

The Neoclassical Marxists

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Abstract

In the contemporary economic literature and academic environments, one encounters increasing interest in the role assigned to human skills and new technologies to interpret economic incidents and formulate viable development policies. In other words, there seems to be a shift in interest from unrealistic assumptions and mechanical relations of interactive robots i.e., homoeconomicus, in an artificially created world to “real” economics as it operates. Unfortunately, because of the worldwide ideological dominance of the sophisticated Neoclassical economic models, many attempts take place within the same ideological framework, just as in the case of Lucas and Romer. The “Holy Ground and the Foundation Stones” of the doctrine are hardly questioned.

Being loyal disciples of the dominant ideology, Lucas and Romer introduced two new approaches independently to the economic growth with educated human resources (human capital, as they call it) at the core of analysis. Overlooking the mechanical and unrealistic relations in the respective models, the striking common feature is the major role attributed to human resources. And this “striking” common feature leads to a “striking” resemblance, not only to one another, but rather to Marx, the great ideological enemy of the Neoclassical doctrine.

Lucas and Romer seem to be “latent” Marxists.

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Introduction

For Marx and many other economists in his time and before, one way or another, labor – (power) was the origin of all value created, given the natural resources. Nothing could be produced without the contribution of labor. Thus, every commodity produced could be reduced to the labor time spent on the gifts of nature. As William Petty asserted: labor was regarded as the father of (material) wealth, while the earth its mother. (in Marx, Vol. I, pp.133-134)

With the rise of Marginalist theory in about 1870s, however, the approach to the status of labor began to change radically. Ideological struggle against Marxist claims had provided premises for new attempts which claimed to escalate the economics to the “objective” scientific levels just like the Newtonian physics. Economics ought to be as scientific as, for instance, astronomy in analytical precision and prediction. Indeed, the attempts have succeeded in making economics a “pure” science commonly known as the Neoclassical economics. But, unfortunately, only at the expense of drifting away from the real world and actual transactions that take place. As the Nobel Prize Laureate Ronald Coase once stated, economics became a subject for the “blackboard economics”. (Coase, 1991, p.4)

The Newtonian physics has undergone significant changes since then, but the “imitators” remained loyal. The growth and microeconomic theories are still dominated by the Neoclassical parable. As in all other parts of the Neoclassical tradition, the models are highly abstract and characterized by unrealistic assumptions and mechanical transactions in an artificial world, as if being a sub-discipline of mathematics rather than an inter-related social science.

In 1950s, economic analysts re-discovered the crucial and vital role played by the technological change, but only as an “exogenous” factor in the growth process. Being an exogenous factor, as if coming manna from heaven, its source was unknown. An “invisible and mysterious” hand was introducing the technological change now and then and disappearing again without trail.

Enlightened from the studies and their shortcomings of economists in 1950s, some prominent scholars began to focus their analysis on the differentiated qualities of human resources in the 1960s and 1970s. It was fashionable to point out to the significance and contributions of knowledgeable labor force, yet under the label "**human CAPITAL**", instead of "**human LABOR**" although the qualified and unqualified labor constitute the two sides of the same medallion. This approach artificially separating the "Human Capital" from the rest of labor force seems to be the major cause of confusion and/or misinterpretation of many issues related to theories of growth or development, among others.

By the way, why is it called Human Capital ? Why not "**Intellectual Labor**" or "**Mental Labor**"? Could it be because of ideological clashes? A heritage from the Cold War Era?

Nowadays, a great number of economists acknowledge that technological change and/or human skill development are irreplaceable (in fact, inseparable) components of growth process which should not be left outside the system. The works of Lucas and Romer are clear evidence of this new process, although still within the framework of traditional parables. In line with new developments in growth theory attributing increasing credits to human skills and/or technological change, ensuing outcome was some inevitable modifications in the Neoclassical parables of growth theory. Meanwhile, the "Holy Ground" of microeconomic theory was still being kept safe from the infiltration of key concepts like "Intellectual Labor" (Human Capital) and "Technological Change", except for some unnoticed or ignored attempts (Gürak,1991).

In the following sub-chapters, we shall take a closer look at the works of Lucas and Romer with more emphasis on the latter scholar due to the proper weight assigned to "**technological change**" in the growth process. According to the assertions indicated in previous works, any argument of growth is bound to be sterile unless it is based on technological change (Gürak, 1999, 2000-a, 2000-b). The contributions of Lucas and Romer point out to human labor (capital) as the most important factor in their **endogenous growth theory** models. The similarities in substance of these two prominent scholars to the ideological enemy Marx are rather striking.

Lucas

In 1988, the Nobel Laureate Lucas, one of the able minded and prominent scholars of Neoclassical heritage, constructed a “**mechanical**” model emphasizing the human capital formation as an endogenous factor of growth and attributing a determinant role to it. According to the Sections 4 and 5 of the model, **human capital accumulation** through schooling and learning-by-doing, respectively, was pointed out as an **alternative “engine of growth” to technological change**. Not only growth, Lucas claimed, but also “**relative prices are directed by the human capital endowments**” (Lucas, 1988,p.29).

The Mechanical Model

By “mechanical”, Lucas means a model of economic development analyzing an “**artificial world**” populated by “**interactive robots**” as Neoclassical economics normally does. The model must be appropriate to put on a computer and run. The relevance of such a model to the real world is, obviously, of minor importance.

Lucas begins his analysis with the assessment of standard Neoclassical growth theory emphasizing “physical capital accumulation” and “technological change”. He asks the question whether the typical Neoclassical growth model has been adequate to account for growth and the conclusion is negative (Lucas,1988,p.6). “**By assigning so great role to ‘technology’ as a source of growth**”, claims Lucas, “**the theory is obliged to assign correspondingly minor roles to everything else.**” (Lucas,1988,p.15).

Then, he considers two adaptations to the standard model to study the effects of human capital accumulation. The purpose is to point out to “**an alternative, or at least a complementary, engine of growth to the technological change.**” (Lucas,1988,p.17). To do this, he adds “human capital” to the standard model. First, he focuses on a one-sector model in Section 4 with two kinds of capital; physical and human capital. The latter implies “**general skill level**” acquired through schooling. The only exogenous factor is the rate of population growth.

What is to be concluded from his exercises? **“Though the model of Section 4 seems capable of accounting for average rates of growth”,** says Lucas, **“it contains no forces to account for diversity over countries and over time within a country.”** (Lucas,1988,p.40). In other words, it says rather little about the real world.

In Section 5, in the second adaptation to the standard Neoclassical growth model, Lucas focuses on **“specialized human capital accumulation”** through learning-by-doing. In other words, all human capital accumulated is specific to the production of particular goods. Technology and preferences are given and relative prices are dictated by the human capital endowments. **“...which goods get produced where will also dictate each country’s rate of human capital growth.”** (Lucas,1988,p.40). The conclusion is, **“... this account of cross-country differences does not leave room for within-country changes.”** (Lucas,1988,p.41).

As mentioned above, the **human capital accumulation** to which the capital and output adjusts endogenously is considered as an alternative engine of growth to technology. The concept of human capital refers to the educated / trained part of the wage / salary earning labor force, having rather distinctive features from **investors' capital**. As the model indicates, Lucas’s growth process, e.g., increased value-generation, occurs in accordance with human capital accumulation. In other words, more educated/skilled labor force implies higher rate of growth. Given these distinctive features of the labor force in growth, then one is entitled to ask: What is the difference between Marx who claimed that all value is generated by the labor power and Lucas who claims the engine of growth, thus value generation, is caused by human capital?

Is Lucas a latent Marxist?

In spite of the key role attributed to "Human Labor", Lucas fails to see any correlation between human capital and technology (productive knowledge) and states, in his mechanical model, that technology and its level and rate of change is **“something whose determinants are outside the bounds of our current inquiry”**. And this standpoint makes him less interesting and relevant for us, as productivity growth due to technological change which is the product of intellectual labor, is the major hypothesis of this paper (see

Gürak,2000-a and 2000-b). But, given the features of his model, Lucas earns to be called a “**Neoclassical Marxist**”.

Romer

Romer (1990), who introduced a new dimension to the theory of growth of Neoclassical heritage, seems to have a more realistic approach to growth for his model embodies technological change as an endogenous input. At last, technology is acknowledged as an endogenous factor of growth, something that occurs within the system incessantly increasing the standards of living. After having asked the accurate question: “**Where is the discussion of innovation, invention, discovery and technical progress ?**”, Romer suggests that; “**the most important job for economic policy is to create an institutional environment that supports technological change.**” (Romer,1994). Because; new ideas produce new products, new markets and increased standards of living.

In spite of its path breaking contribution, Romer’s endogenous growth model with technological change at the core of growth process, fails to reflect actual relations on many accounts, in addition to its theoretical shortcomings. Inevitably all economic theories are an abstraction from reality, but the nature and extent of abstraction as well as of transactions are of vital importance to properly understand the nature of relations of the real world transactions and to be able to design fruitful economic policies. Unfortunately, Romer’s model, although a further advanced version of the Neoclassical parable, fails to embrace important factual ingredients such as the psychological, historical, institutional, cultural and traditional aspects of human relations. But, above all, it **lacks a theory of value and price based on technological change** as the foundation stone of a growth model. In other words, Romer's model is not based on, nor does it offer, **a value/price theory characterized by technological change**. It would be more fruitful if Romer had started with the question: “**Where is the discussion of innovation, invention, discovery and technical progress IN VALUE-PRICE THEORY?**”. In the absence of such a value/price theory, all new theoretical approaches are bound to be sterile. Nevertheless, we will take a closer look at the model.

The Role of Knowledge

In Romer's own words (1990,p.84), (productive) "**knowledge**" enters into production in two distinct ways in the form of "**new designs**";

- 1- as a new good to produce output; and
- 2- as addition to the stock of knowledge which increases the productivity of "Human Capital" in the research sector.

The former (1-) refers to new capital goods in Neoclassical jargon and could imply that;

- (a) "**existing goods**" are produced by "**new**" **capital goods** (methods of production), thus **ignoring** "**new**" goods; or
- (b) "**new goods**" are produced by "**new**" **capital goods** (methods of production), implying that **existing goods** are produced with **existing methods** only; or
- (c) "new" consumer goods are **identical** with the "new" capital goods; or
- (d) "**new**" **designs** imply both (a) and (b), i.e., **new capital goods** are used in the production of both, **existing (consumer) goods** (increased micro productivity) as well as of **new (consumer) goods** (increased macro productivity).

Since "... **all the research is embodied in capital goods**" (Romer,1990,p.99), there is obviously no research, thus no new designs, in consumer (final) goods sector. This assumption introduces some complications and drags us to a new parable. If (a) is meant, then there is a limit to growth and Romer would be contradicting himself. If (b), then (a) is ignored and a more proper expression would be that "knowledge enters into new designs; 1- as a new good to produce "**new**" output.." (compare with 1- above).

If (c) is meant, then it would be a strange world with strange goods. It is likely that Romer had alternative (d) in mind, but he gives no clear clue in this direction.

In addition, and more importantly, Romer fails to incorporate the ever growing **service sector activities** into his growth model, unless he means that goods (tangibles) consists of both, tangibles and non-tangibles (!?). But these two are not identical.

Romer's expression: "**A new design also increases the total stock of knowledge and thereby increases the productivity of human capital in the research sector.**" (1990,p.84), indicates new additions to the existing pool of knowledge in terms of

quantity of new entries per human capital. But, measuring the productivity per human capital would be extremely cumbersome, if not impossible, since the nominator (number of new entries) is a quantitative concept while the denominator, human capital, is a qualitative one.

And, Romer's claim that; "... **the stock of human capital determines the rate of growth.**" cannot account for the relative less-development level and relatively lower growth rates in countries like Russia and Ukraine. These countries seem to enjoy greater stock of human capital (number of scientists and engineers) but lack the **appropriate institutional and cultural environment**, compared to developed Western countries.

Furthermore, the generation of "new" technologies (new designs) might be easily accepted as the engine of long-run growth in developed countries. But, the developing countries constituting the great majority of consumers and markets of global economy, can continue to grow for a very long time to come **even in the absence of any new designs** simply by making better use of the "**existing**" technologies. This, in its turn, could stimulate the economic growth even in developed countries for many decades to come (Gürak, 2000-b). In other words, Romer's growth model is not applicable to developing countries as long as the technological gap prevails. In addition, according to Romer's model, due to the scarcity of human capital in developing countries, the price of human capital ought to be much higher than it is now and should even reverse the brain drain. But unfortunately, that is not the fact.

Regarding the entry of knowledge into new designs **in the first case**, the (productive) **knowledge is embodied in the tangible goods**, the producer durables, while **in the latter case**, it is (productive) **knowledge as such**. Whatever its final expressed form, it is **the same** (productive) **knowledge** in both cases. In other words, there is no difference between the former and the latter form of knowledge with regard to its substance and its source, e.g., **intellectual labor**. The difference is in appearance. This is a very important detail with regard to the source of wealth of nations.

Romer's Inputs and Sectors

Romer's model consists of four inputs and three sectors.

4 Inputs: 1- **Capital** (measured in units of consumption goods).

2- **Labor** (eye and hand coordination of a healthy physical body).

3- **Human Capital** (formal education and on-the-job training).

4- **Level of Technology**.

3 Sectors: (i) **Research Sector** (employs only human capital and produces designs, i.e. new technologies).

(ii) **Intermediate Sector** (uses designs to produce producer durables).

(iii) **Final Goods Sector** (uses labor, human capital and producer durables to produce the final goods)

The model studies price-making "**equilibrium**" conditions with monopolistic competition (1990,p.71) in spite of the **expected "increasing returns" in real life** due to incessantly introduced new designs (technological changes). There is also the critical assumption of "**free entry**" into, in reality extremely costly and difficult, R&D activities assuring that "**firms earn zero profit in the present value sense**". (1990,p.73). These two assumptions are totally unrealistic, unnecessary and avoidable but, unfortunately, indispensable ingredients for the Neoclassical parables.

In the model, the research sector, which consists of human capital only producing new designs, is the core and engine of his growth model. The higher the human capital stock, the higher will be the rate of growth. Because the new designs, i.e., technological changes, are produced by the human capital devoted to the research sector where the stock of knowledge available is the other decisive ingredient. Thus, technological change in the form of new designs supplied by **research sector that employs only human capital** utilizing the existing stock of knowledge is "**the true source of economic growth**". Once again, the human capital component of labor force that produced the existing stock of knowledge and that further advances it, is assigned the key role in the growth process, thus placing Romer in the same platform with Lucas; a "**Latent Marxist**" or "**Neoclassical Marxist**".

Being an able minded scholar, Romer certainly was not unaware that the labor force and the human capital were not two separate factors but part of the same medallion supplied jointly. But, nevertheless, he does not hesitate to make this serious mistake, treating the two as if two distinct factors in his analysis.

Why ? Is it because he cannot free himself from the chains of Neoclassical parables ?

Let us go back to the four inputs of production and examine them closely. Inputs one and two, labor and human capital, are the two inseparable parts of the same medallion, the labor force, and Romer admits it, too. The fourth input, the level of technology, refers to the level of existing stock of knowledge. This pool of knowledge is produced by the same input stated above (human capital) which constitutes a part of the labor force (Gürak,1999; 2000-a; 2000-b). In other words, knowledge is produced by the educated labor force (human capital) assisted by the eye and hand coordination of a body. Bearing this distinctive feature of labor force in mind, it would, probably, be more appropriate to study the labor force in two sub-categories;

- a) mental (intellectual) labor, and
- b) manual (physical) labor (Gürak,1993).

By doing so, we would come to the inevitable conclusion that the **level of technology**, the fourth input, is, in fact, **a product of the labor force, the intellectual output of human mind.**

Now we have only two basic inputs of production left, instead of the initial four;

- 1- the labor force (human resources, qualified and unqualified); and
- 2- capital goods.

But there is more to it.

In an interview with Joel Kurtzman for the Strategy and Business (1997, 1. quarter), Romer says that “ ... **the law of conservation of matter and energy states we have essentially the same quantity of things we have always had.**” It means that what we basically do is take these physically same quantities of things, i.e., the raw materials, and rearrange them. In other words, **all kind of goods**, including all kinds of inputs and outputs available, are **rearranged (transformed) raw materials**. In transforming them, we make use of the mental and manual labor as well as the intermediaries of production, capital goods, which

are themselves rearranged raw materials by the labor force. Therefore, one can easily claim, like William Petty, Marx and Marshall did long time ago; there are only two factors of production; **labor and nature** (Gürak, 1993).

Is Romer to a lesser degree **Neoclassical Marxist** than Lucas with regard to his growth model based on knowledge produced by the labor force?

Concluding Remarks

The fundamental common shortcoming of both Lucas and Romer is the failure to initiate their arguments on a “Value-Price Theory” which contains technological change and human skills. And this failure makes them develop their works on the loose ground and draw inferences suitable to the “parables” but fall rather short of explaining real events. One does not need to be very clever to discover this. Take their analysis to any entrepreneur and ask him to comment with regard to actual economic transactions. The result might come as a surprise to many “academic” economists but not to entrepreneurs and to economists dealing with practical issues.

I disagree with Marx on many critical aspects, but have to admit that his approach, especially with regard to the academic development stage of economics in 19th century, seems to be more realistic than his contemporary followers, the Neoclassical “latent” Marxists. Yet, the Neoclassical Marxists have one very critical aspect in common with their master;

the source of all value generated is the labor power.

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