LEWIS' MODEL IN ECONOMIC DEVELOPMENT AND
THE COMPARISON TO MODELS OF OTHER ECONOMISTS

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Lewis established his model with two sectors: a "capitalist" sector and "non-capitalist" sector. He asked how we could finance development (defined as industrialization) through domestic savings. His approach is based on what sector creates the profit in order to reinvest in the economy but not on what are the activities of sectors. The capitalist sector will hire labor and sell outputs for profit. The non-capitalist sector will supply the labor for the other one. The rudimentary relationship between two sectors is the movement of labor from the non-capitalist to the other whenever the supply of labor is elastic at the ruling wage. The Lewis model concentrates on the ruling wage which is the minimum amount of money for the subsistence demand. The labor supply includes both those who are in disguised unemployment and those who transfer from the household to commercial employment. This supply is abundant due to the increasing of the population in developing countries. When the capitalist wage is still higher than ruling one in agriculture, the labor will continue to transfer from the non-capitalist to capitalist sector. This movement does not cause any expense for former sector because if some labor withdraws from the inefficient sector, others can produce the same amount of outputs as all labors work there.

When the labor works in the capitalist sector and the non-capitalist's outputs are not changed, the economy will have a surplus by selling the outputs of the former sector for profit. The logic of Lewis' model is that the more unemployed labors transfer to the capitalist sector, the more profit or surplus the economy has because the wage will not raise as the demand curve shifts out.. Then, this surplus or profit will be reinvested into the economy and consequently will help economy grow. Lewis confirmed: "the key to the process is the use of the capitalist surplus" (Meier, 122)

As we look at the graph 1 where OA represents subsistence earnings, OW the real wage rate in the capitalistic sector, and WS the perfectly elastic supply of labor, we find that the labor cost that capitalist sector uses to manufacture or produce outputs is the square OLPW. It is measured by the total existing wages paid to the labors. The amount of surplus or profit which is created by the labor power is the WPN. This surplus is the only source of savings and investment. Macroeconomics shows that the growth of economy depends on the growth of savings and investment.

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Therefore a rise in the rate of surplus or savings will lead to the expansion of the capitalist sector and the economy. It also leads to the percentage rise in the national income when the wage-price ratio is constant. Lewis also emphasizes that the key to the process is the use of the capitalist surplus. The driving force in the system is generated by the reinvestment of the capitalist surplus in creating new capital. For example, by the outward shift of the demand for labor from $N_1D_1$ to $N_3D_3$ over time, when some of the initial surplus $WPN_1$ is reinvested, the amount of fixed capital increases, and the schedule of the marginal productivity of labor is then raised to the level of $N_2D_2$. Both the capitalist surplus and capitalist employment are now larger. Further investment then raises the marginal productivity of labor to $N_3D_3$. Therefore, the growth in capitalist profits is crucial in this process, and the share of profits in the national income is of strategic importance.

**Graph 1:**

<table>
<thead>
<tr>
<th>Wages</th>
<th>$N_1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>And</td>
<td>$N_2$</td>
</tr>
<tr>
<td>Marginal</td>
<td>$N_1$</td>
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</tbody>
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**Profits**

<table>
<thead>
<tr>
<th>Product</th>
<th>$W$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
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**Labor cost or wages**

P

**Quantity of Labor**

0 - L

But when the capitalist sector expands largely, it will need a larger quantity of labors from non-capitalist sector. The labor supply is not completely elastic. The labor movement will cause some expense to the capitalist and non-capitalist sectors as well. The reducing of labors in each sector will increase the average product in term of higher wages. Consequently, the surplus of profit in the former one will decrease and does the capitalist savings. Lewis presented three cases in which the economy respond different ways to the change of the labor supply. The first case is that the economy is closed and there is no trade between the two sectors, except that the capitalist sector is self-contained but imports labor, and the second case is that the economy is also closed but the capitalist sector depends on trade with non-capitalist sector for food or raw materials. But only in the third case, when the economy is opened...
and the capitalist sector can trade either with the labor supply or with the outside world, the expansion of the non-capitalist sector is focused together with the expansion of the capitalist one. The developments of two sectors must be commensurately considered. He also showed that the capitalist sector can be expended by the international trade and foreign exchange.

The agricultural policy includes the pricing policies, the taxation policies and the extension policies. In order to do every policy, the first thing must be done is to concentrate to the labor supply. In the Lewis model, the movement of labors from one to the other sector is caused by keeping wages above the subsistence minimum in agriculture and the zero marginal productivity of labors. Lewis approved that the marginal productivity of a man is zero but not the marginal productivity of man-hour. This argument is strongly confirmed by the Nurske, Sen.

Nurske showed us the relationship between total product and total population. Average product per head is reflected in the slope of the curve itself at any given point. In agriculture, the average product per head becomes highest when it reaches to A and after that will decrease due to the overpopulation. The marginal productivity therefore will be zero or negative if the population is over M and the subsistence for this population is B. Nurske shows that B is not the optimal, and overpopulation implies that the marginal product is less than the average because the additional labor contributes less than the average worker previously, and so it pulls down the average product per head. The marginal workers live, in effect, on a subsidy if their own contribution to output is less than their intake of food and other necessities (Nurske, 117). Therefore, the physical subsistence level of average product per head may lie somewhere between A and B where marginal product is still positive.

Graph 2:
Sen asserted repeatedly that "the marginal productivity of the laborer, so to say, that is nil over a wide range and the productivity of labor may be just equal to zero at the margin". The marginal product of labor becomes nil with \( OL_1 \), labor-hours and labor is not applied beyond this point. It means that we need fixed time to produce a certain amount of outputs, and \( P_1 \) is the needed number of laborer but in fact we have quantity over \( P_1 \), let's \( P_2 \), and the laborers will have to share the work. The "normal" working hours per laborer represented by \( OP_1 \) laborers now are shared by \( OP_2 \) laborers due to the population surplus of \( P_1 \), \( P_2 \). Thus, the withdraw labor will have no effect on the agricultural sector in the first period but it will cause opportunity cost in the long-run.

**Graph 3:**

![Graph of Total Output vs Labor](image)

**Number of laborer**

Basing on this argument, all authors such as Rowtow, Sen, Lewis, Nourse and Gershenkron agree that labor are needed for the industrial sector and that in the agricultural sector if a number of laborers go away, the others is able to produce about the same output by working longer, harder and more efficient. Therefore, "opportunity cost" of labor can be measured by the amount of investment that has to be put in to keep rural output constant as a laborer moves out. As the labor transferring creates an opportunity cost, then the pricing of outputs will be increase in order to precisely reflect the level of elasticity of the labor supply curve.

The authors also talked about the roles of the food surplus, the profit or savings for economic reinvestment, the marketable surplus and foreign exchange due to the trade with domestic other sectors and with outside world. In the third stage of the economic growth, the preconditions for Take-off, Rostow gave us three required changes in non-industrial sector which are the establishment of national market, the
technological revolution and the access to the foreign exchange. All changes will be influential to the taxation policy and the extension policy. When families sell the outputs in the market, they will have money to pay tax and to save. Then, the agriculture can be a source of capital formation through taxation. When the families have savings, they can buy new machine, new technology with the goal of bigger profit in future.

When talking about the extension policy in the agricultural policies, we find that the knowledge is also approached by some of authors such as Lewis, Rostow. They knew that the unskilled labors are the constraint to the development of both industrial and non-industrial sectors. However, they did not focus on this issue.

From all above analysis about Lewis model and the agricultural policies, we can say that the nature of rural poverty is the urban bias or the prejudice in the industrial sector. Meier wrote: “misallocation of resources as between agriculture and manufactures is probably rarely a major cause of poverty and backwardness, except where government, through tariffs, discriminatory taxation and expenditure policies, and failure to provide on a regionally non-discriminatory pattern facilities for education, health promotion, and technical training, is itself responsible for this misallocation”. This leads to the slow economic growth in early period in many developing countries. The most potential field in many of them is the agriculture, and if they focus on this field, they can achieve better results in this historical period.

REFERENCE


MÔ HÌNH LEWIS TRONG KINH TẾ PHÁT TRIỂN VÀ SỨ SỐ SÁNH VỚI CÁC MÔ HÌNH CỦA CÁC NHÀ KINH TẾ HỌC KHÁC

Th.S. Phạm Thuý Linh

*Khoa Kinh tế, Đại học Quốc gia Hà Nội*

Mô hình kinh tế của Lewis bao gồm hai khu vực: khu vực kinh tế tự bản và khu vực kinh tế không phải là tự bản. Mỗi quan hệ có bản giữa hai khu vực kinh tế này là sự di
chuyển của lao động từ khu vực không phải là từ bản sang khu vực kinh tế từ bản khi cung của lao động có giánTelephone mức tiền công chỉ phối. Logíc của mô hình Lewis là càng có nhiều lao động thất nghiệp được chuyển sang khu vực kinh tế từ bản thì càng có nhiều lợi nhuận hay tăng dự cho nền kinh tế bởi vì tiền công không tăng khi duồng cầu dịch chuyển ra ngoài. Sau đó thì lợi nhuận hoặc tăng dự sẽ được đem lại đầu tư vào nền kinh tế và kết quả là nền kinh tế sẽ có sự tăng trưởng. Nhưng khi khu vực kinh tế từ bản càng mở rộng thì nó cần càng nhiều lao động từ khu vực kinh tế không phải là từ bản hơn. Sự di chuyển của lao động sẽ tạo ra một vài chi phí cho cả khu vực kinh tế từ bản và không phải là từ bản. Kết quả là thậm dự hay lợi nhuận trong khu vực kinh tế từ bản sẽ giảm xuống và do đó cũng làm giảm lượng tiếp khích của khu vực này. Các nền kinh tế khác như Rowtow, Sen, Lewis, Nurske and Gershenkron cũng cho rằng khu vực kinh tế công nghiệp cần các lao động và rằng trong khu vực kinh tế nông nghiệp, nếu số lượng lao động giảm xuống khi vẫn còn thất nghiệp thì lượng sản phẩm sản xuất ra nhiều hơn dựa trên sự lao động vật và và năng học hơn. Do đó, chi phí cơ hội của lao động có thể được do bằng khoản đầu tư để giữ cho sản lượng ở khu vực nông thôn không thay đổi khi lao động di chuyển sang khu vực công nghiệp. Theo đó, giá của sản phẩm cũng tăng lên để có thể phân ănh chính xác do giảm của cung lao động. Các nền kinh tế này cũng chỉ ra vài trò của tăng dự về lương thực, về lợi nhuận hay tiếp khích để tài đầu tư vào nền kinh tế... thông qua việc trao đổi thương mại với các khu vực kinh tế khác của nền kinh tế và với các quốc gia khác.