A Reply to Amitava Dutt.
The Role of Aggregate Demand in the Long Term

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Summary: In an article in this journal, Amitava Dutt comments on our 1999 paper, "Being Keynesian in the Short Term and Classical in the Long Term: The Traverse to Classical Long-Term Equilibrium", contending that aggregate demand may affect the long-term equilibrium. We agree to some extent, but believe these mechanisms do not question the fundamental difference between the classical-Marxian perspective (in which $\boldsymbol{u}$ gravitates in the long term around $\bar{\boldsymbol{u}}$) and the postKeynesian perspective (in which the long-term equilibrium position of $\boldsymbol{u}$ depends on the level of aggregate demand). The basic controversy harks back to Harrod's investment function, in which the only long-term equilibrium is $\boldsymbol{u} = \bar{\boldsymbol{u}}$. We solve the problem of Harrodian instability in reference to the action of monetary authorities and governments. Dutt's defence of the postKeynesian investment function is unconvincing.

Keywords: Aggregate demand, Capacity utilization rate, PostKeynesian, Classical-Marxian, Central bank

JEL classification: E32, E11, E12

In March 2011, Amitava Dutt published an article in this journal, entitled « The Role of Aggregate Demand in Classical-Marxian Models of Economic Growth ».[1] There, he makes a number of commentaries on our 1999 study in the *Manchester School.*[2] As expressed in our title, "Being Keynesian in the Short-Term and Classical in the Long-Term", our project was to provide the foundations of a possible convergence between the Classical-Marxian approach, in which the capacity utilization rate, $\boldsymbol{u}$, gravitates around its target value, $\bar{\boldsymbol{u}}$, in the long term, and the Keynesian approach, in which in the short term equilibrium value of $\boldsymbol{u}$ can have any value, the expression of the levels of aggregate demand.

Dutt's main contention is that our models "fail to show that the long-run independence of growth from aggregate demand considerations is robust". So, still following Dutt, we "should embrace the possibility that aggregate demand affects long-run growth in capitalist economies". (We have nothing to say concerning the summary given of our formal framework, a quite accurate account.)

The three first sections are devoted to the long-term impacts of demand: (1) Demand plays a crucial role in the fluctuations of the capacity utilization rate around its long-term equilibrium value, $\bar{\boldsymbol{u}}$, within what we denote as a "medium term fluctuation", in our opinion the field of postKeynesian analysis (the empirical underpinning of these debates and the introduction of such a medium term are discussed in another note[3]); (2) The parameters of the demand function may have a secondary impact on the long-term equilibrium growth rate; and (3) The fluctuation of demand at the micro level may affect the slow dynamics of $\bar{\boldsymbol{u}}$. Overall, we contend that demand, through specific mechanisms, may to some extent affect long-term equilibrium positions. These mechanisms, however, do not question the fundamental difference between the classical-Marxian perspective (in which $\boldsymbol{u}$ gravitates in the long term around $\bar{\boldsymbol{u}}$) and the postKeynesian perspective (in which the long-term equilibrium position of $\boldsymbol{u}$ depends on the level of aggregate demand).

The focus of the two remaining sections is on the investment function, of which Dutt wants to defend the postKeynesian formulation. Section 4 considers the mechanisms governing the gravitation of the capacity utilization rate in the long run. The discussion hinges around Harrod's investment function and harks back to the issue of "Harrodian instability". We contend that the way out must be sought in the action of central authorities, which commands the stability of short-term equilibrium. We conclude that the postKeynesian framework may account for the properties of the aggregate economy in a time frame, which we denote as a "medium term", shorter than the Classical-Marxian long term. Involved are five- or ten-year long periods, as in the 1960s or 1990s. In such a medium term, $\boldsymbol{u}$, may remain at significant distance of $\bar{\boldsymbol{u}}$. Section 5 is devoted to the defence by Dutt of the postKeynesian investment function, which we judge misdirected.

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[1] Amitava Krishna Dutt, The role of aggregate demand in classical-Marxian models of economic growth, *Camb. J. Econ. (2011) 35 (2): 357-382.*

[2] G. Duménil and D. Lévy, 1999, "Being Keynesian in the Short Term and Classical in the Long Term: The Traverse to Classical Long-Term Equilibrium", *The Manchester School*, 67(6): 684-716. A preliminary version of this paper is available in our webpage, http://www.jourdan.ens.fr/levy/dle1999o.pdf.

[3] G. Duménil and D. Lévy, 2012, Being PostKeynesian in the Medium Term and Classical-Marxian in the Long Term?, http://www.jourdan.ens.fr/levy/dle2012o.pdf

1. Demand and the medium-term fluctuations around long-term equilibrium

1.1. The fluctuations around the long-term equilibrium depend on aggregate demand

What are the mechanisms accounting for the gravitation of $\boldsymbol{u}$ around $\bar{\boldsymbol{u}}$ in the long term? In modern capitalism, the agent of this gravitation is the set of central institutions in charge of macro policies, either monetary or fiscal policies. In both cases, credit mechanisms, either to private agents or to the government, are involved. The new loans or security credit impact demand, and the objective of central authorities is to adjust credit and, consequently, demand to appropriate levels. This action is difficult.

While in a long-term equilibrium, $\boldsymbol{u}$ is equal to $\bar{\boldsymbol{u}}$ (an exogenous parameter), the fluctuations around this equilibrium clearly mirror demand levels. Since growth rates are affected by capacity utilization rates, these fluctuations are also expressed in growth rates. This is the main field in which Dutt's statement, "*aggregate demand parameters have long-run effects*" is valid, although we would rather denote this time frame as "a medium term". For example, during the 1960s or the second half of the 1990s (the boom of new technologies), $\boldsymbol{u}$ remained durably superior to $\bar{\boldsymbol{u}}$.

1.2. The difficult action of central authorities

The capability of central authorities to control credit mechanisms or to impact demand by way of fiscal policy is subject to limitations. The actions are not always strong enough to check the procyclical destabilizing action of private agents. We believe the difficulty (stubborn divergences) met in the maintenance of the general level of activity at levels considered satisfactory, commands important changes in institutions and mechanisms. Much more than feedback policies is involved. The observation of the downward trend of the medium-term fluctuation in the early 1960s led the advisors of the Kennedy administration to suggest reforms concerning taxation in favor of investment; one objective (beside making profits) of financial deregulation in the early 2000s was the support of the capacity utilization rate under the unfavorable circumstances created by neoliberal trends in the United States; the major role played by agencies (in particular, Fannie Mae and Freddie Mac) in the credit policy of the U.S. government is well known.

Dutt suggests that the behavior of central banks may be biased by the lack of information or the effects of the variation of prices on real interest rates. We certainly agree concerning the existence of such limitations. They account for the fluctuations of the capacity utilization rate, which, to a large extent, may be undesired. We assume, however, that central monetary authorities (in monetary policies) and the government (in budget policies) have a sufficient capability to maintain these variations within certain boundaries around a target capacity utilization rate, though at the cost of recurrent reforms.

1.3. Distinct targets—Other mechanisms

We also agree with Dutt in those respects:

> *Economic policies may direct the system toward targets other than the stability of the general price level. Examples of such targets are full employment, the balance of foreign trade and payments, the repayment of the public debt etc. It would be easy to show in the model that, if such targets are defined, long-term equilibrium will be shifted to another position deviating from the normal utilization of capacity.*

In the general case, central authorities seek "normal" levels of activity and relatively stable price levels. But other objectives may prevail under specific circumstances. Notably, priority may be given to the financing of wars.

Dutt goes on:

> *Symmetrically, the behavior of enterprises as price-makers may be more complex than the straightforward response to the disequilibria between potential supply and demand, as in equation (1).*

Again we have no disagreement with such statements. A good example is provided by the crisis of the 1970s and stagflation. When they decide on prices, enterprises do not exclusively react to the disequilibria between supply and demand. They may also target given profitability levels, incompatible with the levels of real wages and their dynamics.

Dutt goes even further, in reference to class struggle between industrial capitalists, financial capitalists and workers:

> *However, other more persuasive Marxist theories of the state see it as a site of struggle between different classes and groups, including industrial capitalists, financial capitalists and workers, and recognize that even if industrial capitalists are dominant in this struggle they may have objectives other than those that increase aggregate demand when demand is deficient. There may be pressures to keep financial returns high (if financial capitalists are strong or if the distinction between industrial and financial capitalists becomes blurred) and to prevent unemployment from falling to low levels because it erodes working class discipline. While fuller discussion of these issues is well beyond the scope of this paper, these complex issues make it unlikely that the behavior of the central bank can be appropriately depicted with simple equations like (21) and (27).*

In various contexts we developed such analyses. A good methodology builds on basic mechanisms (our equations (21) and (27)), and further elaborates the framework of analysis in order to account for additional complexity. The basic mechanism in modern capitalism is the combination of the built-in instability inherent in private behaviors and the stabilizing action of central authorities. On such foundations, specific interpretations can be given of particular circumstances. In a sense, all circumstances are always particular, but in distinct respects, and the basic framework is crucial in the identification of these variations. Involved are well-known interrogations. Why the two-digit inflation during the 1970s? Why the Federal Reserve lost control of monetary policy in 2008? Etc.

2. Demand, income distribution, and the growth rate in a long-term equilibrium

Within Classical-Marxian models, the long-term equilibrium capacity utilization rate is equal to $\bar{u}$, and is independent from demand. One may wonder, however, if the same thing can be said of the equilibrium growth rate. The problem lies in the determination of what is meant by "demand". Demand refers here to the parameters in the demand function (instead of demand levels as in the previous sections).

Dutt devotes an entire section (section 6) to the impact of demand on the equilibrium growth rate when distribution is endogenous. He assumes that nominal wages are not fully pegged on inflation. Thus, real wages may vary with inflation rates, and the distribution of income is endogenous. Dutt's equation 37 accounts for the long-term equilibrium share of wages, a function of the two parameters, γ_0 and γ_1, in the investment function. The conclusion is:

Moreover, if income distribution is endogenous in the long run as a consequence of inflation, even with central bank stabilization, long-run growth is not independent of aggregate demand.

Leaving aside the discussion of the model, we have no basic disagreement with this statement if by "long-run growth" Dutt means "long-run growth rates". There is no doubt that the variation of the real wage rate affects the growth rate when long-term equilibrium is assumed. The link is not, however, that real wages stimulate positively the capacity utilization rate and the growth rate, the postKeynesian mechanism:

$$\text{Real wage} \xrightarrow{+} \text{Demand} \xrightarrow{+} \text{Capacity utilization rate} \xrightarrow{+} \text{Growth rate}$$

It is, instead, the direct Classical-Marxian mechanism (with $\boldsymbol{u}$ equal to its long-term equilibrium value), and real wages influencing negatively the rate of profit and the growth rate:

$$\text{Real wage} \xrightarrow{-} \text{Rate of profit} \xrightarrow{+} \text{Accumulation} \xrightarrow{+} \text{Growth rate}$$

The same conclusion would be reached if an assumption were made on an *endogenous saving rate* instead of an *endogenous income distribution*.

3. The dynamics of $\bar{u}$

Since the 1970s, the capacity utilization rate within the U.S. manufacturing sector is trended downward .We do not interpret this trend as manifesting a declining trend of aggregate demand, but a historical trend downward of $\bar{\boldsymbol{u}}$.[4] Given the issue raised by Dutt concerning the role of demand in the long term, the problem must posed of such an impact on the value of $\bar{\boldsymbol{u}}$.

A number of such attempts have been made to link the Marxian and postKeynesian perspectives. In these frameworks, the target rate $\bar{\boldsymbol{u}}$ is gradually adjusted to the prevailing $\boldsymbol{u}$. With λ denoting a parameter between 0 and 1, the following adjustment is assumed:

$$\bar{\boldsymbol{u}}_t = \lambda\, \bar{\boldsymbol{u}}_{t-1} + (1-\lambda)\, \boldsymbol{u}_{t-1}$$

With this model, both $\bar{\boldsymbol{u}}$ and $\boldsymbol{u}$ are function of demand. We do not consider this description of enterprises' behaviors as satisfactory. In a way or another, enterprises target a given capacity utilization rate which depends on technical-organizational ("institutional") conditions. They have no reason to perpetuate extra capacities when demand has been consistently low for a significant period of time.

We believe, however, that the fluctuations of demand may play a role in the determination of $\bar{\boldsymbol{u}}$ by enterprises. If demand levels were constant, enterprise could adjust their productive capacity to these levels ($\bar{\boldsymbol{u}}$=100%). A "normal" degree of under-utilization is rendered necessary by the recurrence of peaks in demand, in which the cost of deficient supply might be large, an effect of lost sales and market shares. Thus, $\bar{\boldsymbol{u}}$ may depend on the fluctuation of demand at a micro level but not on aggregate demand.

4. The investment function, "Harrodian instability", and the countercyclical action of central institutions

Underlying the debate concerning the role of demand in the long term is the basic Classical-Marxian contention that $\boldsymbol{u}$ gravitates around $\bar{\boldsymbol{u}}$ in the long term. This is also the central aspect

[4] *Ibidem*.

in the controversy between Classical-Marxian and postKeynesian economists. The investment function plays a central role, and this issue is important in Dutt's article, where he attempts to justify the postKeynesian investment function (Section 5).

Although this framework does not do justice to the monetary-credit determinants of these mechanisms[5], *the framework put forward by Harrod provides a straightforward line of reasoning, sufficient to render natural and intuitive the existence of a long-term equilibrium in which* $\boldsymbol{u^*} = \bar{\boldsymbol{u}}$. If the capacity utilization rate of an enterprise remains durably below its target value, this enterprise will diminish its investment rate, and conversely in the symmetrical situation. This statement can be expressed simply in an investment function such as the following, in which ρ_t denotes the investment rate (the ratio of investment to the existing capital stock) in period *t*:

$$\rho_t = \rho_{t-1} + \gamma_1 (\boldsymbol{u}_{t-1} - \bar{\boldsymbol{u}}) \qquad (1)$$

If $\boldsymbol{u}_{t-1}$ is larger (smaller) than $\bar{\boldsymbol{u}}$, the accumulation rate is increased, $\rho_t > \rho_{t-1}$ (decreased, $\rho_t < \rho_{t-1}$). The only equilibrium with a constant accumulation rate is $\boldsymbol{u^*} = \bar{\boldsymbol{u}}$. This latter property is intuitive. How could enterprises not alter their investment behavior as long as their productive capacity is not in line with demand levels? A problem is, however, that in this model, the long-term equilibrium is unstable. This second property is also intuitive. Enterprises respond positively to the high levels of capacity utilization rates, investing more; this reaction further stimulates demand and, thus, output and the capacity utilization rate, and the sequence is repeated in a cumulative fashion. The symmetrical chain is observed when capacity utilization rates are low. This mechanism is known as the "Harrodian instability".

We believe that Harrodian instability is not just a puzzling property in a given formalism, but mirrors a broader basic mechanism characteristic of capitalist economies. We refer to this property as a "built-in instability".[6] *Its recognition is a crucial element in the difference between our framework and the postKeynesian perspective.*

We see three ways out:

- *Kaldor.* In a linear model, an unstable equilibrium means that the variables diverge toward infinity. In a nonlinear model, a stable cycle may prevail, which can be interpreted as a theory of business-cycle fluctuations.
- *The postKeynesian train of thought.* The following equation is typically substituted for equation (1):

  $$\rho_t = \gamma_0 + \gamma_1 (\boldsymbol{u}_{t-1} - \bar{\boldsymbol{u}}) \qquad (2)$$

  A stable long-term equilibrium, $\boldsymbol{u^*}$, exists, at a certain value $\boldsymbol{u^*} \neq \bar{\boldsymbol{u}}$. We consider this investment function inappropriate in the discussion of the properties of the long-term equilibria. It could only allow for the investigation of shorter term dynamics (medium-term dynamics). We believe parameter γ_0 cannot be considered constant in the long term. The reasons are those mentioned in the introduction of the Harrodian function above.

[5] Duménil G., Lévy D., 2012, "Modeling monetary macroeconomics : Kalecki reconsidered", Metroeconomica, Vol. 63, num. 1, pp. 170-199.

[6] Not only investment is involved also consumption.

- *Our own framework.* How is stability restored given the instability inherent in private behaviors? "Markets" do not autonomously lead to this outcome. The countercyclical action of central institutions is required to stabilize the macroeconomy. The action of the central bank or a deliberate action of the government concerning deficits, both play a central role in stabilizing the macro economy.

  As contended in Sections 1.2 and 1.3, these actions of central monetary authorities or the government are "more or less" efficient, as the position of the long-term equilibrium is not always well defined and its stability not always ensured (and this may require "institutional changes"). In the history of capitalism, this feature was established gradually, as monetary and credit mechanisms developed. The growing built-in instability rendered the stabilizing action of central institutions gradually more necessary. These historical dynamics of destabilizing and stabilizing forces are a key aspect in the history of modern capitalism.

The treatment given of these issues refers to a rather advanced phase of capitalism, in which credit mechanisms have reached the degree of development at the origin of the built-in instability above, and the action of central (private or government) authorities more or less successfully checks this instability. Marx lived through a form of "intermediate" historical period, in which these two trends were gradually emerging, with a significant lag of stabilizing devices. The Keynesian revolution was a crucial step forward. The paper does not address these historical dynamics.[7]

5. Dutt's defence of the postKeynesian demand function

Dutt acknowledges the existence of the difficulty usually discussed in reference to Harrod's investment function above:

(…) *there is the problem of internal consistency of models with demand-determined long-run growth. (...) It is asked why firms continue investing at a rate that does not allow them to achieve their planned level of capacity utilization and why they would not necessarily imply long-run adjustments in investment that lead to the Harrodian instability discussed in Section 4. This argument is not entirely convincing for a number of reasons that have been extensively dealt with in the literature. We confine ourselves to four.*

The problem is, however, that none of his *four* arguments is actually a defence of the postKeynesian investment function as in equation (2).

One*, as we have seen, endogenous long-run capacity utilisation is not necessary for aggregate demand to affect long-run growth: endogenous distribution can also achieve this result.*

We addressed this point in Section 3.

Two*, there may be no such thing as a long-run equilibrium in which all relevant adjustments have been completed, and that one can analyse the long run simply as an average of short-run*

[7] Already prior to the establishment of the Keynesian framework of macro policies, large banks (as in the National banking system in the United States) tended to perform similar functions, though in an imperfect manner. G. Duménil, D. Lévy, *Capital Resurgent. Roots of the Neoliberal Revolution*, Harvard University Press, Cambridge MA, 2004, Ch. 18. But the way was long leading to the Keynesian revolution after World War II, the strict monetary policy in neoliberalism with the new corresponding targets, and the declining efficiency of stabilizing devices after 2000 and the current crisis. G. Duménil, D. Lévy, *The Crisis of Neoliberaism*, Harvard University Press, Cambridge MA, 2011.

positions. If this is the case, there is no particular reason why the long-run equilibrium (a hypothetical construction) need be qualitatively different from short-run equilibria.

In this second point, Dutt questions the relevance of the reference to a long term, since all parameters may change rapidly. (This viewpoint is inspired by Kalecki.) The problem is that this criticism may be directed toward the postKeynesian perspective as much as toward the Classical-Marxian perspective.

Three, *although firms may have some planned or desired levels of capacity utilisation, in uncertain environments they may not choose a specific level, and may be content if actual capacity utilisation falls within a band. As long as the economy remains within this band (the width of which may be taken to depend positively on the extent of uncertainty faced by firms) aggregate demand will have long-run effects on growth.*

A model could certainly be built accounting for a gravitation process within a band (containing $\bar{u}$), instead of one specific value. This sophistication does not question the basic framework.

Four*, firms may have a desired rate of capacity utilisation, but this rate may be endogenous. If firms maintain excess capacity as a defensive weapon against potential entrants, and if they choose to increase their desired amount of excess capacity when they expect the economy to grow at a higher rate than at present, it is possible to have a model with multiple equilibria in which changes in expectations change both investment and desired capacity utilisation. In long-run equilibrium, the actual and desired levels of capacity utilisation will be equal, but the desired level is endogenous and long-run growth is affected by aggregate demand and may be wage led (see, e.g., Dutt, 1997 and Lavoie, 1995).*

Yes, the degrees and forms of the competitive warfare are certainly among the determinants of $\bar{u}$, and various contexts might lead to distinct targets. The simplest model does not necessarily account for the entire complexity of mechanisms. The question of the empirical relevance remains, however, central.