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1. Learning Outcomes

After studying this module, you shall be able to

- Know about Fei-Ranis Model of Dualism
- Learn the interrelationship between Traditional Subsistence sector and Modern Industrial sector
- Identify the difference between Lewis model and Fei-Ranis model
- Evaluate the criticism of the Fei-Ranis model

2. Introduction

The Fei–Ranis model of economic growth is a dualism model in developmental economics or welfare economics that has been develop by *Johnc.h.fei* and *Gaustav Ranis* and can be understood as an extension of the Lewis Model. It is also known as the Surplus Labor model. It recognizes the presence of a dual economy comprising both the modern and the primitive sector and takes the economic situation of unemployment and underemployment of resources into account, unlike many other growth models that consider underdeveloped countries to be homogenous in nature. According to this theory, the primitive sector consists of the existing agricultural sector in the economy, and the modern sector is the rapidly emerging but small industrial sector. Both the sectors co-exist in the economy, wherein lies the crux of the development problem. Development can be brought about only by a complete shift in the focal point of progress from the agricultural to the industrial economy, such that there is augmentation of industrial output. This is done by transfer of labor from the agricultural sector to the industrial one, showing that underdeveloped countries do not suffer from constraints of labor supply. At the same time, growth in the agricultural sector must not be negligible and its output should be sufficient to support the whole economy with food and raw materials. Like in the Harrod-Domar model, saving and investment become the driving forces when it comes to economic development of underdeveloped countries, in this model both primary and secondary sector are both driving force of economic development in developing countries.

3. Features of Fei-Ranis model

Like Lewis model, Fei-Ranis model is also based on the Nurkse's model of Economic Development. Fei-Ranis model tries to overcome the limitations of the Lewis model by incorporating certain major departures from it due to which Fei-Ranis model is seen as an improvement over the Lewis model. These departures are as under:

- Lewis model invariably underscores the significance of the agriculture sector, it talks about a model of growth in which there is no interaction between the capitalist sector and agriculture sector, except that the surplus labour force moves from agriculture sector to the capitalist sector. In this model, one sector continues to grow while the other to lag behind, i.e. capitalist sector grows at the expense of the agriculture sector. However, Fei-Ranis model emphasize that the interaction between K sector and agriculture sector is significant and this interaction accelerates the process of overall economic development in the economy.

- Fei-Ranis model is closer to reality prevailing in the LDC as it takes into account the impact of population growth on labour force. This feature is completely missing in Lewis model.

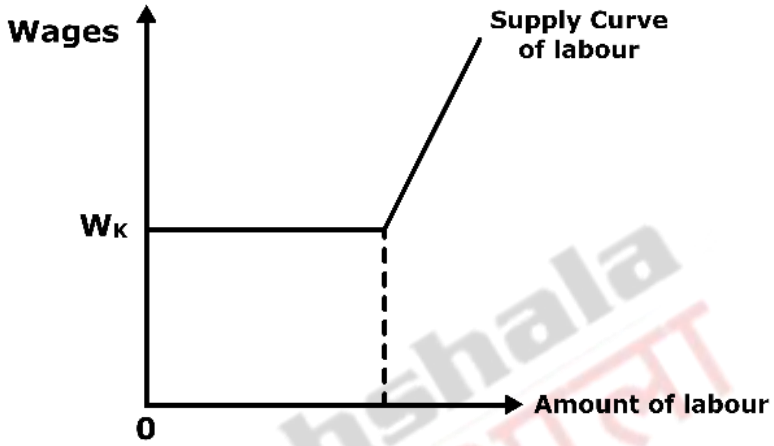
- Lewis model does not assign any role to the landlord i.e. landlord is a passive factor and does not have any important role to play. But in Fei-Ranis model landlord plays an important role in the sense that he maybe prompted to introduce innovation and technological progress in the agriculture sector under two circumstances:

(a) if the price of agriculture sector products is allowed to rise
(b) In case of subsidization of input cost

- In Lewis model, the speed of transfer of labour force from agriculture to capitalist sector depends upon the growth of profits of the capitalist sector only. In Fei-Ranis model, it depends upon rate of growth of population, nature of technological progress and growth of industrial capital. Industrial capital depends upon growth of profits of industries and surplus generated in agriculture sector.

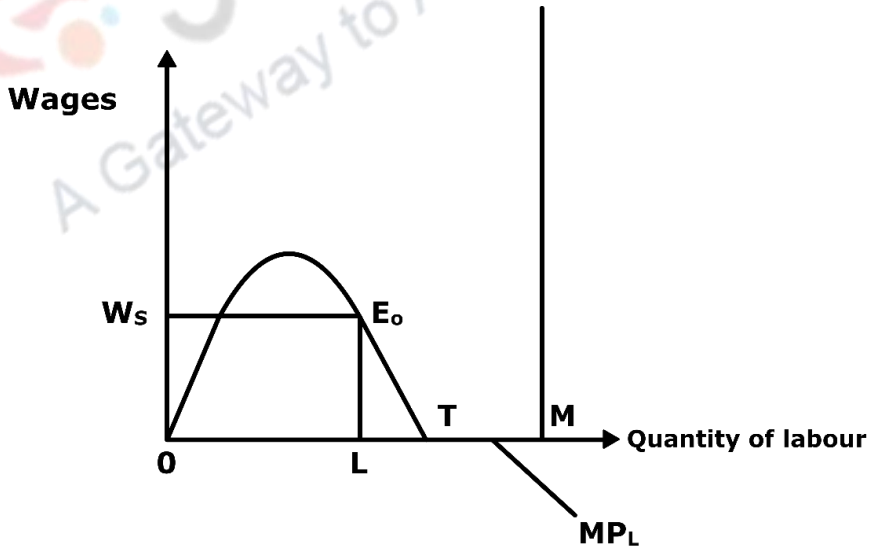
- In the Lewis model, the end result is a lopsided pattern of development because capitalist sector grows at the expense of agriculture sector. The two cannot grow simultaneously and

the gap tends to increase overtime. In the Fei-Ranis model on the other hand, balanced growth of capitalist and agriculture sector is necessary because otherwise the end product will be stagnation.



- In Fei-Ranis model when the surplus labour force is exhausted, the supply of labour curve turns upward implying thereby that higher wage rate must be paid to the workers if more labourers are to be employed. In Lewis model, the supply curve is perfectly elastic.

Three Stages of the Process of Transition



OM is the total quantity of labour force, which is fixed while the demand for labour is given by the marginal product curve of labour which is MP_L. OL amount of labour force is productively employed and LM is underemployed or unemployed.

In the first stage, that labour will get transferred from A Sr to K Sr whose marginal product is negative or zero so that there is no difference on the performance of A sector with the departure of that labour force.

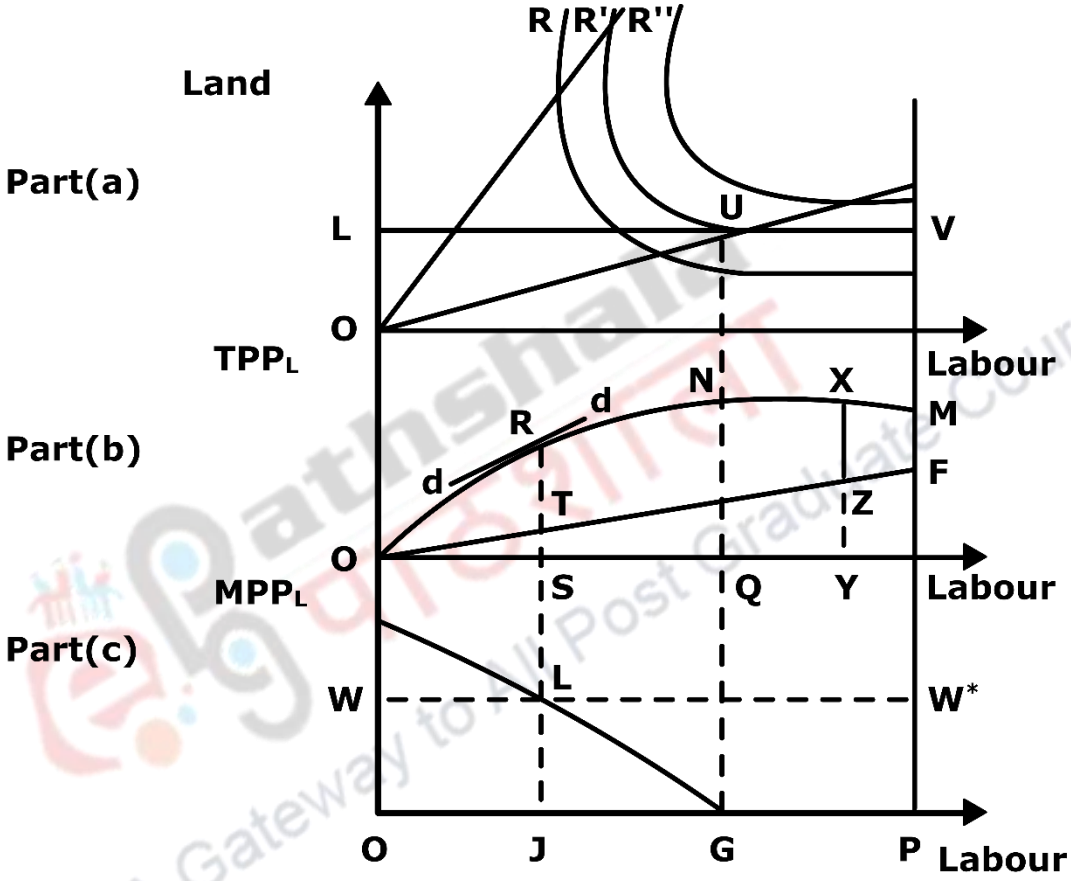
In the second stage, that labour force is transferred whose marginal product is positive but less than the subsistence wage rate. This departure would make a difference to the A Sr output.

In the third stage, there is commercialization of agriculture whereby the agriculture sector and K Sr compete with each other for labour force. Hence, they bid the wage rate and whosoever provides an increased wage rate will succeed in getting the surplus labour force.

Assumptions of Fei-Ranis Model

1. There is a presence of dual economy. Traditional or agriculture sector is passive and stagnant in nature while the capitalist sector is active and progressive in nature.
2. Supply of land is fixed, and both A sector and K sector makes use of the land.
3. Population is an exogenous factor i.e. it is determined by factors other than those present in the model.
4. Real wage rate in the industrial sector is fixed. This wage rate is equal to initial level productivity and is also called *constant institutional wage rate.*
5. There are constant returns to scale with respect to labour where labour acts as a variable factor in both A Sr and K Sr.
6. There is no accumulation of K in the A Sr. except in one form, i.e., land reclamation. It means that if there is no technological breakthrough in agriculture, the sector will become non-remunerative and it will be characterized by fatigue. Therefore, land's fertility has to be maintained.
7. Output of the A Sr. depends upon land and labour, while that of the K Sr. depends upon labour and capital.
8. Marginal product of labour is zero at some points and such labour force can be transferred from A Sr to K Sr, where the productive capacity is more without any loss to A Sr.

Functioning of Agriculture Sector



In part (a), the total supply of labour in the economy is fixed at OP on the x-axis and the total amount of land available is OL on the y-axis. OA and OB are the ridgelines, they are the boundaries within which there is a possibility of substitution between various factors of production i.e. land and labour. The curves joining the two lines- R, R', R'' are the production frontier lines. Labour force productively employed is LU, therefore, labour force and surplus is UV.

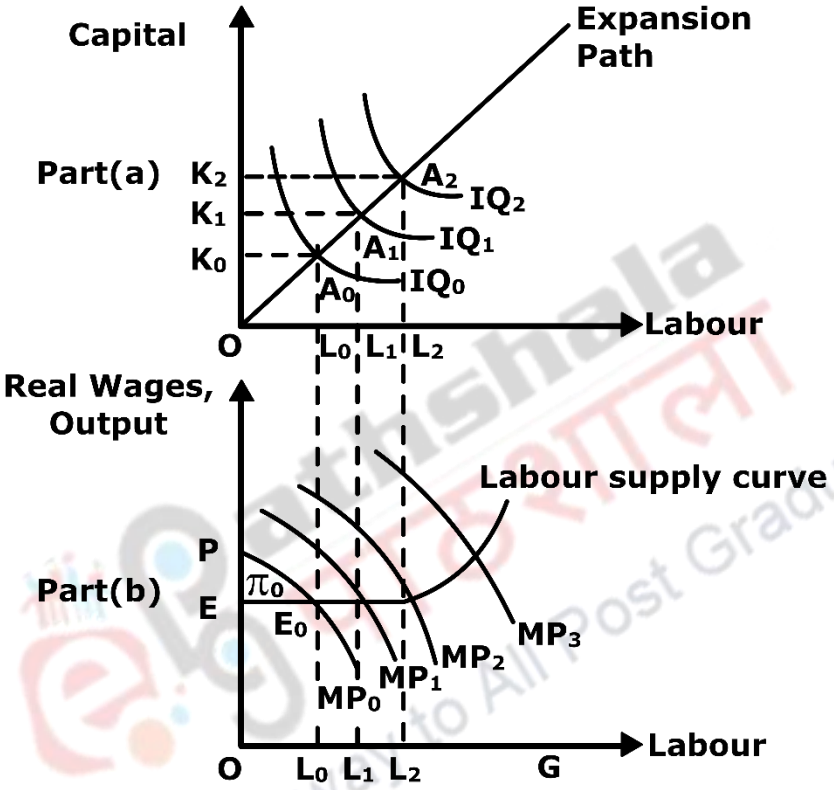
In part (b), we have amount of labour on the x-axis and the total product of labour on the y-axis. Total product of labour is OM, after N it slightly diminishes. OF is the corresponding wage bill.

In part (c), quantities of labour lies on the x-axis while the marginal product of labour on the y-axis. OW is the initial wage rate fixed at subsistence level. At G, MP_L is zero; therefore, beyond G there is all surplus amount of labour force (GP).

In the first stage of transition, let us assume for the sake of convenience that from the surplus labour force (UV=QP=GP) we withdraw YP [from part (b)]. We make use of OY labour force to produce XY level of output and the total wage bill is ZY. Therefore, the total agricultural surplus is XZ. In the Fei-Ranis model, this XZ is the source of hidden savings which can be mobilized; leading to higher capital accumulation and can put the economy on the path of higher growth. If these savings are not visualized for the K Sr., they will remain hidden. Hence, agriculture sector makes two important contributions to the process of growth – surplus labour force and surplus output for the growth of K^{ist} Sr.

In the second stage of transition, that labour force is transferred whose marginal productivity is positive but less than the constant institutional wage rate SQ.
Finally, in the third stage, there will be commercialization of agriculture and both the sectors will compete for OS amount of labour force.

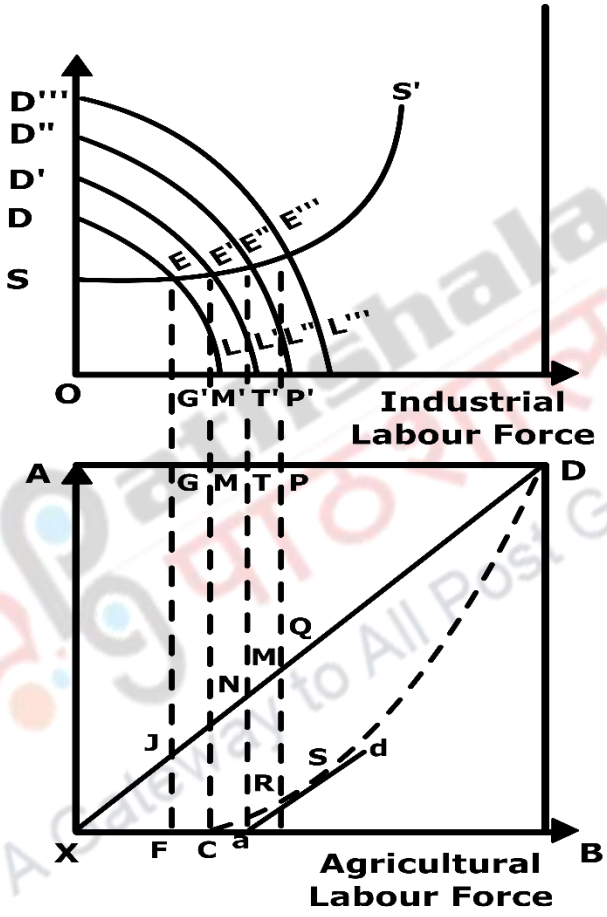
Functioning of Industrial Sector



Part (a) has labour on the x-axis, while capital lies on the y-axis. IQ_0, IQ_1 and IQ_2 are the isoquant curves representing various combinations of L and K for a given level of output. Higher isoquant represents higher level of output. OM is the expansion path of K Sr corresponding to OK_0, if we apply L_o amount of labour force we get MP_0 curve (in Part (b)). It tells us that if the wage rate is OE and OL_0 labour force is applied, then the total wage bill is $OExOL_0$, and the total output is OPE_0L_0. Therefore, the total surplus is EPE_0. Every capitalist is tempted to increase its surplus and hence he ploughs back this surplus in the business. This leads to increase in capital to K_1 and increase in labour to L_1 corresponding to a higher marginal product MP_1 and surplus will be even higher. This surplus will again be

ploughed back only till the point where labour force gets fully exhausted from A Sr (till E_2). Beyond this, any further amount of labour force will only be available at a higher wage rate.

Interaction of A Sr. and K Sr.



In Part (a), SS' is the labour supply curve in the K Sr. and DL is the marginal product of labour. Initially the K Sr. uses OG' amount of labour force and correspondingly AG part of labour force gets transferred from A Sr. to K Sr. Corresponding to G, we have point F and J in Part (b). OX is the total wage bill and OF is the total physical productivity curve in the A Sr.

With OG' amount of labour force, the total surplus of the K Sr. is DSE corresponding to which the total wage bill is OSEG'. So the capitalist is prompted to reinvest DSE in the K Sr. due to which the DL curve shifts upward to D'L' and E' is the new point of equilibrium corresponding to which M' is employed in the K Sr. For M' amount of labour force, OM is withdrawn from the A Sr. leading to MN wage bill and NC agricultural surplus. Now with M' amount of labour force in the K Sr. the total surplus in the K Sr. amounts to D'SE' which will again be reinvested in the business. This process of transfer of labour force from A Sr. to K Sr. will continue to happen until point "S" where the gap between the total physical productivity and the wage bill is maximum.

4. Criticism of Fei-Ranis Model

- According to Berry and Soligo agricultural output in first phase of Ranis –Fei model will not remain constant and may fall whereas FR model assumed that MP_L is equal to zero in agricultural sector in initial stage.
- This model has been criticized on the grounds that capital also play major role in determining output in agricultural sector which was neglected by the Ranis-Fei model which maintained that output is only determined by land and labour .
- As Fei and Ranis model assumed closed economy, so it has neglected the role of foreign trade.
- Last but not least, in LDC the subsistence agricultural sector has low productivity which caused the sluggish nature of industrial sector, but according to Jorgenson, who argued that for improvement of the modern sector drive the traditional sector.

5. Summary

- Ranis and Fei (1961) formalised the Lewis theory and defined three "phases" of dualistic economic development by sub-dividing the first stage in the Lewis model in to two phases.
- Ranis-Fei theory of dualistic economic development therefore provides a Suitable theoretical framework for studying the growth path of labour-surplus developing economies Like Asian countries.
- Fei-Ranis (FR) model of dual economy explains how the increased productivity in agri. sector would become helpful in promoting industrial sector.
- Fei –Ranis model ignored the role of foreign trade as it is assumed closed economy rather than open economy.