ARGUMENTA OECONOMICA
No 1 (20) 2008
PL ISSN 1233-5835

I. ARTICLES

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LANGE AND HIS 1938 REVIEW OF *THE GENERAL THEORY*[1]

In February 1936 John Maynard Keynes gave birth to modern macroeconomics when he published *The General Theory of Employment, Interest and Money*. In some ways Oskar Lange seemed also very critical of mainstream neoclassical thinking although known as a working marginalist for the greater part of his life. In this paper we try to identify what Lange might have had to say of Keynesian nature especially in an important contribution from 1938 where he gave his interpretative review of *The General Theory*.

Keywords: Macroeconomics models, effective demand, the economics of Keynes.

INTRODUCTION

As is commonly known, when John Maynard Keynes published his book **The General Theory** on the 4th February 1936, he gave birth to modern macroeconomics. In his book Keynes had his grand attack on the economic mainstream. Above all, the neoclassical paradigm was rightly criticized for its lack of explanatory power when it came to explain firstly why an economic crisis as the one in the early 1930s could occur and secondly, why it could seemingly be maintained for a longer period. Keynes's answer to these two very important questions was given within the framework of his macroeconomic model of chapter 3 on the principle of effective demand. And throughout the analysis given in the book as a core element he tried to focus upon how agents have to behave in an often unstable economic environment characterized by imperfect knowledge and imperfect expectations to an unknown future.

In some ways Oskar Lange seemed also very critical of mainstream neoclassical thinking in so far as a Marxist, he held according to (Fisher 1966, p.

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1 I would like to thank Danuta Tomczak, Oestfold University College Remmen, Halden, Norway, and Heine Ruppert, Department of Environmental and Business Economics, for comments to an earlier draft of this paper. This article is a revised version of Olesen (2006).

734) – with a line of reasoning that seems to follow alongside that of Keynes when Keynes stated that economics is a moral science that has to do with a lot of very important qualitative factors, as Keynes stated it himself: "Economics is a science of thinking in terms of models joined to the art of choosing models which are relevant to the contemporary world. It is compelled to be this, because, unlike the typical natural science, the material to which it is applied is, in too many respects, not homogeneous through time… **Progress** in economics consists almost entirely in a progressive improvement in the choice of models … I also want to emphasize strongly the point about economics being a moral science. I mentioned before that it deals with introspection and with values. I might have added that it deals with motives, expectations, psychological uncertainties. One has to be constantly on guard against treating the material as constant and homogeneous"; (CW XIV, pp. 296 and 300). And that economics:

"is a valid social science only in combination with other social sciences, including history… He regarded praxiological definitions of economics in terms of "maximizing", or a "means-end" schemes, as too restrictive and as part of a trend that withdraws economics from social science and from political economy broadly conceived".

But perhaps Lange after all was a bit dualistic on this matter. As a matter of fact, we know that he is mainly seen as a marginalist who for the greater part of his life worked within the framework of the neoclassical paradigm, as also noted by (Fisher 1966, p. 734):

"But at the same time he did regard praxiology … as a valid part of political economy, and felt that socialism could learn from this body of theory. As his writings testify, he understood and skilfully expounded it. Much of his writing contains a strong marginalist message", e.g. in Lange (1944) the macroeconomic analysis of price flexibility and employment is conducted within the framework of a general equilibrium model.

The primary purpose, therefore, of this paper is to try to identify what Lange might have had so say of a Keynesian nature especially in an important contribution from 1938 where he presented an early interpretation of the fundamental messages in *The General Theory*. Before we try to highlight Lange in this regard in Section 3, we start out giving a short summing up of the main findings of Keynes's book in the following section. Finally, the paper is closed with some few concluding remarks in Section 4.

1. A SHORT SUMMING UP OF THE GENERAL THEORY

Ever since its publication, Keynes's book has been heavily interpreted and evaluated by many authors. And still today the debate is an ongoing one. What could be learned from Keynes's economic universe? And how should one today conduct a macroeconomic analysis in the right way when dealing with a modern economy? Seen from a Post Keynesian perspective, the main findings of *The General Theory* have to do with at least the following three crucial aspects that are of vital importance even now as economists are to understand the macroeconomic performance rightly: 1) economic agents have to act in an environment of true or strong uncertainty (a kind of endogenous uncertainty that cannot be calculated as is the case with risk; e.g. Dequech 1997); therefore they have to form and act upon expectations about unknown future events that might be of an imperfect character; and 2) economic processes have to do with calendar time and as a consequence of these agents economic performance becomes path dependent, and might bring about important structural changes; cf.Davidson (1996:482): "Keynes' uncertain future involves a creative economic reality in the sense that the future can be permanently changed in nature and substance by actions of individuals, groups (e.g. unions, cartels), and/or governments, often in ways not completely foreseeable by the creators of change"; 3) therefore, an economy's contextual institutional set up always matters, it may indeed induce serious real economic effects; cf. Arestis (1996:114): "The economy operates subject to a *historical* process in an uncertain world, where *expectations* inevitably have significant effects on economic outcomes. Social, conventional, political and other *institutions* shape economic events, and their evolution is studied carefully"). According to Davidson (1984), Keynes provided a more general theory than that given by the mainstream economists when he rejected three major neoclassical mainstream axioms thereby acknowledging that the relevant economic world is one that is non-ergodic, and in such a non-ergodic environment: "Keynes' claim that there is nothing in a laissez-faire system that assures that endogenous forces in the economy will always automatically move the system to a full employment equilibrium is correct. When agents fear the unpredictable future and perceive nonproducible liquid assets (including money) as safe heavens for their current claim on resources … then there is a lack of effective demand and no endogenous force to restore full employment" (Davidson 1996 p. 503). And in such a world, money would never become neutral neither in the short nor in the longer run. So according to Davidson (1984, pp. 572 and 574):

"Keynes … rejected this view that past information from economic time series realizations provides reliable, useful data which permit stochastic predictions of the economic future. In a world with important non-ergodic circumstances – our economic world – liquidity matters, money is never neutral, and neither Say's Law nor Walras's Law is relevant … when one is dealing with human activity and institutions, one may be, in the nature of things, outside of the realm of the formally precise. For Keynes as for Post Keynesians the guiding motto is 'it is better to be roughly right than precisely wrong!'"

And Keynes's economic thinking always reflected his fundamental methodological views. To him methodology and theory could not be separated. He was throughout his life inspired by his early views on philosophy and ethics; cf. Skidelsky (1983, p. 133): "Philosophy provided the foundation of Keynes's life. It came before economics; and the philosophy of ends came before the philosophy of means. Keynes's philosophy was worked out between 1903 and 1906, in his last two years as an undergraduate, and in his first and only postgraduate year". Or as Keynes himself stated his views on the matter in the very famous essay *My Early Beliefs* from 1938:

"The attribution of rationality to human nature, instead of enriching it, now seems to me to have impoverished it. It ignored certain powerful and valuable springs of feeling. Some of the spontaneous, irrational outburst of human nature can have a sort of value from which our schematism was cut off" (Keynes 1938, pp. 448-49), or as Meade (1975, p. 82) has pointed out: "the fact that Keynes was trying continuously to relate his very extensive experiences in the real world of affairs in an intuitive manner to the revision of standard economic theory was of the essence of his genius. His thinking never stood still and his critique of the existing corpus of economic doctrine was constructed out of many and various … components".

Seen from the perspective of Keynes, economic theory always had to deal with reality. Out there in the real world individuals may suffer economically as a consequence of a mismatch in expectations between suppliers and demanders not being able to bring about the optimal outcome of full employment in the economy. Out there they have to do the best they possibly can given their imperfect knowledge and imperfect expectations to a truly unknown future. In this way Keynes worked as a *realytic* economist throughout his entire life; cf. Landreth and Colander (1994, p. 463): "A **realytic theory** is contextual; it blends inductive information about the economy with deductive logic. Reality guides the choice of assumptions".

2. LANGE AS A KEYNESIAN?

As pointed out by Tomczak (2006), Oskar Lange (1904-1965) was more than just an ordinary economist. He was also a statistician, a politician and a diplomat. This is all well known and well documented. But did Lange also have something to say as a possible contributor to what later on became Keynesianism? At least he wrote what seems to be an important article in 1938 where he gave an interpretation of what he saw as the fundamental messages of *The General Theory*. In what follows, not only the 1938-contribution is highlighted but also some related works by Lange on Say's Law and on various aspects of the multiplier are briefly discussed. Lange did this work when he was at the University of Chicago from 1939 to 1945, a period in his life that accordingly to Tomczak (2006, p. 3) was: "his very active publication period".

At the very beginning (Lange 1938, p. 12) Keynes's new 1936 theoretical breakthrough is rightly recognized when Lange states:

"By introducing liquidity preference into the theory of interest Mr. Keynes has provided us with an analytical apparatus of great power to attack problems which hitherto have successfully resisted the intrusion of the economic theorist".

And then Lange starts out presenting his own economic model – a model that he claims to be a more general model than that given by Keynes although of the same nature – with four macroeconomic equations and three diagrams illustrating the demand for money (Figure 1), the consumption function (Figure 2), and the investment function (Figure 3); (Lange 1938, pp. 15-16):

$$M = L(i, Y) \quad (1)$$

$$C = \Phi(Y, i) \quad (2)$$

$$I = F(i, C) \quad (3)$$

$$Y = C + I \quad (4)$$

Equation (1) is the liquidity preference function; equation (2) expresses the propensity to consume as a positive function of total income, and perhaps also as a positive function of the interest rate – "no general rule can be stated as to the reaction of this expenditure to a change in the rate of interest" (op. cit. p. 13); equation (3) is the investment function where investment is also

positively dependent upon the level of consumption ("For the demand for investment goods is *derived* from the demand for consumers' goods. The smaller the expenditure on consumption the smaller is the demand for consumer goods and, consequently, the lower is the rate of net return on investment. Thus, the rate of interest being constant, investment per unit of time is the larger the larger the total expenditure on consumption" (op. cit. p. 14), and finally, equation (4) gives the macroeconomic identity (actually Lange also includes a fifth equation representing the quantity theory of money. In this respect Lange is certainly not following the line of argumentation made by Keynes himself. *The General Theory* represents the defeat of the quantity theory of money and the victory of the liquidity preference function).

Having put the apparatus at hand Lange then determines the interest rate, the levels of consumption and investment in the economy. He argues as follows. With a given amount of money, M_0, and a given initial level of income, say Y_0, equation (1) gives a rate of interest i_0. With Y_0 and i_0 given, equation (2) determines the total consumption, $C_{0,}$, and then equation (3) can finally give us the level of investment, I_0. Perhaps by chance we now have that the sum of total consumption and investment precisely equals the total of income – equation (4) is fulfilled – if not, we must start a process of adjustment until an equilibrium in the economy is finally established. "This process of *mutual adjustment* goes on until the curves in our three diagrams have reached a position compatible with each other and with the quantity of money given, i.e. until equilibrium is attained ... Whatever the investment and saving *decisions* are, the volume of total income always adjusts itself so as to equalize saving and investment *actually performed*" (op. cit. p. 17 and 22).

Then Lange considers what happens if the marginal net productivity of capital increases and if the propensity to consume drops down. In the first case total income begins to go up and as a consequence, also the interest rate increases. In the second case we have a decrease in both. And as Lange argues this is in good accordance with the statements of traditional theory: when the tendency to invest increases with a given level of savings in the economy we would expect the real interest rate to increase as well, and considering case number two, a drop in the propensity to consume is equivalent to an increase in the propensity to save, and with a higher level of total savings (and a given level of investment) the real interest rate has to decrease in this situation. But these results cannot be stated with certainty as Lange does. If we have a build-up of investment then the stock of capital is growing and so is the productivity within the economy. This might be expected to reduce costs lowering the price level and as a consequence of this the real money

supply increases which in itself should make the rate of interest to decrease. And with a higher level of income we would also expect the total of savings to increase which would further breakdown the arguments given by the classical theory. And if the propensity to save increases as stated in the second case this will lower the level of total income, and then we might get a decrease in the total amount actually saved. So perhaps the interest rate is not going to decrease after all as Lange argues.

To Lange as something new and very important Keynes has made it clear that the demand for money is sometimes only dependent upon the rate of interest:

"For the change of the rate of interest which is necessary to balance a given change in the demand for liquidity caused by a change of total income is nil in this case. This is Mr. Keynes' theory" (op. cit. p. 19).

What is new in Keynes according to Lange is then the case of the liquidity trap. And in Lange's own theoretical framework giving as he claims a more general model than that of Keynes – equations (1)-(4) – this is one of two limiting outcomes. The other being the one where the demand for money is only dependent upon the level of income – that is in the case of the quantity theory of money.

And then Lange goes on to point out that to make the demand for money to depend upon only the rate of interest is far from being a new phenomenon within economic theory. He states that this is already what could be found in the writings of Walras: "But whatever the shortcomings of his presentation, the liquidity preference function has been indicated clearly by Walras" (op. cit. p. 21). But this is not a fair interpretation of the liquidity preference function given by Keynes. In the Walrasian quotations given by Lange the motive of speculation is hardly present. What is essential in the writings of Keynes is that people who demand money have an expectation about the level of the rate of interest (or alternatively stated, an expectation about what should be the price level on bonds). If you expect a lower interest rate than the one actually given by the market you should start to buy up bonds because in the future you would expect to get a capital gain on your stock of bonds (you would be able to sell them at a higher price). This aspect is precisely not to be found in the Walrasian quotations given by Lange.

Next, Lange criticizes Keynes on the grounds that:

"Mr. Keynes treats investment and expenditure on consumption as two *independent* quantities and thinks that total income can be increased indiscriminately by expanding *either* of them. But it is a commonplace which can be read in any textbook of economics that the demand for investment goods is *derived* from the demand for consumption goods. The real argu-

ment of the underconsumption theories is that investment *depends* on the expenditure on consumption and, therefore, cannot be increased without an adequate increase of the latter, at least in a capitalist economy where investment is done for profit" (op. cit. p. 23).

But regarding this aspect Lange has understood Keynes wrongly. Keynes would not deny that investment decisions are dependent upon what is consumed. On the contrary, the more is consumed the higher is the level of total income and the more would have to be invested. But Keynes would argue that the decision to invest and the decision to consume are made by two different types of economic agents and that the time horizons of the two kinds of decisions are very different indeed. When you decide to invest you need a planning perspective concerning the longer run whereas a decision to consume is a lot more shortsighted in its nature. So households and firms hold different types of expectations. Therefore, the decision to invest and the decision to consume have to be considered separately. On this aspect Keynes was right and Lange is wrong.

Then Lange finishes his paper by considering how the optimum propensity to save (or to consume) which would maximize the amount of investment in his model could be determined. The condition is given on page 26, equation (10), stating: "*the marginal rate of substitution between the rate of interest and total income as affecting the demand for liquidity is equal to the marginal rate of substitution between the rate of interest and expenditure on consumption as inducements to invest*". In what Lange has termed the special case of Keynes we would reach the conclusion that:

"The rate of interest remaining constant, the optimum propensity to consume is *when the expenditure on consumption is such that a further increase does not any more increase the marginal efficiency of investment*. It has been mentioned already that this happens when the elasticity of supply of factors of production becomes zero, so that an increase of the expenditure on consumption only raises their prices but cannot increase investment" (op. cit. p. 31).

Alternatively stated we have reached an economic outcome with full employment. Arguing along these lines Lange now seems to be in good accordance with Keynes. When he considers the severe restriction given by the monetary constraint and what could be done, he also argues almost as Keynes himself did in *The General Theory*. Let us compare statements. Originally Keynes wrote:

"Thus the remedy for the boom is not a higher rate of interest but a lower rate of interest! For that may enable the so-called boom to last. The right remedy for the trade cycle is not to be found in abolishing booms and thus

keeping us permanently in a semi-slump; but in abolishing slumps and thus keeping us permanently in a quasi-boom" (Keynes 1936, p. 322).

While Lange concludes his paper by pointing out:

"Therefore, if the propensity to save does exceed its optimum it need not be curbed to avoid its evil consequences. It can be made to benefit economic progress by an appropriate monetary policy which increases the quantity of money sufficiently to reduce the rate of interest so as to compensate the discouraging effect a high propensity to save has on investment. How far such a policy is possible depends on the structure of the monetary and of the whole economic system" (Lange 1938, p. 32).

To conclude, in some respects Lange (1938) is quite Keynes-like in its content, as Fisher (1966, p. 735) somewhat overstates it: "His 'Rate of Interest and the Optimum Propensity to Consume' has been widely regarded as making Keynes clearer than did Keynes himself". How widely though this is a correct statement seems rather debatable at least at present times. And seemly Keynes himself also acknowledged this when he states that the article by Lange:

"... follows very closely and accurately my line of thought. The analysis which I gave in my *General Theory of Employment* is the same as the 'general theory' explained by Dr. Lange" (CW XIV, p. 232).

It seems as if Lange is still arguing along the lines of the classical thinking without a full understanding of Keynes's breakaway from mainstream orthodoxy. Not surprisingly this could also be said of most of the other reviews of *The General Theory* some of which even totally miss the central messages of the books alternative and new thinking, e.g. Pigou (1936) and Knight (1937). Contrary to most reviews and interpretations of *The General Theory* Lange is much more model-like in his presentation as is the case with for instance Hicks (1937) and Meade (1937). Whatever could be said about the analysis given by Lange his theoretical model seems to be not very inferior to the one given by John Hicks. But in one respect at least Hicks (1937) was way ahead of Lange. The simplicity of his famous IS/LM model by far beats that of Lange's model. And as we all know Hicks's model became *the* representative interpretation of Keynes for generations of economic students to come, or as Skidelsky (1992, p. 538) has put it: "The IS-LM diagram ... *is* the *General Theory* as it has been taught to economics students ever since: 384 pages of argument whittled down to four equations and two curves".

Now it is time to present three other contributions by Lange which in regard to Keynesianism though are of a more inferior character.

In Lange (1939) we are told that the way Keynes talks about saving and investment is not inferior to the way this item is dealt with by Robertson and the Swedish school of ex-ante/ex-post. Actually Lange points out that:

"There now seems to be substantial agreement that Mr. Keynes' definition of saving, which makes savings identically equal to investment, has the advantage of simplicity" (Lange 1939, p. 620).

Once again Lange is not only polite towards Keynes, he also acknowledged the strength of the analysis made by Keynes concerning the process of how savings and investment match one another.

In Lange (1942) Say's Law is critically examined; among others we are told that: "From its very first enunciation Say's law has been associated with the proposition that there can be no 'universal glut' or 'general overproduction' in the sense of all entrepreneurs suffering losses … Thus total entrepreneurial receipts are, under Say's law, identically equal to total cost plus planned total profit" (Lange 1942, pp. 53 and 57). This is done with a historical perspective in so far that the controversy between the two close friends David Ricardo and Thomas Malthus is taken into account. The presentation in Lange (1942) is rather technical and does not provide any convincing evidence of being a major theoretical contribution in a Keynes-like tradition although the analysis given by Lange includes an analysis of a monetary equilibrium.

Finally, let us highlight some aspects of the discussion of the multiplier given in Lange (1943). Lange starts out by presenting what he calls simple multipliers focusing upon the investment and the consumption multipliers. Then he points out the existence of a possible crowding-in effect when governmental activities take place. Contrary to the statements of the classical theory we find that increases in either public investment and/or public consumption do not bring about a decline in private investment or in private consumption, rather the contrary:

"An initial government investment leads, as a rule, to induced private investment and the multiplicand dI must include the latter … The same limitation of the multiplier arises with regard to the effect upon national income of an initial increment in governmental consumption expenditure … The multiplicand dC includes, in addition to the increase in the government's expenditure, all the induced increases in private consumption" (Lange 1943, p. 229).

As a consequence of this fact, Lange next tries to put forward the relevant multipliers which he calls the compound multipliers. Further on he develops multipliers representing an open economy where we have to take into ac-

count the leakage that arises from imports. Then he goes on to discuss some aspects of dynamics. Hitherto the multipliers developed in the paper have not taken historical time into account. ”The procedure is merely one of comparative statics. But whether we recognize it in our formulae or not, the effect of a change of one economic variable upon the value of another does operate in time” (Lange 1943, p. 237). But we must do so, Lange argues. We must have knowledge not only about equilibrium positions but also of what causes the path of transition from one equilibrium position to another. But to do so is a rather complicated and mathematically advanced task as could be seen from the presentation of the relevant formulae of the multipliers in the latter part of Lange (1943).

3. CONCLUDING REMARKS

The purpose of this paper has been to try to find out if the earlier writings of Lange contain some elements of a Keynes-like nature. As stated above this is especially the case with Lange (1938). Had he continued his work on macroeconomics within the framework of the model presented in that paper he might have got his reputation in the history of economic thought as one of the economists in what later became known as the Keynesian Revolution. But as we know he did not choose to do so. Therefore, Lange has only had a very limited role if indeed any to play in Keynesianism and in the now long lasting line of Keynes research.

Why then did Lange not try to take a more prominent position within the camp of Keynesian macroeconomists? Perhaps his economic focus changed as a consequence of him coming to the U.S. to work at The University of Chicago. Here he might have been under the influence of a much more traditional economic mainstream thinking than that of Keynes and the Keynesians. Although he made some other contributions of a macroeconomic character during the war, they were really not in essence Keynesian in their content. And when Lange returned to Europe at the end of the war then perhaps as indicated by Tomczak (2006) the politician and the diplomat took over when Poland had to be rebuilt anew. First later on in 1955 he once again took up his career as an economist being appointed professor at the Faculty of Political Economy at the University of Warsaw. By then the Keynesian Revolution was well under way and ahead of the contributions made by Lange in his earlier years and he had himself become well known as a marginalist rather than as a Keynesian. So it

might be only natural that in 1955 he put his intellectual forces into matters of a different kind than that of macroeconomics.

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Received: July 2007