

Money and Say's law: on the macroeconomic models of Kalecki, Keen, and Marx

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Abstract

Kalecki's model of aggregate income and aggregate spending, and their dynamic relations was very likely influenced by Marx's schemes of reproduction. This paper argues, first, that in both Kalecki's model and in Marx's simple reproduction, money and credit play no role, so that rather than a monetary economy, these models portray a barter economy which follows Say's law. Second, that Steve Keen's recent proposition that aggregate demand is the sum of income plus the change in debt is a step toward an aggregate macroeconomic model in which the market economy is portrayed in a more realistic way. Third, that Marx's expanded reproduction scheme somewhat forces the consideration of money in the model, which makes evident that hoarding is a basic mechanism for the creation of excess supply. Fourth, that a proper macroeconomic model that portrays the market economy without abstracting essential characteristics of it must not ignore (1) money, fulfilling its role of purchasing power reservoir, and (2) credit, as a two-edged tool that creates purchasing power in the short run and macroeconomic strain in the long run.

1. Introduction

In 1954, Michal Kalecki published his *Theory of Economic Dynamics*, where he claimed that key aspects of his macroeconomic views had been already presented in papers published in 1935.² In a concise and elegant way, Kalecki was addressing the issue of intellectual precedence – in macroeconomic matters – over Keynes, who had published his *General Theory* in 1936.

In *Theory of Economic Dynamics*, Kalecki presented his profit equation (see figure 1 – at the end of this paper) as the corollary of a simplified macroeconomic model of a closed economy in which both government expenditure and taxation are negligible, so that the gross product is the sum of gross investment and consumption. In these conditions, gross profits equal gross investment plus capitalists' consumption. This is Kalecki's profit equation, which had a major impact in post-Keynesian economics.

Three decades after the profit equation appeared in the *Theory of Economic Dynamics*, Hyman Minsky closely followed Kalecki's views on the determinants of profits. In his *Stabilizing an Unstable Economy*, to create an even more simplified model, Minsky added the assumption that capitalists do not consume, thus arriving at the notion that profits equal investment. For Minsky, the notion that profits equals investment was "a profound insight into how a capitalist economy works."³

It will be argued here that the simplifications of Kalecki's and Minsky's models imply major flaws in the realism of macroeconomic models. Indeed, these simplifications imply that Say's

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² Michael Kalecki, *Theory of economic dynamic – An essay on cyclical and long-run changes in capitalist economy*, London, George Allen & Unwin, 1954 p. 45, footnote 1, see figure 1 here.

³ Hyman P. Minsky, *Stabilizing an unstable economy* [1986], New York, McGraw-Hill, 2008, p. 169.

law creeps into the model just from the assumptions. The same happens when Marx's schemes of reproduction are interpreted in a way that has been common among Marxist economists. For Marx, in the aggregate, profits are just the same as surplus value, and many would agree – though it is wrong – that in the Marxian scheme of expanded reproduction, capitalists either use surplus value for personal consumption or invest it for further accumulation of capital. Thus, the idea that profits equal investment plus capitalist consumption would directly connect Kalecki with Marx. However, as it will be explained, Marx's presentation of his model of expanded reproduction, though a very sketchy one, is sufficient to reveal that his model is quite different from Kalecki's.

Recently, Steve Keen has emphasized the key role of money in our economy and has stated that aggregate demand is the sum of income plus the change in debt.⁴ This is an important step in the right direction, toward a theory of economic aggregates which does not abstract away such key elements as money and credit. But to explain why this is the case we need to come back first to the concrete presentation of the macroeconomic aggregates in Kalecki's *Theory of Economic Dynamics*.

2. Kalecki's model of income and spending

In *Theory of Economic Dynamics*, Kalecki presented his macroeconomic model without explaining what represents each side of his double-entry scheme (figure 1). He simply stated that in a closed economy the national gross product must be equal to investment plus consumption, that the income of workers consists of wages and salaries, and the income of capitalists equals gross profits, including depreciation, rent, interest, etc. From these premises and distinguishing between capitalists' consumption and workers' consumption, Kalecki sets a scheme of the gross product in which gross profits plus wages and salaries must be equal to gross investment plus capitalists' consumption plus workers' consumption. With the additional assumption that workers do not save, workers' consumption equals to wages and salaries.

In the presentation of his double-entry scheme, Kalecki does not use the terms *supply* and *demand*. It has to be inferred that in Kalecki's scheme the left column represents income, while the right column represents spending. But income has to correspond to the money value of the goods and services brought to the market by business activity during a given period (Kalecki usually assumes one year). Wages and salaries plus profits are the money value of what is offered in the market; they are conceptually the aggregate price of supply. This assumes entrepreneurs are selling at cost plus a markup, with cost being just equal to salaries, because the cost of raw materials, machines, and other capital inputs can be vertically integrated and so reduces to the wages and salaries of the workers producing those capital inputs.

On the other hand, the right column represents spending, money flows which purchase the goods and services produced in the same period. Investment represents money flows buying capital goods, while consumption, either of workers or capitalists, refers to money purchasing consumption goods. Overall, consumption plus investment has to represent aggregate demand. To reach the profit equation, Kalecki first equals the two columns; second, he assumes that all wages and salaries are spent in consumption. The corollary is evident: profits have to add up to investment plus capitalist consumption.

⁴ Steve Keen, Secular stagnation and endogenous money, *Real-World Economics Review* No. 66, 2014.

3. Say's law crawling in from model assumptions

The only role of money in Kalecki's scheme is as a means of exchange, not as storage of purchasing power. The existence of money is ignored, which amounts to considering money as "a veil," as in classical economics. Let's examine that in detail.

First, let's reinterpret Kalecki's double-entry scheme adding symbols:

Aggregate supply (σ_t)	Aggregate demand (δ_t)
Gross profits (P_t)	Gross investment (I_t)
Wages and salaries (W_t)	Capitalists' consumption (C_t) Workers' consumption (L_t)

All symbols in the scheme represent flow variables measured in money units. Sigma (σ) and delta (δ) are respectively aggregate supply and aggregate demand so that, if t is measured in years, σ_t and δ_t are aggregate supply and aggregate demand during year t , P_t is profits from the start to the end of year t , L_t is workers' consumption throughout year t , and so on. Then the first column ($P_t + W_t$) represents the aggregate price of the products and services produced throughout the year; the second column ($I_t + C_t + L_t$) represents the money demand that is allocated during the year to purchase the economic output. In this way, Kalecki is stating that supply ($\sigma_t = P_t + W_t$) is equal to demand ($\delta_t = I_t + C_t + L_t$). Therefore, $\sigma_t = \delta_t$ and

$$P_t + W_t = I_t + C_t + L_t,$$

which means that, in the aggregate, all that is produced is sold; or, in other words, that aggregate supply is equal to aggregate demand. In economics that has always been called "Say's law."

4. Money and credit are missing

Kalecki's formulation in which aggregate demand is equal to consumption plus investment ignores money and credit, the former as a deposit of purchasing power, the latter as a means to create purchasing power. Let's see why that is the case.

When hoards of money are mobilized to purchase goods, and m_t and m_{t-1} are the quantities respectively hoarded at times t and $t - 1$, the condition for this process creating demand is that $m_{t-1} > m_t$ so that $m_{t-1} - m_t > 0$. Note that this and the other variables symbolized herein with low-case letters are stocks, not flows. The increase in hoards of money from the end of year $t - 1$ to the end of year t , $m_{t-1} - m_t = \Delta m_t$, shall be negative for demand being created. The contribution that shrinking hoards of money make to aggregate demand is $-\Delta m_t$. Obviously, $\Delta m_t > 0$ means that active hoarding is reducing aggregate demand.

On the other hand, expanding debts – that is, flows of credit that have financed the purchase of capital goods or consumption goods – contribute to aggregate demand. If d_t is the total aggregate debt at time t , then the difference $d_t - d_{t-1} = \Delta d_t$ is the contribution of credit creation to aggregate demand.

From this it follows that the quantity $\Delta d_t - \Delta m_t$ is the contribution of expanding debts and shrinking hoards of money to the purchasing power that is spent in the economy between time $t - 1$ and time t , that is, during year t .

Considering all the above, we can restate aggregate demand and aggregate supply as follows:

(a) Aggregate Supply: $\sigma_t = P_t + W_t$,

that is, the aggregate price of supply is equal to profits plus wages and salaries;

(b) Aggregate Demand: $\delta_t = I_t + C_t + L_t + \Delta d_t - \Delta m_t$,

that is, aggregate demand is investment plus consumption plus change in debts minus increase in hoarding.

In recent contributions, Steve Keen has emphasized the key role that money and credit play in our economy and has stated that “aggregate demand is the sum of income *plus the change in debt*”.⁵ Keen has also criticized the view of mainstream economics that money is a veil, and has argued against the idea that the aggregate level of debt (and changes in that level) are irrelevant to macroeconomics. For that purpose, Keen has provided econometric evidence that changes in the level of debt are strongly correlated with major macroeconomic indicators – such as the change in unemployment.⁶

But what is the precise meaning of Keen’s formulation that aggregate demand is the sum of income plus the change in debt? It seems that for Keen income means the sum of investment plus consumption, so that what he is saying is that demand is $\delta_t = I_t + C_t + L_t + \Delta d_t$. If that is the case, a major element contributing to enlarge or shrink demand would be left out of the picture. That element is the shrinking or expanding hoards of money.

5. Potential purchasing power and debt

What would be an appropriate way to expand the notion of aggregate demand as “equal to income plus the change in debt” to properly consider the effect of variations in the level of hoarding on aggregate demand?

Let’s use lambda for liquidity, so that aggregate liquidity or accumulated (potential) purchasing power λ_t is the amount of money hoards minus standing debts at a given time t , that is $\lambda_t = m_t - d_t$. Since at the end all debts have to be paid (except when the system enters into periods of major dysfunction in which debts are cancelled through losses for creditors),

⁵ Steve Keen. The “credit tsunami” – Explaining the inexplicable with debt and deleveraging. In: G. Friedman, F. Moseley and C. Schurr, eds., *The Economic Crisis Reader*, Boston: Dollars & Sense, 2009, pp. 44-51 (italics are Keen’s).

⁶ Steve Keen, Secular stagnation and endogenous money, *Real-World Economics Review* No. 66, 2014.

we can consider accumulated debt at a given moment as a counterbalancing influence to the potential purchasing power embodied in hoards of money. Then $\lambda_t - \lambda_{t-1} = \Delta\lambda_t$ is the change in accumulated liquidity from the start to the end of the year. It is directly inferred that $\Delta\lambda_t = \Delta m_t - \Delta d_t$. That is, the change in aggregate liquidity is equal to the difference between the change in hoards and the change in debts.

We can consider λ_t as an index of the *potential* purchasing power existing at a given time. In some sense λ_t would be like the potential energy of a pendulum, which is at its highest when the pendulum has zero kinetic energy because it is “at rest” at the extreme of a swing. All other things equal, the higher the volume of hoarded money at a time t , the higher the potential purchasing power available to buy commodities. By the same token, the higher the volume of debts (that eventually will have to be paid), the lower the potential to purchase goods and services. The quantity $\lambda_t = m_t - d_t$ is therefore a measure of the potential purchasing power at a given time. But high volumes of hoarded money and low levels of debt are typical of downturns, when economic activity is at minimum levels, bankruptcies have wiped out some debts and others have been paid to use idle cash balances. As Wesley Mitchell put it, during contraction:

the shrinking physical volume of business and falling prices reduce the need for transaction cash; cash balances go on increasing, often faster than they had grown in expansion. This increase comes mainly from the ‘liquidation’ of receivables and inventories. The surplus balances piling up from the decreasing need for and increasing supply of cash are presumably used as far as feasible *to pay off debts* to banks and commercial houses, perhaps to maintain dividends, perhaps to buy marketable securities from which some income may be expected. But, after all such opportunities have been grasped, the corporations of our sample *held their largest cash balances at cyclical troughs*, and these balances enhanced the ability of business managements to increase their purchase of industrial equipment at this lowest stage of business cycles.⁷

During periods of “normal” business conditions, the creation and suppression of debt is related to banking activity – banks giving loans, private citizens or businesses paying them – and to the use of hoards of liquid money to make payments. Since hoards can be used to invest or to pay debts, and the payment of preexisting debts does not contribute toward creating demand, the existence of debts is always a potential leak toward insufficient demand. In conditions of rising (or high) profitability, hoards are mobilized into investment, that is, payments for capital goods, or for wages. In such conditions the circulation of money will tend to accelerate and the general decrease in hoarding will stimulate credit, that is, the creation of debt. This is what happens in periods of expansion. Conversely, in periods of contraction in which profitability is decreasing (or low), investment will decay, the speed of money will decrease, and hoards of money will grow.⁸ Some or many debtors will have trouble repaying debts, some of which will be cancelled and, in general, credit creation will be reduced.

⁷ Wesley C. Mitchell, *What happens during business cycles: A progress report*, New York, National Bureau of Economic Research, 1951, p. 148 (my italics).

⁸ Cash deposits in banks were at very high levels in the sluggish economy of the fall of 2011 (E. Dash and N. D. Schwartz, In Cautious Times, Banks Flooded With Cash, *New York Times*, Oct. 28, 2011). Also in the peak of financial crisis associated to the Great Recession (when even deposits in banks were considered unsafe) it was reported that sales of safes were at historic heights (M. Wilson, Sales of Safes Boom as the Economy Falter: Looking for Security in a Cube of Steel, *New York Times*, March 6, 2009). Ben S. Bernanke (Nonmonetary Effects of the Financial Crisis in the Propagation of the Great

The quantity $\Delta\lambda_t$ seems therefore to be an important determinant of aggregate demand. As hoards of money shrink and money is sent into the circulation, it adds up to aggregate demand. As credit is used to purchase capital or consumer goods, debts are created and they contribute to the expansion of aggregate demand.

6. Accounting inequalities

Since the aggregate price of what is sold has to be equal to the aggregate price of what is purchased, assuming aggregate demand is sufficient to buy aggregate supply, it will be true that

$$P_t + W_t \leq I_t + C_t + L_t + \Delta d_t - \Delta m_t$$

and since $\Delta d_t - \Delta m_t = -\Delta\lambda_t$

$$P_t + W_t \leq I_t + C_t + L_t - \Delta\lambda_t.$$

That is, for aggregate supply to be sold so that markets clear, its aggregate price cannot exceed the aggregate income (investment plus consumption) minus the increase in aggregate liquidity.

Since in an annual timeframe like the one we are considering money hoards and credit are long preexisting, it would be absurd to look for any simplifying assumption – such as “money is just a veil” or “investment equals saving” – that could remove them from the picture.

Of course, this inequality, stated on the assumption that there are not unsold goods, does not presuppose that supply creates its own demand, because neither debts nor changes in hoards of money are direct consequences of recent production. Say’s law refers to the aggregate value generated in production, that is, aggregate supply, equaling the value of what is demanded for consumption, without any consideration for money stocks or debts. In our terms, Say’s law assumes that $P_t + W_t = I_t + C_t + L_t$. In other terms, Say’s law implies that $\lambda_t = \lambda_{t-1}$, so that $\Delta\lambda_t = 0$. But that is exactly the assumption on which Kalecki’s model is built.

Kalecki’s assumption that workers consume what they get does not seem unrealistic in a first approximation, so that $W_t = L_t$. Then we can simplify

$$P_t + W_t \leq I_t + C_t + L_t - \Delta\lambda_t$$

to

$$P_t \leq I_t + C_t - \Delta\lambda_t$$

or

$$P_t + \Delta\lambda_t \leq I_t + C_t.$$

Depression, *American Economic Review* 1983, Vol 3, No. 3, pp. 257-276) cited reports that in 1930, at the climax of the Great Depression, money was “available in great plenty” and “accumulating at the centers, with difficulty of finding safe investment.” On the other hand, it has long been known that the velocity of money “has a fairly regular cyclical pattern, falling during contractions and rising—or falling at a lower rate—during expansions” (Milton Friedman and Anna J. Schwartz, *A monetary history of the United States, 1867-1960*, Princeton University Press, 1963, p. 34).

Assuming that all hoards of money and debts are owned by capitalists, Δm_t is the annual increase of liquid money stockpiled by the capitalist class, and Δd_t is the increase in debt of enterprises and individual capitalists, and $\Delta \lambda_t = m_t - d_t$ is the potential purchasing power of the capitalist class. Then the inequality $P_t + \Delta \lambda_t \leq I_t + C_t$ tells us that for aggregate demand to be sufficient to purchase aggregate supply, investment plus capitalist consumption must be at least equal to profits plus the increase in purchasing power of the capitalist class. This is simply an accounting inequality without causal implications. When the inequality does not hold, aggregate supply is only partially sold, inventories remain unsold, and there is a recession. But why should investment plus capitalist consumption become smaller than profits plus the increase in purchasing power of the capitalist class? In my view Wesley Mitchell and Jan Tinbergen provided long ago an empirical answer to that question.⁹ Marx had theorized on it much before.¹⁰

Nowadays huge pension funds exist in which savings of workers are pooled and then invested, as well as sovereign wealth funds which convey into global investments the savings owned by national governments. These entities can be considered major objections against the assumptions that workers do not save, and all hoards of money are owned by capitalists. It would be controversial, though, to argue that a sovereign fund such as, for instance one held by the United Arab Emirates, valued at more than one trillion US\$, is the property of the workers of that country. Regardless of the ownership of these large pools of money, what is obvious is that they perform as capital in the global economy, looking for both safety of investment and maximization of returns. A further objection against the assumptions presented earlier is that significant indebtedness of wage-workers is a reality in many nations, which goes against the assumption that only capitalists have debts. These assumptions – which have to do precisely with the role of large volumes of money or debt – should be removed so that these elements are properly considered in a more developed model. Any model implies abstraction, and “all models are wrong,” though some approximate reality better than others.

There was an early tradition of institutionalist economics which emphasized the importance of money and which labelled capitalism precisely as “the money economy,”¹¹ but departing from that tradition, mainstream economics during the 20th century emphasized the idea of “the veil of money.” That veil would obscure the actual nature of the real economy in which – supposedly – goods are produced and swapped back and forth. Even Paul Samuelson in his textbook referred with disdain to “the social contrivance of money” since “if we strip exchange down to its barest essentials and peel off the obscuring layer of money, we find that trade between individuals and nations largely boils down to barter.”¹² In a way that strongly contrasts with this tradition, Marx thought about money as a key element of the economic system ruled by capital, in which it is the existence of money itself which implies the possibility of crisis. In his sketchy model of expanded reproduction, he came quite close to showing it formally.

⁹ Wesley C. Mitchell, *Business cycles*, University of California Press, 1913. Jan Tinbergen, *Statistical Testing of Business-Cycle Theories: Volumes I and II*, Geneva, League of Nations, 1939. Jan Tinbergen, *The dynamics of business cycles: A study in economic fluctuations* (translated from the Dutch and adapted by J. J. Polak), Chicago, University of Chicago Press, 1950.

¹⁰ J. A. Tapia Granados, Does investment call the tune? Empirical evidence and endogenous theories of the business cycle, *Research in Political Economy*, 2013, vol. 28, pp. 229-259.

¹¹ Wesley C. Mitchell, *Business cycles*, University of California Press, 1913, p. 21.

¹² Cited by David Graeber in *Debt: The first 5,000 years*, Brooklyn, NY, Melville House, 2011, p. 44.

7. Aggregate supply and aggregate demand in expanded reproduction

According to Marx's schemes of reproduction,¹³ the total value of the commodities produced in a year can be represented as $c + v + s$, where c , v , and s are respectively the values of constant capital, variable capital, and surplus value. Under conditions of simple reproduction, that is, when production is just sufficient to maintain the level of value produced in the previous year, and using the subindices 1 and 2 to indicate the production departments of capital goods and consumption goods respectively, the value of the supply of capital goods is $c_1 + v_1 + s_1$, while the value of the supply of consumption goods is $c_2 + v_2 + s_2$. The demand for capital goods is $c_1 + c_2$, while that for consumption goods demanded by workers expending their wages as well as by capitalists expending all their profits in consumption, is $v_1 + s_1 + v_2 + s_2$. Assuming supply is equal to demand in any or both departments, it is inferred that c_2 must be equal to $v_1 + s_1$. Since this seems perfectly conceivable, it can be concluded that simple reproduction is at least possible.

Marx was explicit in presenting simple reproduction as just an unrealistic model, albeit useful for heuristic purposes.¹⁴ Expanded reproduction, in which part of profits is reinvested to expand production, would be a much more realistic model. In expanded reproduction, total surplus value $s_1 + s_2$ can be (i) spent on consumption goods produced in sector 2 (s_c); (ii) used for capital accumulation by buying extra capital goods produced in sector 1 (s_a); (iii) used for the expansion of production by paying extra wages (s_w); or (iv) hoarded as money (s_h). Thus, the value of aggregate production for a year in both departments is

$$\sigma = c + v + s_c + s_a + s_w + s_h.$$

This expression giving the value of total supply includes s_h , which is the fraction of surplus value that flows into hoarding. All other elements in the expression represent the value of commodities or the value of the labor force, but s_h does not have such a correspondence; it is "pure money" and therefore the comparison of this expression with simple reproduction illustrates how the scheme for simple reproduction is a barter scheme in which there is no money.

Under expanded reproduction, demand for capital goods is $c + s_a$ and demand for consumption goods is $v + s_c + s_w$. Therefore, total aggregate demand is

$$\begin{aligned} \delta &= c + s_a && \text{(demand for capital goods)} \\ &+ v + s_c + s_w + s_h && \text{(demand for consumption goods).} \end{aligned}$$

Thus, aggregate supply and aggregate demand are respectively

$$\begin{aligned} \sigma &= c + v + s_c + s_a + s_w + s_h, \text{ and} \\ \delta &= c + v + s_c + s_a + s_w. \end{aligned}$$

From these equations it is immediately inferred that $\sigma \leq \delta$, meaning that there are no unsold goods, is possible only if $s_h = 0$, that is, if capitalists do not hoard money. Though Marx does not arrive at this conclusion, he gets close to it. Indeed, he states that the fact that at different

¹³ Karl Marx, *Capital - A critique of political economy* (Volume 2, ed. by Friedrich Engels [1885], transl. by D. Fernbach), Penguin, 1981, chapters 18-20.

¹⁴ Marx, *Capital*, Volume 2, ch. 20, pp. 470-471.

points capitalists withdraw money from circulation and put it in hoards appears “as an equal number of obstacles to circulation, because they immobilize the money and deprive it of its capacity for circulation for a longer or shorter time.”¹⁵ In the final analysis, for Marx the root of the possibility of crisis is the existence of money. The realization problem implied by the lack of money to buy the produced mass of commodities as soon as hoarding takes place (a problem that overwhelmed Rosa Luxemburg) was solved by Marx by referring to masses of money hoarded in previous years, so that “the quantity of money present in the society is always greater than the part of this that is in active circulation, even if the latter rises and falls according to circumstances.”¹⁶

8. Concluding remarks

It is generally agreed that economic dynamics deals with the study of the phenomena variously referred to as macroeconomic fluctuations, business cycles or trade cycles.¹⁷ Since the 18th century, these fluctuations or cycles have been characterized by periods variously referred to as revulsions, general gluts, crises, panics, depressions, stagnations, or recessions – in which goods and services overflow in markets. As Wesley Mitchell once explained, serious efforts to explain business crises and depressions began along with the violent fluctuations in trade which followed the Napoleonic Wars, in the 1810s, after a century or more in which Europe had been experiencing at intervals speculative manias, glutted markets, and epidemics of bankruptcies. However, it was not the orthodox economists who gave the problem of crises and depressions its place in economics. Smith and Ricardo were concerned primarily with elucidating principles which hold in the long run, and paid almost no attention to the recurrent oscillations of trade. To them, crises and depressions were not among the central problems of economic theory. To force into prominence the fact that economic activities are subject to recurring crises was the work primarily of authors who were critics, not merely of orthodox economics, but also of modern society – men such as Sismondi, Rodbertus, and Marx.¹⁸ The general glut controversy was the occasion upon which Jean Baptiste Say came into prominence. Since then, Say’s law has had a constant presence, assuming away recessions and depressions that, nevertheless, have occurred time and again. As it was once said, facts are stubborn things. As for the previous discussion, for developing a theory of economic dynamics, an equation that presupposes Say’s law does not seem to be a good start.

Historical experience shows that periods of contraction in which markets do not clear because demand is insufficient are a constant to be recurrently expected in a market economy. But it would be a mistake to think that the market clearing that occurs in periods of “normal” growth represents an equality of supply and demand. During these periods of expansion, the unregulated economy by itself tends to produce increases in prices, profits, wages, interest rates, debts, and many other economic variables. Probably the simplest model of the “free enterprise system” is one in which the economy never fits Say’s law because it oscillates between upturns in which demand exceeds supply and downturns in which supply exceeds demand. But such model is at odds with most of what academic macroeconomics has produced in the past half-century. In the spirit of real-business-cycle theorists, the alternation

¹⁵ Marx, *Capital*, Volume 2, ch. 21, p. 568.

¹⁶ Marx, *Capital*, Volume 2. ch. 21, p. 569.

¹⁷ Fritz Machlup, Statics and Dynamics: Kaleidoscopic Words, *Southern Economic Journal* 1959, Vol. 26, No. 2, pp. 91-110.

¹⁸ Wesley C. Mitchell, *Business Cycles: The Problem and its Setting*, New York, National Bureau of Economic Research, 1927, pp. 4-6.

between excess supply and excess demand may be conceived as a fluctuation around a long-run equilibrium path. If such is the case, a drunkard hitting alternatively the right and the left wall of a narrow alley could be also considered as oscillating around an equilibrium path.

In modern analyses of economic conditions in general, or the Great Recession in particular, much attention has been paid to consumption and consumers' feeling, as if these elements were the key factor in pulling the economy out of troubled waters. Marx would have been very skeptical about that. For him, a necessary condition for the overall mechanism of capitalist economy is that the class of owners of capital must itself cast into circulation the money needed to circulate its surplus value.

For here there are just two classes: the working class disposing only of its labour-power, and the capitalist class, which has the monopoly of the means of social production, and of money. It would rather be a paradox if, instead, it was the working-class that initially advanced the money required to realize the surplus-value contained in commodities, out of its own resources. The individual capitalist, however, effects this advance only by acting as buyer, *spending* money on the purchase of means of consumption or *advancing* money on the purchase of elements of his productive capital, either labour-power or means of production. He only ever parts with the money in exchange for an equivalent. He advances money to circulation only in the same way that he advances commodities to it. In both cases, he acts as the starting point of their circulation.¹⁹

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¹⁹ Karl Marx, *Capital*, Volume 2, ch. 20, p. 497.

Figure 1. First page of chapter 3 of Kalecki's *Theory of Economic Dynamics* (London, George Allen & Unwin, 1954).

