

MARX ON DIVISION OF LABOUR AND TECHNICAL PROGRESS.

(SUMMARY)

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The aim of this paper is to reconstruct Marx's analysis of the development of the forces of production --of the dynamics of the social productivity of labour. In Marx's conception, such a development appears as an evolutionary process of interaction between the development of division of labour, both 'in manufacture' and 'in society', and technical progress; moreover, that process is intrinsic to the general process of capitalist accumulation.

In this paper it is argued that Marx's analysis provides the most consistent and developed antecedent of Allyn Young's view of 'increasing returns and economic progress' and, more generally, of the view implied in the principle of cumulative causation as developed by Nicholas Kaldor. Both Young and Kaldor acknowledge that their analyses are based on Adam Smith's vision of economic growth centred on the development of division of labour as determinant of efficiency, and, in particular, on his proposition that "the division of labour is limited by the extent of the market". Yet, it is only Kaldor who makes a passing mention to Marx; thus, in establishing the principle of cumulative causation as a view of the workings of the market mechanism, of the economic process, alternative to that implied by the mainstream equilibrium framework, he refers to the "co-existence of increasing returns and competition--emphasised by Young and also by Marx".

Marx's view of the development of the forces of production --of the social productivity of labour-- is based on a detailed analysis of the *evolution* of the conditions of production from those characterising the *handicraft system* previous to the emergence of capitalist relations to those characterising *manufacture* proper to the conditions of '*modern industry*' based on production by means of *machinery*.

Yet, Marx's analysis embodies a conception of such a development of much wider significance and validity. At the core of the analysis is the view that the dominant tendency underlying the development of the forces of production is the *progressive automatisisation* or *mechanisation* of social production, that is, its progressive reduction to forms progressively more automatic or mechanic. The fundamental notion here is the progressive *rationalisation* and *improvement* of the labour process as process of production of capital, that is, its progressive adaptation to the specific requirements --to the inner logic-- of capitalist production. This entails freeing the labour process from the restrictions imposed by the limits and imperfections of the human labour force, be they natural or acquired, and its designing and performing according to laws based on scientific and technological criteria. In Marx's own view, production on the basis of machinery --the introduction and continuous development of machinery-- not only implies an *increasing continuity and efficiency* in the labour process --creation of relative surplus-value-- but also endows the system with an increasing *elasticity in its productive capacity* which promotes the inherent tendency of capital to prolong and intensify the working day --creation of absolute surplus-value. Thus, machinery endows the system with an increasing elasticity and

potential for expansion, and, therefore, it promotes the self-realisation of capital, i.e., its progressive self-expansion on an extended scale. Once modern industry achieves a degree of development such that machinery is itself produced by means of machinery, and, hence, it 'is erected on its own technical basis', social production becomes susceptible of a *continuous and progressive process of technical change*, and, at the same time, it acquires a capacity for expansion which is only *limited by the growth of markets and by the supply of raw materials*. This process evolves through the interaction --the causal interdependence-- among division of labour in the different processes of production, social division of labour and technical progress. In this view, the form (organisation) of the process of production, the method of production/the 'technique', depends on the nature of 'capital' --of the means of production-- used; in addition, the form or method of production is seen to depend on the level of activity and on accumulation of capital, while 'capital' and labour as elements ('factors') of production are seen as essentially complementary. Accordingly, the changes in the method --technique-- of production that may occur are mostly the result of technical progress; as such, those changes belong to the dynamics of the system. This conception is very much that put forward by Kaldor in his critique of the neoclassical production function which is summarised in his dictum that "one cannot distinguish movements along a production function from shifts in that function".

Furthermore, in Marx's analysis the following fundamental elements or hypothesis can be distinguished: (1) the view of technical progress as an evolutionary process of accumulation of knowledge with respect to, and of improvement of, the various elements --material, human, organisational-- conforming productive activities, and which evolves through the interaction between the development of science and the learning process which results from experience in production; (2) the view implied of technical progress and, more generally, of the dynamics of productivity as a progressive and cumulative process of a macroeconomic--structural nature; (3) the fundamental role of the capital goods sector; (4) the interdependence between the development of the forces of production, the process of accumulation and the expansion of markets. To these elements, it shall be added the central role of competition; when Marx's analysis of the dynamics of the system on the basis of the reciprocal interaction between accumulation of capital and the development of the forces of production is seen from the perspective of the different individual capitals, *competition* appears as a fundamental driving force in such dynamics. Paraphrasing Kaldor's view of the workings of the market, it can be said that competition constitutes a (social) mechanism which generates and "transmit impulses to economic change, and thereby, creates more resources through enlarging the scope for specialisation, division of labour and technical progress".