WHAT IS THE PROBLEM WITH NEOCLASSICAL PRICE THEORY?

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Abstract: The article seeks to focus attention on Neoclassical price theory, as one of the two problematic foundations of modern mainstream economics—the other being the theory of distribution. After outlining what is understood to be Neoclassical price theory and noting the various criticisms which it has been subject to from both within and without the school, the article proceeds to argue that its major flaws need to be understood as stemming from how it conceives of the formation of prices in the first instance. Specifically, the article argues that the basic problem with the Neoclassical theory of price is that it abstracts from both production and money in the first instance, such that when these are eventually brought back into the explanation of price it is done so in an inessential manner; one where production and money have no bearing on the findings of the analysis of price which excluded them.

Key words: price; relative price; production; money; equilibrium; inflation; perfect competition

Introduction

The simple answer to the question posed by the title of this article is its starting point; how Neoclassicals conceive of the formation of prices. At first glance the theory of price may appear as an odd, even esoteric, choice of topic given the overwhelming attention being paid by all-and-sundry to various aspects of the on-going global economic and financial turmoil. Yet, when the much needed soul-searching by the economics profession begins, as it already shows signs of beginning, many economists may be forced to take a fresh look at the economic foundations that they have hitherto held to be immutable.

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Why begin the soul-searching with price theory? Well, quite simply because there is nothing more foundational than the theory of price (and implied theory of money). Indeed, the theory of price, together with the theory of distribution, provides the foundations for most attempts to understand any market-based economy.

Why Neoclassical price theory? Because the Neoclassical approach can be argued to represent the dominant view of how market economies work, and therefore any consideration of the foundations of current economic thinking needs to begin with those underpinning this approach. As the dominant view, the Neoclassical approach is seen as having failed decision-makers with respect to the current economic turmoil. It is seen as having failed to flag the potential for this turmoil and, for some, may have even contributed to it.[1]

What is Neoclassical Theory?[2]

The origins of what has come to be referred to as the Neoclassical school of thought can be traced to the writings of Stanley Jevons, Karl Menger and Leon Walras in the latter part of the 19th century.[3] These writings represented a fundamental break with the then dominant Classical school whose representatives included Adam Smith, David Ricardo and Karl Marx. Whereas the Classical economists focused on classes and production when explaining economic phenomena, the Neoclassicals came to focus on the behavior of individuals and the process of exchange between them. Given the nature of the break between the Neoclassical and Classical approaches, it can justifiably be argued, as quite a few economists have done, that the Neoclassical label is a misnomer.[4] However, while agreeing with this criticism of the use of the Neoclassical label to describe the general subjectivist, individualist approach to economics, I will nevertheless retain its use in the present article because of its widespread adoption in the literature. Moreover, while it is readily apparent that there are differences among adherents of this school when it comes to the explanation of economic phenomena in general and prices in particular, I argue that they share certain basic principles which are manifest to one degree or another in these explanations. It is these shared principles and common elements in the explanation of prices that I will focus on in the present article, noting in passing divergent explanations of various sub-groupings where I consider these material.[5]

What is Neoclassical Price Theory?

Price is the worth society attaches to goods which are traded and consumed. The precondition for the existence of prices for Neoclassicals is deemed to be scarcity; the scarcity of resources required to produce commodities or the scarcities of commodities themselves.[6] Prices are seen as serving to allocate scarce resources among competing

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wants. When explaining prices most Neoclassicals distinguish between; relative and money prices, equilibrium and non-equilibrium prices, competitive and non-competitive prices, and, for some (especially New Keynesians), short- and long-run prices. Equilibrium prices are argued to be prices which equate the demand for, and supply of, commodities (and factors). Some Neoclassicals, viz., the New Keynesians, adopt what is referred to as a partial equilibrium approach, in the sense that the equilibrium prices being explained balance the supply of, and demand for, a commodity of a specific sector or market without reference to developments in any other sectors or markets. Others, viz., Walrasians, favor a less intuitive but, allegedly, theoretically more rigorous approach in which the equilibrium prices explained are economy-wide prices that balance the supply of, and demand for, all commodities simultaneously such that the aggregate excess demand for them sums to zero. With partial or general equilibrium prices there is no tendency for change in these prices, and, for most Neoclassicals, the satisfaction or welfare of all trading parties is maximized at these prices—so-called Pareto optimal equilibrium prices. Although it is accepted that actual prices might deviate from equilibrium prices, most Neoclassicals are of the view that in a competitive environment there are economic forces that will keep the former close to the latter. A competitive environment is defined as one in which there are a large number of traders selling a fairly homogeneous product where neither buyers nor sellers are able to exert an undue influence on price. In such an environment, so it is argued, the consumption satisfaction optimization behavior of individuals typically moves prices towards their equilibrium levels. By implication, a non-competitive environment is one where there are only a few buyers and/or sellers in either product or factor markets. It is assumed prices in non-competitive markets will also tend to their market clearing levels, but these levels will not be such that economy-wide satisfaction is maximized. The distinction between the short and long run made by New Keynesians follows one made by Alfred Marshall and is founded on the relative fixity of inputs. The short run is argued to be that period of time when all factor inputs except one (labor) are fixed, and the long run when all factor inputs are variable.[7]

When explaining price magnitudes, most Neoclassicals begin with explanations of relative (competitive) equilibrium price magnitudes. This is because it is relative and not money prices of commodities that are considered as being important for decision making by "economic agents." Neoclassicals contend that relative (equilibrium) price magnitudes are determined by the relative amounts of a given product demanded and supplied, with these amounts seen as the aggregation of the demand for, and supply of, products by individuals (and firms). Accordingly, in their explanation of relative price magnitudes Neoclassicals typically begin with the explanation of individual demand and supply curves linking prices and quantities demanded and supplied. Individual demand curve constructs assume that individuals

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derive relatively less satisfaction from the consumption of relatively more of a given product such that they would only consume relatively more of that product if its relative price were to fall. Individual supply curve constructs assume that producers typically set relative offer prices on the basis of relative marginal costs, and that these costs increase (after initially declining) as producers are required to produce relatively more of a given product. The net result is that the magnitudes of relative prices are conceived of as determined by the relative preferences of individuals and the relative costs of producing commodities.

Money price magnitudes of commodities are explained by the demand for, and supply of, money as a medium of exchange, and, in the final instance, the relative scarcity of money in relation to commodities and services. For Neoclassicals, money as medium is also "an asset" yielding a return to individuals in terms of the medium of exchange services it provides them.[8] Individuals are assumed to hold a certain quantity of money or real money balances (i.e., money in relation to the prices of all commodities and services which are to be purchased with the money), the yield on which is equated with that on all other assets held by them. Money for Neoclassicals is basically the liabilities of the banking system (cash and deposits held by individuals with banks) which can be used to purchase commodities and services, although there are differences between Neoclassicals as to which liabilities should be included in the definition. The relationship between these liabilities (money stock) and money expenditure, or velocity of circulation, is assumed to be fairly constant, at least over the long run. The source of increases in money stock is argued to be an increase in the cash in the system, or money supply, essentially to finance government budget deficits. The relation between cash and the money stock, the money multiplier, is also assumed to be fairly constant. Until relatively recently it was assumed by most Neoclassicals that the level of cash in the system is controlled by the monetary authorities, the so-called exogenous money supply approach, but this has given way to a more nuanced approach by some suggesting that the monetary authorities also, if not for the most part, accommodate the demand for money.[9]

It needs noting that modern Austrians see themselves as deviating from the Neoclassical fraternity with regard to much of the preceding, so much so that they are nowadays more frequently regarded as belonging to the Heterodox rather than the Neoclassical school of economic thought.[10] However, I would argue that while they most certainly diverge in a number of respects from the majority of Neoclassicals when explaining prices, it is not in any fundamental sense, certainly not so as to justify their exclusion from this fraternity. In fact, in many ways Austrians can actually be seen to be more catholic than most of their Neoclassical brethren. For example, although Austrians argue that prices rarely correspond to equilibrium prices, they do so because they view the multilateral exchange process as even more

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atomistic than other Neoclassicals, i.e., as the aggregation of spatially and temporally unconnected bilateral exchanges. Further, although many modern Austrians give the impression that they see prices as fundamentally money prices and money as more than a veil, their conception of the exchange process is even more one of barter than many other Neoclassicals (see below). Finally, while many Neoclassicals consider it important to bring costs of production into the explanation of the magnitudes of prices, Austrians oppose this because of the implication it has for diluting the subjective nature of the explanation (see below).

Traditional Criticisms of Neoclassical Price Theory

The Neoclassical theory of price, as outlined above, has been subject to a variety of criticisms from a number of quarters, also from within the school. Most of the criticisms from within the school are, as one might expect, criticisms of one sub-school by another. For example, Walrasians are criticized by other Neoclassicals for denying exchange and money any role in the formation of prices,[11] Austrians for the abstract nature of their theoretical foundations,[12] and the New Keynesians for their partial equilibrium methodology.[13] However, a few criticisms of the Neoclassical theory of price which have come from those within the school appear to be directed at certain of its shared principles, including: the impossibility of constructing market demand curves by aggregating individual demand curves without a number of highly restrictive assumptions about the behavior of individuals—in effect assuming only one individual in the economy;[14] assuming away the existence of economies of scale notwithstanding the considerable evidence pointing to their existence,[15] and; the circuitous reasoning relating to the real balance mechanism in explanations of the value of money and aggregate money price level.[16]

Naturally enough, most criticisms of the Neoclassical theory of price have come from those who see themselves as outside of this school, with the bulk of these being made in the context of criticisms of the general microeconomic foundations of the school and its macroeconomic perspectives on inflation. While some of these repeat a number of the criticisms emanating from within the school noted above, for the most part they go well beyond them. Those which have arisen as a by-product of general criticisms of Neoclassical microeconomic foundations include: conceptualizing the exchange process as one involving asocial individuals, each endowed with a bundle of commodities and possessing innate tastes (and talents); reducing the behavior of individuals engaged in the exchange process to one of mere utility maximization; failing to explain who sets price, or to recognize that prices are for the most part set by producers in a non-competitive environment; incorrectly conceptualizing the prices whose magnitudes need to be explained in

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the first instance as (perfectly) competitive, equilibrium prices; having a misguided view of the distinction between short and long run prices; seeing money as only a medium of exchange and veil, and not, say, also a store of value and having an impact on the real economy; failing to show how market supply curves can be derived from the aggregation of individual supply curves without similar artificial assumptions to those required in the construction of market demand curves; not recognizing the importance of costs in the explanation of prices, and economies of scale in the explanation of changes in costs; and, mistakenly seeing the costs which are relevant for business decision-making as marginal and subjective.[17] The criticisms of Neoclassical price theory which have emerged from general criticisms of its theory of inflation include: its failure to recognize the importance of money as a store of value and its resulting mistaken definition of money; its denial of the importance of credit and, as a consequence, its failure to see the velocity of money as necessarily unstable; and, the assumed exogeneity of money supply.[18]

While many of these criticisms have considerable merit, I am of the view that they do not really get to the heart of the problem with the Neoclassical theory of price. For me, from a Marxist perspective, this problem is the way in which Neoclassicals implicitly or explicitly conceive of how prices are formed. Certainly, a number of the above-mentioned criticisms, especially those emanating from outside of the school, touch on this problem. But, I would argue, they still fall far short of getting to grips with it.

The Real Problem with Neoclassical Price Theory

What then is wrong with the Neoclassical view of how prices are formed? Quite simply that it sees prices as formed in the first instance in a process of exchange which abstracts from, in the sense of ignoring, *production* and *money*. Neoclassicals typically refer to an economy characterized by such an exchange process as a pure exchange economy, and depict it as comprising individuals with naturally given tastes and endowments of commodities whose primary goal is to enhance (maximize) their individual satisfaction through the direct exchange of their commodities with one another.[19] Production and money, which are arguably two of the most fundamental ingredients for understanding the exchange process, have no role to play in such an economy.[20] Even when they are subsequently brought into the analysis to explain where individuals get their endowments of commodities from and why commodities have money prices, it is in an inessential manner, i.e., one which does not significantly alter the findings of the analysis which excludes them. Indeed, for most Neoclassicals, even after production and money are brought into the analysis, prices can still be fundamentally understood as if formed in a pure exchange economy.

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The problems with ignoring production

To be clear, production is missing from Neoclassical analyses of price formation in the first instance because individuals exchanging commodities are assumed to be *naturally endowed* with these. There is no indication of how these commodities come into existence let alone how individuals come to acquire them. When production is eventually brought into the picture to explain where an individual's commodity endowments come from, it is after price has been explained excluding production. This, naturally enough, means that when production is brought into the analysis it must be in a way that does not overturn the results of the analysis of price excluding it. It has to be brought into the analysis in an inessential manner. Neoclassicals do precisely this by positing producers as consumers who are motivated to produce and exchange commodities by their mutual desire for consumption satisfaction and not, say, a desire to augment their wealth. So when producers buy inputs for production, they are either implicitly or explicitly deemed to do so with a view to satisfying their final consumption needs. What Neoclassicals either wittingly or unwittingly fail to appreciate in this respect is that once it is recognized the commodities traded by individuals are produced and not naturally given, the pure exchange economy is an entirely inadequate, and fundamentally misleading, starting point for understanding economic phenomena in general and price in particular. This starting point must be one of exchange mediating an economic system in which commodities are produced and reproduced through the cooperative efforts of interlinked producers.

The failure to accord production a role in the formation of prices in the first instance, and its subsequent inclusion in the analysis of prices in such an inessential manner, causes Neoclassical economists to have a seriously distorted view of the precondition for the existence of prices, how they emerge, their purpose and nature, and the determinants of their magnitudes in the process of exchange. I will deal with each of these in turn beginning with the Neoclassical view of the precondition for the existence of prices.

While there can be no dispute that in general freely available commodities will not have a price, it does not follow that those commodities which are limited in supply necessarily have prices. What Neoclassicals are unable to see in this regard because of their initial neglect of production is that the necessary precondition for commodities to have prices is they should be produced in the context of an extensive division of labor, one where different producers specialize in the production of different commodities. It is this and not any alleged scarcity of commodities, or even differences in subjective valuations of commodities, that is the precondition for commodities to have relative worth or value in exchange. In any case, as a number of commentators have pointed out, it is price that determines scarcity and not the other way around.[21]

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Abstracting from production in the first instance, and seeing individuals as naturally endowed with commodities, also causes Neoclassicals to see prices as emerging with exchange per se rather than exchange that mediates an extensive division of labor. As soon as commodities start to be produced in the context of a division of labor, they acquire, and must acquire, worth in relation to one another, with commodities of a similar kind having a similar relative worth. The more extensive the division of labor, the more uniform will be this relative worth, i.e., the more commodities of a similar kind will have a similar relative worth. The bread baked by one baker will have a similar worth to that baked by another when there is an extensive division of labor such that there are many bakers producing bread. When the commodities produced in the context of a division of labor come to be exchanged, and the production of commodities is systematically for the purposes of exchange, commodities come to acquire a price form which reflects their relative worth. That is, their worth comes to be denominated in terms of a common standard which indicates their general exchangeability with other commodities. Certainly, exchange is antecedent to an extensive division of labor, and an extensive division of labor is not possible without widespread exchange. However, widespread exchange is not possible without an extensive division of labor, and the mere appearance of exchange does not in itself cause similar commodities which are traded at different locations and points in time to have a similar price. In fact, when exchange does not mediate a division of labor and is not recurrent and generalized, prices of similar commodities would most likely vary depending on the specific context of the particular transaction. Indeed, it is this vision of the exchange process that causes Austrians to deny the formation of standard prices for standard commodities traded, since the latter are actually seen as defined by the specific context of each and every transaction.[22]

Perhaps more fundamentally, the failure of the Neoclassical approach to accord production a primal role in price formation causes most of its adherents to misunderstand, or rather allows them to misrepresent, the purpose of price. It causes, or allows, them to see prices as facilitating the allocation of (scarce) resources so as to improve (maximize) consumer satisfaction by providing signals for decision-makers in respect of quantities of commodities demanded and supplied. It is argued that the quantity demanded will rise/fall and that supplied will fall/rise as relative prices fall/rise.[23] However, once it is recognized that exchange mediates the reproduction of commodities, and that prices are formed in this context, then it necessarily follows that the purpose of price is the reproduction of commodities—the material reproduction of the system.[24] Prices enable producers to obtain the necessary revenue to purchase the inputs they require to materially reproduce their commodities, and generally to do so on an expanded scale in surplus producing economic systems. Concomitantly, it also follows that what governs the allocation of

productive resources is the incomes of producers and, in particular, when considering capitalist commodity production, the profits of capitalists. One should add in this context that there is no reason to suppose that rising or falling relative prices will elicit a corresponding increase or decrease in production as suggested by the Neoclassical view of the purpose of prices. For example, it is entirely conceivable that a fall in prices may be accompanied by a rise in profits as economies of scale kick in, attracting more resources to the sector concerned, not less.[25]

Ignoring production in the first instance, and thereby misconstruing the purpose of price, in turn leads Neoclassicals to a mistaken view of the nature of relative price. It causes, or rather allows, them to see relative prices as reflecting the relative utility or satisfaction derived by individuals from consuming a commodity, albeit in relation to its availability. It also causes them to see the prices of inputs as reflecting either the satisfaction producers expect to derive from the consumption of the commodities produced with the inputs or the satisfaction they expect to derive from the consumption of commodities exchanged for the produced commodities. Aside from noting the absurdity of the latter, for prices of standard commodities to be seen as reflecting utility in any meaningful sense the utility derived from the consumption of a good by different individuals should be seen as comparable—it should be seen as cardinal and not ordinal. The problem is, as Austrian defenders of the faith are only too quick to point out, this contradicts the subjective nature of utility.[26] The satisfaction derived by one individual from the consumption of a commodity cannot be compared with that derived by another from the consumption of the same commodity. This means that for utility to be seen as reflecting the prices of commodities, the latter need to be seen as unique to each and every bilateral transaction as argued by Austrians. That is to say, there can be no conception of a standard price for a standard commodity.[27] Moreover, replacing utility with subjective preferences, and arguing that these are "revealed" in the process of exchange, simply turns the explanation of price into a tautology; individuals reveal their preferences in exchange therefore the exchange ratios between commodities must reflect these preferences.

Nor can prices be seen as reflecting the relative scarcity of resources, and by implication the commodities produced with these resources, particularly when it is recognized that the resources in question are for the most part actually produced inputs, and that scarcity is in any case logically not an ex ante but an ex post property of commodities in relation to price.

Needless to say, once it is recognized that prices are formed in the context of the reproduction of commodities, with the reproduction of commodities being the essential purpose of prices in market systems, then it follows that they can only be seen as reflecting the relative material costs of reproducing commodities.

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This takes us to the Neoclassical explanation of the magnitudes of relative prices. As noted above, Neoclassicals typically begin with an explanation of the magnitudes of (relative) competitive, equilibrium prices. They are not wrong to do so, but because they ignore production in the first instance they arrive at an erroneous conceptualization of these prices. To begin with, while it can be argued that a characteristic feature of capitalism is competition and, therefore, that an explanation of the determinants of prices should commence with a conceptualization of competitive prices, there is every reason to question the Neoclassical conception of these prices and, in particular, the notion of competition underlying them. For Neoclassicals a competitive environment is to be understood primarily in terms of the activities of traders in the exchange process. A "perfectly" competitive environment is deemed to be one in which there are large numbers of buyers and sellers of commodities in the process of exchange and, concomitantly, perfectly competitive prices are those formed in such a process as a result of the unfettered activities of the buyers and sellers. Producers producing a homogeneous product with homogeneous technologies and appropriating a normal rate of profit are seen as taking these trade-based competitive prices as given. That is to say, competitive prices have nothing to do with the actions of producers, except as utility maximizing traders. A non-competitive environment is then regarded as one in which there are only a few buyers or sellers and where, as a consequence, certain of the buyers or sellers influence prices, with the implication being drawn by certain Neoclassicals, viz., the New Keynesians, that where it is the sellers who influence price they are typically producers who are able to do so as a result of producing a differentiated product, using superior technologies, etc.

Once it is accepted that prices are formed in the context of the reproduction of commodities, competitive prices must of necessity be seen as formed in the context of competition between producers, a competition in which there are continuous attempts to differentiate products and therefore prices of products, adopt more efficient techniques of production, expand market share, and, in the final instance, appropriate an excess profit. What should be seen as defining an environment as a competitive one is that it gives rise to the standardization of products, techniques of production, and prices, as well as an averaging of profit rates between sectors (for those producing standard products and using standard technologies). It is a standardization and averaging that emerges in the context of diversification and divergences.

While it can similarly be argued that Neoclassicals are justified in conceiving of prices as equilibrium prices in the first instance when explaining the magnitudes of prices, as with competitive prices the problem is once again their particular conceptualization of such prices. That is to say, as long as one is assuming continuity of the capitalist system, prices must be such that there is balance between the supply of, and demand for, commodities at certain junctures, however fleeting this

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balance might be. The problem with the Neoclassical understanding of this balance, and corresponding conceptualization of equilibrium prices, is that it is located in the process of exchange. The balance between supply and demand is seen as that between buyers and sellers of commodities in a process of exchange where individuals are seen as exchanging their commodities with a view to increasing (maximizing) their satisfaction. When, however, the production of commodities is brought into the picture, and it is recognized that there is a fundamental separation of the production of commodities from their sale (a separation which is reinforced by the appearance of credit), it is unclear those prices that balance the supply of, and demand for, commodities in exchange guarantee their balanced physical reproduction. Specifically, market clearing prices, i.e., prices which balance the supply of, and demand for, commodities in the process of exchange, may be such that the majority of firms in some sectors make losses, while in other sectors they make excessive profits. This means that the equilibrium prices of Neoclassical economics are not necessarily those which would guarantee the balanced reproduction of the system, and therefore can be said to be a correct conceptualization of equilibrium prices when production is taken into account.

Leaving these conceptual problems aside, I turn now to what I consider to be the problems with the Neoclassical explanations of the magnitudes of relative competitive, equilibrium prices arising from ignoring production in the first instance. As noted earlier, the standard Neoclassical explanation of the magnitudes of prices is the relative demand for, and supply of, the specific commodities concerned. If the demand for, and supply of, commodities is seen as taking place in the context of the exchange of part or all of the given endowments of commodities by individuals seeking to maximize their consumption satisfaction, this of necessity amounts to seeing the fundamental determinants of the magnitudes of relative prices as the relative preferences and scarcities of the commodities being traded, although with the qualification that the magnitudes of the prices being explained will tend to vary according to locations and points in time. However, once it is accepted that the commodities being traded are produced, and need to be physically reproduced for the system to continue, one cannot avoid the conclusion that the prices of commodities are necessarily determined by their relative physical costs of production—by supply-side factors. Demand can only be seen as having a bearing on the magnitudes of prices of commodities over the long-run through its impact on physical costs. Demand does not give prices dimension or magnitude. Only costs can do this. Moreover, although in the spirit of Alfred Marshall demand can be argued to have a greater impact on relative price over the short run, and even then only through its impact on profit margins, it can only plausibly be argued to do so in exceptional circumstances, when existing capacity is inadequate to cope with surges in demand for specific commodities. This is because, in opposition

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to Neoclassical assumptions of full capacity utilization by firms, it is known that firms typically operate with significant levels of excess capacity, certainly in most advanced capitalist economies.[28]

It is to avoid precisely this type of conclusion in respect of the determinants of price magnitudes that most modern Neoclassicals have formally retreated from invoking supply as given by objective physical costs of production, and a number have taken the relation of demand and supply as only pertaining to the process of exchange—without any reference to production. Those who have retreated from the notion of objective costs of production see these instead as subjectively determined, viz., the satisfaction that is forgone as a result of various factor services that are provided by individuals in the process of production. An obvious problem with this is that it becomes very difficult to define precisely what is meant by subjective costs, at least in a way that is meaningful in any real-world sense of costs. A second is that seeing costs as subjectively determined does not deny that it is producer costs that fundamentally explain prices. This clearly still does considerable damage to the basic Neoclassical argument of demand and supply determining the magnitude of price. Seeing demand and supply as pertaining only to the process of exchange, and, concomitantly, costs as the satisfaction forgone from the commodity being supplied in this process of exchange (i.e., the subjective costs of all of those involved in exchange), certainly overcomes this problem but, obviously, only because it denies the physical production of commodities has any relevance in the analysis of exchange and determination of the magnitudes of prices. It is this denial, incidentally, that also causes many Neoclassicals to downplay the importance of technological changes in the processes of production when explaining relative prices, since these too point to the importance of physical costs in any such explanation.

The problems with ignoring money

I now turn to the problems besetting Neoclassical price theory stemming from its neglect of money in the formation of prices. Money is missing in the first instance because the processes of exchange in which prices are seen as being formed are conceived of as essentially non-repetitive individual *acts of barter*. In barter it is the commodities exchanged that reflect their worth to one another, with the individual utility or preferences of the contracting parties for the commodities that are exchanged being seen by Neoclassicals as the measures of their intrinsic (exchangeable) worth. When money is then brought into the analysis it is to explain how generalized exchange takes place and why prices have a money form, but, as noted above, in a manner that does not affect the basic Neoclassical understanding of the exchange process and formation of prices. Most importantly, money is introduced into the exchange process by Neoclassicals in a manner that denies the fundamental separation between sale and purchase it typically gives rise to.[29] For Neoclassicals,

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when commodities are sold for money by individuals, they allegedly have in mind the satisfaction they expect to derive from the consumption of the commodities they expect to purchase with the money, and compare it with the satisfaction they expect they would have derived from the consumption of the commodities they sold. Similarly, when commodities are bought for money, individuals are seen as having in mind the satisfaction they expect to derive from the consumption of the commodities they need to give up to get the money and comparing it with the satisfaction they expect to derive from the specific commodities they intend to purchase with the money. That is, even after the introduction of money, the exchange process is conceived of as essentially one of *barter* in which it is the utility expected to be derived from, or preferences for, commodities that governs their exchange and not money as such. Money is basically a veil.

Anecdotally, and perhaps even more bizarrely, the exchange process continues to be conceived of as effectively one of barter even when credit is introduced. "Credit transactions are in fact nothing but the exchange of present goods against future goods" (von Mises 1953: 35). When commodities are sold on credit, the individuals selling the commodities are assumed to have in mind the satisfaction they expect to derive from the consumption of the commodities they expect to purchase in the future when the debt is repaid.[30] Which means the temporal separation of sale and purchase which credit gives rise to is also denied, and credit, like money, is also conceived of as a veil.

This view of the exchange process, as essentially one of barter, causes Neoclassicals to see money as representing specific exchangeability and worth, notwithstanding the numerous Neoclassical texts which appear to formally accept money's character as general exchangeability and worth. This is because, when money is seen as mediating an exchange process in which the objective of the sale of commodities is the purchase of other commodities and not the acquisition of money, money logically represents specific exchangeability and worth. That is to say, in an exchange process where individuals are deemed to have in mind the specific usefulness of the commodities they seek to give up for, and acquire with, money, money can only be seen as a representative of specific worth (utility). It becomes the representative of the specific use-values of the commodities being exchanged for the individual concerned. One might add here, that seeing money as an asset does not change this view of money as representing specific exchangeability and worth in this process.[31]

What Neoclassicals fail to appreciate because of their abstraction from money in the first instance is that the objective of exchange in money-based exchange systems is money and not other commodities. In a money based-exchange system it is money and not commodities that measures exchangeable worth and regulates exchange. It is money as a representative of general exchangeable worth and not

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specific worth (utility) that measures the exchangeable worth of commodities and regulates their exchanges. When selling commodities for money individuals do not have in mind the relative satisfaction they expect to derive from the consumption of the commodity they seek to buy with this money, i.e., as compared with the satisfaction they could derive from the commodity (or leisure) they have to give up to acquire the money. Instead, they have in mind the acquisition of money as general exchangeability and worth that may or may not be exchanged for other commodities. For Neoclassicals it is illogical for individuals to want to hold money as general exchangeability precisely because they see the exchange process as one in which consumers are naturally endowed with commodities and seek to exchange some or all of them to enhance (maximize) their satisfaction. In such an exchange process money serves to reflect the specific subjective worth of the commodities being exchanged not their objective general exchangeability.

This distorted view of the nature of money and its emergence causes Neoclassicals to mistakenly see money's fundamental and defining function as that of medium of exchange. Money's medium of exchange function is seen as giving rise to its other functions, including its measure of exchangeable worth (numéraire) function. For Neoclassicals, whatever functions as medium of exchange is used by individuals to equate the exchangeable worth of different commodities; it is used as numéraire.[32] However, while it is fairly evident that whatever functions as medium is typically used as the measure of the worth of commodities in exchange (numéraire), it is only once commodities have prices that money can facilitate their exchange. Which means money's medium of exchange function presupposes its measure of exchange function.

Of course, once it is accepted that the exchange of commodities for money is an exchange of commodities for money as general exchangeability and worth, and that this takes place in the context of the reproduction of commodities, it necessarily follows that money's most important function is its measure of exchangeable worth function. As measure of the exchangeable worth of commodities money bestows on commodities a homogeneous form, the money price form, and regulates their exchange in accordance with the magnitudes of money these prices represent. And, at the same time as it measures the exchangeable worth of commodities, money acquires worth in relation to them. Indeed, it is the use of money as measure of exchange value and not medium of exchange that causes money to have worth. As medium of exchange money's worth is presupposed.

It goes without saying that the distorted Neoclassical view of the nature of money (as specific exchangeability and worth) and the resulting primacy attached to its function as medium in turn causes Neoclassicals to have an erroneous explanation of the exchange value of money and money price level. It causes them to see the exchange value of money as fundamentally reflecting the preferences of individuals

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to hold money for the purposes of the exchange of commodities—i.e., to see the exchange value of money as reflecting its intrinsic value of money.[33] The obvious problem here is that the preferences of individuals to hold money as medium, i.e., the intrinsic value of money, depends on its exchange value—which for Neoclassicals is the satisfaction derived from the consumption of the commodities to be purchased with money. The Austrian economist von Mises acknowledged this problem of circularity in the explanation of the exchange value of money as follows: "The marginal utility of money to any individual, i.e., the marginal utility derivable from the goods that can be obtained with the given quantity of money or that must be surrendered for the required money, presupposes a certain exchange-value of the money; so the latter cannot be derived from the former" (1953: 120). For von Mises the way out of this dilemma is to see money as having a historical worth that originates from its non-monetary uses. He argues, "The theory of the value of money as such can trace back the objective exchange-value of money only to that point where it ceases to be the value of money and becomes merely the value of a commodity" (ibid.). Which is to say, for von Mises the way out of the problem is to see money as in the final instance a commodity. Modern Austrians typically reject the solution proposed by von Mises and instead argue that a way out of the dilemma is to see the intrinsic desire of individuals to hold money balances as depending on their expectations of the future money price level. But this would only provide an escape route if it can be argued that the expected future value of money does not in any way depend on its present intrinsic worth, i.e., the desire to hold money balances at the present.

Needless to say, and as already alluded to above, once money is seen as facilitating the reproduction of commodities, and its primary function is recognized as being the measure of exchange value, no such contradiction arises. As facilitator of the reproduction of commodities, money enters the process of circulation (whether as medium, settler of debts or purchaser of financial assets) with a given value and circulates commodities with a given price.[34] As facilitator of the reproduction of commodities the value it enters circulation with must obviously reflect the productive resources which are required to reproduce a given amount of commodities over a given period of time.

This brings me to the Neoclassical explanations of the magnitude of the value of money and aggregate money price level. As with the explanation of the magnitudes of relative prices, Neoclassicals typically begin with an explanation of equilibrium magnitudes in the first instance—the equilibrium value of money and equilibrium money price level. And, as with the explanation of equilibrium relative price magnitudes, this starting point too is not in itself wrong. What is problematic is, again, how Neoclassicals explain these equilibrium magnitudes. For Neoclassicals the equilibrium magnitude of the value of money is that magnitude which balances

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the supply of, and demand for, money as a medium of exchange such that the satisfaction derived by individuals holding money is equated with that derived from holding all other assets and, at least for most Neoclassicals, the total satisfaction derived from holding all assets is maximized. The problem is that this definition of the equilibrium value of money presupposes money is held as a medium of exchange for the purposes of increasing the consumption satisfaction of individuals engaged in the exchange of products with one another. However, it should be evident that the balance of the demand for, and supply of, money as a medium of exchange which enhances (maximizes) the consumption satisfaction of all individuals will not necessarily guarantee a balanced reproduction of commodities—the material reproduction of the system. This is most obviously because in order to facilitate the balanced reproduction of commodities money necessarily functions as far more than a medium of exchange. As facilitator of the reproduction of commodities it, and tokens of it, serve also to settle debts and purchase financial assets.

From the preceding it should be apparent that the magnitude of value of money and aggregate money price level cannot be explained by the amount of money held by individuals as media of exchange because the magnitude of money's worth when functioning as media of exchange is necessarily presupposed. To put it another way, it cannot be argued that the money balances held by individuals in relation to the quantity of commodities to be circulated explains the value of money and aggregate money price level since the total amount of money held by individuals for the purposes of exchange in turn depends on the aggregate price level. In practice, Neoclassicals ignore this problem and simply equate one measure or another of the quantity of money (including tokens of it) required for the exchange of commodities (e.g., narrow or broad money stock) with some indicator of the quantity of commodities to be circulated (e.g., gross domestic product at constant prices) to "explain" the aggregate price level.[35]

A further problem of note with the Neoclassical explanation of the value of money and aggregate money price level is that it needs to assume that it is only money (and tokens of money) that buys commodities, and not also credit. There are at least two reasons for this. One is that conceiving of credit as mediating the exchange of commodities makes it even more difficult to depict the exchange of commodities as effectively regulated by the preferences of individuals for different commodities. This is because, as noted earlier, it requires one to make far-fetched assumptions about the behavior of individuals in the process of exchange. The second is that conceiving of the mediation of exchange by credit also undermines the hypothesized relation between money stock increases and the aggregate money price level. In particular, as Heterodox economists have long pointed out, it raises questions about the assumed stability of this relationship and, more problematically for Neoclassicals, the direction of causality. Once it is accepted that credit too

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facilitates the exchange of commodities there can be little justification for assuming the existence of a stable relation between money stock and the money price level, except over the very long-term and without any presumption of the causal relation implied by Neoclassicals. And, once it is accepted that money also serves to settle debt obligations in respect of the circulation of commodities, there is added reason (i.e., in addition to the fact that commodities come into exchange with given prices) to suppose that money enters circulation in accordance with the demand for it; in this case also in accordance with the demand for it to settle net debt obligations.

Analogously, most Neoclassical explanations of the magnitude of the value of money and aggregate money price level necessarily assume that money and tokens of money only buy commodities, notwithstanding the fact that the majority of Neoclassicals formally accept that money also serves to settle debts and purchase financial assets. One obvious reason for this is that it would otherwise bring into question the alleged primacy of money's function as medium of exchange, making it even more difficult to argue that the intrinsic worth of money is given by the preferences of individuals to hold it with a view to purchasing commodities. A second, perhaps even more obvious, reason is that it further undermines the assumed stability of the relation between money balances held by individuals and the value of money. Once it is recognized that money (including tokens of it) is also used to settle debts and purchase financial assets, and the extent to which it is used by individuals for these purposes varies with changes in the economic environment, then the notion of a stable relationship between the quantity of money and the money price level is further undermined.

Finally, most Neoclassicals tacitly assume that increases in the amount of money supplied by the authorities translate into proportional increases in the money balances held by individuals for the purposes of purchasing commodities and even "other assets." However, this assumption fails to take into account how money supply increases actually take place. Thus, while money injected into the system by the authorities may well be to accommodate commercial bank demand for liquidity to back expanded deposits by the public, it may also be to accommodate a demand to facilitate the rebuilding of the balance sheets of commercial bank, with little or no impact on balances held by the non-bank public. Indeed, it is precisely the latter type of money injections which have been taking place in advanced countries over the recent past.

It goes without saying, once it is recognized that money facilitates the reproduction of commodities, serving first and foremost as a measure of general worth in this context, it follows that the magnitude of the value of money, and therefore money price level, has to be seen as determined by the quantity relation of money to the productive resources required to produce a given amount of commodities over a given period of time. The quantity of money includes money (and guaranteed

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substitutes of money) which serves as means of purchase, settler of debts and purchaser of financial assets. Money has to be recognized as acquiring its value in the performance of its function as measure of the exchangeable worth of commodities, a function which simultaneously bestows money prices on commodities. Given the diversity of the functions performed by money, and changes in the proportions of money allocated to its various functions under different economic circumstances, there can be no presumption of constancy in the relation of the quantity of money and money price level at any given point in time.[36]

Concluding Remarks

The preceding has sought to show that the Neoclassical approach has a fundamentally flawed view of the determination of commodity prices because it conceives of them as being formed in the first instance in the process of exchange abstracting, in the sense of ignoring, production and money. It was argued that abstracting from production causes (allows) Neoclassicals to erroneously conceive of the relative prices of commodities as essentially determined in a process of the exchange of commodities between utility maximizing individuals who are naturally endowed with bundles of commodities. Hence, relative prices are seen as determined by the relative preferences of individuals given that the relative scarcity of the commodities are traded. And, abstracting from money causes Neoclassicals to erroneously see money prices as formed in the process of exchange, and the aggregate money price level as reflecting the amount of money injected into the system to circulate commodities at any given point in time. It was further argued that when both production and money are eventually brought into the analysis of prices by Neoclassicals it does not for the most part fundamentally alter these conclusions.

Notes

1. See, for example, Colander et al. (2009), Kirman (2009), and Reinert (2012).
2. See Gee (1991) for a short, but instructive, review of the main theoretical propositions of the Neoclassical school.
3. For excellent accounts of the origins of the Neoclassical school see Dobb (1973) and Roll (1973).
4. See, for example, Aspromourgos (1986) and Colander (2000).
5. The important sub-groupings in respect of the explanation of price I take to be the New Keynesians, Walrasians, and Austrians, with the modern incarnations of the latter two schools sometimes having the prefix "neo" applied to them. See Mankiw and Romer (1991), Kreps (1990), and Horwitz (2000) for presentations of the New Keynesian, Walrasian general equilibrium, and modern Austrian versions of Neoclassical price theory, respectively.
6. Although Neoclassical theories of price refer to commodities, it is taken as given that the same principles apply to the prices of services.

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7. Marshall, it needs noting, used the distinction to argue that prices over the short run are determined more by demand while over the long run they are determined more by costs (see Marshall 1920, Book 5, chapter 3).
8. Laidler attributes the origins of this view of money to the work of Keynes and Hicks (see Laidler 1990: 2).
9. The seminal modern Neoclassical explanation of the long-run equilibrium money price level is to be found in the work of Milton Friedman. See especially Friedman (1976, 1989).
10. The Heterodox school may be defined as essentially a collection of all those approaches to the analysis of the economy which are opposed to current mainstream Neoclassical economics.
11. See, for example, Hahn (1984) and Clower (1999).
12. See, for example, Samuelson (1964).
13. See Kreps (1990: 279–283) for a flavor of the criticism of partial equilibrium theory from within.
14. See, for example, Kirman (1989, 1992).
15. See, for example, Hahn (1984), Kreps (1990) and Clower (1999).
16. See, for example, Shand (1984).
17. Many of these criticisms are to be found in Keen (2001), Fullbrook (2004, 2008), Lee and Keen (2004), and Benicourt and Guerrien (2008), among others.
18. See, for example, Moore (1979), Palley (1991), and Wray (2003).
19. Gee (1991) notes that modern Neoclassical conceptualizations of a pure exchange economy can be traced to the writings of Francis Edgeworth and Léon Walras.
20. Dissatisfaction with the restrictive assumptions about the behavior of the individual in standard Neoclassical theory, particularly in view of the so-called Sonnenschein-Mantel-Debreu theory demonstrating the impossibility of bargaining between utility maximizing individuals leading to a unique and stable set of prices which would maximize society's welfare, has spawned in recent times a number of offshoots of the Neoclassical school which posit all manner of individual behavior. The new offshoots include so-called evolutionary game theory, and experimental and behavioral economics. However, their point of departure remains a process of exchange divorced in the first instance from production and money.
21. See, for example, Sinha (2010).
22. See, for example, Endres on Menger's view of price formation (Endres 1997: 61).
23. It needs noting that Walrasian general equilibrium theory does not see any signaling role for prices because it is assumed that prices are equilibrium prices given by some invisible hand or auctioneer which balances the quantities of commodities demanded and supplied so as to maximize overall satisfaction (see Hahn 1984: 92).
24. Emphasis is placed on the reproduction of the commodity as opposed to its production because what matters in the material reproduction of commodities is not their historic costs of production but the material resources required for their future production.
25. It is interesting to note Milton Friedman's tacit admission of the importance of incomes rather than prices per se in the allocation of resources in his landmark Neoclassical book on prices when he states, "Prices of products in relation to the costs of producing them determine the distribution of resources among industries…" (1976: 9).
26. See, for example, Stringham (2010).
27. Endres notes that for Menger "Prices at which transactions occur are formed in 'price duels' and distributed within ranges of indeterminacy so that there is no unique market clearing price" (Endres 1997: 61).
28. See, for example, Lee (1998) on this point.
29. I take money, whether commodity or paper, to be legal tender issued by the state in a modern economic system. Tokens of money are anything which replaces money in the performance of its various functions, including; medium of circulation, means of settling debts, store of exchangeable worth, and means of purchasing financial assets. Accordingly, they include drafts on notional deposits of legal tender such as commercial bank deposits. Given that the state typically guarantees these notional deposits in most advanced economies, they can be regarded as effectively money.

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And, the ability of banks to create such deposits means that money creation rests to a large extent with such banks in these economies.

30. See also Baltensperger (1989).
31. One might also add that given this view of money as specific exchangeability it is difficult to understand how Neoclassicals are able to see it as emerging historically to facilitate multilateral exchanges.
32. Money's numéraire function is sometimes referred to as its unit of account function.
33. For Neoclassicals, when money is a commodity it has two intrinsic values, one which is the satisfaction derived from the particular usefulness of the commodity which is money and the other the services it provides as medium of exchange. It is assumed that individual optimization will cause the two intrinsic values of money to be equated.
34. This is not to deny that both the value of money and the money prices of commodities can change during the course of this process of circulation, and even because of it (see below).
35. The favored formulation in Neoclassical econometric analyses is the regression of changes in contemporaneous and lagged money stock on changes in aggregate nominal gross domestic product.
36. See Nicholas (2011) for an elaboration of this point.

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