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Evsey Domar and the Keynesian Tradition

Working Paper No. 7

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Abstract: This inquiry seeks to establish that Evsey Domar extends Keynes's thinking and in this manner helps to establish a post-Keynesian tradition. First, I shall consider Keynes's ideas concerning problems facing market capitalism as appears in his book, *The General Theory of Employment, Interest, and Money*. Then I shall continue with this inquiry and consider Domar's insights into expansion and employment and his concerns regarding capital accumulation, as well as his confronting a theory posited by Keynes concerning investment and employment, raising the issue of whether Keynes's understanding is accurate. The last part of this inquiry deals with Domar's concerns about the stage when the economy will reach its limits of capital absorption.

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This inquiry seeks to establish that Esvey Domar extends Keynes's thinking and hereby by helps to establish a post-Keynesian tradition. John Maynard Keynes in his book, The *General Theory of Employment, Interest, and Money* [1936], attempts to fill the gaps evident in classical economics and its response to the Great Depression. The classical economists' explanation for the creation of demand and full employment were not matching with the empirical evidence of the times. The suggestions made by Keynes were intuitive, but only provided a general theory of how to increase demand and realize full employment. It was up to the economists following Keynes to deepen the understanding and to propose policy solutions.

Evsey Domar helped to establish a post-Keynesian tradition by delving deeper into the suggestions and inquires advanced by Keynes. In his article, "Expansion and Employment" [1947], Domar questions whether Keynes's assumption, namely, that a lack of hoarding is all that is required for the avoidance of unemployment. This particular inquiry by Domar builds on Keynes by specifying that growth must be constant, and at an accelerated rate in order to ensure full employment. The results of this article raises some questions that Domar strives to answer in his later article, "The Problem of Capital Accumulation" [1948]. Since the maintaining of full employment requires constant and accelerated growth there will come a point with the limit of capital an economy can absorb. Although Domar's inquiries do not provide the definitive answers to the problems raised by Keynes, he does provide thoughtful insights that help to lay the foundation for further inquiry.

Keynes and the Problems of Market Capitalism

Keynes begins his master work by stating the contrast between his ideas and those of the classical economists. The theories of classical economics, Keynes (2002) professes, are applicable only for special cases and not the general. Furthermore, Keynes (2002) warns that disaster will arise by applying the classical theory to alleviate the woes of the Great Depression. In short, the speculations of the great economic thinkers were not matching the experiences of Keynes and his contemporaries. New approaches were required to understand and managed the economic pressures that came along with the Great Depression.

In his efforts, Keynes provided for a new understanding of unemployment. During the Great Depression the classical theory of the bargain between employers and workers to set the real wage explained the relatively high and persistent rates of unemployment. Keynes states that the wage bargain was discernibly untrue. If that were the case, Keynes (2002) asserts, the unemployed who are willing to work at the current wage would rescind their bid to labor at the slightest increase in the cost of living. More importantly, Keynes (2002) explains that there has been no empirical evidence of that having happened. This served to compound Keynes (2002) bewilderment when one considers that the orthodox economic thinkers believed just that. Yet they failed to accept the existence of "involuntary" unemployment.

Keynes construed involuntary unemployment as an answer to fill the gaps inherent in the classical theory. The full definition is offered by Keynes (2002):

"*Men are involuntarily unemployed if, in the event of a small rise in the price of wage-goods relatively to the money-wage, both the aggregate supply of labour willing to work for the current money-wage and the aggregate demand for it at that wage would be greater than the existing volume of employment."*

The explanation Keynes (2002) provides for why classical theorists do not admit involuntary unemployment is due to them adhering to the wage bargain between employers and employees. The classical theory would rationalize, what Keynes calls involuntary unemployment, as labourers refusing to work for a perceived low wage. In comparing classical theorist's relation with involuntary unemployment to Euclid geometers failing to understand a non-Euclidean world, Keynes (2002) sets the first emphasis of his argument for a new understanding of Economics.

Keynes denounces the classical theory that supply creates its own demand. The classical theorists, Keynes (2002) reminds us, expect aggregate demand price of out put to equal to the aggregate supply price for all volumes of output; in other words, under classical economic theory there is no obstacle to reach full employment. Which is obviously not true considering what occurred in the Great Depression. Keynes (2002) avers that what he calls *effective demand* consists of two quantities: the amount of anticipated consumption and the expected amount of new investment. The quantity of labour depends on the level of effective demand. When workers have a higher income they will likely consume more, which in turn will propel employers to produce more. The increase level of production will require additional workers, and thus unemployment decreases. Employers would lose money, Keynes (2002) explains, if increased employed was solely to satisfy the higher demand for consumption. Keynes (2002) contends that to sustain the higher quantity of employment there must be sufficient investment to absorb the excess of total output at the given level of employment. Thus, Keynes (2002) has illustrated that the propensity to consume and the rate of new investment decide the volume of employment.

If the propensity to consume and the rate of new investment are deficient then the volume of labour employed will fall lower than the level of supply of potential labourers. The task for post-Keynesians is to find the optimal level for the propensity to consume and the rate of new investment.

Domar's Insight into Expansion and Employment

Evsey Domar inquired into the sufficient conditions for the level of employment considering the theories of Keynes. Domar (1947, 34) questions whether Keynes postulation that the absence of hoarding is all that is required for the absence of unemployment is oversimplified. In his journal article, "Expansion And Employment"(1947), Domar seeks to discover the conditions required to maintain full employment over a period of time.

Domar refines the understanding of what creates the employment of labour. Before providing his perspective of how to derive the labour force Domar (1947, 37) reiterates Keynes' interpretation that employment is a function of income. Going a step further Domar (1947, 37) contends that, "*The percentage of labor employed is a function of the ratio between national income and productive capacity".* Here is an instance in which Domar utilizes the base Keynes established and expounds upon it while adding his own ideas. Applying the function of the ration between national and productive capacity to derive the percentage of labor is a specification Keynes did not have when he surmised that employment was solely a function of income. Domar (1947, 37) explains productive capacity as the total output of the economy at full employment. The best way to increase productive capacity, Domar (1947, 39) explains, is by investing in capital. Domar (1947, 39) notes that by investing in capital there is an increase in the productive capacity as well as an increase in income. Since Domar considers labor employed to be a function of the ration between national income and productive capacity, and since he considers investing in capital the optimal option for increasing productive capacity, Domar wants to know the optimal rate of growth for Investment and Income.

Domar (1947, 41) devises an equation to reach the rate of growth needed to maintain full employment over time. The equation is:

$$\frac{\Delta \boldsymbol{I}}{\boldsymbol{I}} = \boldsymbol{\alpha\sigma}$$

Where I stands for annual rate of investment. $\Delta \boldsymbol{I}$ represents for the absolute annual increase in Investment. $\boldsymbol{\alpha}$ is the marginal propensity to save. $\boldsymbol{\sigma}$ characterizes the average productivity of investment. Clarifying his equation Domar (1947, 41) explains that investment needs to grow at the annual percentage of $\boldsymbol{\alpha\sigma}$ to maintain full employment. Furthermore, Domar (1947, 41) elucidates that income needs to also grow at the annual percentage of $\boldsymbol{\alpha\sigma}$ in order for investment to remain constant. Domar (1947, 41) provides a numerical example to illuminate understanding of his equation. The average productivity of investment will be 25 percent per year, the marginal propensity to save will be 12 per cent, and **Y** will be 150 billions per year. Here is the equation, and the result:

$$\frac{150 * \frac{12}{100} * \frac{25}{100}}{150} = \frac{12}{100} * \frac{25}{100} = \boldsymbol{\alpha\sigma} = \mathbf{3}\text{percent}$$

Considering the numerical values given my Domar the Investment and Income would have to grow at annual rate of 3 percent to maintain full employment.

Domar has the answer to his inquiry. As Domar (1947, 42) defends his argument he recaps Keynes assertion that investment needs only to counterbalance savings in order to maintain full employment over a period of time. With his equation Domar (1947, 42) stipulates that new money must be invested constantly and at an accelerated. Thus, expansion of the economy must be incessant for the attainment of full employment.

Domar's inquiry into the postulations of Keynes inhibits the dogma found in the neo-classical school. The post-Keynesian tradition, with Domar as an example, is not how Keynes (2002) described the classical theorists for attempting to explain a non-Euclidean world by Euclidean theorems. In his book, The *General Theory of Employment, Interest, and Money,* Keynes with astonishment that the theorist of the classical school remain faithful to their theories despite the evidence not corresponding to them. Domar understand that Keynes is on the right track but is not convinced with his claim that non-hoarding is all that is necessary to have the sufficient investment to maintain full employment. If Domar has read and understood Keynes like a neo-classical economist the literature would not have thrived and improved. Instead of knowing by the end of his inquiry that Investment needs to grow at the product of $\boldsymbol{\alpha\sigma}$ at annual rate, the best answer would be Keynes original idea. Fortunately, Domar writes his paper with humility in the understanding he makes assumption and provides only a part of the answers. As Domar expanded on Keynes others will expand on Domar's claims. The answer Domar provides for the question he asked in his paper, "Expansion And Employment", creates others problems and questions. If full employment requires constant growth and constant investment, the limit of capital the economy can absorb will be reached. Once that limit is reached how then can full employment be reached?

Domar's Insight into the Problem of Capital Accumulation

Esvey Domar inquires whether prosperity can last despite the problem of accumulation. In his journal article, "The Problem Of Capital Accumulation", Domar (1948, 777) informs that the increasing ratio of capital to output is limited. There will come a point where the economy cannot absorb more capital. In his paper, "Expansion And Employment", Domar suggests that the economy must constantly grow at an accelerated rate to maintain full employment. Moreover, Domar (1948, 777) teaches that the more rapid the accumulation is, the quicker investment will be depleted, and thus ensuing a depression.

Domar explains his rate of growth for the prevention of excessive capital accumulation. Domar (1948, 781) proposes that by dividing the absolute rise in income by Y one gets $\alpha s,$ which is the relative rate of growth, necessary to prevent excessive capital accumulation. α stands for the propensity to save and s representents the ratio of output to capital. Once Domar (1948, 782) establish the relative rate of growth he questions whether income can and will grow at that rate.

The different possible requirements to establish the rate of growth are difficult to establish. Firstly, Domar (1948, 782) considers the possibility of preventing the problems of capital accumulation by constant inflation.

Domar’s proposal of increasing average prices by 2 to 3 percent per year would likely prove unacceptable by public opinion. Once Domar (1948, 782) rejects an inflation rate as a solution, he decided to maintain price levels constant in his continuing inquiry. The next possibility Domar (1948, 785) considers is to reduce the propensity to save. However, Domar (1948, 785) dismisses this as an option since it is dubious stability would be provided, plus government intervention would be needed to realize it. Domar (1948, 785) also offers the possibility of a reduction in *s* by developing industries that need a lot of capital and little labor per unit of out put. He considers it a question of technology that at his time was mere speculation compared to the reality of our day. Finally, Domar (1948, 785) in optimism decides to assume it is possible to reach that rate of growth. Once it is assumed it can be achieved the problem of willing it to existence depends on government intervention and social acceptance.

If reducing the propensity to save need not be the solution to the problem Domar considers the alternatives the better options. Domar (1948, 785) admits that reducing the propensity to save would be effective, but would prefer if the public could save and yet have the required rate of growth achieved. Ideally, Domar (1948, 785) considers, that a socialist society would strive to achieve both, but wonders if it can happen without one. The options available to a society like the United States Domar (1948, 785) explains would take through incentive taxation, scientific research, and accelerated deprecation etc. As well as providing incentive for firms to invest enough to induce income to rise at the require rate. Ultimately, Domar leaves his suggestions to be considered by the readers, and leaves the optimism for a realization of the public to will the changes necessary to prevent the problems of capital accumulation.

Domar's paper concerning capital accumulation is more in line with Keynesian and hence post-Keynesian thought. The journal article, "Expansion And Employment", is more closely related to Keynes, since what is driving his inquiry is in response to a theory laid down by Keynes. The inquiry in, "The Problem Of Capital Accumulation", stands only on threads of Keynesian thought. Keynes is mentioned only twice in the paper and in a broad manner. Domar (1948, 1 and 11) explain that Marxists and Keynesians spout under consumption as a serious consideration. Domar is a post-Keynesian because he builds on Keynes theories directly, but can also continue towards other questions based on his own ideas and concerns.

Conclusion

This inquiry has sought to establish that Evsey Domar extends Keynes's thinking and there by helps to establish a post-Keynesian tradition. The ideas of unemployment and the importance of aggregate effective demand written by Keynes changed the way economics perceived the world. Keynes' solutions were more in tuned with the reality of the Great Depression than the speculation and dogmatic attachment of classical theorists. Yet, even Keynes acknowledged that his ideas were only in general, thus leaving the room for others to bring attention to specialized situations. Esvey Domar is an economist who did just that. This inquiry provided the examples in Domar's article, "Expansion and Employment", to note how a post-Keynesian develops a Keynesian idea further. Once that was done this inquiry indicated how Domar's article, "The Problem of Capital Accumulation", is more of definitive post-Keynesian writing than the "Expansion and Employment".

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