

Economics: the primary lesson to be taught and learned, as update

Liviu C. ANDREI

National School of Political Studies and Public Administration (NSPSPA),
Bucharest
liviucandrei@yahoo.com

Abstract. *This paper below tries rather a courageous approach to the topic of economics, as updated, than an academic formulation. Actually, there are two Parts, for two different approaches through which this “old” and uncomfortable topic for all students and learners reveals as a really dramatic character: a “champion permanently (re)playing its own title”, the one who could lose all he has and get off the scene one day.*

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The historical approach

The historical approach of *economics* will be here below significant at least in two ways. First, this science will be defined, together with its link to the *general economics*, as a component. Second, there is to list the most general issues studied by the *general economics* field.

1. Periods and specific developments and issues

The word economy gathers all *activity, science* and *policies*. In other languages than English⁽¹⁾, confusions get even higher between *economy* and *economics*. There is a *common denominator* of these, defined by *using scarce resources in order to satisfy a larger set of needs and utilities*.

In the same time, this text gets interest in *economics*, whereas this is neither describing, nor reflecting the economic activity only. Besides, there is an equal interest in *economic policies*, whereas they are not similar to materializing and experiencing the economic thinking. So, there is about both a common denominator among the most general issues of this field, but, on the other hand, these concepts stay different among each other.

The *economic history*, as activity, is enough different from the history of *economics* (Blaug, 1997) – e.g. there can be both remarked and explained that economics, as economic thinking, is more actively developing in economic crises and disturbing periods. And as for the *economics* formation, there are three essential periods (eras) to talk about: (i) the antique era, (ii) the treaties era and (iii) the economic specialties era.

1.1. The antique era: Aristotle and the value concept (since the ancient Greece's time and the late eighteenth century)

The beginning of this science might be found especially in the European cultural history – see the Greek and Latin eras. There won't be a large or detailed picture of this, but just an example. Aristotle, in his "*Politics*", has one page reflection on an economic concept, which would be taken over much later on by Karl Marx – this is the concept of *value*. There is even a shocking similarity between the expressions of the two theorists, otherwise so separated in time and in their times. As for Aristotle, the *value* was the *labour materialized in the individual good's manufacturing*⁽²⁾.

Karl Marx is much closer to our times and events that we live, than Aristotle, the way that such a thinking was easily conducting to an ideology

sustaining labour, workers and their working social class. On the contrary, despite the high respect and admiration that we keep for the antique philosopher, there is not to omit that he was a man of his times: by the way, Aristotle was considering slavery as equally *bad and necessary* for his type of society. Actually, the value concept, taken over by Karl Marx, in his capital paper, kept genuine Aristotelian roots. The antique idea of the value concept was even passing through the so-called “*Italian writers*” of the fifteenth century of *Renaissance*, up to the *value-labour* of Karl Marx and of his *Marxian* school of thinking.

The same age with Marxism (the second half of the 19th century) and opposite to this theory was the *Marginalist* school of thinking, with its *value-utility*. The first was the “extreme” socialism of all times, the latter was the opposite liberalism, and they were as contemporary as the *Marginalist* school was mentioned when the second volume of the Karl Marx’ “*Capital*” was in way.

Vis-à-vis the Marxian school (Marx, 1958) and its “labour-value” – that besides its strong Aristotelian roots, was then developing a current of thinking with “followers of a master” – let us have some more about the *Marginalist* school and its different view about value, as also differently shaped, as a school of economic thinking. Instead of a master thinker’s work inherited by followers, there were three sub-currents of the same roots in Europe of that time⁽³⁾. As for the value concept, *Marginalism* was for the value, as *scarcity* and *utility* based.

In other words, whereas for the *Marxian* view *value* was formed and located in production and on just one of its factors (exogenous) and that last as differently assessed on its location criterion inside or outside the production process⁽⁴⁾, for *Marginalists*, the same value concept was differently located, in the market space – where the production’s result meets consumption and consumer – and so, closer to the consumer’s environment. Both schools proven the same intellectual courage of approaching a difficult concept, but finally both were wrong: the one for limiting value to just one factor of production, plus considering labour as keeping (by exception) two levels of value (the one, as separately from production, the other as included in the latter’s processing); the other for leaving the same concept to the consumer reference – and this is wrong by the high level of economic irrationality that the consumer proves, as compared to the producer and production, on the other hand.

In such conditions, the 19th century ended with an *equal result* for this “match” of scientific polemics between the two schools of thinking. But the same polemics would not follow the way of archives, as other contradictions in the area. Then, the next following century was reporting this directly to the activity field. The Marxian studies helped the socialist schools and

revolutionary movements and were followed by Vladimir Ilich Lenin, the Russian Revolution of 1917 and the creation of the *alternative economic system* to the market economy. Overall, there was a success of the time: the big economic crisis of 1929-1933 did not strike this system (Rothermund, 1996), and later on, the Russian people proven interested in and succeeded to defend the same system in World War II.

This way, the alternative economic systems coexisting was a several decade reality, as two systems of allowing resources and of economic value. The western world easily hosted both analysts were accepting both systems as equally able to allow resources with the highest operative efficiency and theories like the “*two systems’ convergence*” (Calhoun, 2002)⁽⁵⁾. 1989 was, so, something which took most economic scholars by very surprise. And the effective fight between the two twentieth century economic systems seems to have been won by the “older” market economy, as against one of its most real alternatives. Older Marginalist concepts came up to their reconsidering, as the immediate result.

In another development, an idea of *alternative economic systems* (Duquesne de la Vinelle, 1989) remains still in place – the scholars admit that such a process might not necessarily imply revolutionary violence, as always needed for.

Finally, the fight around the *value* concept seems to meet one more result: *value* gets no longer present in the current manual and scholars’ view, not an easy concept to focus on today either. Not easy to predict about its scientific future, once more.

1.2. The era of economic treaties: between the late eighteenth century and the twentieth century

This was a period in which the economic thinking – the economics itself – reinforced its identity: instead of paragraphs and chapters inside other writings, it was about entire writings about economics; and these were the *treaties*. Together with treaties, their authors came up previously of economic thinking schools and currents. There were some treaties representative for the period between the late 18th century and the end of the following nineteenth century.

What *treaties* represented at their time could be explained by a biographical detail better than by any academic exposure: the first author has been the British Adam Smith⁽⁶⁾, who wrote his “*Wealth of Nations*” in 1776⁽⁷⁾, when he was 53, then died in 1790. On the one hand, this book remains as the first treaty of economics; on the other one, Adam Smith was the economist

author of a single book during his lifetime. As observed from today, this might be understood at the best through that the same author would have nothing more to say in his profession of faith at that precise time. The treaties of economics were filling the contemporary view of at list one generation of economic thinking. They were the encyclopedia of those times, and this especially for the Smith's writing, fully comprehensive for the knowledge of the time.

Whether a Smith's friend like the philosopher and also economist David Hume thought that the same treaty was a difficult book to be read⁽⁸⁾, he was wrong by that the issues herein stayed much simpler, as compared to what the economic activity and thinking had to face ever since. But for its moment in time, each treaty was a whole fully comprising picture.

Authors like David Ricardo, British as well of the next generation and with a much different biography⁽⁹⁾, Karl Marx later on, a German scholar and ideologist of the turning point of the socialist movement⁽¹⁰⁾, but previously deeply inspired by both Smith and Ricardo, then Alfred Marshall, in the second half of the 19th century, as neoclassical⁽¹¹⁾ and Marginalist representative have also written treaties of economics. And that story went for about one and a half century time.

Nevertheless, as for the same one and a half century period⁽¹²⁾, there were not just a couple of economic treaties gathering the whole economic literature of the time. On the contrary, the old insertion of economic nature reasoning in other writings was continuing, even decreasingly; plus, there were equally shorter writings building the young science, and even longer studies and books that were not treaties – e.g. the double-based *macroeconomics*, as settled in the vicinity of the first treaty by the French Jean Baptiste Say and François Quesnay. But let us have another classic example of a treaty author, like the also British Robert Thomas Malthus. He just succeeded to shock the academic world of his time, then including himself, by the still famous paper named “*Essay on Population*”⁽¹³⁾, the first ever paper foreseeing – not the imminent economic development of the forthcoming decades, as Ricardo did, but – the period of famine coming up about one century later than that. It was a real shock for a time, a world of a less substantial science and range of writings, and a scholar who – like all classics – believed in that the economy was part of the whole nature and neither of these would ever let the people down, unless their given laws would be defied by people⁽¹⁴⁾.

1.3. The era of economic specialties and topics: the twentieth century and up to present

This broadly began together with the 20th century⁽¹⁵⁾. The identity of economic thinking through writings overpasses individual paper about economics – recall that the book of Adam Smith had gathered all imaginable economic issues to approach at his time: resources and needs, market and competition, some calculations on firms' efficiency and profitability and even taxation and fiscal dimension of the State. So, now, in the early 20th century economics have got enough able to break down into autonomous components, like some of following.

First, the *scale* criterion splits up *microeconomics* – as studying the economic entities, like firms, banks, insurance companies, financial and non-financial companies, units of production and business, and even individuals – from *macroeconomics* – studying large groups of economic entities and their acting together within and forming an autonomous economic environment; actually, a macroeconomic *system* works around a distinct *market* (as for classics and neoclassic) or *flow* (as for the thinking around the Keynes' writings), as national, federal or resulted from economic integration – and *international economics* – studying the economic flow area developing across national boundaries, as another specific.

Second, the macroeconomic area would be approached by studying the specific of individual *industries*, over firms of similar activities and product resulted – sometimes called *mezzo-economics* (Kozuharov, 2011) – as for a scale economy between micro and macro entities. As for individual industries, the supply and demand, final goods, profitability, efficiency and accounting get different specifics from one another. In such a view, *industrial* activities stay different from *agriculture, transport, trade* and *services*, despite that these are not economic (autonomous) entities themselves, as the cases of firms and macro system.

Third, economics as a whole might break down into individual *specialties (topics)*, as well as *micro-, mezzo- and macro-*studies had arisen rather from a scale of economic activities. This way, *money, finance* and *accounting* could be seen as deepening the economic thinking.

The *money and banking* topic regards both the monetary economy and money functions and the banking activity, as autonomous. *Finance* is studying financial sources and their flows and functioning for real economy activities and investment in – there are, on the one hand, economic entities disposing of resources, on the other one, entities specialized in putting the same resources into value. Finally, *finance* breaks down into *private* and *public finance*, as specifics.

Accounting has another interesting story, in context. It is an economic specialty, as today admitted, but originally, meaning historically and basically, its story had started about three centuries earlier than the treaties era. Equally differently than economics, the master of accounting was the Italian Luca Pacioli, who was a kind of equivalent for a modern and today scholar in his Renaissance time and place⁽¹⁶⁾. This man was ordered by a businessman to bring order in his firm stuff. As the response, Pacioli has got the idea of accounting all assets not only as individual values, but equally complying with the criterion that each component would be considered as both existent and coming from an identified source of providing. So, accounting was going to develop on individual micro entities by considering *assets* of material and money forms, *liabilities*, versus assets, and the *owner's equity*, as a distinct asset providing source. Then, there results the so called basic accounting equation, as the *basic principle* of accounting:

$$\text{ASSETS} = \text{LIABILITIES} + \text{OWNER'S EQUITY}$$

In which, *assets* identify all that the entity disposes of, *liabilities* identifies sources attracted from thirds (more or less temporarily) and the *owner's equity* is the investment involvement of owners in their own enterprise.

Irrespective of all activities developed by and inside a firm, as an individual economic entity, this equation comes to be remade and bases the *balance sheet* at the end of each significant accounting period. Equally basing on this, each of the equation items comes to be broken down into components; the activity developing by the firm or company, from one balance sheet issued to the next one, comes to be accounted, as a parallel activity, between individual items according to other principles and rules developed ever since. Or, a whole science here arisen from the above defined *basic principle* and it deepen its knowledge and helped microeconomics and management on both theory and practice developed. On the contrary, as well, the same scientific development of accounting is also due to that the basic principle was not enough to solving all aspects, issues and problems of the same nature inside economic entities.

But what made master Bacioli (Pacioli) really immortal for this topic? There are two reasons, in our view. The one is naturally its managerial capacity induced to individual firms and other economic entities, despite that plenty of further problems to be solved might arise ever-since. The second one gets even more connected to the modern economic times that followed the Bacioli's time on the firm developing side: this is identifying and separating (splitting) the firm's assets from the owner's fortune that paved the way to the modern business partnerships, joint ventures, corporations and multinationals. At the

Luca Bacioli's time, there was only the "one man business" structure of economic entities⁽¹⁷⁾.

Another criterion of reaching economic topics was the one splitting the "purely" economic discourse from the "frontier" topics – as between economics and other topics, of different natures. There are the practice and practical needs which put pressure in such a way. On the other hand, economics is already known from above as a topic very open to other sciences, as for assimilating researching methodologies. Or, there is a scientific "frontier" of economics with goods and services' production and trading technologies – and this is called *ware knowledge*. Another frontier makes economics (and the economy) be seen and meat by decisions of all kind and level, see *management*.

Besides, there are at least two frontier topics between economics and mathematics: *statistics* and *econometrics*. The first limits to a synthesis of specific economic *indicators* that result from gathering data off a conceptual zone, and from complex formulas elaborated, as representative for the same zone – note that *statistics* is ready to fill frontier topics together with several other sciences and technical domains. *Econometrics* (Jula, 2003) work together with statistics and economics, and their work so relate to data provided by statistics and reasoning provided by economics. Econometrics is a practical topic of building models – it founds the *empirical* observation of facts, face to the fundamental research which belongs to economics and its other topics.

1.4. What about (general) economics today?

The treaties era left the stage for a long time already and treaties have been replaced by both limited economic topic areas and the *manual of economics*. Scholars still write treaties today, but mostly on these newly opened areas, and not on the economics area, that became too large in the above order. The question here raised comes to be that wheather *general economics* were still existent or it might be out, together with treaties. And, if yes, what exactly does this topic become?

Our answer is yes, economics still exist, and this for a couple of reasons. The didactical aspect here is the one, but far from being the most important. The genuine aspects keep on the scientific side, for which economics rather give up some old and improper aspects to the other topics and so "purify" its object and method substance. One of the reasons that keep economics (like general economics) alive might be the yet incapacity of the other topics to take over and control all about economics, as economic thinking, and even about *economy*, as a comprehensive system.

Another reason might be linked to its modest manual definition as "some connections between phenomena and processes of an economic nature"⁽¹⁸⁾

(Hardwick, 1992) – meaning a selective focus on issues and events of the historical and economic present. There occurs this way that the current attention stays on some topics – as for instance the business cycle, inflation, unemployment, economic growth, money stability, open economy, as well as production, costs, demand, utility, supply and welfare, the last as more stable in the generations' preoccupation, whereas issues like *value* exceeds the update focus of this topic area. It is true, once more, that this last concept both seems far from being finished as against appropriate studies on, and its future stays unclear. The economic activity bears important changes at least during a decade or so; so economics is expected to move as correspondingly.

What economics, as general economics, do become? In our opinion, once more, it is about another “frontier” topic – now, the one within the economics topic areas, in the larger sense.

Economics, versus exact sciences

What is Economics? More precisely, what is Economics, *as compared to other sciences?* The appropriate answer can be given in both the above way of general presentations, and as here below, through a direct comparison to the exact sciences. Moreover, our task might be here alleviated as much as economics proves so open to scientifically borrowing from methodologies of other sciences, all the most from the exact sciences (mathematics, physics, biology and so on).

There is even something more to mention about this kind of approach. The topics will be deepened down to the detail of individual postulates, on both sides: an *exact science*, versus *economics*. Actually, there will be structurally analyzed an individual postulate from *physics* and another one from *economics* and compared to each other for results regarding the condition of economics.

Lastly, the postulates here below analyzed are well known and simple to be described through mathematics, so accessible enough to anyone. These postulates will be:

(A) *the universal attraction law*, of *physics* (Table 1);

(B) *the quantity theory of money*, of *economics* (Table 2),

and they will be structurally arranged on two columns, so priory achieving a surprising structural similarity of this double approach, as later necessary on to the expected differences to be made throughout the end of analysis.

A. Physics: the *universal attraction (gravity) law*

So, let us see Table 1, below.

Table 1

Physics

Order	Chapter	Explanations
1	Title	the universal attraction law
2	Author(s)	Isaac Newton
3	Enunciation	<i>Any corps in space (the attracted) is attracted by another corps (the attractor), as proportionally with its (the attracted's) individual mass.</i>
4	mathematical explaining	$G(m) = mg$ in which: G = attraction force exerted by the attractor on the attracted corps (gravity force); m = mass of the attracted corps; g = gravity acceleration, as component of the gravity force.
5	Perequisites and restrictions	(1) This is for non microscopical (under-atomic) masses of both (attractor and attracted) corps; (2) But also for the important differences between the two corps' masses – the attractor is much heavier than the attracted. (...)

As for final details, more descriptions and comments:

- This is a universally accepted physical law, laboratory and experimentally proven.
- So, all of the above entitle it with a place in the universal scientific inventory of postulates.
- Mathematically, this law reaches the simplest formula: a linear function without free coefficient, of $y(x) = ax$ type.
- Moreover, mathematically as well, there can be accepted that the right hand side of the equality contains m , as belonging to the *attracted* and exogenous of the function of gravity, and g , as belonging to the *attractor*, and so the coefficient of the linear equation.

B. Economics: the *quantity theory of money*

In the same way, see Table 2 below.

Table 2

Economics

Order	Chapter	Explanations
1	Title	the quantity theory of money
2	Author(s)	(...), Alfred Marshall, Irving Fisher, Albert Aftalion, J.M. Keynes, Don Patinkin(...) ⁽¹⁹⁾
3	Enunciation	<i>The price level is directly dependent on the money issued (money supply) in the economy.</i>
4	Mathematical explaining	$MV = PT$ or $P(M) = M \times V/T$ in which: M = the money issued (money supply); V = velocity of money; P = price level, as general; T = volume of transactions closed and operational.
5	Prerequisites & restrictions	Brought in by diverse approach developments (see below in the text).

As for final details, more descriptions and comments, there is a little more to develop:

I. This is not a real postulate, but a *theory* – this is one of the greatest and highly important theories in economics, but it remains just a theory. A theory is not a discovery or finding, in the exact science proper sense – whereas the other above described postulate is an essential discovery of all physics and of all times. And that is because there are rather no discoveries in economics, except for very concrete and casual circumstances – not for general judgments.

On the other hand, theories are not to be disgraced. Important scientific issues, as operative in astronomy, like the “black holes” or “big-bang” are just theories either; the Charles Darwin’s “evolutionism”, versus “creationism”, on a religious base, in biology, are both theories as well. And this is while a science like astronomy is half formed by theories and the rest by postulates and discoveries. Not even physics, that is here above involved in this approach and its postulates’ substance would never be denied, on the contrary it is typical and representative, misses its theories’ part of the issue⁽²⁰⁾. At the other end of the field, economics is the typical case of a science mostly built on theories. Several circumstances *cause this*, among which:

- Missing specific measure units, laboratory and experiment;
- A different perception of the time and much more changes during shorter periods;
- Larger numbers of exogenous for the economic environment etc.

But more important than causes, on the one hand, are the *consequences* of this, on the other one:

- Theories – instead of postulates – imply debates with *supporters* and *adversaries*, so the role of different schools of thinking comes up as essential.
- Then, the *unique scientific truth*, as a basic criterion qualifying each science domain, is here settled in a more complicate way;
- Even mathematics, here involved, shifts its condition, as from the exact sciences.

The debate on these above will continue, plus other conclusions will be drawn below. Here, there remains to conclude just that, unlike the above described postulate of physics, this one of economics stays far from the universal scientific inventory – its story does not end here, but, on the contrary, it just begins.

II. But this story won’t be told here, in historical details. What is preferred is just figuring out what such a scientific issue encounters on the ground. Let us

have both expressions in Table 2 on the quantitative theory's mathematical model:

(a) the *implicit* form:

$$MV = PT$$

(b) the *explicit* form:

$$P(M) = M \times V/T$$

the one in which the endogenous (general price level /P) and exogenous (money supply/M) get identified, distinguished and split from each other.

(1) First, there is to reconsider the left hand side of the implicit form, as for a *financially developed economy*, e.g. in which *money* extends from their initial and primitive *effective* state to: *accounts*, diverse kinds and time *bank deposits*, *cards*, *bonds* and *securities* and so on – they will be differently functioning on each of these and they require to be considered as such:

$$M1V1 + M2V2 + M3V3 + \dots = PT$$

meaning individually, with individually shaped velocities. Here to be mentioned that there is accepted a classification of the M1,2,3,... components of the total M, in economics and banking practice, different than this above.

(2) Then, there is a similar development on the right hand side of the same implicit form – this is for individualizing the industries' price and transaction contributions to the real economy and corresponding money behaviour:

$$MV = P1T1 + P2T2 + P3T3 + \dots + PnTn$$

in which PiTi corresponds to each individual industry. This is called the Fisher's variant of the theory (Fisher, 1911).

Or, let us just stop here for reflecting about what is happening on both the above (a) and (b) developments of the equation, in economics, as compared to the above Newton's postulate, in physics, which remains a single unchanged mathematic expression forever. The question raised is that: Is economics, as a science, entitled to work on and change its initial formulas? In other words, which of these formulas gets true, from now on?

One of the answers to these questions might consists in the same specific difference of economics, as compared to the exact sciences: physics is nature and this is unchanged, whereas economics is reflecting economy, and this is changing data and landscape step by step, decade by decade, in its development. The previous mathematic and economic formulas get just primary, preliminary and obsolete in time. So, the scientific perception of the economy is supposed to adapt to such a reality.

On the contrary, only a theory proving such an adaptive capacity is a "great" one – there are not "great discoveries" in economies, but theories are

“great” just this way of remaking formulas and reconsidering more and more specific exogenous⁽²¹⁾. On the contrary once more, besides a theory like this one, there are also other less substantial theories leaving the economic science and thinking, once some specific conditions are out – see the example of the old “*Gresham Law*”. This is referring to money, as well as the quantity theory, and expresses like: *the “bad” money kicks the “good” money off the market* (Mundell, 1998).

Or, this last enunciation broadly limits, in its popular perception, to an economic and financial environment in which the gold money came (sometimes) to be replaced by silver currencies on market.

Actually, this was a quite complex process and this theory skips several deep aspects and catches just some appearances or the economic life of the 18th and 19th centuries. This rule is referred to *bimetallism*, that preceded the historical monetary system of the *gold standard*. It was the *gold standard* to talk about between the 19th and 20th centuries, and no any “silver” standard of the market values, except for some markets in the East Asia before 1800 – the Euro-American world was preferring gold, instead. *Silver* as value-standard had been just for the European Middle Ages. In the modern era, it became a basic value to be exchanged on the market, as in the money position, just under the *gold control* of the same money and value and just as replacing and extending the gold reference, which was getting increasingly scarce, as effectively, face to an extending trade and production development. In such a development, the gold presence was apparently weakening on the market, whereas its value reference was just staying. Moreover, this way the gold value was continuing to rise, whereas silver was getting exposed to devaluation. Vis-à-vis, the *international gold standard* was still alive in the early twentieth century and the gold value rises ever since. Even the bankruptcy of the gold standard did not stop the gold value increasing on all markets. And all these above are for equally make a complex issue even of such a simple theory – finally, which one (gold or silver) would be the “good” and the “bad” money, as time as once silver could take advantage just of bimetallism to remake its market position, and in another time gold came back to become the real “master” of the money-market? Actually, today scholars argue that this very specific monetary system that bimetallism was once ruled as a primitive substitute for the later modern world of monetary and financial systems with commercial banks and banking systems, with bonds and other valuable papers and stock exchanges. Plus, bimetallism made easier the coexistence between low and high individual prices, as requiring diverse money units on market, as correspondingly (also see Macleod, 1858, and Redish, 2000 for more details).

This above description is for giving alternative examples among different theories of economics – the *economic reality* is the threat, the obstacle to be passed over or the test to be attended by theories; but this is not the lonely one. See also some other aspects below.

(3) Let us take a new quantitative theory development aspect from another stand point and on the explicit form of the equation, this time. A quite delicate mathematical aspects comes up when the repeated from above expression:

$$P(M) = Mx (V/T)$$

realizes that not only M and P here are exposed to variation, but also the V and T numbers, in the effective economy. Or, what kind of mathematics would be this?

The developments on this aspect meet two kinds of answers. The first one – according to some of the adepts of the quantitative theory – is that the (V/T) report would be, in reality, a constant value (k), as of principle – both numerator and denominator of this vary together at the same. This opinion goes further on producing practical effects: the k coefficient⁽²²⁾ gets different values for more and less financially developed economic systems – when k is high, the financial system is less developed, and the contrary for lower k and its corresponding high developed financial system. Actually, k represents a portion of nominal income (PY) and a certain portion of the money supply that will not be used for transactions; instead, it will be held for the convenience and security of having cash on hand.

Despite this operative quality, this position stays under the same mathematical “handicap”: even so, the above mathematical formula, as explicit relation between the exogenous and endogenous, is not allowed to include other relations, among other variables, as there is the case of V and T. The k coefficient apparently plays for the quantitative theory and here brings in a new practical dimension of it – that is the one of remaking a monetary-financial criterion difference between macro-systems –, but that paying the unacceptable price of undermining the mathematical basics of the same theory. Moreover, k here corresponds in exact sciences just to an unauthorized disease cure or mass production technical formula.

Here, there comes the other approach answer to the question raised – and it belongs to John Maynard Keynes, in one of his early papers, when he was still considered one of the classic liberal economic scholars. His approach fought the mathematical retorts to the above considered k coefficient in a more proper mathematical context: the V/T report will no longer be considered constant, but there will be here to search for the economic conditions (restrictions) of constant numerator and denominator concomitantly. So, when, exactly, V and T will be constant values together? And the answer was not too complicated, as in this new context. As for V , the money velocity, this is variable on longer time only and constant on short periods (Wennerlind, 2005).

As for the denominator, there was a modification to be operated on. The volume of transactions T equalizes *production* (Q), national product and *national income* (Y), at the macro scale. Or, *production* here comes to be considered on the same short periods of the money velocity. When production gets constant on the short time? The answer turns to the variable production factors – here *labour* and *variable capital* (raw materials and natural resources). As for the macro scale, *labour* gets exhausted on the short time – see the *full*

employment state of the economy –, whereas raw materials and natural resources do the same on rather longer times. Shortly, the J.M. Keynes' finding contribution to the *quantity theory of money* was for limiting the basic enunciation of this to $M \rightarrow P$ only: (i) on *short periods* and (ii) in the *full employment* conditions. Alternatively, the rising money supply might go into production rising – see the *credit-investment-production* macroeconomic flow, as for putting in value the disposable production factors.

Even in his early and liberal stage of thinking, Keynes was basing the later coming *inflation-unemployment* relation and *economic growth* theories, belonging to his school of thinking, which, in its turn, was coming to be non-liberal.

The *quantity theory of money*, on its side, was following the same way of developments. Don Patinkin (1954) came to introduce more variables into the same function, but the conclusions also enlarged through less and less M , as exogenous, and P , as endogenous.

III. There might be much to describe about all these, but our description stops here for having achieved its goal of building an idea about the condition of any individual economic theory.

First, let us deepen the condition of *mathematics*, as for economic theories. We saw above that:

- (i) Mathematic developments are not demonstrating things, but stop to explaining and reports;
- (ii) So, they are always subordinated to theories, the way that the debate in economics is priority on the theories' enunciation;
- (iii) And the mathematical debate comes only among adepts of the same theory;
- (iv) Mathematics see themselves "humiliated" sometimes – the economic theory steps forward and progresses even by breaking elementary mathematical rules.

And here there might be also included a secondary aspect in which numbers considered in the mathematical model are not always materialized by statistics – see the price level (P), as aggregate, and the velocity (V), resented in practice for its temporary variations only. So, the theory, by its mathematical model, finds itself once more unable of the reality control.

Second, let us have the final conclusions about the *economic theories* themselves. We already saw above that economic theories encounter the economic reality. Besides, they are aimed to equally fight each other, despite that they are not always made for such a reason. In our case, the quantitative theory has proven itself substantial enough, whereas sharing the topic with other theories in the area, as *non-quantitative* or *qualitative* for money – see *psychological* theories of money etc. There is to imagine that adepts of these

latter positions would not be supposed to debate with the adepts of the quantitative theory on mathematical models of the above described kind, on the one hand. On the other one, these supporters are not necessarily contradicting each other as naturally or structurally.

Plus, we saw above that a theory advances even by breaking mathematical rules. Here, the context might be enlarged by noticing that theories step forward even by threatening their own previous enunciations and mathematical models.

What a theory does through including one more development in the area? It progresses, adapts to newly given conditions and strengthens itself. But, what a theory – more precisely, the new theorist, as personally – just had done previously than this? Here, the answer is: he or she has reconsidered the debate and so put the same theory in question and so in danger⁽²³⁾. The ones of theories have resisted, as successfully and successively to such series of assaults; they provided new answers to questions raised and those researchers became new followers, supporters and adepts. Other theories have not succeeded to encounter such a danger. Here recall the “Gresham’s theory”, which stayed in its history of the *gold-silver* money alternative. There has been concluded that the higher the adaptive capacity and the more numerous the adepts, the greater the theory.

One more concluding remark

In a word, *economics* is not an exact science, with spectacular discoveries and findings in presumable labs, but their condition is the one of a continuous fight(er), by individual postulates and ideas. We here above had science examples just by their piece-postulates and theories (some of them raising, some, on the contrary), but the idea of economics losing its whole battle, on all its theories on the field, for once in future, is never excluded, as theoretically, unless refreshed or replacing content.

Notes

- (1) See Latin or Slavish languages, in the European area.
- (2) See the major paper of Aristotle called “Politica”, comprising eight books that are suspected to have been written all along the philosopher’s lifetime. It was translated into Romanian by El. Bezdechi and published in 1924 by the “Cultura Nationala” publisher at that time.
- (3) See the German-Austrian school, represented by Wieser and Bohm-Bowerk, the Swiss one, with Léon Walras and Vilfredo Pareto, and the British one, represented by William Stanley Jevons Alfred Marshall (Hardwick et al., 1992).
- (4) That is criticized by Bran (1995) as a common sense defy against the “entropy law” of physics: *corps keep the same dimension whatever the reference system of assessment.*

- (5) Names like Raymond Aron, John Kenneth Galbraith and Jan Tinbergen were associated to such ideas in 1950's and 1960's. Shortly, it was argued that technologically advanced societies would be able to overpass those social details by reaching both a mixed type economy and a meritocratic social management, as required. Calhoun (2002) writes that studies on this issue go on, despite the post-communist economic emergency in the last decade of the 20th century (p. 93).
- (6) A professor of moral and philosophy, as previously, then turning into an economist and the first ever author of a treaty of economics.
- (7) The first publishing (1776) was in London: Methuen & Co., Ltd.
- (8) The Hume's biographers remark that he died the year of the treaty's publishing and in the presence of his friend that was Adam Smith. The last also published a letter occasioned by this event and actually the two scholars equally had much in common on moral, philosophy and politics issues. Hume was also less known by his economics writings than as a representative philosopher of his time (The Concise Encyclopedia of Economics/Online).
- (9) A very young (from 12 years old on) business man and autodidact turning into a great classic of economics when aging and leaving business for studying and writing.
- (10) That from the earlier and so called "utopist socialism".
- (11) Note that all the other generation representatives after Smith, Ricardo or W. Petty called themselves "neoclassic" the way that there are good several generations of neoclassic to talk about today.
- (12) And except for currents and schools of thinking that won't be here approached.
- (13) The book was also translated into Romanian in 1992 by Victor Vasiloiu and Elena Angelescu and published by "Editura Stiintifica" (Malthus, 1992).
- (14) As an interesting biographical detail, that editorial event shock "absorbed" even the author, that saw himself committed to "fix some" about it and then wrote and published a larger book named: "New principles of economics". Nevertheless, the last "New principles..." saw much less impact on readers than the previous "Essay..."
- (15) Together with scientific and technical conquests like filming-cinema, radio broadcasting and aircraft flying (The Concise Encyclopedia of Economics/ Online).
- (16) Luca Bartolomes Pacioli/Bacioli, called "frater", as a religious man, was born about 1445 at Borgo San Sepulcro, in Tuscany. He acquired an amazing knowledge of diverse technical subjects, as religion, business, military science, mathematics, medicine, art, music, law and language during his lifetime. He believed (with his time) in the interrelatedness of these widely varying disciplines and in the special importance of those, such as mathematics and accounting, which exhibit harmony and balance. His friend Leonardo da Vinci helped prepare the drawings for Pacioli's 1497 work, "*Divina Proportione*"; in turn, Pacioli is reputed to have calculated for da Vinci the quantity of bronze needed for the artist's huge statue of *Duke Lodovico Sforza* of Milan (Canham Rogers/Chartered Accountants-Management Consultants/Online).
- (17) Pacioli denied being a founder of the "double entry system" (Canham Rogers/Chartered Accountants-Management Consultants/Online).
- (18) Let us equally mention that, as related to the given comprehensive definition of economics, as *using a lower amount of resources to satisfy a larger utility area*, each economic specialty born in the 20th century has got its own distinct and restricted definition.
- (19) The full explanation about such a long series of authors is expected below. Just notice that this paper's aiming is different than the one of describing the quantitative theory.
- (20) There is to be here mention the polemics between the Albert Einstein's "theory of relativity" and the "quantum mechanics" lastly represented today by Steven Hawkins.
- (21) And I will come back to this idea below, near the end of this paper.

- ⁽²²⁾ As associated to the “Cambridge School”, with names like Alfred Marshall, A.C. Pigou, and even John Maynard Keynes, in the last’s earlier career.
- ⁽²³⁾ So, finally, the long series of authors, as adept or contributor to this and that theories, especially for big theories’ cases, gets now really explained.

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