

## Financial-Economic Crises: their Causes and Remedies

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### Abstract

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This paper reveals and discusses two crucial causes of the continuing deep economic-financial crisis: (1) Dissonance between economic theory (models) and Reality, including the following: (a) Inadequacy of the Modern Microeconomics; (b) Irrelevance of the Modern Macroeconomics; (c) Flaws of the modern monetary theory; and (d) Separation between real (productive) and financial sectors; and (2) Economic Education. To defeat the economic-financial crisis, the paper suggests the following: (1) The microeconomic theory has to be reformulated on the basis of classical and neo classical theory, accordingly to today's real economy. (2) The macroeconomic theory has to be renewed, also on the basis of classical and neo classical theory, taking into account the changes in today's real economics. (3) Textbooks of microeconomics and macroeconomics have to be rewritten, consequently reformulating micro theory and renewing macro theory.

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**Keywords:** Economic-Financial Crisis, Dissonance, Microeconomics, Macroeconomic, Economic Education

### 1. Dissonance between Economic Theory (Models) and Reality

The classics (Smith, Ricardo, and Marx), and Walras, stated that theory has to be as close to economic reality as possible. So, the *relationship between theory and reality has to serve as the criterion as to whether there is progress in economic science.*

The classical thinkers (Smith, Ricardo, and Marx) have, in general, given us a descriptive theory of economics.

Their theory, especially Smith's, not only described the current economic life of their time very closely but also related to coming events.

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Yet, their descriptive theories are based on solid philosophical and mathematical (logical) backgrounds. For example, Smith's descriptive theory of general equilibrium might be considered as a predecessor to Walras's formalized (mathematical) theory (Davar, 1994, pp.28-37).

Walras was the first who used mathematics to describe the interdependence between various parts of whole economy (Walras, 1954). His use of mathematics is both effective and impressive, and is based on the latest achievements of his time while trying to explore a new direction. For example, Walras's mathematical model for the economy of the individual (micro model) is a significant achievement, and it is the best model to this day. Also, Walras's unique method of equilibrium establishment for the macro model, namely, the iterative process – *tâtonnement*, allowed him to transform the disequilibrium state into the equilibrium state; and by means of that, the problem of solving the equation system where the number of unknowns is larger than the number of independent equations was overcome. And this entire well over a century ago!

It is clear that today's real economics is characterized by much higher technology and more complicated reciprocal relationships between individuals, production sectors, financial and public institutions, and international trades, which has increased the stochastic character of economic events. The role of mathematics today is much more significant than in Walras's time. Only by means of mathematics is it possible to describe modern economics and to plan and forecast its future (Davar, 2013b).

Therefore, formalized (mathematical) theory for the contemporary economy should, accordingly, be much more sophisticated than the mathematical theory of economics of the last century, where conditions dictate that it has to be compatible to economic theory. Hence, it is not accidental that modern authors have tried to persuade us that current economics "became" mathematical science (Debreu; Weintraub, 2002). Supposedly, these claims are based on the well-known law of the dialectics, whereby quantitative changes become qualitative changes. For this to happen, these works must research economic problems, which, unfortunately, is not the case (Davar, 1994 and 2011).

In practice, unfortunately, the opposite is true. Namely, today's mathematical economics is very "technical" and it is far from able to expound on economic problems. Actually, assumptions of contemporary mathematical models make them irrelevant to the practical recommendations. Moreover, sometimes these assumptions are "forgotten", and they are generalized as if those assumptions had not been assumed.

It is clear that theory cannot replicate the real world. Hence, there will always be some assumptions, due to simplification, which bring about a theory that exists in a relevant real-world conceptual framework. Walras's economic theory, despite some of its assumptions (free competition, uniformity of prices for commodities and factors, fixed coefficients of production, and so on), was relevant in his time. Hence, his economic theory was characterized by a genuine linkage between micro (individual) economics and macro (whole) economics, the positiveness of all prices, unemployment (voluntary) of service and so on (Davar, 2002 and 2014b). At the same time, Walras indicated that imperfect competition (e.g., monopoly), price and wage discrimination, international trade and an increased public sector also characterized the modern real world.

Instead of gradually updating the Walrasian assumptions and extending his theory by introducing mixed (free and imperfect) competition, price discrimination (Davar, 1994) and international trade and taxation, modern economic (general equilibrium) theory has retained almost all of Walras's assumptions (Davar, 2013b). Also, it has introduced an additional assumption, the so-called non-classical free goods conception (different from the classical version of free goods conception). This conception means that *when there is an excess supply of a commodity (factor), its price equals zero*. In other words, in equilibrium, if a certain factor is not fully employed, then its price is zero (Arrow, K. J.; Arrow, K. J. and F. Hahn). For example, if unemployment exists, then wages should equal zero (Arrow, K. J. and D. Starrett). But in this case, such a theory contradicts reality. Moreover, the proof of the existence of an equilibrium state is considered the main achievement of modern GET (Weintraub, 1985). But if we take into account the above conception (rule) of free goods, and then we must conclude that this achievement is not useful. Also, modern scholars have been stating that the above-mentioned contradiction between theory and reality is inherited from the Classics and Walras. But this statement has no real basis.

Finally, crucial economic issues such as capital formation, savings, investment, circulation of capital, land, money and interest rate are not discussed in modern general equilibrium theory. If they are discussed it is artificially and mechanically, i.e., they are not integrated in the theory.

To illustrate the inadequacy of the modern mathematical models of economics in reality, let us to consider some leading and prevalent economic concepts from both macroeconomics and microeconomics.

### 1.1 Inadequacy of Modern Microeconomics

There is common agreement among economists over microeconomics issues, according to which modern microeconomics theory, as distinguished from macroeconomics theory, has been compatible with reality; on the other hand, there are economists who state that 'We have concluded that microeconomics does not provide knowledge that could not be obtained otherwise and that, as it is usually taught (or presented in textbooks), it encourages an erroneous way of thinking' and 'In a word, to understand the real world, one has to forget microeconomics' (Benicourt and Guerrien, p.317 and p. 322 respectively). However, the theory of microeconomics theory was not developed especially from the point of view of money.

The economy of individuals is essential in Walras's general equilibrium theory. The process of equilibrium establishment is started by the solution of a mathematical model for each individual allowing him/her to obtain the demand and supply for goods and services (including money). The model of individuals' economy illustrates Walras's *evolutionary approach* (Davar, 2014b). Unfortunately, when Walras's approach is discussed in the post-Walrasian literature, the model of individuals' economy is presented either through the exchange economy (in general), or through the production economy (Pareto, Hicks, Arrow & Hahn, Dorfman & et. al; Mas-Colell and et; Weintraub, 1985; and so on). Moreover, this representation of Walras's model differs from his original model and is incomplete; in its simplified form, it is generally described only as a demander. The offer side is externally given as total monetary income (or wealth), when it is assumed that it should be wholly used. Furthermore, if money is integrated, then it is done very artificially, namely, the money commodity is absent as a separate category, which is replaced by money income (Arrow-Hahn, Patinkin, Kiyotaki and Wright, Magill and Quinzii).

In addition, the offer of money for circulation to the sectors of production is not considered, let alone well-thought-out in the overall theoretical context. Yet, according to the models, the demand and supply of commodities are not directly obtained; they might be indirectly determined by the relationship between the final endowment and the available initial endowment. But, *this prevents us from discussing problems of employment-unemployment in the modern general equilibrium theory (vide infra)*.

So, unfortunately, since Walras's time, microeconomics theory has not developed from the point of view of money theory and has insignificantly developed from the point of view of demand theory. Microeconomic models are generally confined by the Exchange and sometimes Production Economies, and if money is integrated, then it is done superficially. In these models, demand and supply of commodities might be indirectly determined by the relationship between the final endowment and the available initial endowment, but this is not done.

Let us to elucidate our above mentioned argumentation using the well-known and sole paper of Clower (1967) 'A Reconsideration of the Microfoundations of Monetary Theory'. Here Clower has identified post-Walras theory of money with Walras's theory, such that if the modern theory is either relevant or irrelevant then the same is true for Walras's theory (Clower, p.81). However, fortunately, this statement of Clower and other authors is generally mistaken (*vide infra*). This is a clear example how the modern authors' blaming Walras's theory due to irrelevant theories by other modern economists.

Clower, first, discusses the micro model of the modern authors:

By hypothesis, market excess demands are defined in terms of individual demand functions for goods and money obtained as solutions to the decision problem:

$$\text{Maximize } U_j(d_{1j}, \dots, d_{nj}, M_j/P) \quad (1)$$

$$\text{Subject to } \sum_{i=1}^{i=n} p_i(d_{ij} - s_{ij}) + M_j - \underline{M}_j = 0, \quad (2)$$

Where  $U_j$  satisfies familiar continuity and curvature conditions,  $s_{ij}$  and  $d_{ij}$  represent initial and desired quantities of goods,  $\underline{M}_j$  and  $M_j$  represent initial and desired quantities of fiat money, and  $P$  is a fixed weight index of the money prices  $p_1, \dots, p_n'$  (Clower, 82).

This model differs from Walras's model of individual's economy in Exchange economy: first, Walras used fiat money only in the last economy – Circulation and Money – for the circulation only, side by side with the money commodity, which in the previous three economies is served as money. Second, fiat money is valueless and useless; therefore, it has no utility and cannot appear in the utility function. Third, Walras manipulated the demand and supply of all categories, later obtaining the final endowment by their means. Clower and consequently Hicks, Lange, and Patinkin use initial and final endowment, which allows calculating demand and supply. Finally, the utility function includes all components (commodities, prices, money) simultaneously, which from the practical point of view is problematic, if not impossible; while Walras considered utility function for each good separately.

Clower states that the conclusion in the discussing model 'indicates that money plays no distinctive role in economic activity' (ibid. p.83). Therefore, he suggests using the money commodity and presents his own, alternative model (ibid. p.86). The result is that the budget constraint equation is divided into two constraints: (a) a constraint on money expenditure and (b) a constraint on money income'. So, the model is

$$U_j(d_{1j}, \dots, d_{nj}, M_j/P, m_j/P) \quad (5)$$

$$\sum_{i=1}^{i=n} P_i x_{ij} + M_j - \underline{M}_j = 0, \quad x_{ij} = d_{ij} - s_{ij}, \quad x_{ij} \geq 0 \quad (3)$$

$$\sum_{i=1}^{i=n} P_i x_{ij} + m_j = 0, \quad x_{ij} < 0 \quad (4)$$

Where

$m_j$  represents desired "intra-period" receipts of money income' ( ibid. pp. 87-8). Such a division is artificial and incompatible with reality, because in practice expenditure and income are mutually connected.

The result is that as Clower states (Clower, p.88), that Walras's model is incompatible with reality (Davar, 2005).

Moreover, this means that his approach also represents disequilibrium state similar post-Walras's economists approach because it is based on the "Walras' Law" formulated by Lange (Davar, 2012). Finally, and more importantly, Clower does not discuss the connection (relationship) between micro and macroeconomics.

The same situation, even much more worsen, we can observe for recently discussed micro model by Baumol, who has been clamming that Walras's mathematics is primitive, and has created a much poorer model, and this writing more than a century after Walras. Baumol writes

'Then, using obvious notation, equilibrium requires

$$(1) \text{Max } \sum p_i y_i - C(y_1, \dots, y_n)$$

Subject to (2)  $\sum p_i y_i - C(y_1, \dots, y_n) \leq k$  (where we will select  $k = 0$ )' (Baumol, 2007, p.15).

With regard to the micro model in modern general equilibrium theory, through a careful consideration of the relevant part of the complete Arrow-Debreu model (Arrow & Hahn; Mas-Collel and at el.) there are several differences; therefore, all the above claims about Clower's micro model are relevant here too (Davar, 2012 and 2014b).

To sum up, the microeconomic theory (models), the core of economic theory, has to be reformulated on the basis of classical and neo classical theory, accordingly to today's real economy, regardless of any mutual connection with macroeconomics.

## 1.2 Irrelevance of Modern Macroeconomics

From among the numerous economic issues of macroeconomics, here the main ones will be discussed: (a) government spending; (b) unemployment; and (c) money theory.

### 1.2.1 Government Spending

One of the central remedies for the contemporary financial-economic crisis, i.e., the method of increasing government spending, which is emphatically recommended in the economic literature and which has been broadly implemented in real economics over the last decade, is incompatible and irrelevant for this goal in its current form due to the fact that it is based on two erroneous postulates: (1) Keynes's investment multiplier; and (2) the printing of fiat money as the main source for increasing government spending. It was shown (Davar, 2011 and 2013a) that the essence of Keynes's multiplier is not a multiplication but a requirement, since (a) the Keynesian multiplier is based on the substitution of the cause (the national income) for the effect (investment) (Hazlitt, p.139), and (b) Keynes's "multiplier" is the inverse of the marginal propensity to invest.

This has occurred because neither Keynes nor his followers have proposed a clear distinction between (a) phases of the investment process; and (b) sources of the increase in investment. The whole process of investment generally consists of two phases. The first phase is when investment is created; that is, investment (saving) is determined; and therefore, the causal relation here moves from income to investment. This is when the increment in income causes an increment in investment, while the inverse relation means that in order to increase investment an according increment of income is required. In the second phase, investment is transformed into fixed capital and produces income in combination with other services (labour, land, money) and technology. So, in this phase, fixed capital (investment) is the determinant; and thus, the causal relation here moves from fixed capital (investment) to income. An increase of fixed capital causes an increment of income; while the inverse relation is equal to the next requirement: in order to increase income, an increment of fixed capital is required.

Additionally, the character of the process of investment depends on the type of the source of its increment. The founders of the concept of multiplier (Kahn and Keynes) considered two sources of investment increasing: endogenous, and exogenous: domestic (financial system) and foreign (government and financial system); whilst modern economists, especially the school of New Keynesians, also consider a third source – the printing of money.

It must to be stressed that both, Kahn and Keynes (and especially the first), the founders of the multiplier concept, rejected the notion of printing money as a further source for the increasing of government spending. Moreover, a massive flow of paper money into the market neutralizes money as a central factor of the market mechanism, which, in turn, negatively influences the effectiveness of government spending and, consequently, the growth of economics.

Modern authors have accepted Keynes's version of the multiplier without any reservation. For example, Kamiryo recently asserted that 'According to Davar Ezra (2010 (must be 2011-E.D.), 25), modern general equilibrium theory conversely sets investment the cause and sets national income as the effect. In the endogenous data-sets, however, investment and income = output are two-ways, and causes and results march simultaneously' (Kamiryo, p. 70).

Here Kamiryo makes two erroneous assertions: (1) in my paper (Davar, 2011) it was shown that Keynes himself replaced the cause (national income) for effect (investment) in the first phase of investment process (*vide supra*) and it is not modern general equilibrium theory which makes the replacement, as Kamiryo asserts; and (2) Keynes's approach to the multiplier concept relates to the first phase, where income is cause and investment is effect; hence, they cannot be two-ways, and causes and results march simultaneously. This means that in the first phase, income creates saving which is transformed into investment; hence, investment cannot create income. So in such a case there is no place for a multiplier, there may be only requirement (see Davar, 2011, 2013a, 2014b).

Moreover, modern authors they have extended it by two additional multipliers: government purchases (spending) multiplier and taxes multiplier (*vide infra*). The majority of works (papers) on the subject, in the last twenty years, revolve around the issue of the size of the multiplier, while the problem of the legitimacy of the multiplier itself did not emerge in them at all. However, the models that are employed by modern economists (Ramey; Woodford; Christiano, et al; Romer and Bernstein; and Cogan and Taylor) to estimate the effectiveness of government spending are ill-assorted and conflict with the real facts due to their unrealistic assumptions.

Let us list the common and yet quite unrealistic assumptions characterizing these models: 1. Representative consumer; 2. Representative firm; 3. Infinite-lived households; 4. Constant discount factor; 5. Single produced good; 6. Fiat (paper) money is only used. If we also take into account the specific unrealistic assumptions characterizing each particular model, it is clear that the use of the results of such models for practical recommendations (as the authors of these researches tend to do), is doubtful at best.

It must be emphasized that some scholars understand that their models are simple, but they do believe that they are realistic nonetheless; therefore, they too have recommended the use of results for policy making (see Woodford; Christiano, et al; and Ramey).

One of the crucial sources of government purchasing – taxation - is considered deficient (Woodford, p.38); therefore, modern authors recommend printing money as one of the main sources for government purchasing. However, there are economists who assert that the effectiveness of the money flow is much smaller than it is evaluated by its recommenders (Cogan and Taylor, p.2). Moreover, they conclude that the printing of money as a source of government purchasing is doubtful (ibid. p.23).

More importantly, such a massive flow of fiat money into the market, as it happens in America, definitively neutralizes money as a key factor of market mechanism; since previously the money commodity, serving as a measure of value, in exchange and as a store, was neutralized when it was replaced by fiat money. Hence, it is not surprising that the rate of interest has been close to zero for a rather long time.

Finally, modern general equilibrium theory (MGET) is a basis for DSGE's models; however, MGET itself is irrelevant to the reality (Davar, 1994, 2012, and 2014).

To sum up, Keynes's investment multiplier and its modern variants cannot serve as any basis for practical recommendations, and, of course, does not facilitate economic growth.

## 1.2.2 Unemployment

Unemployment, one of the chronic afflictions of modern economics, will be cured only after accomplishing genuine theoretical definition accordingly to reality and on the basis of classical and neoclassical authors. In order to illustrate this statement, let us to consider Keynes's involuntary unemployment.

"Involuntary unemployment" is one of the central issues of Keynes's economic theory. Moreover, it is Keynes's truly unique contribution, in the opinion of the author, to the Classical and Neoclassical economic theory (Davar, 2014a). Unfortunately, Keynes's definitions of full employment, voluntary unemployment and involuntary unemployment are extremely vague and incomplete (Hazlitt, p.30; Patinkin, p.314; see also Lipsey and others, p.751). These definitions only became murkier as Keynes's followers tried to explain them (*vide infra*).

Involuntary unemployment has been assessed in two very different ways. On the one hand, there are economists who consider "involuntary unemployment" to be an innovation, and one of Keynes's crucial contributions to economic science (Shapiro, C. & J.E. Stiglitz). On the other hand, there are those who consider the concept of "involuntary unemployment" an issue which does not contribute anything to the employment theory and, as such, is superfluous (Pissarides, pp. xv-xvi). Keynes himself asserted that 'my doctrine of full employment is what the whole of my book is about!' (Keynes, C.W. XIV: 24). Some economists deny the existence of involuntary unemployment, claiming that in reality it is not possible to find statistical data about it. On the other hand, the reason for the absence of such data might be the abovementioned situation of the definition of involuntary unemployment. Post-Keynes economists have been discussing whether "involuntary unemployment" is equilibrium or a disequilibrium phenomenon. There are also two opposite claims, those claiming it a disequilibrium phenomenon (Clower, p.109; Patinkin, pp.337-8) and those claiming it an equilibrium phenomenon (Davidson, 1967, p. 567; Hahn, p.1). In the latter case, the question is whether Keynes's equilibrium theory is compatible to Classical and Walras's theories. However, sometimes there is a preposterous statement; for example, Hayes recently states that 'Nevertheless, for both Marshall and Walras, unemployment represents disequilibrium' (Hayes, p.11). The majority of economists assert that they are different theories (for example Blaug, Leijonhufvud, De Vroey, and Davidson, 2007 and 2009), and unfortunately, only a few economists consider them to be related theories.

Another issue of the employment theory is the interconnection between full employment, voluntary unemployment and involuntary unemployment and their measurement. The point is whether voluntary and involuntary unemployment are mutually exclusive or if they can co-exist. The economics literature to date has either ignored the co-existence of these two kinds of unemployment or has claimed they were both the same (Layard, and others, p.41 and p.11; Lucas, 1978; Pissarides, 2000; Taylor, 1987). The result is that in the economics literature, especially in the textbooks (*vide infra*), there is either an abundance of variant definitions of involuntary unemployment or the concept, as well as voluntary unemployment, is not mentioned at all (*vide infra*).

Keynes considered three kinds of unemployment: frictional, voluntary and involuntary. Moreover, Keynes's definition of full employment includes "frictional" and "voluntary" unemployment (GT, pp.15-16). If "voluntary" unemployment is only considered according to Walras's definition (Davar, 2002) then such a definition of full employment might have certain reasoning, because in this case each individual is either employed or unemployed by his own wishes. But Keynes also included "forced unemployment", hence such a definition of full employment is not only inconsistent with its practical definition (*vide supra*), but also creates a mystified situation (Sheehan, p.223; see also Hayes, p.52). Careful examination of Keynes's definition and clarifications of involuntary unemployment (GT, p.15 and p.295) enable us to conclude that Keynes changed Walras's assumptions (Leijonhufvud, 1968, p. 94 and 2000, p.18). Namely, Keynes assumed that the total supply function of labour is a weakly increasing function, and not a strictly increasing (and decreasing) function as Walras assumed.

This means that such supply functions might be characterized by a horizontal segment. Secondly, as a result of the first assumptions, in this case of a certain magnitude of wage, there might be a number of magnitudes of quantities of labour. Therefore, in the equilibrium state there might be involuntary unemployment if the equilibrium point is located on the horizontal segment that excludes boundary points (*vide infra*), and Keynes also hinted at measuring the magnitude of involuntary unemployment as a difference between the right boundary point of the segment and the equilibrium point of employment. Keynes also claimed that "involuntary unemployment," as well as "voluntary unemployment," is equilibrium phenomena (*ibid.* p. 28). These assumptions allowed post-Keynesian economists to define "involuntary unemployment" relatively clearly (Negishi, 1979, p. 27, see also Sachs & Larrain, p.62). Lange was one of the first economists to define involuntary unemployment graphically, in a way that is close to its genuine meaning in economics literature (Lange, 1944, p. 6).

Lange correctly defined involuntary unemployment but, unfortunately, he identified it with total unemployment, which is only correct in one case (*vide infra*). Namely, by Lange's definition "involuntary unemployment" only exists if the labor supply curve includes the horizontal segment (the part with rigid wages) and the equilibrium point is located on this line, except at the borders. In other words, involuntary unemployment occurs if the employment equilibrium point is located to the left of the right border point of the horizontal segment and is determined as the difference between the latter and former equilibrium points. This means that "involuntary unemployment," if it exists, *is an equilibrium phenomenon*. By this definition of involuntary unemployment, Lange made a *very important contribution*. This means that the character of unemployment depends on the form of the total supply curve of labour and there are two types of supply curves: a) Walras's supply curve of services is generally a strongly increased function of wages; and b) Keynes's supply curve of labour is parallel to the horizontal line. Therefore, combining these two versions of the total supply curve in one, a new version of supply curve of services is drawn:

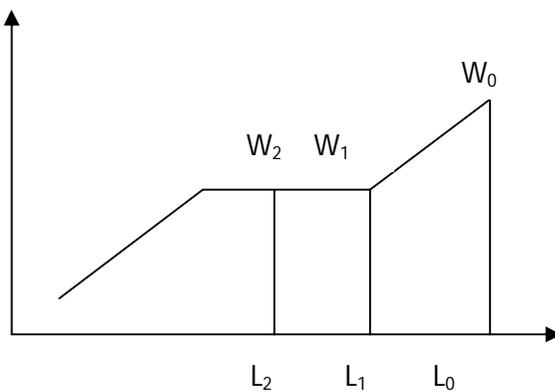


Figure1

If the equilibrium is at point  $W_0$ , then there is neither voluntary unemployment nor involuntary unemployment, meaning there is full employment. If the equilibrium point is at  $W_1$ , then there is only voluntary unemployment, which is determined as the difference between  $L_0$  and  $L_1$ . If the equilibrium point is at  $W_2$ , then both voluntary unemployment and involuntary unemployment exist. The former is determined, as in the previous case, but the involuntary unemployment is the difference between  $L_1$  and  $L_2$ . The total unemployment is the summation of these two kinds of unemployment, i.e., it is determined as  $(L_0 - L_1) + (L_1 - L_2) = (L_0 - L_2)$ .

To sum up, Keynes's original definition of types of unemployment, voluntary and involuntary, is very vague and incomplete, and did not allow calculating their magnitudes to use for employment policy.

### 1.3 Flaws of Modern Money Theory

The Classics (Smith, Marx) and Walras considered money theory as central and non-separate from economic theory and have discussed their reciprocal influence. Yet they distinguished between the functions of money and money as a service. Money has the following functions: 1) measure of value; 2) medium of exchange; 3) a store of value; and 4) it is used as world money. These functions of money are carried out by the money commodity (*numéraire*). Fiat (paper) money, however, must be only used for circulation. This means that they considered two types of money: money as a medium of exchange, a measure of value and store of value where the money commodity (*numéraire*) can be served, and money for circulation where either the money commodity (*numéraire*) or fiat money can be served. Thus, there are two different prices for the money commodity: (a) when money commodity is used as a measure of value, its price equal to one; (b) when money commodity is used in circulation, its price equal to the rate of interest (Davar, 2014b).

The Classics also postulated that the quantity of fiat money must be regularized by the quantity of the money commodity (Smith, p.284 and p.290). Marx went further and raised this postulate in the Level of the law.

From the seventies, unfortunately, the majority of countries in the world used fiat money as standard money; fiat money replaced the money commodity and had to fulfill all four functions of money. But this is contrary to the above principal statement of classical money theory, that only money commodity must serve as a measure of value, and fiat money must be used for circulation. It must be stressed that Keynes's money theory played a significant role in the process of replacing commodity money with fiat (paper) money.

The money theory is an anchor of Keynes's economic theory and his main contribution; and the source of the '*Keynesian Revolution*'. Meanwhile, Keynes's money theory is incomplete and even incorrect. Keynes merged the transaction-motive, which already represents a combination of the income-motive and the business-motive, with precautionary-motive.

This eliminates the difference between two types of money: money as a medium of exchange, a measure of value and a store of value (the money commodity – *numéraire*) and money for circulation (the money commodity – *numéraire*, or fiat money), and consequently, the difference between two various prices for money commodity are also eliminated.

The theoretical and practical backgrounds for that process, unfortunately, were not properly discussed. The replacement of the money commodity by fiat money has yielded several harmful phenomena. First, because fiat money has no objective value, economics (markets) is managed without the valuating of goods and services. Second, because there is only one type of money, namely fiat money, there is only one price – the rate of interest and the price of the money commodity is absent. This is another reason why fiat money cannot serve as a measure of value. Third, there are neither obstacles nor limits to printing paper money; *that is what has occurred in the last decade*. Finally and most importantly, the rate of interest is generally determined by the Central (Federal in USA) Bank.

One of the crucial attributes of Classical money theory, especially Walras's general equilibrium theory, is the reciprocal interconnection between micro and macroeconomics, i.e., exchanging information between them in the process of establishing equilibrium. By means of a solution of the model of individual (micro model), the three categories of money are obtained and used in macro model: 1) the demand of money commodity for consumption, in terms of money commodity (*numéraire*); 2) either the demand or the supply of income commodity for saving, in terms of money commodity; 3) the supply of money for circulation in production, in terms of either money commodity or paper money, which is determined as the difference between the available quantity of money (cash) in the hands of individuals minus the demand for money, and money for savings, from the consumers' side.

Meanwhile, the information which is passed to micro economics from macro includes three prices: 1. the price of the money commodity, which in equilibrium is equal to one; 2. the rate of income; 3. the rate of interest. It must be emphasized that Walras assumed that in equilibrium, the rate of income is equal to the rate of interest.

In modern theory, either the connection between micro and macro is not considered or if it is considered, then the connection is depicted in a rather simplified model, where, if money is presented at all, it comes to light only as fiat money.

Moreover, these models are based on unrealistic assumptions, like the above-mentioned models that are still in use for the estimation of the rate of the multiplier. Moreover, in modern general equilibrium theory, money has either disappeared (Arrow-Debreu Model), or is considered in a very simplified form and with unrealistic assumptions (see Applicable (Computable) General Equilibrium, Input-Output Analysis, and Dynamic Stochastic General Equilibrium Theory).

Walras emphasized the specific role of money in the distortion of general equilibrium because a change in the price of money impacts directly on the prices of almost all products. Hence, a change in the price of money yields a change in the prices of products, and the result is a disruption of equilibrium.

In a case of deep crises, Walras recommended that the State should intervene and regulate the quantity of money: 'Therefore the State should issue the *money* and, if necessary, regulate the production of precious metals according to the country's needs and prohibit or make rules for the issue of *banknotes* and the use of *account money*' (Walras, 2005, p.373).

To sum up, there is a growing need to put an end to the massive flow of paper money, thus enabling money to fulfill its functions.

#### 1.4 Separation between real (Productive) and Financial Sectors

The Classics and neo-Classics considered a mutual interconnection between the productive sector and the financial sector one of the fundamentals of economy, where the productive sector has to be in a leading position. In contrast, in contemporary economics and, consequently, in the works of most modern economists, the economic and financial sectors are separated. One of the central reasons for this is that in the world economy and in modern money theory, as shown above, only one type of money is generally used and considered - fiat money; since fiat money replaced the money commodity and had to "fulfill" all four functions of money.

Notably, the severance between productive and financial sectors achieved huge dimensions during the last financial-economic crisis, when the Federal Bank started printing money without any limitation.

When there is a lot of "cheap" money, the financial sector does not require the strong productive sector, it has a much more "credible" basis. Therefore, banks behave independently, to achieve only their sectoral targets – high salaries and bonuses, without taking into account the needs of society. Yet, Banks have a large part in the growth of "pyramids" and, consequently, inequality in society, one of the most difficult problems for all countries and especially for a small, fragile country such as Israel.

Increasing gaps of inequality in society, banks perform on two planes. On the first plane, banks provide almost unlimited loans without guarantees to tycoons. As a result: (1) the banks have immediate "big profits", so there are huge salaries and bonuses accordingly; (2) tycoons roll the money and acquire companies and businesses and implement "profits" enjoyed by managers and top lawyers, etc.; (3) When it comes time to repay debts, it turns out tycoons cannot (or do not desire) to repay debts, so they ask to cancel debts, at least partially. As a result, banks have to lose. But no, the sector has to absorb it, or rather that segment of the population called - households. On the second plane, banks charge all sorts of various and sundry charges, fees and higher interest rates. This weakens the population, along with other sectors of government, and, of course, the gap size. Furthermore, tycoons with debts from banks also seek to make a "haircut" (alias brilliant!). Sometimes a tycoon absorbs large losses for objective reasons not dependent on him. Therefore, it is in the national interest to help him if he asks. But there are tycoons who waste resources on personal needs and then seek assistance and operational haircut. This is antisocial and unjust. Even today, in the midst of deep crises, banks continue their strategy of highly rewarding themselves with overstaffed offices and playing musical chairs.

Furthermore, the salaries of senior executives are not the only source of growth of inequalities; they also produce serious and dangerous distortions in the economy, such as the "bloated" economy, low productivity, and of course - corruption. Those employees, customers of these companies, demand salary increases, which raise the prices of your products, and then companies raise prices all over again and the economy goes into a constant price increasing circuit. And that, of course, inflates the economy and productivity decreases. About corruption, cheap money is always accompanied by corruption, where its size is proportional to the amount of cheap money. To sum up, the macroeconomic theory has to be renewed, also on the basis of classical and neo classical theory, taking into account the changes in today's real economics.

The role of Government must be rethinking, being as flexible as possible, and creating according theoretical tools of management for such economic issues as: (a) expenditure of Government (taxes); (b) unemployment; (c) money theory; (d) deep internal linkage between productive and financial sectors; and so on.

## 2. Economic Education

The gloomy situation of the economic theory described above has had an influence on economic education, which itself deepens the crisis of economic theory. To illustrate our above statement, textbooks in economics, in both microeconomics and macroeconomics, will present according to the order of the previous section.

### 2.1 Microeconomics Textbooks

Let us satisfy ourselves by discussing only of the advanced Microeconomic textbook (Mas-Colell et al., see also Varian). In Chapter 3 *Classical Demand Theory* they write:

The consumer's problem of choosing her most preferred consumption bundle given prices  $p \gg 0$  and wealth level  $w > 0$  can now be stated as the following *utility maximization problem (UMP)*:

$$\begin{aligned} & \text{Max} \quad u(x) \\ & x \geq 0 \\ & \text{s.t. } p \cdot x = w \text{ (Mas-Colell et al., p.50).} \end{aligned}$$

All flaws of the modern microeconomic model from the previous section are relevant for this model too, namely:

- (1) The utility function included all goods and services together in one function, which from the practical point of view is problematic, if not impossible.
- (2) In this model the unknown are final endowment.
- (3) In this model the budget constraint equation relates to the wealth which is vaguely determined and it is given.
- (4) Such attributes as primary factors of production; money commodity, money for circulation, saving, and so on, is absent.

In addition they assume:

Then the Walrasian demand correspondence  $x(p, w)$  possesses the following properties:

- (i) *Homogeneity of degree zero in  $(p, w)$* :  $x(ap, aw) = x(p, w)$  for any  $p, w$  and scalar  $a > 0$ .
- (ii) *Walras' law*:  $p \cdot x = w$  for all  $x = x(p, w)$ .
- (iii) *Convexity/uniqueness*: ... (ibid. p. 52).

It is very difficult to understand these properties from an economic perspective. First, homogeneous function is 'very special case' (Allen, p.315). Second, in general, it destroys fundamental postulate of economics, namely, the connection between prices and quantities. Second property is explained as

(ii) Walras' law follows from local nonsatiation. If  $p \cdot x < w$  for some  $x \in x(p, w)$ , then there must exist another consumption bundle  $y$  sufficiently close to  $x$  with both  $p \cdot y < w$  and  $y > x$  ... But this would contradict  $x$  being optimal in the UMP' (ibid. p.52).

Finally and most importantly, what is presented here as Walras' law, in the case of Walras it is an attribute of his model, as well as in this model; hence it is not formulated as a law, i.e., it is ordinary constrain. Moreover, this law differ not only Walras's original laws but also from "Walras' law" formulated by post-Walras economist, and also using in this textbook (ibid. p. 582).

Beforehand in the Chapter 2 *Consumer Choice* they state:

Walras's law says that the consumer fully expends his wealth. Intuitively, this is a reasonable assumption to make as long as there is good that is clearly desirable. Walras's law should be understood broadly: the consumer's budget may be an intertemporal one allowing for savings today to be used for purchases tomorrow. What Walras's law says is that the consumer fully expends his resources *over his lifetime*' (ibid. p.23).

What is the meaning of "resources *over his lifetime*"? What is its measurement? Is this what Walras' law says!?!?

Hence, in an economy where savings, investment and money play a leading role, as distinguished from the modern economic theory, these properties might be irrelevant, at least problematic.

## 2.1 Macroeconomics Textbooks

There are many Macroeconomics Textbooks, as well as Microeconomics textbook; therefore, for each issue the leading textbook will be discussed, taking into account the fact that differences in other textbooks might be minor.

### 2.1.1 Multiplier

Modern authors, since Samuelson, have accepted Keynes's version of the multiplier without any reservation and have extended it by two additional multipliers: government purchases (spending) multiplier and taxes multiplier.

Let us to consider the determination of these two multipliers as it is presented in Mankiw's Macroeconomics, providing its dominance in contemporary macroeconomics literature (not only in the text books, see Ramey; and Romer & Bernstein). Mankiw determines the government-purchase multiplier as 'The ratio  $\Delta Y/\Delta G$  is called the government-purchase multiplier; it tells us how much income rises in response to a \$1 increase in government purchases. An implication of the Keynesian cross is that the government-purchase multiplier is larger than 1' (Mankiw, p.292) and writes (ibid. p.290): 'Now consider the determinants of planned expenditure. Assuming that the economy is closed, so that net exports are zero, we were planned expenditure  $PE$  as the sum of consumption  $C$ , planned investment  $I$ , and government purchases  $G$ :

$$PE = C + I + G$$

(3.1): In equilibrium condition ( $PE=Y$ ) (ibid. p.291) assuming that  $I$  is fixed then  $\Delta Y/\Delta G = 1/(1 - MPC)$  (ibid. p.294)

(3.2) So, government-purchase multiplier is the determinacy of the investment multiplier and they are equal, and therefore, its essence is the same (vide intra).

He continues: 'Why does fiscal policy have a multiplied effect on income? The reason is that. According to the consumption function  $C=C(Y-T)$ , higher income causes higher consumption. When an increase in government purchases raise income, it also raises consumption, which further raises income, which further raises consumption, and so on. Therefore, in this model, an increase in government purchases causes a greater increase in income' (ibid. p.293).

There, Mankiw makes two fallacious postulates: (1) the process of "multiplication" in the considered case was discussed by Mankiw, like the majority of other post-Keynes's economists, as a cumulative (dynamic) process; while Keynes himself considered it as an instantaneous (timeless) process (Keynes, pp.122-123); (2) In order that an increase in government purchases would occur a greater increase in income is required, but not 'an increase in government purchases causes a greater increase in income', as Mankiw has asserted.

In the following Mankiw describes the process of deriving of calculation of the multiplier and states (ibid. p.294): 'A result from algebra allows us to write the multiplier as

$$\Delta Y/\Delta G = 1/(1 - MPC).$$

(3.3)

Yet, in *Mathematical note 3* he added:

'The government-purchases multiplier is most easily derived using a little calculus

$$Y = C(Y-T) + I + G. \quad (3.4)$$

Holding  $T$  and  $I$  fixed, differentiate to obtain

$$dY = C'dY + dG, \quad (3.5) \text{ and then rearrange to find}$$

$$dY/dG = 1/(1-C). \quad (3.6)$$

This is the same as the equation in the text' (ibid. note 3, p.294)

However, this is incompatible to the previous statement of Mankiw that "If government purchases equal taxes minus transfers, then  $G=T$  and the government has a *balanced budget*."

If  $G$  exceeds  $T$ , the government runs a *budget deficit*, which is funds by issuing government debt - that is, by borrowing in the financial markets. If  $G$  less than  $T$ , the government runs a *budget surplus*, which it can use to repay some of its outstanding debt' (Mankiw, p.65). This means that, in the closed economy, specifically in the equilibrium state of  $T=G$ , and even in the open economy, taxes stay the main source of the government spending; therefore, assuming that "holding  $T$  is fixed" without assuming simultaneously that  $G$  is also fixed is to assume an unrealistic assumption in terms of closed economy, which, as a result, may yield inadequate results (vide infra); this is the case because the distortion of the balance between them means that the economy is transformed from the closed economy into the open economy where the rules appear to differ.

As regards to tax multiplier Mankiw writes: 'A decrease in taxes of  $\Delta T$  immediately raises disposable income  $Y-T$  by  $\Delta T$  and, therefore, increases consumption by  $MPC \times \Delta T$  for any given level of income, planned expenditure is now higher' (ibid. p.294). Mankiw, once again, forgot his above statement, namely, that simultaneously with decrease in taxes, there is also a decrease in the same magnitude in terms of government purchases. Mankiw continues: 'Just as an increase in government purchases has a multiplied effect income, so does a decrease in taxes. As, before, the initial change in expenditure, now  $MPC \times \Delta T$ , is multiplied by  $1/(1-MPC)$ . The overall effect on income of the change in taxes is

$$\Delta Y/\Delta T = - MPC/(1 - MPC). \quad (3.10)$$

This expression is the **tax multiplier**, the amount income changes in response to a \$1 change in taxes. (The negative sign indicates that income moves in the opposite directions from taxes.) For example, if the marginal propensity to consume is 0.6, then the tax multiplier is

$$\Delta Y/\Delta T = - 0.6(1-0.6) = - 1.5. \quad (3.11)$$

this example, a \$1.00 cut in taxes raises equilibrium income by \$1.50' (ibid. 295).

To justify his 'strange' result, Mankiw, in a mathematical note, employs the above equation (3.4), but this time, when he assumes that 'Holding  $I$  and  $G$  fixed', he makes the same mistake; i.e., changing taxes without changing government expenditure in the closed economy.

### 2.1.2 Unemployment

The problems of unemployment may be cured by a new generation of economists - if they understand these problems. Unfortunately, Macroeconomic textbooks do not facilitate this, because the definition of Unemployment is so confusing and unclear that it is impossible to study anything. To illustrate our above statement, we start with a discussion of the definition of voluntary and involuntary unemployment in macroeconomic textbooks.

It is amazingly difficult to find textbooks where voluntary and involuntary unemployment are considered, and if they are considered then it is in a very confusing form (Lipsey and Chrystal). Mankiw and Krugman (2009), two eminent new-Keynesians, who are leading supporters and propagandists of the "Keynesian Revolution", never mention term "involuntary unemployment" in their textbooks. But, it is Keynes's truly unique contribution!

Sachs and Larrain (Macroeconomics, 1993), correctly define involuntary unemployment in principle: 'The notion of involuntary unemployment is that some people who are willing to work for the wage received by other workers of comparable ability cannot do so' (Sachs and Larrain, p.62). But, following this, it is not clear how its magnitude is calculated. If we take into account the definition that the unemployment rate 'measures the number of people who are without a job and are actively, searching for a job, as a proportion of the total labor force' (ibid. p.5), this means that to calculate any unemployment, two sets of data are required: the total labor force and the amount of employed people. They forgot about this statement when the voluntary and involuntary unemployment is discussed. Moreover, they asserted 'There is, in fact no standard accepted procedure to estimate the natural rate of unemployment, and leads to disagreements about methods and magnitudes' (ibid. p.506). This is not exact; because the natural rate of unemployment is calculated according to the equilibrium state: 'the "natural" rate of unemployment as the rate which corresponds to macroeconomic equilibrium, in which expected inflation is equal to its actual level' (ibid. p.496). The problem is how to achieve macroeconomic equilibrium.

On the other hand, Krugman and Wells define the natural unemployment rate as 'The natural rate of unemployment is the normal unemployment rate around which the actual unemployment rate fluctuates. It is the rate of unemployment that arises from the effects of frictional plus structural unemployment' (Krugman and Wells, p.210). When "Frictional unemployment is unemployment due to the time workers spend in job search' (ibid, p.207) and 'Structural unemployment is unemployment that results when there are more people seeking jobs in a labor market than there are jobs available at the current wage rate' (ibid. p.208), where did the total labor force disappear? What about Macroeconomics equilibrium?

### 2.1.3 Money

The money issue is presented in a much broader form, and discussed in more detail, in the macroeconomics textbooks than any other economic issues, in the spirit of the contemporary understanding of it (*vide supra*). In general, three main roles of money are considered: (a) a medium of exchange, (b) a store of value, and (c) a unit of account. The majority of textbooks remind us that there are two types of money: (1) commodity money, and (2) fiat money; and stress that in today's economy, only fiat money is used. They emphasize the "advantages" of fiat money and also the risks which derive from its use. However, here also, a crucial attribute of Walras's money theory, which was completely misunderstood and was absolutely given up, yields serious confusion: this is the fact that Walras, as well as Smith, considered two types of money: money as a medium of exchange, a measure of value and store of value where the money commodity (*numéraire*) has to be served, and money for circulation, where either the money commodity (*numéraire*) or fiat money might be served. Thus, there are two different prices for the money commodity: (a) when money commodity is used as a measure of value its price is equal to one; (b) when money commodity is used in circulation its price is equal to the rate of interest.

It must be stressed that the textbooks tend to consider the theoretical version of the determination of the interest rate on the same lines of the classical approach; namely, according to modern theory, the rate of interest is determined by the relationship between aggregate demand and aggregate supply of money. However, there are essential differences between them, since the modern theory of interest is based on Keynes's approach.

Moreover, the supply of money depends not only on the quantity of printed money as in Keynes's approach, but also on the rate of the money multiplier. Yet, the modern theory of money continues to determine the demand function for money as an inverse function of money according to Keynes, the existence of which is doubtful. It must be stressed that in money theory, the mutual interconnection between micro and macro is generally absent.

It is clear that such textbooks both micro and macroeconomics have been negatively influencing several generations of Economics students.

To sum up, textbooks of microeconomics and macroeconomics have to be rewritten consequently reformulating micro theory and renewing macro theory.

## **Conclusions**

This paper reveals and discusses two crucial causes of the continuing deep economic-financial crisis: (1) Dissonance between economic theory (models) and Reality, including the following: (a) Inadequacy of the Modern Microeconomics; (b) Irrelevance of the Modern Macroeconomics; (c) Flaws of the modern monetary theory; and (d) Separation between real (productive) and financial sectors; and (2) Economic Education. To defeat the economic-financial crisis, the paper suggests the following: (1) The microeconomic theory (models), the core of economic theory, has to be reformulated on the basis of classical and neo classical theory, accordingly to today's real economy, regardless of any mutual connection with macroeconomics. (2) The macroeconomic theory has to be renewed, also on the basis of classical and neo classical theory, taking into account the changes in today's real economics. The role of Government must be rethinking, being as flexible as possible, and creating according theoretical tools of management for such economic issues as: (a) expenditure of Government (taxes); (b) unemployment; (c) money theory; (d) deep internal linkage between productive and financial sectors; and so on. (3) Textbooks of microeconomics and macroeconomics have to be rewritten, consequently reformulating micro theory and renewing macro theory.

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