Economics Is Performed by People in a Social Environment

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> *The present treatise is an attempt to present a modern version of old doctrines with the aid of the new work, and with reference to the new problems, of our own age* (Marshall, 1890, Preface to the First Edition).

1. Introduction

This paper is intended to be in line with the hopeful message by Lars Pålsson Syll: "The Keynes-inspired building-blocks are there. But it is admittedly a long way to go before the whole construction is in place. But the sooner we are intellectually honest and ready to admit that modern neoclassical macroeconomics and its microfoundationalist programme has come to way's end – the sooner we can redirect our aspirations to more fruitful endeavours" (Syll, 2014a, p. 28). This paper is twofold: first it shares with Lars Syll the conclusion that the mainstream economics and paradigm are not only unreal but that they are not science at all and should be dismissed. Second, it aims at proposing an economically meaningful paradigm and a basic structure of the real world economic science, both at micro and macroeconomic levels. Perhaps we are at the threshold of a paradigm change in a scientific revolution for "the successive transition from one paradigm to another via revolution is the usual developmental pattern of mature science" (Kuhn, 1962, p. 12)[1].

It seems that the fundamental paradigm of economics should always be the oldest one: "none can spend more than one's earnings". Monetarist mainstream doctrine is at odds nowadays because it has always steered governments and people to do the opposite. Monetarist mainstream economics is a failure as science, but a great success in messing the economic theory to disguise its actual purpose, which is not democratically acceptable and hence cannot be openly assumed. The paper firstly stresses briefly the technical failure of the mainstream that may justify its rejection and secondly it suggests to rescuing the work of some pre-neoclassical people. This paper is an attempt to present a consistent version of an old theoretical idea with the aid of old econometrics.

The fundamental assumption of this work is that economics is a human concern; economics is performed by people in a social environment. The smallest piece of economics is a buying/selling act made by two persons in a social context. Such acts are conditioned by exogenous forces, among them the economic policy made by people empowered to do so. It looks natural that the engineering of this fundamental assumption be the old idea of the supply and demand theory, which has been stigmatised by the monetarist mainstream economics. The point of departure is at Marshall's explanation of the state of the art of his time and the statements by Keynes on aggregate supply and demand and on fiscal policy without debt.

Section 2 briefly describes step by step the construction of the monetarist mainstream economics focusing on its shortcomings to demonstrate that it may be a doctrine, a devious doctrine, but never a science submitted to the proof of the real world. Section 3 presents the human foundations of the supply and demand theory stressing that the human behaviour should not be reduced to a Homo Economicus; it is a matter of other human sciences and so an exogenous phenomenon for economics. Economics starts by observing and analysing the economic conditions and consequences of the act of buying/selling stuffs that satisfy human physiological, psychological and social needs.

Section 4 is dedicated to modelling the supply and demand theory, based on three assumptions taken from Marshall times: the one is that demand comes first, the second is that it is up to sellers to adjust supply to demand changing their bid prices and production in direction of the best expected result they feel able to obtain and the third is that

[1] Kuhn defines "paradigm" as "recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners". The paradigm of a science must adhere to reality and is the basic principle without which a science cannot be recognized as such.

production takes time, meaning that equilibrium in economics is a theoretical concern; it may be theoretically constructed, never attained. Section 5 collects some statements about the equilibrium in economics, stressing its direct implication to econometrics. Section 6 presents the estimate of the US GDP as a reduced equation of the US aggregate supply and demand model and some commentaries on the results obtained. Finally, Section 7 offers some few conclusions.

2. What is wrong with the mainstream economics[2]

It is the political power that has the legal right to print money, and the one who has the power to print money do it for one's own sake. The monetarist paradigm says that "government should not print money". It has then been up to the private or "privatised" central banks to print money. Therefore, the political power is at the central banks and private central banks decided that people should be convinced through any means that the monetarist doctrine must be the mainstream economics. Being a bank concern, the main subject of the mainstream economics might thus be money, both in quantity and price. However, monetary policy means public debt and expenditure on interests, and does not create tax receipts to pay these interests, on the contrary. Consequently, in the real world mainstream economics pushes government to systematically spend more than its receipts, acting then against the main economic paradigm: people, companies and governments cannot spend more than their earnings.

Furthermore, other facts of real life are that 1) governments are actually printing [Treasury bonds that central banks redeem with printed] money, a remunerated money that people pay to use thus reducing the aggregate demand; 2) central banks print money daily to buy Treasury bonds, for they are committed to assure 100% liquidity[3], and in so doing every working day they print new and unbacked money to pay the due interests and 3) the timing and amounts of Treasuries sales/purchases are not set by central banks; it is up to the public to make the decision on selling/buying Treasury bills. "Treasuries can be thought of as bank "saving deposits" held at the Fed, earning interest" (Nersisyan and Wray, 2010, p. 12). The mainstream paradigm has no grounds. Central banks play inflation control while actually they assure rent to idle financial capital. Mainstream economics flawed ideas applied to the real world produces a systematic expansion of, at least, public deficits, public debts, primary surpluses and money supply, thus leading the economy to chaos in a way paved by crises like the present one.

The construction of the monetarist doctrine starts in the neoclassical doctrine, both at micro and macroeconomic levels. The neoclassical paradigm is said to be optimisation, stating that consumers and producers always intend to maximise their utility and profit and that they attain such intention[4]. The mainstream model says that Paul maximises when buying pears; then no matter if Paul buys X or N or no pears he will always be said to maximise utility when eating pears. By the way, it is said that the demand curve slope is negative because buyers maximise utility. This neoclassical paradigm requires only mathematical models, dispensing with direct observation and measurement. Moreover, in the real world there is no how to test if consumers maximise utility or not; Paul maximises because it is said so and if it does not maximise then he is said to be irrational, tout court.

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[2] The following criticism to the mainstream is based on reality and on the supply and demand theory that comes next.

[3] For instance, data on daily market operations, including the information on the value of the due interests, are available at http://www.newyorkfed.org/markets/omo_transaction_data.html. Harvey (2011) uses daily data to analyse the FED's open market operations and concludes that "markets are potentially confused about the purpose of the open market operations". This conclusion also suggests that the FED's intention may be other than driving markets. Harvey, like almost everybody, makes no comments on the fact and consequences of the daily central banks emission of new and unbacked money to pay interests on the public debt.

[4] It would be inconsequent to say that buyers and sellers have some objective without proving so.

On the supply side it is said that producers maximise profit and that if demand grows then new competing producers invest in order to enter the market thus shifting the market supply curve to the right[5]. In the real world investment and competition are synonyms at the microeconomic level. However, it is a fact that actually there is no independent information neither on the maximisation nor on the competition effects. The only way to prove that companies maximise profit is to suppose that they do not compete with each other, as did Cournot (1838). The effect of optimization is neither measurable ex-ante nor identifiable ex-post when real world companies are competitive and therefore it is impossible to split these effects and prove that producers are maximising[6]. Therefore, the mainstream microeconomics is not economic science.

Additionally, neoclassical maximisation models imply an instantaneous equilibrium solution provided by the auctioneer or by the agents' rational expectations about the future. So, any value observed in the reality is told to be the right measure of the theoretical equilibrium value of all endogenous variables. Therefore, the mainstream notion of equilibrium serves no scientific purpose - the world would always be there. It remains that the neoclassical paradigm seems to be prone to "prove" that consumers, entrepreneurs and society are all happy for they have the maximum benefit attainable. The neoclassical microeconomics may be using assumptions and models carefully designed to lead to the desired result; it looks like a self-fulfilling schema, its end is at the beginning. In the neoclassical mainstream microeconomics mathematical modelling may be seen as an end in itself. On the other hand, if it is true that maximisation leads to nowhere it also happens that it makes no sense to suppose a non-maximising behaviour. Perhaps consumers and producers intend or expect to get their maximums but reality makes them accept what they actually get.

Assuming that as a rule in the real world production takes time then there is no equilibrium and consequently it becomes natural that old econometrics of neoclassical models hardly produces statistically acceptable results. The immeasurable discrepancy between actual and equilibrium values of endogenous variables is an exogenous variable whose omission leads to the autocorrelation of the residuals that plagues neoclassical old models. "Solutions" to unsuccessfully countervail the problem were and have mainly been the creation of new econometric methods based on lags, the inclusion of past values of the dependent variable as if they were exogenous variables[7], and the ad hoc inclusion of a fix-all crafty exogenous variable named "rational expectation"[8] of economic agents.

It follows that the neoclassical doctrine on supply and demand is flawed at least twice. First, by pretending that the demand curve is negatively sloped because people maximise utility. In the real world the necessary and sufficient condition for the slope of the demand curve to be negative is that buyers' income be fixed. Second, neoclassical textbooks say that there is no supply curve outside its imaginary perfect competition planet and go on to imperfect competition models until the conclusion that there is no neoclassical supply curve[9]. This implies that the neoclassical supply and demand theory either does not exist or does not fit the real world, it is a waste of time; mainstream microeconomics is not science. But this fact does not harm mainstream; on the contrary, its microeconomics is very much interesting to the monetarist paradigm dominance because it states that prices are not determined by supply and demand. This statement leaves room for the monetarist mainstream tricky argument that prices are driven by the money supply or the interest rate that central banks pretend you to believe they control.

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[5] What actually happens is that the supply curve rotates clockwise.

[6] In the famous Cournot model producers are monopolists for they have the same decision equation connecting price and production (they have the same supply curve) because all of them do the same thing, they only maximise. Cournot's proposition may be seen as strong evidence that it is not possible to use differential calculus to describe the behaviour of competing firms.

[7] An equation with lagged series of the dependent variable as explanatory variables is a difference equation requiring a different mathematical treatment.

[8] For a comprehensive view and criticism of the "rational" expectation see Syll (2014a).

[9] Actually, they pretend that there is no supply curve at all.

At the macroeconomic level the neoclassical doctrine contributes to the construction of the monetarist paradigm with three pieces. The first is the demonstration that if government and unions do not disturb then at any given wage rate the worker will maximise hers utility choosing how many hours to work, thus raising money, and how many hours to dedicate to leisure - and employers are there to allow the worker to always realise the choice done. So, everybody that intends to work is already employed; under normal conditions full employment prevails. Combining then the labour hours available with *given* productive and financial capital stocks the production obtained is said to be at the maximum level and consequently the aggregate supply curve is a vertical line at this maximum production level. In modern times the notion of full employment was replaced by the NAIRU concept, what changes nothing. Outside the monetarist mainstream world the landscape is almost opposed; unemployment and bad jobs have been widespread phenomena. Mainstream macroeconomics is not science. But once again this fact does not harm mainstream; on the contrary, its labour market theory is also very much interesting to the monetarist paradigm dominance because it may be used to state that inflation is a problem and the only problem that touches society.

The second macroeconomic neoclassical contribution to the monetarist mainstream economics is the IS curve, which is at the core of the mainstream model. The IS curve supposedly provides a connection of the interest rate with the real world thus allowing monetarists to assume that the interest rate may control inflation. Assumptions of the IS curve are just two: first the private investment level (I) is determined only by the interest rate (r) and second, private savings (S) depends exclusively upon the income as measured by the Gross Domestic Product (Y). Then one national accounting identity $I \equiv S$ is converted into a function: $I(r) = S(Y)$ and voilà the "theory" of the IS curve: $Y = f(r)$.

The IS curve is negatively sloped because it is assumed that the investment and hence the GDP levels always fall when the interest rate and thus the investment costs raise, independently of what made happen the interest rate to raise. However, an increase of the interest rate causes not only an increase of the investment costs, but also of the present production and distribution costs. The aggregate supply curve shifts thus to the left, market prices increase and GDP decreases. This means that the monetary policy of increasing the interest rate to push prices down firstly causes prices to escalate[10] and hence production and income reduce. Finally, aggregate demand shifts to the left and the price level falls. It is not the IS curve that may explain why the price level drops when the interest rate inflates but the aggregate supply and demand theory.

The third piece is the Phillips curve. Phillips' (1958, p. 284) purpose was "to see whether statistical evidence supports the hypothesis that the rate of change of money wage rates in the United Kingdom can be explained by the level of unemployment…". In fact, there is a relation between inventories and prices because sellers normally lower their bids when they observe that their individual inventories increased (Marshall, 1890, p. 290). But of course inventories do not determine market prices for these depend also on the demand side, the same applying to unemployment and market wages. Unemployment and market wages are both endogenous variables, meaning that both are determined by some exogenous variables connected to the labour market. There is yes a relation between these two endogenous variables, but anyone of them can only change after exogenous variables variations, and when any exogenous variable varies both endogenous variables unemployment and market wages vary. The statistical experiment made by Phillips allows demand for labour to change (for it is absent in the equations) and keeps cost of living under the ceteris paribus condition. So, what Phillips demonstrate is that his curve is the line of points that comes about when the supply curve (of a product, a production factor or the aggregate supply) is fixed and the respective demand curve shifts, caused for instance by the expansion of consumers' income or the fiscal policy or the credit supply or the exchange rate. Phillips did not demonstrate that unemployment causes wage inflation; he just showed how these endogenous variables

[10] Central banks economists know that (Gaiotti and Secchi, 2004), but call it a puzzle (Balke and Emery, 1994) and keep doing the same, as ever.

are related when labour demand varies for unknown reasons and labour supply remains fixed[11].

A great problem to the economic theory and to society came about when some monetarist mainstream economists saw in the Phillips curve a cause of inflation to be blamed. Mainstream economists repeated a lie: "*lower unemployment causes more inflation"* over and over again until people believed and accepted it as a scientific truth, despite the odds at estimating a Phillips curve (Dées and o., 2008; Stirati, 2010; Montoya and Döhring, 2011, to quote a few). What happens instead is that if prices are rising as a consequence of, say, the fiscal policy, then the unemployment is *simultaneously* falling; in economics none endogenous variable may be fixed while some related endogenous variables change, and both unemployment and inflation are endogenous variables that have common exogenous causes. It is not possible to increase unemployment without previously shifting aggregate supply or demand curves or both[12]; prices fall as a consequence of an aggregate demand drop or an aggregate supply expansion or both, and not directly because unemployment rose.

The Taylor rule closes the set of "basic commandments" of the monetarist mainstream economics doctrine, composed thus by 1) rational expectations, 2) the rejection of the supply and demand theory as prices and production setting, 3) the statement that price and inflation are exclusive monetary phenomena, 4) the idea of an inevitable unemployment level named NAIRU, 5) the ungrounded IS curve, 6) the mistaken interpretation of the Phillips curve and 7) the Taylor discretionary rule to define an interest rate to supposedly fight inflation but actually to charge the public debt. These assumptions "support" the DSGE model, which turns around its most important variable, the interest rate as an instrument of economic policy to be used by central banks[13]. Not coincidentally, however, the interest rate is the remuneration of financial capital.

Having no theory, mainstream economics constructs many independent "models" patchworking relations among variables based on assumptions that these relations statistically mimic reality with perfection[14]. Possibly, mainstream economics is a careful construction towards a given end; certainly, it is not science but an inconsistent doctrine. Mainstream literature talks aggregate supply and aggregate demand theory, but builds a fake AS & AD model for it is derived from the flawed IS-LM model (Hicks, 1980). The AS & AD principle is not used by mainstream economists to determine the GDP and the general prices index. Above all, mainstream economists are always concentrated indirectly on inflation and directly on the interest rate under the flawed assumption that it can tame inflation; central banks interest rate is their raison d´être. Differently of sciences that deal with people directly, mainstream economics is not concerned with men but only with money, or perhaps only with men that have lots of money.

Notwithstanding, mainstream monetarist economics doctrine created many notions which, despite being senseless or harmful, has conquered hearts and minds. Examples of such notions are "rationality" and "money causes inflation", and what seems to be the worst: "government cannot and is not printing money". These notions are either accepted or viewed with some kind of respect, carrying many researchers to appreciate the "elegancy" of the monetarist mainstream models and to assume that "monetary policy is a must". Besides such admiration, monetarist mainstream research centres elaborate and disseminate their own biased ideas about important non-mainstream theoretical contributions to economics that acquired outstanding credibility. Consequences are at least two: one is that if these contributions are not clear criticism to the mainstream economics then they are incorporated into mainstream textbooks as special cases of the

[11] Illustrating the point, Lima (1992) shows an estimate of the Phillips curve for the Brazilian cement market.

[12] An aggregate supply collapse always causes a price rise then sales and production reduction, then an unemployment rise and a wage income reduction, and hence an aggregate demand fall.

[13] Syll (2014a) provides a much more comprehensive criticism of the mainstream monetary policy models.

[14] Syll (2014b) brings a thorough critical analysis on the matter.

mainstream economics. The other is the critic, based upon the monetarist mainstream doctrine, of the dissenters' works that seriously challenge the mainstream. Properly disseminated in mainstream classrooms of economics this cocksure mainstream criticism has created prejudices among economists from all schools against each other and against old non-neoclassical work. Anyway, it seems that real economic science progress depends on non-mainstream economists to move together towards one single economic science. Wealth and income are unsatisfactorily distributed, but man and society are the same everywhere; all mankind needs is one theory, one paradigm and one economic policy.

Lavoie, (2006, p. 88) brings some hope to anti- and non-mainstream economists when he states that "Heterodox schools are subjected to the influence of two opposing forces. On the one hand, they are prone to the overall divisions which occur in the sciences and in economics in particular. Here, each school has a tendency to specialise in the study of particular questions and tries to be distinct from the others. But a counter tendency also exists which is caused, perhaps, by a situation in which minorities are in peril. Some heterodox researchers from different schools have been prompted to advocate for interactions and to take steps to bring the different schools together".

It should not be a surprise that, especially after the crisis initiated in 2007, the dissatisfaction with the mainstream economics has increased and enlarged, touching students, teachers, researchers, employers, politicians and even a Queen. If a large number of real world economists consider that the mainstream economics is not scientifically reliable, then those real world economists must arrive at a consensus on what is wrong. Neoclassical and monetarist people will never admit they are wrong.

The 5th Edition (2013) of the Heterodox Economics Directory[15] lists 87 Research Centres, Institutes, and Websites, 38 Heterodox Economics Associations, 186 Heterodox Journals, 109 courses from undergraduate to the master levels and provides other information on the matter. Heterodox efforts of these institutions towards a common theory are hardly linked through common interests. Consequences of this dispersion may be illustrated by The Proposal presented by Cambridge Students in June 2001[16]. Their main proposals are: 1) That the foundations of the mainstream approach be openly debated; and 2) That competing approaches to understanding economic phenomena be subjected to the same degree of critical debate.

These Cambridge Students' proposals are supported by some observations like for instance: "Progress towards a deeper understanding of many important aspects of economic life is being held back", which is complemented by "Economics is a social science with enormous potential for making a difference through its impact on policy debates. In its present form its effectiveness in this arena is limited by the uncritical application of mainstream methods"; and by the critical view that "Competing approaches have a little role in economics as it stands simply because they do not conform to the mainstream's view of what constitutes economics".

Main conclusions of this section are two. First, monetarist mainstream economics is not science and its paradigm "government should not print money" has no grounds on the real world; actually Treasury bonds are (remunerated) money. Therefore, yet there is no general economic theory at all. Second, the neoclassical doctrine tried to incorporate the theory of supply and demand, and naturally failed. Supply and demand theory adheres to the reality but does not fit the mainstream, then it is not sufficient to monetarist mainstream economists to despise it; they must deny it, entirely, always and everywhere. Until now it seems that the monetarist mainstream still wins for neoclassical economists apparently succeed in stigmatising Marshall's Principles and the supply and demand theory, thus giving a resistant support to the monetarist mainstream paradigm.

For more than a century many ethical economists have worked hard, but they produced a plethora of theories which are partial and have been supported mainly by

[15] http://heterodoxnews.com/hed/.
[16] Available at http://www.paecon.net/PAEtexts/Cambridge27.htm.

famous names and seldom by tests against reality. Therefore, the most important duty of ethical real world economists seems to be searching not for an alternate but for "more fruitful endeavours" towards "the" economic theory, an economic theory that assures the "progress towards a deeper understanding of many important aspects of economic life" and provides a sound "impact on policy debates".

3. Foundations of the supply and demand theory

A statement by Joan Robinson seems to be good advice in the search into the lost economic science: "In the serious sciences, original work is discovery - finding connections that were always there, waiting to be seen" (Robinson, 1965a, p. 95). So, for her the construction of a new economic theory should be based on the ever since existing reality. Accordingly, the proposal here is to go back to the real world economists ideas before the neoclassical doctrine upsurge. It seems that Adam Smith, Alfred Marshall, John Keynes, Joan Robinson and many other old times economists did not fail; what probably happened is that their ideas were biased and stigmatised by neoclassical people in order to promote the development and dominance of the monetarist doctrine.

The paradigm behind what follows is: "none can spend more than one's earnings". This is not an apology of savings but a rule of life for anybody to be not systematically indebted. Saving is an individual virtue but a social disaster (Keynes, 1936) and hence economic policy should compensate for the social loss caused by savings. This paradigm looks old and obvious, but mainstream economics always denies it forcing the government and all the people to be indebted. At the production side the paradigm must be rephrased to mean that "a company must raise more money that it spends". So, the basic duty of professional economists should be to advise companies on production investments decisions; however, the majority of the schools of economics dispensed with the project elaboration and management disciplines and are far from preparing for this or any other real world job.

Economics is a human concern, thus a social concern; it is performed by people in a social environment. Economics is moved by human personal acts that may influence other people. The smallest piece of economics, the "cell" of economics, is a buying/selling act made by two persons in a social context. Of course many important people make main autonomous decisions that influence all "non-important" people. But all human and social sciences depend on people behaving in a predictable manner so as to bring about logical consequences of their acts; economics only makes sense if people are generally consistent on their actions of buying/selling. In economics people do not need to behave in such a way that some dream like general happiness comes true – it is only expected that they are consistent over some time when performing economic acts. Human behaviour and social interactions mediated by money are also matters of psychology, sociology, politics, etc., and not only economics. Economic science searches into the economic exogenous reasons, like government expenses, exchange rate and oil prices, that may explain the consequences of social group's buying/selling acts, starting from quantities and prices of individual products and services[17]. Of course people have reasons to buy something, but these reasons cannot be reduced to just one goal that worse still would always be attained. Men are not only Homo Economicus but above all Homo Sapiens; "it is better to be vaguely right than exactly wrong".

The supply and demand theory comes from the observation of human relations with two permanent characteristics involved, money or credit and human needs. So, its origin is at the human needs, a subject that is exogenous to economics; money comes next. Human needs are a complex psychological matter, but it seems that the famous Maslow's pyramid with his "Hierarchy of Needs" offers sufficient grounds to the work on economics at the demand side. The pyramid of Maslow gives a coherent explanation to the income

[17] The Pragmatic Approach to Demand Analysis may be a consequence of the dissatisfaction of non-economists with the mainstream economics. Marketers and other market researchers interested in consumer behaviour despised the neoclassical flawed "law od demand" and formulated demand functions on the basis of market data, thus concentrating primarily on market demand.

and price elasticities variation among products, thus providing a hint on the slope of the demand curves. On the supply side the slope depends upon many material facts like capital availability and product perishability but it is always up to companies' executive staff to make decisions on their individual production and bid prices. Executives are also human and their decisions are affected by knowledge and the need of money, but also by vanity, aggressiveness, stupidity and so on. The slopes of the supply and demand curves reflect human behaviour while exogenous variables shift the curves up and down stairs.

After every exogenous shock some, many or all countless markets have their supply and demand curves moved. Next, it is the interplay of people supplying and demanding that determine the value of the basic endogenous variable price and production at the smallest level. Next step producers realize revenue and, after deducting the exogenous cost, the profit obtained defines, ceteris paribus, their demand for inputs. Combined then this demand with the respective supply of inputs it comes about the wage and employment in the labour market, the amount of credit and interest rate in the financial market, the exchange rate, the savings by people and companies, the personal and companies' wealth, the level of investment, the national economic growth, the tax revenue, etc., and social consequences on health, education, housing, retirement, and so on. If an exogenous variable variation or economic policy decision do not touch supply or demand in some, many or all markets then it has no effect on the economy. Price and production are determined at all single markets and are the root of every endogenous value that happens in the economy.

Lima (1992) describes a practical example of the model and econometric method presenting the estimation of the supply and demand curves for the cement market in Brazil. The estimates of this example are then used to show the empirical applicability of the supply and demand theory on price and production setting and beyond, for instance the inflation, the production growth, the relation between profit margin and degree of cooperation among companies, and the estimate of the Phillips curve. The thesis also presents a critical appreciation of the profit maximisation principle demonstrating that it is an insufficient and unnecessary condition for the deduction of the supply curve and that it cannot be identified in the real world; it remains a matter of belief. A short version of this critical analysis is available in Lima (2011). Additionally, a discussion on the uselessness of the notion of competition in the matter of price and production determination may be found in Lima (1995).

An essay on the theoretical connection between the micro and the macroeconomic levels of the supply and demand is offered in Lima (1997), following the statement by Keynes: "I regard the price level as a whole as being determined in precisely the same way as individual prices; that is to say, under the influence of supply and demand" (in Kahn, 1984, p. 59). For Keynes the supply and demand theory is the same both at micro and macroeconomic levels. "A key element in Keynes' theory is private investment, which is partially a function of expected profits. Accordingly, to be realized the investment depends upon the mobility of financial capital. Given that the financial capital is free to move, then the existence of a speculative reserve fund[18] implies that all productive sectors have had exactly the amount of financial capital which stems from the respective supply and demand interactions. Mobility of capital may thus be seen as the interface between the industrial productive sector and the Keynesian speculative reserve fund associated with the speculative demand for money, it relates the real and the monetary sides of economics, connecting micro and macroeconomics" (Lima, 1997, p. 15).

At the macroeconomic level the aggregate supply and demand curves may be seen as abstract notions resulting from a kind of "abstract composition" or "forest view" of all microeconomic supply and all microeconomic demand curves, on the grounds that every buyer and every seller always keep doing the same they always do, that is buying and selling stuffs to respectively satisfy needs and raise income. In reality the collective behaviour exists but it concerns medicine, anthropology, psychology, sociology and other

[18] A speculative reserve fund may be associated with the Keynes' notion of liquidity preference.

human and social sciences which bring important information to practical applications of the supply and demand theory. But from the economic perspective the collective behaviour just happens, like political decisions and natural resources availability. Given that people are consistent on their economic decisions, then real world observation and statistics of the human economic performance provide sufficient information for economists to grasp a useful theory, to make econometrics and to supply orientation on investment and policy. This can be done for a single product or service, at any level of sectorial aggregation, and at the country and union of countries levels. Supply and demand theory is not microfoundations for macroeconomics. Supply and demand theory assumes that the economy as a science starts by an exchange between two people and ends when all the economic reasons and consequences of such exchange are traced out and delivered to some people with technical recommendations. An important feature of the supply and demand theory is that it provides a basic method to deal with economics.

The economy does not begin by the economy and does not end in the economy; we are human being with human needs and the economy starts when someone has money or credit to buy something that somehow satisfies these needs. Sellers can only expect to sell if there is a buyer. If people were able to satisfy their own needs then there would be no sellers, no economy and no economics. If it is true that producers are professionals and more powerful than consumers in the market interaction, it is also true that producers cannot stop producing and that it is up to the final buyer to decide on raising, lessening or stopping her purchases. So, it is not possible to promote economic growth systematically expanding the supply curve; moreover supply depends on production costs that cannot be indefinitely reduced, and the most important cost item is the income of the worker/consumer. These arguments lead to the fundamental idea registered by Marshall that the economy is pushed by demand.

4. Modelling supply and demand theory

In Book V of his Principles Alfred Marshall describes what he denominated "the state of arts" of the supply and demand theory, going back to Adam Smith. The assumptions then applied to the matter was that 1) demand comes first, 2) it is up to sellers to adjust supply to demand through production and marketing, a mix where the price is the most important variable, and 3) production takes time. Marshall summarized statement 2 later on into a single phrase: "Production and marketing are parts of the single process of adjustment of supply to demand" (Marshall, 1919, p. 181). This set of three assumptions suggests that the basic principles of the supply and demand theory collected by Marshall from the work by some scientists were then laid, requiring therefore only the right mathematical treatment.

Marshall's explanation of how producers decide is divided in two decision making functions: 1) the price bidding function and 2) the production level start up function. Producers do not impose prices; they propose list prices and buyers decide how much to buy at prices proposed, of course after some possible bargaining. All the same producers do not impose production levels, they invest with a production level target that sometime later may succeed or not. Both price and production follow demand in the same direction; if demand grows then producers observe that their individual inventories decrease and hence they, acting in cooperation or huge competition among them, raise their own prices and production levels. Next, each producer decide whether to accept the amount sold and keep the selling prices or to change bid prices and production levels again until a satisfactory, or inevitable, solution comes about. This satisfactory solution looks like what Keynes defined as producer's expectation (Keynes, Chapter 5).

The simple contribution offered by Lima (1992) is just the engineering of the supply curve, revealing that it is a reduced equation of the decision making double functions set, the bid price function and the production start-up function. Given that companies' decisions on production and price are functions of their own demand levels (as seen through individual inventories variations) with positive sign then when demand varies it comes about a relation between production and price that has a positive sign. This

relation is the supply curve for it is the common place of the price x production points producers are looking for when, ceteris paribus the cost of production, their demand shifts upwards and downwards. Considering that all buyers and sellers are consistent on their decisions, statistics allow for the estimate of the supply and demand of each and all products and services. There is no need of a representative firm as considered by then. If Marshall had done so the history of economics could be quite different, perhaps Keynes would have been fully understood and monetarists would never existed.

Both supply and demand curves are relations between two endogenous variables, quantity and price. Their slopes depend on the behaviour of producers and consumers and it is assumed that they are consistent in deciding to raise their profits and to satisfy their needs. The supply and demand curves are shifted sideways by the exogenous variables; cost variables displace the supply curve while the demand is shifted basically by individual buyers' income, credit and the price of competitive products. The supply and demand theory is based on the human behaviour, on entire communities making decisions on bid price and production at one side and, on the other side, how much to buy at that price. Both sides are free to decide, but the values they actually take are constrained or stimulated by the exogenous variables levels.

One may imagine that first some people somehow raise money or credit and demand stuffs they need. Then each producer perceives the level of its individual demand and decides to launch some production to offer, asking some price. Next, buyers decide how much to buy depending on the price asked by sellers. Next, each seller decides to take the quantity sold as a satisfactory production level or to change his price and observe competitors actions and buyers' decisions on how much to buy at the new price. The human decision process thus started leads towards some accommodation of players when finally stable market price and production come about. But what almost certainly happens is that before such accommodation is actually observed some new exogenous variables variation creates another direction to the players' moves. Players do not complain about continuous reorientation, they keep buying and offering for they need to do so. There is no auctioneer, no invisible hand and no rational expectation; there is a process guided by human decisions that eventually yields price and production as endogenous variables.

Additionally, considering that production takes time, the effects of the exogenous variables on the endogenous variables are in general delayed; endogenous variables values in time t result from exogenous variables values distributed in time t-1, t-2, t-3... Keynes's idea on the subject was that "It is evident from the above that the level of employment at any time depends, in a sense, not merely on the existing state of expectation but on the states of expectation which have existed over a certain past period" (Keynes, p. 50).

This does not mean that time must be included as an explanatory variable because "time" is not an exogenous variable germane to economic performance. What is exogenous is not "time" itself but the dynamic process that leads producers' and consumers' decisions to their practical realization. This process obviously takes time, but it is an exogenous phenomenon in itself. This process is complex and unpredictable in essence and duration, for it depends upon data availability and quality, financial capital need, manpower, people's ability to analyse the situation, people's emotional behaviour on decision making, existing producers and consumers alternatives, ability and restrictions to change, competition or cooperation, and so on. The exogenous variable in this context is the continuous process of adjustment of producers' decision which, conditioned by consumers reaction, *would* in the long run lead to a situation that may ex post be said the best for them just because they accepted it. This is what one can do, not the one's dreams situation; it is always possible that one more creative businessman or consumer find still better situations.

This "best" or "acceptable" situation seems to match also the Marshall's normal or "natural" value, defined as the "average value which economic forces tend to bring about *in the long run*. It is the average value which economic forces would bring about if the general conditions of life were stationary for a run of time enough to enable them to work

out their full effect" (Marshall, 1890, p. 289, original italics). On the matter, Keynes stated that: "If we suppose a state of expectation to continue for a sufficient length of time for the effect on employment to have worked itself out so completely that there is, broadly speaking, no piece of employment going on which would not have taken place if the new state of expectation had always existed, the steady level of employment thus attained may be called the long period employment corresponding to that state of expectation. It follows that, although expectation may change so frequently that the actual level of employment has never had time to reach the long-period employment corresponding to the existing state of expectation, nevertheless every state of expectation has its definite corresponding level of long-period employment" (Keynes, p. 48). Robinson wrote that "The short period is here and now, with concrete stocks of means of production in existence. Incompatibilities in the situation (...) will determine what happens next. Long-period equilibrium is not at some date in the future; it is an imaginary state of affairs in which there are no incompatibilities in the existing situation, here and now" (Robinson, 1965b, p. 101). So, their idea is that actual values are short run or daily market values while equilibrium refers to natural values or long period or an imaginary state[19]; supply and demand is not an equilibrating device.

Equilibrium of supply and demand refers to one theoretical situation in which at some price quantities produced and sold would be equal during some period of time; theoretical equilibrium may happen at any level, misery included; it does not mean maximum satisfaction or maximum profit or the like. It is up to producers to adjust their bid prices and production plans to the individually perceived existing demand and costs, and in the short run they decide to change bid price and production start-up level because their profits and inventories are increasing or decreasing thus signalling a disequilibrium situation. For each company disequilibrium means opportunity to raise more money or need to cutting losses. The adjustment process restarts continuously at each relevant new information obtained by each producer about own sales, inventories and costs and competitors' strategy, leading then towards a new point of equilibrium. Hence, equilibrium values are unattainable but may be theoretically deduced from observed exogenous variables' values that touch buyers and sellers.

5. Equilibrium and econometrics

Endogenous variables' values are consequences of exogenous variables' values; except for some inventories, endogenous variables have no autonomous feedback system. For an endogenous variable's value to change at least one exogenous variable's value must have changed first. Always that some exogenous variable's value varies at least one endogenous variable's value is changed and hence its relations with all other endogenous variables. Assuming that markets do not clear instantly, short run relations among endogenous values are constantly changing because short run values of endogenous variables are disequilibrium values. Economic theory cannot explain the processes of adjustment for it is immeasurable. So, economic theory cannot explain disequilibrium values and disequilibrium relations among endogenous variables. It is only in a theoretically created equilibrium situation that economic theory can explain endogenous variables values and relations, for instance the supply curve.

This approach to equilibrium delivers an important consequence to econometrics. In the real world all observed values of endogenous variables are not equilibrium values. All the same, statistical data collected for analytical purposes carry exogenous components whose values cannot be anticipated. From a theoretical point of view this component is not an "error" but a "deviation" or a "lacuna" associated with the process of adjustment of supply to demand that would be eliminated only if exogenous variables could stop varying. Producers are assumed to be consistent in making decisions, but their targets, or expectations, depend upon the exogenous variables values that are unpredictable. Producers are supposed to notice changes in the demand for their individual products and therefore to make decisions on their constantly renewed targets; they are always chasing

[19] Could this be the reason for Keynes to say that in the long run we are all dead?

their targets. In Keynes words: "For the state of expectation is liable to constant change, a new expectation being super-imposed long before the previous change has fully worked itself out; so that the economic machine is occupied at any given time with a number of over-lapping activities, the existence of which is due to various past states of expectation" (Keynes, p. 50). Therefore, the series of present values of an endogenous variable may be expressed by an equation like:

$$Y_t(X) = a + D(L)X_t + \mu_t$$

where Y_t is the value of any endogenous variable in time t, D is a lag operator on the exogenous variables set X and μ is the error term. All endogenous variables are functions of lag distributed exogenous variables sets. Perhaps it is not coincidence that this equation is the first stage reduced equation of the old fashioned two stages ordinary least squares (2SLS) econometric method for the estimate of simultaneous equations models. So, this econometric method is suited to estimate the supply and demand curves both at the micro and macroeconomic levels. The first stage brings about the estimate of the endogenous variables reduced equations which will be transformed in "reduced theoretical equilibrium equations" through a "laboratory experiment". This experiment consists of adding up the coefficients of each significant exogenous variable in the expression above thus creating the expression:

$$Y_t^e(X) = a + (\Sigma b_i)\, X_{it}$$

where Y_t^e represents the theoretical equilibrium of any endogenous variable and b_i are the coefficients of all significant exogenous variables X_i in the set X. The reduced equilibrium equation produces then the "laboratorial" or "theoretical" "equilibrium" series of the endogenous variables which will be used to estimate the structural relations of the model. The idea is to find the equilibrium values of endogenous variable under the theoretical hypothesis that at each point in time the exogenous variables have stopped varying for a sufficient while for the process of adjustment to have "worked out their full effect". It may be expected that with some delay the line of actual values of endogenous variables will somehow follow the line of their theoretical equilibrium values keeping a lacuna that may be statistically zero or convergent or constant but never divergent. This would be a "theoretical equilibrium method". This procedure allows for the estimation of the effect of each exogenous variable under the theoretical ceteris paribus clause[20].

Econometrics of models that have at least one endogenous variable in the explanatory set and use actual data will generally be plagued with autocorrelation of the residuals[21] due to the omission of one exogenous variable: the process of adjustment of supply to demand. For the same reasoning, it is generally not recommended to define one endogenous variable by the ratio or any other mathematical operation with other endogenous variables. Accordingly, all observed values used in estimating one reduced equation must be nominal values because all deflators are endogenous variables.

6. Estimate of the US GDP reduced equation

An aggregate supply and demand model is quite large and starts by the search of the exogenous variables set that explains the basic two endogenous variables, the gross domestic product GDP and the price index, and all other endogenous variable that explains GDP and the price index directly. The purpose here is to show an example of the first stage of an aggregate supply and demand model presenting below the reduced equation for the United States GDP, which is part of the first stage of the aggregate supply and demand model for the United States in the period 1960-2007. This means that

[20] A necessary condition to talk "ceteris paribus the variable X" is the presence of the exogenous variable X in the endogenous variable reduced equations.

[21] This is a permanent problem for monetarist mainstream modellers forcing them to adopt time series analysis as if time could fill the economic performance gap they cannot explain without denying the monetarist mainstream economics doctrine.

here the GDP depends on both aggregate demand and aggregate supply for it is determined at their intersection. The aggregate demand is composed by one exogenous variable, the government expenses on consumption and investment (**FE**) and by three endogenous variables: 1) the private demand for consumption goods and services, whose explanatory variable, the disposable income, is an endogenous variable that has three explanatory exogenous variables: the personal current transfer (**TR**), the rent from the interest upon the public debt (**INT**) and the net income sent abroad (**NISA**); 2) the private investment, which is an endogenous variable explained by the endogenous variable yield which in turn is a function of the price index and the cost of production (COST), defined below; and 3) exports, whose exogenous variables are the rest of the world GDP (**YE**) and the exchange rate (**ER**), considered exogenous on the assumption that dirty floating prevails.

At the aggregate supply side the explanatory variable is only the endogenous variable cost of production (COST), defined as a function of 1) the wage (W) determined in the labour market where the only exogenous variable is the minimum wage (**MW**); 2) the cost of financial capital measured by the interest rate determined in the financial capital market where exogenous variables are the public debt (**D**) and the money stock (**M**); and 3) the exogenous variables exchange rate (ER) and the foreign price index (**PE**). Therefore, the GDP first stage reduced equation may be expressed by:

GDP = f (FE, MW, ER, D, INT, TR, M, NISA, YE, PE)

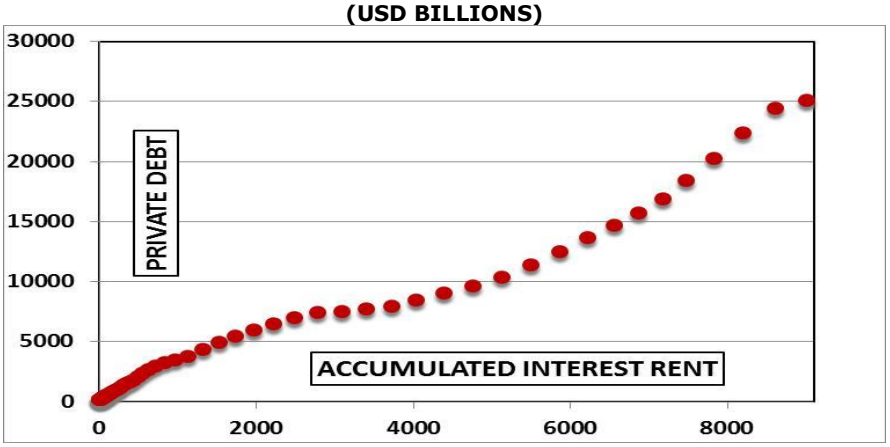
Three considerations were then made. First, TR was included in FE and second the money stock M was discarded because it composes a linear combination with the exogenous variables FE, ER and D through the exogenous money stock formula:

$$\Delta M = (FE + INT - T) + CAB - \Delta D$$

where T is the endogenous variable tax receipts and CAB is the endogenous variable current account surplus tied to the exogenous variable exchange rate ER. Given that INT is a function of D, then one of the exogenous variables in the set (FE, ER, D, M) should be discarded.

Third and more relevant, in this particular case of the US aggregate supply and demand model it was introduced the private credit (DEBTS) as measured by the balance of debts of the non-financial private sector. DEBTS is an endogenous variable, but it was introduced in the model as if it were exogenous on the assumption that a relevant part of the credit supply comes from the accumulated interest rent on the public debt. The idea is that those who collect rent from the public debt are rentiers, reach people whose propensity to consume is quite low and do not make direct investment. The major part of this rent is supposed to be added to the financial capital stock thus expanding autonomously the credit supply as the Figure nearby suggests. This idea is in line with the model by Baiman and Rothenberg (2007), which is founded on the premise that the United States is a rentier-based country while its economy is finance-driven.

PRIVATE DEBT (DEBTS) versus
PUBLIC DEBT ACCUMULATED INTEREST RENT
(USD BILLIONS)



It is then assumed that the exogenous variable public debt generates an interest rent that goes to consumption through credit, thus temporarily pushing the aggregate demand and expanding GDP. The process of defining the exogenous variables led then to:

GDP = f (FE, MW, ER, D, INT, DEBTS, NISA, YE, PE)

The exogenous variables set is composed by the rest of the world income **YE** and price **PE**, both measured in indexes, and by the four basic economic policy instruments: the fiscal policy is measured by the fiscal expenses of federal, state and county governments (**FE**); the foreign economic relations policy is represented by the exchange rate in dollars needed to buy a foreign currencies basket (**ER**), and the income sent abroad **NISA**; the income distribution policy is done by the federal minimum wage in US$ per hour (**MW**); the monetary policy effect is given by the public debt (**D**) expressed by the public hold stock of Treasury bonds, the expenditure in interest on D (**INT**) and the private credit (**DEBTS**). GDP, FE, D, DEBTS and NISA are measured in US$ billion and all values are nominal. FE is the unique exogenous variable that shifts only the aggregate demand; the others may shift both aggregate supply and aggregate demand. Therefore, the reduced equation for the US GDP is:

$$GDP_t = a + D(L)FE_t + D(L)MW_t + D(L)ER_t + D(L)D_t + D(L)INT_t + D(L)DEBTS_t + D(L)NISA_t + D(L)YE_t + D(L)PE_t + \mu_t$$

After several attempts it was observed that NISA, YE and PE were never statistically significant. Moreover, as expected INT and DEBTS are mutually exclusive in such a way that in the case of the GDP the best performance was made by DEBTS and then INT was dismissed. In the cases of other endogenous variables the opposite may happen. The estimate obtained is presented in the Gretl's report nearby.

US GDP ESTIMATE (1961 - 2007)
Dependent variable: GDP

	Coefficient	Std. error	t-statistic	Prob.	
Constant	-473,109	82,8648	-5,7094	<0,00001	***
FE_2	-1,93435	0,498011	-3,8842	0,00039	***
FE_3	4,33371	0,43523	9,9573	<0,00001	***
MW_1	339,144	45,8185	7,4019	<0,00001	***
MW_3	230,147	59,7646	3,8509	0,00043	***
ER	5,67532	2,66778	2,1274	0,03977	**
D	-0,242064	0,0724749	-3,3400	0,00185	***
DEBTS_2	0,245723	0,0394469	6,2292	<0,00001	***

Dependent var. avg.	4924,109	Dep. var. std. error	4012,693
Square residuals sum.	180279,6	Regression std. error	67,98937
R-square	0,999757	Adjusted R-square	0,999713
F(7, 39)	22884,63	F p-value	2,13e-68
Durbin-Watson	1,891513	DW table (7,39)	0,930 - 1,729

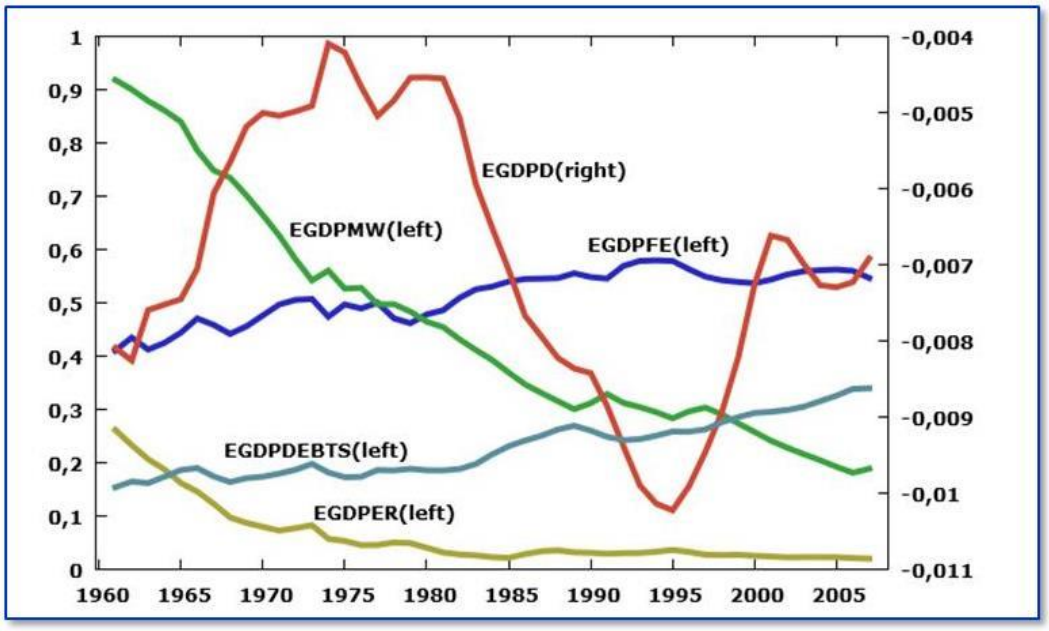
This statistical summary shows that the US GDP responds to the four basic instruments of the domestic economic policy: the fiscal policy (FE), the foreign relations policy (ER), the income distribution policy (MW) and the monetary policy, both directly through the public debt (D) with negative sign and indirectly through the credit (DEBTS) with a positive sign. It was also found that, as theoretically expected, the exchange rate ER and the minimum wage MW are more effective in displacing the aggregate demand than shifting the aggregate supply for an increase in ER or MW leads to a greater GDP. Dollar devaluation and higher minimum wage cause GDP to grow. Collecting the coefficients for each explanatory variable it comes about the theoretical equilibrium equation for the US GDP, a hypothetical situation in which the GDP would be in a theoretical state of equilibrium:

GDP^e = -473.109 + 2.39936*FE + 569.291*MW + 5.67532*ER – 0.242064*D + + 0.245723*DEBTS

The coefficient for the fiscal policy (≈2.4) in the **GDP^e** equation is the Keynesian multiplier for this sample. It means that ceteris paribus MW, ER, D and DEBTS, a fiscal expenses expansion of US$ 1 billion does not touch the aggregate supply curve and leads to an aggregate demand shift such that at the new theoretical equilibrium point the US GDP would initially be US$ 2.4 billion larger. Vice versa, a reduction of 1 US$ billion in the fiscal expenses would cause a GDP initial loss of US$ 2.4 billion. Primary surpluses cause recession and unemployment. The coefficient of each explanatory variable depends not only upon its time performance vis-à-vis the time performance of the endogenous variable; it depends also on the time performance of all other explanatory variables thus making the ceteris paribus condition unattainable in the real world. So, primary surpluses may cause *growing* recession and unemployment.

Coefficients explain the past but they are expected to change in the future. So, what can and should be done is to estimate the elasticities associated with each exogenous variable at each point of the sample period. Collecting then these elasticities one may identify the historical evolution of the relative importance of each exogenous variable in the concerted explanation of the endogenous variable past performance without the lacunae between actual and theoretical equilibrium endogenous variables values. Illustrating the point, the Figure nearby presents the time performance of the US **GDP^e** elasticities in relation to each exogenous variable. This Figure shows that the most important exogenous variable in the US GDP formation is, or at least was in that sample, the fiscal policy for the elasticity EGDPFE is always the highest one, being above 0.5 at least in the last 25 years. The second one is the credit to the private sector, whose elasticity (EGDPDEBTS) rose during almost all the sample and exceeded 0.3 in the last five years.

US GDP ELASTICITIES



On the opposite side, the GDP elasticity in relation to the monetary policy, measured by the public debt (EGDPD), as expected presents the negative sign but its effect on the GDP is near zero. This implies that the public debt, ceteris paribus DEBTS, causes a shift to the left on the aggregate supply and pushes the aggregate demand down but the combined effect on GDP was negligible. At each increase in the credit balance (DEBTS) the aggregate demand shifts upwards compensating the shift to the left of the aggregate supply in such a way that the GDP finds a new higher theoretical equilibrium level. Credit compensated the harmful effect of the public debt. However, credit cannot raise forever

for it is limited by the borrowers' capacity of paying their loans[22]. By the way, if the credit supply availability overtakes its demand then the next crisis comes sooner. Credit cannot promote GDP expansion indefinitely as the fiscal policy (FE) does. If the intention is to expand GDP in order to create jobs, then the best way is the fiscal expenses FE without debt D – a Keynesian without debt fiscal policy. The other two aggregate demand shifters, the exchange rate and the minimum wage, present a fading performance: their elasticities, respectively EGDPER and EGDPMW, felt consistently into levels below the elasticity of GDP in relation to the credit (EGDPDEBTS), mainly because DEBTS grew faster than any other exogenous variable. One observation so allowed is that the United States while transferring interest rent on the public debt to rentiers substituted interest bearing money for the cost-free money associated with fiscal policy without debt, exports and minimum wage.

This observation seems to add empirical support to Baiman & Rothenberg conclusion: "The RBFL (Rentier-Based Finance-Led) regime appears to be the latest and perhaps most destructive form of global capitalism, as it seems unstable and unsustainable in its most basic features. It appears to be, at least trending toward, a global capitalist "Ponzi scheme" that may collapse without a radical rebalancing of real wages and trade and capital flows on a global scale. This trend is clearly linked to the concentrated political power of private finance and capital" (Baiman and Rothenberg, 2007, p. 28).

The monetarist mainstream doctrine states that the interest rate is the right instrument to promote economic growth. Notwithstanding, the elasticity of the GDP in relation to the public debt is very low and negative, suggesting that the same happens to the interest rate. Moreover, a lower interest rate on the credit to producers implies a once for all shift of the aggregate supply curve to the right. This means that a lower interest rate may at best cause a once for all small increase in the GDP. In order to trigger a continuous process of a GDP sound expansion the interest rate should be reduced indefinitely even after crossing the zero line, but then it would no longer be a monetary policy but a fiscal policy.

7. Conclusions

The few empirical examples available suggest that when free from the stigma that mainstream economics imparted to it the supply and demand theory may be restored and developed as economic science for it adheres to the real world and may depict many interesting observations. For instance, in the case here presented the Keynesian fiscal policy without debt looks like the best instrument to promote economic growth, going as far as needed to eliminate unemployment. The limit of the fiscal policy is given only by the availability of resources, manpower included. Increases of the fiscal expenses expand the aggregate demand thus creating more jobs and private income and then multiplying the initial expansion. All products and services are produced with some labour, so more consumers' demand implies more labour demand and higher tax receipts. Moreover, following the supply and demand theory, the labour displays the lowest elasticity of demand for its substitution is not so easy, fast and cheap. So, it is expected that the fiscal policy expansion target to eliminate unemployment also leads the real wage to rise.

Ceteris paribus, a once for all fiscal policy expansion shifts the aggregate demand to the right thus causing the price level to move to a new higher point. But consumers also take an increased income and then move upstairs in the Maslow's pyramid, buying better products and services that are naturally dearer and before they had no sufficient money to buy. There is no reason and no room for an expansive fiscal policy beyond zero unemployment and the inflation that goes with employment creation is economically virtuous to the society. In the absence of the contemporaneous speculative financial market, at zero unemployment level everybody would be producing goods and services that the society need and buy thus remunerating very well those who really work for her. The only social group harmed by an always temporary Keynesian aggregate demand

[22] Note that it is not possible to change the credit DEBTS without a change in the debt D, hence it is not possible to talk about DEBTS (positive) effect on GDP ceteris paribus (the negative effect of) D.

pushed inflation is that of the financial capitalists. By the way, this seems to be the real reason for the central banks' mission of fighting inflation.

Marshall and Keynes thought that the supply and demand theory should be the foundation of the general economic theory. Supply and demand theory results from the contributions of many researchers; it has no creator and does not call for an adjective; it is a collective work that for a long time has been there waiting to be seen … and developed.

According to the supply and demand theory an economic crisis is associated with a lack of demand, or an excess of supply stemming for instance from an optimistic growth in investments motivated by a previous temporary expansion of the demand caused by a credit supply upsurge resulting from the eternal growth of the stock of unbacked money issued by central banks to pay interests on the public debt. Lack of demand for real world economists must be the major concern of students, researchers, teachers and schools of economics. The reason for this demand to be low may be a low quality of the services economists have been trained to supply the society, as indicated by the dissatisfaction that remains despite the non-mainstream huge efforts from the world around.

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