

CHAPTER-II

THEORETICAL FOUNDATIONS OF BRAIN_DRAIN

The writers belonging to both these groups have stated some of the effects of brain drain on sending-developing country. A few of them have empirical data in support of their arguments. We examine both the approaches in the following paragraphs.

2.2 GRUBEL AND SCOTT THEORY :-

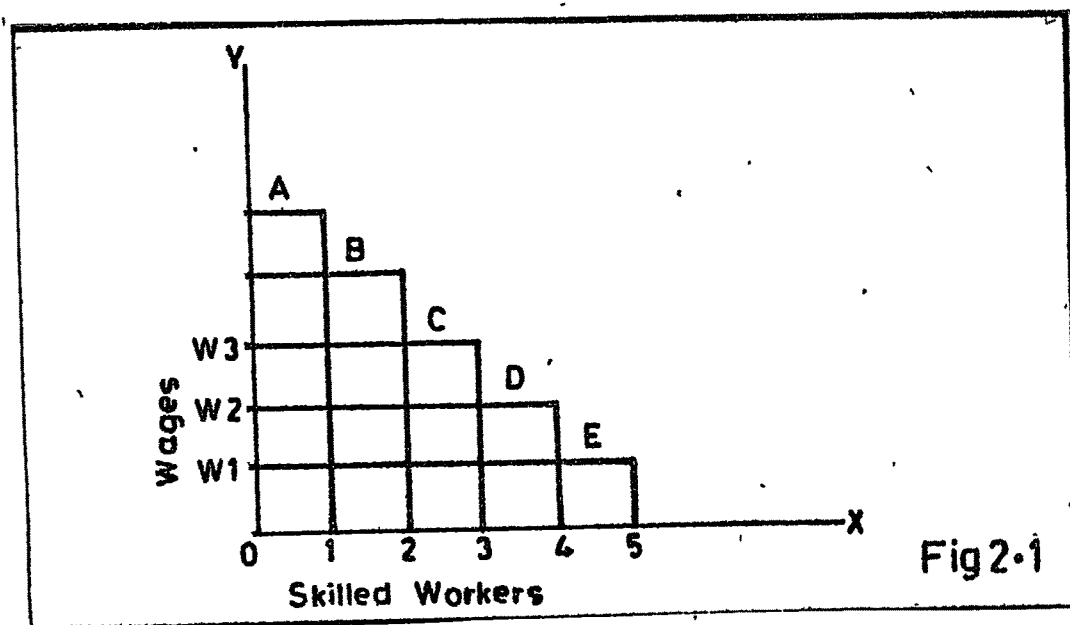
The first serious and meaningful attempt at formulating a theory of brain-drain was made by H.G. Grubel and Scott defined a country to be " an associations of individuals whose collective welfare, its leaders seek to maximise." They reject the concept of nation as being " a nation-State whose national objective is to maximise its military and economic power"²

Accepting 'Social welfare maximisation' as the collective aim of the people of the country, they state that welfare is bound to increase when income to all the people is maximised. In such a condition, according to them, emigration of skilled manpower should be welcomed whenever two conditions are met.

- 1) The emigrant improves his own income.
- 2) The emigrant's departure does not reduce the income of those remaining behind. The first of these conditions is automatically met when the migration is at the desire of the migrant, while the second is deemed to be met in the case of a market economy where persons are paid according to their

marginal product and hence where the migrant removes both, his contribution to national output and income that gives him claim to this shares so that other incomes remain unchanged.

This can be explained by using Fig. 2.1 in which is plotted the marginal product for highly skilled workers in a perfectly competitive economy. It is assumed that initially there are five skilled workers in the economy but that in the absence of emigration restrictions three of the five skilled workers will leave the country. The initial total product of the economy is the sum of the areas under rectangle, A through E and W_1 is the wage paid to the skilled workers.



The question is what effects does the emigration have on the income of the remaining population. Grubel-Scott analysis provides the answer as : emigration of the fifth skilled worker reduces national product by rectangle E which is the income of the fifth skilled worker and hence there is no reduction in the income available for the remaining population, once the fifth skilled worker has left, the wage paid to skilled workers will increase to W_2 and emigration of the fourth skilled worker than reduces national product by rectangle D, which is now the income of the fourth skilled worker and hence there is no reduction in the income available for the remaining population.

The same analysis can be continued upto the departure of the third worker. Grubel and Scott admit that; there may be income redistribution effects, through changes in the marginal product of the remaining people. Due to the departure of a skilled worker, the marginal products of the other than skilled workers would change causing a change in the incomes of such people. However since brain-drain involves rather small numbers of people, these effects are likely to be small enough to be safely considered negligible. The effect of migration on welfare of those remaining behind has to be sought either in the short-run adjustment costs or in market failures.

The short-run costs are due to production losses,

professionals and P_0 is the price for their services. If N_0 people migrate to the other country, the loss of consumers surplus is $Q P_0 P_1 R$, but in that case the income of those who remain behind increases to the extent of $p_0 P_1 R S$. This leads to a net loss of $Q R S$, which is marginal and will subsequently disappear when the supply of professional specialists will increase as a result of higher price being offered to them.

Johnson's theory, explained above is not tenable since the supply of professionals is not dependent merely upon the price offered.

2.3 CIRITIQUE OF THE INTERNATIONALIST'S APPROACH :-

The theory developed by Grubel and Scott has been criticised by some other economists in the following manner:

- 1) Brinley Thomas despite his overall support has pointed out some of the major shortcomings of the analysis. Grubel and Scott, in their theory have dismissed the short-run adjustment costs of brain-drain by claiming that such costs would be only frictional in nature. Thomas argued that this treatment is not convincing since, the training of human capital requires a fairly long period and the substitution principle therefore loses its validity.
- 2) The other point of criticism mentioned by Thomas is about the long-run losses stemming from market failures remedied through government action. Grubel and Scott theory stated that publicly financed education entails no debt to society since it is an intergeneration transfer of

funds. Commenting on it, Thomas argued that most professional emigrants are highly paid people in lower age groups, whose emigration reduces the tax revenue of the sending government.

- 3) Norman D. Aitken⁷ has also criticised the Grubel-Scott approach. In his opinion, their argument in connection with "the income of those who remain behind remains unchanged" in a series of static comparisons of an economy, with and without the skilled worker at the margin.
- 4) The other weakness pointed out by Aitken, is the use of absolute reductions in present income as the criterion for determining whether or not emigration has an advance effect of the remaining population, by Grubel-Scott theory. According to Aitken, the selection of this criterion forces one into a comparative static analysis of emigration and prevents one, from analysing its dynamic effects.
- 5) The validity of the following assumptions of the Grubel and Scott theory can be questioned.
 - a) The inherent assumption of perfect competition,
 - b) The payment of wages as per the marginal product of workers.

- c) Earning higher incomes to be the only motivating factor, for emigration.
 - d) The quantification of social costs of brain-drain only through an objective condition of impact or no impact on the incomes of those remaining behind.
- 6) The approach developed by Harry Johnson can be criticised on the ground that augmentation of world welfare- which he considers to be the outcome of brain-drain is possible only if there is a Global Government- which by no means is a practical idea. At least in the near future.

These are some of the shortcomings in the internationalists approach which can be pointed out. However, it does not mean that the nationalists approach is the current approach as it also suffers from some shortcomings. We discuss below the nationalist approach to brain-drain.

2.4 NATIONALIST'S APPROACH :-

In contrast to the approach by the internationalists, there is a good no. of economists who consider that brain-drain definitely involves, financial as well as other types of losses for the sending country.

Foremost among such economists is Don Patinkin.⁸ In his model, human capital plays a very crucial role in economic development of any country and in fact is an indispensable factor

There are some externalities which are associated with the migrating persons and such externalities are lost to the sending countries. The internationalists argument of world welfare being argmented or in other words the application of trade theory to the flow of human capital was denied by him on the ground that the world walfare is likely to increase only in the conditions of a world government.

According to Patinkin brain-drain poses no problem in the short-run, but it certainly is harmful in the long-term.

Patinkin's view was supported by V.M. Dandekar.⁹ According to him, higher premium is paid on the foreign returned persons even higher positions are offered, but such offers are infact responsible for migration. The initial temporary migration, finally results in permanent settlement abroad since, the foreign returned persons can't adjust themselves in their home countries because of the cultural, economic and social differences between the two nations, and more particularly between the jobs he does abroad and may be offered in his home country.

N.D.Aitkin¹⁰ has also supported the nationalists approach by showing the drawbacks in the Grubel and Scott approach though he has not developed any independent approach as much.

2.5 CRITIQUE OF NATIONALISTS APPROACH :-

The approach of Don Patinkin can be criticised for some of its implications. It implies that each emigrant from a developing country necessarily, will have some externalities which are useful to the society and which are lost in the process of his migration. However, there is no place for presuming that each emigrant should have some social externalities.

Further, neither Patinkin nor V.M. Dandekar appears to have paid any serious attention to the loss of tax-revenue on the part of the sending country and the fact that the receiving country is able to tax the incomes of the immigrants even though it has not made any investment in the education of the immigrant brains.

The nationalists approach has also ignored the fact that the 'brains' produced by the developing countries are actually produced with much time and capital spend on them. The emigrants not only take away the capital embedded in them (human capital) but they also take away the potential addition to the physical stock of capital.

Thus, it is evident from the above discussion of the two approaches that, none of these two, provides a satisfactory analysis of the problem.

2.6 POSSIBILITY OF A NEW THEORETICAL APPROACH :-

Considering the limitations of the earlier approaches, a new theoretical approach can be developed in the following way.

Whether or not a developing country should welcome the brain-drain would depend upon the specific individual circumstances of the nation, but some generally applicable criteria could be suggested. :

- I) The developing country is ~~the~~ one which fulfills the following conditions :
 - a) It is a labour surplus economy.
 - b) The supply of skilled manpower is relatively inelastic.
 - c) In spite of the wide-spread unemployment, remunerative jobs are not difficult to be secured for the highly educated manpower.
 - d) The average income of a skilled worker in such a country is less than that of a similar worker in a developed country.
 - e) Job-satisfaction, atmosphere conducive to further research, better working conditions, reasonable status are some of the other motivational pulls for the educated manpower in such countries.

- II) The developing country fulfilling above conditions usually will have the following effects of brain-drain. :

- a) The incomes of those who remain behind will have no impact.
 - b) The income of those going abroad will be normally improved.
 - c) The huge costs (Particularly considering the time consumption involved in imparting higher education and wastages and inefficiencies in financing education.) involved in educating the emigrants are not likely to be directly compensated.
 - d) The out-letting economy will lose the potential addition to Gross National Product by such emigrants.
 - e) The loss of potential tax-revenue for the out-letting country will have to be borne.
 - f) The loss of externalities associated with the emigrants, personal as well as professional- are not likely to be easily compensated through replacement.
 - g) The positive effect could be in the form of remittances of such emigrants to the home country.
 - h) On the other hand, the in-letting or receiving country will be benefited in the following ways. :
- 1) There will be a net addition to the Gross ^National Product by such immigrants.
 - 2) The incomes of the immigrants can be taxed.
 - 3) Cost of training in money and time in the present are avoided.

III) Taking into consideration the above mentioned effects of brain-drain, on the developing economy, a formula to gauge the actual impact could be prepared, if we use PIA, P T A, RA, and PCA as symbols and where,

PIA = A's potential income in the home country.

CA = Per capita cost on education of 'A' for a given period.

P T A = The potential tax revenue from A in the absence of his migration.

RA = Remittances of 'A' to the home country during a given period.

The equation of neutral effect of brain-drain can be :

$$PIA + CA + P T A = RA.$$

The left side of this equations represents the loss to the out letting country while the right side stands for gains from 'A'S migration. If the two sides are equal, there will be no real impact on the sending nations.

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