to the extent that the latter change proves moderate enough to rule out substantial feedbacks of prices on demand.

It should not, however, be concluded from the foregoing remarks that analysis in separate stages can only validly deal with cases in which the feedbacks of price changes are sufficiently mild. If we jettison D’Orlando’s conception of that procedure, which he interprets as a means to attain detailed quantitative specification of the normal position after a shock, and recall that the essential purpose of the theory is to assess the *sign* of the changes in normal prices, we realize that the analysis in separate stages has a more general scope. A simplified example will serve to illustrate this point.

Suppose that we wish to investigate the effect of a severe import restriction that perturbs the initial normal position of the economy by stimulating a substantial increase in the effectual demand for domestically produced corn. Suppose also that, in the first stage of the analysis, it emerged that the adjustment of corn output to the increased demand would entail a worsening in the technical conditions of production and, for this reason, a marked rise in the price of corn in terms of the chosen numeraire.⁶ In the second stage we will have to ascertain whether this initial result can be altered by the feedback of the higher price on the demand for corn. In this connection, reflection indicates that the price increase cannot drive the demand for corn back to the original level, as in that case its very cause—the worsening in production conditions—would evidently disappear.

⁶ It is assumed for the sake of simplicity that the change in employment associated with the increase in corn production makes no appreciable difference to the workers’ bargaining position and therefore has no significant effect on the real wage.

Given the nature of the autonomous shock postulated, the only consistent conclusion to be drawn is therefore that the import restriction will bring about a rise in the normal price for corn together with a rise in the effectual demand for that commodity (cf. Piccioni, 1998: 20-21 and Garegnani, 2007: 188, n.12 for a similar argument framed in a slightly different context). The analysis in separate stages would thus yield a first definite result concerning the *direction* of the change in the normal price for corn. The procedure could then be repeated in order to ascertain the direction in which the prices for the means of production of corn, or for any other commodity, would tend to change after the import restriction.

In the example just provided, assessment of the sign of the change in the normal price for corn requires only simple qualitative evaluation of the relevant feedback. It should be noted, however, that the example could be easily modified in order to show that analysis in separate stages can deal equally well with alternative cases requiring more complex quantitative evaluation of the feedbacks of price changes on demand.⁷ It should also be noted that for proper quantitative evaluation of the feedbacks in those cases, it will be necessary to estimate the changes in individual incomes that the initial change in one independent variable will tend to bring about through its impact on both distribution *and* the number of workers employed. And since classical theory entails no mechanical tendency to full employment but acknowledges that the ultimate effect on employment of a change in the real wage, say, depends to a considerable extent on the specific socio-institutional context of the economy under examination,⁸ analysis at that stage will have to be conducted according to the circumstances of the case by means of primarily inductive methods. D'Orlando's account of this aspect of the analytical procedure suggested by Garegnani is, however, totally misleading. He misinterprets

⁷ Suppose, for example, that it emerged in the first stage of the analysis that the increase in corn output required to meet the rise in effectual demand would stimulate a technical improvement in the production of 'ploughs' and, for this reason, a marked *fall* in the price of corn. Suppose also that it emerged in the second stage that the further increase in corn production prompted by that fall would require cultivation of less fertile lands, thereby giving rise to partial recovery of the price for corn. Under these alternative circumstances, it could be consistently concluded that the import restriction would bring about a fall in the normal price of corn together with a rise in the effectual demand for that commodity.

⁸ Consider for example the effect of an increase in the wage rate on the number of workers employed. As Marx pointed out, entrepreneurs could react to the ensuing fall in the profit rate by reducing investment, thereby giving rise to a slowdown of the economy and a decrease in employment. The effect would be entirely different, however, in the case of a rise in wages taking place within the context of an institutional agreement aimed at increasing domestic consumption and the general activity level of the country.

Garegnani's remarks about the necessarily inductive assessment of the relevant feedbacks and surprisingly ascribes to him the absurd view that, in the course of the procedure, the quantities demanded at the provisional prices determined through Sraffa's equations should not be the object of analysis but simply be inferred from observed reality (D'Orlando, 2005: 644-45).⁹

3. On D'Orlando's proposed dynamic analysis

The previous sections have discussed the methodological and theoretical objections that D'Orlando raises with respect to traditional classical analysis. We shall now briefly examine the alternative theory that he suggests on the basis of those objections.

In general terms, D'Orlando (2005: 647-51) advocates a theory of value based on demand and supply functions that analyses the evolution of the price system over a sequence of short-period positions of the economy. More specifically, he argues that a valuable initial step toward the proposed 'dynamic' analysis is provided by Caravale's (1994) model of price determination in the short run. Let us recall the relevant features of this model.

As D'Orlando points out, the core of the model lies in the following theoretical representation of the transactions held in a generic 'market period'. At the beginning of the period, the producers of each industry bring to market quantities of commodities that are the outcome of their past production decisions and announce an initial price for their product. The quantities demanded at the announced prices are then determined through formalized demand functions and it is assumed that the quantity initially sold of each commodity will correspond to the smaller between the total amount made available and that demanded by the complex of agents. As the quantities initially demanded will

⁹ The absurdity lies in the fact that the prices provisionally determined in the course of the procedure and the corresponding quantities demanded both refer to the conditions of the economy after a *hypothetical* change in one independent variable and are therefore themselves hypothetical, non-observable magnitudes. For the misinterpretation of Garegnani's position, consider the following passage:

'Garegnani [...] maintains that [...] the quantities demanded at those [virtual] prices [...] cannot be identified a priori but can be "analysed in accordance with the case under consideration" [...] since they are influenced by "social and political factors [...]". What this analysis "in accordance with the circumstances of the case" means is not crystal clear. [...] One [possible interpretation] is that these quantities are observable [...]' (D'Orlando & Nisticò, 2000: 16).

generally not be sufficient to clear all markets, it is further assumed that the producers of the commodities in excess supply adjust their prices and sell an additional portion of their outputs in a second round of transactions. The process of price revisions and trading at ‘false’ prices then continues until all the markets are eventually cleared. This process will thus give rise, within the market period, to a sequence of ‘temporary market prices’ for each commodity, whose weighted average is called the ‘actual equilibrium market price’. Determination of the ‘actual equilibrium market prices’ of the different commodities is the ultimate aim of the analysis.

It should be noted that in the theoretical representation outlined above, the demand functions driving transactions are *probabilistic* in the sense that each of them incorporates a ‘random disturbance’ designed to express the influence on demand of all sorts of accidental factors. It follows that the ‘actual equilibrium market prices’ determined by the model are themselves random variables whose range will evidently reflect the range of the disturbances. According to D’Orlando, this probabilistic qualification of the theoretical prices has remarkable implications. Even though the model addresses short-run magnitudes that cannot be centres of gravitation, he argues, the fact that the ‘actual market clearing prices’ are random variables entails that meaningful correspondence can still be established between theoretical and observable prices. In particular, this correspondence would be ensured ‘as long as the realization of the random variable—that is, the observed market price—lies within the range of the disturbance’ (D’Orlando, 2005: 649). D’Orlando accordingly concludes that Caravale’s ‘attempt to formalize the interdependence between prices and quantities [...] outside the long-period method [...] has the potential to avoid the main drawbacks of [...] the Sraffian approach’ (2005: 650) and, at the same time, ‘ensure[s] that theory corresponds to reality’ (2005: 651).

We cannot agree with D’Orlando’s conclusion, however, as three aspects of the short-run analysis he praises give rise to serious misgivings. The first is strictly theoretical and concerns the foundations of demand functions. If we look at Caravale’s original specification of those functions, and ignore for a moment the random disturbances attached to them, we see that the quantity demanded of any commodity is assumed to depend exclusively on the relative prices (Caravale, 1994: 58, equation (3.3)).

The quantities demanded in any given price situation are, however, inevitably influenced by the *purchasing power* of individual agents and it is not clear how that further determinant of demand decisions can be taken into account within the postulated transaction scheme. Consider, for example, the quantity of 'beans' demanded by a producer of 'meat' when prices are announced at the opening of the market period. How can that quantity be identified without knowing the producer's purchasing power, which will be determined only *ex post* by the receipts from the sale of his output? Closer examination reveals that the problem is 'solved' in Caravale's model by assuming that after the announcement of the initial prices, the meat producer reckons the relative prices in terms of his product and plans to 'buy' beans by offering the required quantity of meat *directly* to the producers of those vegetables. In other words, the model actually assumes a barter economy in which the desired commodity bundles are obtained through bilateral exchanges (Caravale, 1994: 58, equations (3.3)-(3.4)). It would be interesting to know how D'Orlando plans to deal with the problem of the purchasing power of agents once the peculiar hypothesis of a barter economy is dropped.

The second puzzling aspect is the view that, in a short-period setting, the influence of accidental forces on the demand for commodities can be adequately modelled by appending random disturbances to the systematic component of demand functions. It is unclear how accurate quantitative specification of those disturbances could ever be attained, given that estimation of their range alone would involve ascertaining the effects of the *countless* contingent factors that may affect demand in any given market period. This problem certainly cannot be ducked by simply stating that the parameters of the disturbances should be 'suitably chosen' by the theorist (Caravale, 1994: 59).

Finally, let us suppose for the sake of discussion that the random disturbances have somehow been correctly specified and that the possible values of the 'actual market clearing prices' have been determined accordingly. In the likely event of the range of those values proving very broad, the whole exercise will ultimately indicate that the prices prevailing in a generic market period, and even more the path of those short-run prices, are in fact regulated by accidental factors and not by circumstances amenable to theoretical treatment. Since D'Orlando himself touches on this shortcoming in an earlier

paper,¹⁰ one might wonder why he does not mention it in the recent contribution under discussion here. One reason may lie in the analogy that he now sees between the results of his proposed short-period price determination and those produced by Duncan Foley's 'statistical equilibrium' theory of markets, which depends on a probabilistic representation of potential transactions (D'Orlando, 2005: 651). The analogy is highly questionable, however, as Foley's construction has the considerable advantage of allowing for *univocal* determination of the plausible market outcome when the number of agents is sufficiently large.¹¹

4. Conclusions

In this paper we have examined the critical objections that D'Orlando raises with respect to the classical theory of value based on normal positions and briefly commented on the alternative analysis that he recommends.

We first point out that reliance on the method of normal positions on the part of classical scholars does not rest on unwarranted postulates about the actual economy—as D'Orlando claims—but on carefully developed arguments concerning both the 'persistence' of the circumstances governing the exchange ratios of commodities and the tendency of market prices toward their normal levels. We then discuss the claim that the separate determination of produced quantities creates a problem within classical theory in that it prevents adequate treatment of the interdependence of outputs and prices and hence consistent determination of the normal prices. We argue that classical theory is essentially concerned with the sign of the changes in normal prices and point out that definite results in this respect can be consistently achieved by means of the analysis in separate logical stages put forward by Garegnani.

Finally, attention is focused on the alternative dynamic theory advocated by D'Orlando, and especially on the model of price determination in the short-run that should be at its centre. It is argued that the foundations of the demand functions playing a

¹⁰ '[R]ecourse to probabilistic qualifications might lead to [...] indeterminacy, with the disturbances becoming more important than the economic data in determining the evolution of the system' (D'Orlando 1997: 77, our translation).

¹¹ It may be useful to recall that Foley defines the 'statistical equilibrium' of a market as the configuration of transactions with maximum likelihood over the set of possible configurations and then shows that the

major role in the model are problematic and that the alleged correspondence between the theoretical short-run prices and observable market prices is questionable.

In the light of the considerations developed in this paper, we therefore maintain that D'Orlando's critique of the classical theory of normal prices is not well founded and that his proposed alternative analysis is open to doubt on both theoretical and methodological grounds.

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