

Growth Pole Model Proposed by Perroux:

GROWTH POLE refers to the concentration of highly innovative and technically advanced industries that stimulate economic development in linked businesses and industries. This concept was first introduced by French Economist **Francois Perroux** in 1950 based on Schumpeterian theory of development and theory of inter industry linkages and industrial interdependence, was further sharpened in following publications, and finally evolved into an idea that came to take on a meaning rather different from the one posited by **Perroux**. While he had conceived a growth pole to be a focus of economic development in an abstract economic space, it was interpreted by his disciples, particularly **Jacques Boudeville**, to be a focus of development in geographic space. **According to Perroux**, “Growth does not appear everywhere and all at once, it appears in points or development poles, with variable intensities, it spreads along diverse channels and with varying terminal effects to the whole of the economy”. It is related to **Perroux’s** idea of an economic space as a field of forces consisting of centers, “from which centrifugal forces emanate and to which centripetal forces are attracted. Each center being a center of attraction and repulsion, has its proper field which is set in the field of other centers”.

History of the Theory:

Perroux, a 20th-century French economist, was largely influenced by the eco-political climate around him when he wrote about the concept of the growth pole. At this time, France was in its post-World War II phase of rebuilding itself under the Marshall Plan. Urban areas were the primary centers of economic growth, relying on technology- and innovation-based industries that thrived on primary resources such as iron ore or agricultural products from the surrounding region. These concentrations of industries often affected the economies of geographical areas outside their immediate regions. Also apparent to **Perroux** was the dominance of colonial centers over geographically dispersed colonized areas.



Basic Assumptions:

The concept of growth poles and growth centers is based on certain assumption about the real world.

1. Human activities must cluster together to generate internal and external economics of scale.
2. Clustering create social problem like congestion, diseconomies of scale and spatial imbalance in social and economic dev.
3. Policy interventions to generate to generate growth foci in areas.

Object of this Theory:

Perroux in his attempt to understand the modern process of economic development, discovered that –

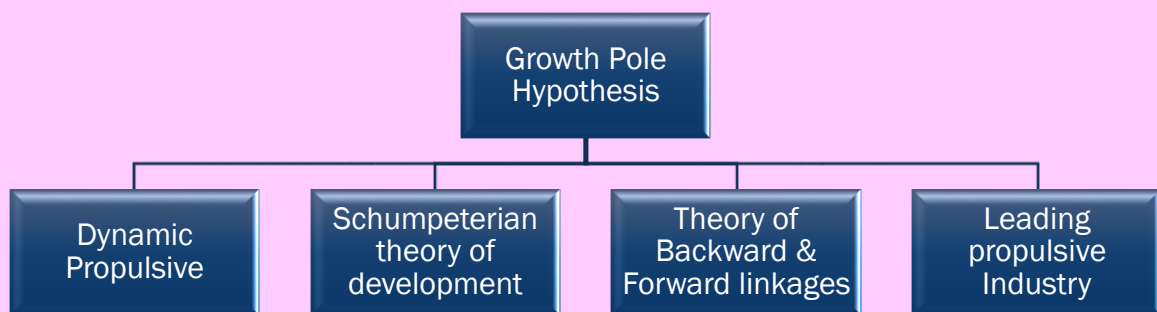
1. Growth does not appear everywhere at the same time.
2. It manifests itself in points or poles of growth with variable intensities.
3. It spreads by different channels and with varying terminal effects on the economy as a whole.

According to Perroux, “The process of economic development is essentially unbalanced and the centers of growth may give birth to other esters or it may become a center of stagnation.”

Hypothesis of the Theory:

The core idea of the growth poles theory is that economic development or growth is not uniform even an entire region, but instead takes place around a specific pole. The pole is often characterized by a key industry around which linked industries developed, mainly through direct and indirect effects. The expansion of key industry imputes the expansion of output, employment, related investments as well as new technologies and new industrial sectors. Because of scale and agglomeration economics near the growth pole regional development is unbalanced Transportation especially transport terminals, can play a significant roles in such a process. The more dependent or related an activates is to transportation, for more likely and strong thing relationship.

At a later stage, the emergence of a secondary growth pole is possible. Mainly if a secondary industrial sectors emerges with its own linked industries also emerge.



Basis of Perroux’s Hypothesis:

1. Schumpeterian theory of development:

According to Schumpeterian, “Economic Development occurs as a result of discontinuous sports in a dynamic world”

(i.e. Growth doesn’t appear everywhere and all of once; it appears in pints or development poles with variable inter sites; it spread along diverse channels and with varying terming effects to the whole of the economy).

According to Perroux, “Once growth emerges in a particular place, it becomes center of growing economic activities ad in turn induces growth in the dependent regions.”

2. Theory of Inter-industry uncages and industrial interdependence (Backward and Forward linkages):

Based on this theory **Perroux** developed his idea of economic space as a field of forces consisting of centers (or poles or foci) from which centrifugal forces emanate and to which centripetal forces are attracted.

Basic types of polarization:

Growth poles theory thus documents the contribution of polarization to the development of poles as well as peripheries and this theory identifies four basis types of polarization:

- A. **Technological and technical** – based on the concentration of new technology in the growth pole.
- B. **Income** – the growth pole contributes to the concentration and the growth of income due to expansion of services and dependence on demand and profit.
- C. **Psychological** based on the optimistic anticipation of future demand in the propelled region.
- D. Geographical based on the concentration of economic activity in a geographically determined space.

Contributions of the theory:

The same author then proposes that in spite of certain drawbacks the theory of growth poles makes several contribution:

- 1.It uncovers inequalities in the economy of a country (region) and focuses our attention to the propulsive and propelled units.
- 2.It offers a dynamic image of the economy in the country (region) which is based on a general tendency to spatial focus of manufacturing facilities on an interregional level.
- 3.It presents a basis for careful decentralization by supporting the creation of new development poles (focused decentralization or decentralized focus).

Important features of Perroux's theory:

The close relationship between scale of operations dominance and impulses to innovate because the most important features of *perroux's* theory lead to the concept of *Dynamic Propulsive Firm* and *Leading Propulsive Industry*.

Characteristics of a Dynamic Propulsive Firm:

- 1.It is relatively large.
- 2.It has high ability to innovate.
- 3.Belongs to a relatively fast growing sector.
- 4.The quality and intensity of its interrelations with other sectors of the economy are important enough for the induced effects to be transmitted to them.

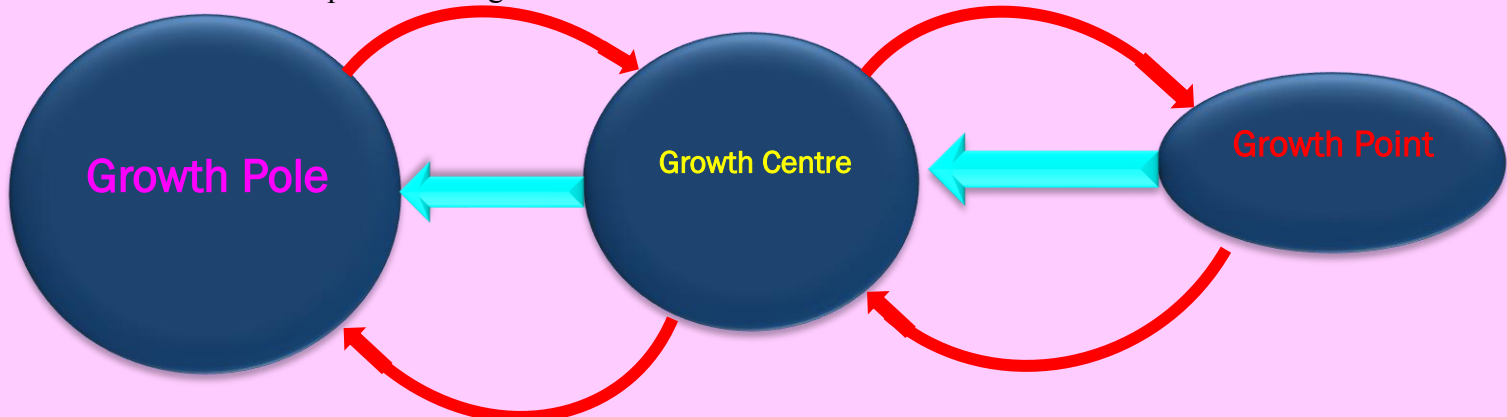


Fig.: Growth pole, Growth Centre and Growth Point: Forward and Backward Linkages

Characteristics of a Leading Propulsive Industry:

- 1.Highly advanced level of technology and managerial expertise.
- 2.High income elasticity of demand for its products.
- 3.Marked local multiplier effects.
- 4.Strong inter – industry linkages with other sectors.

The linkages created by these industries are of two types:

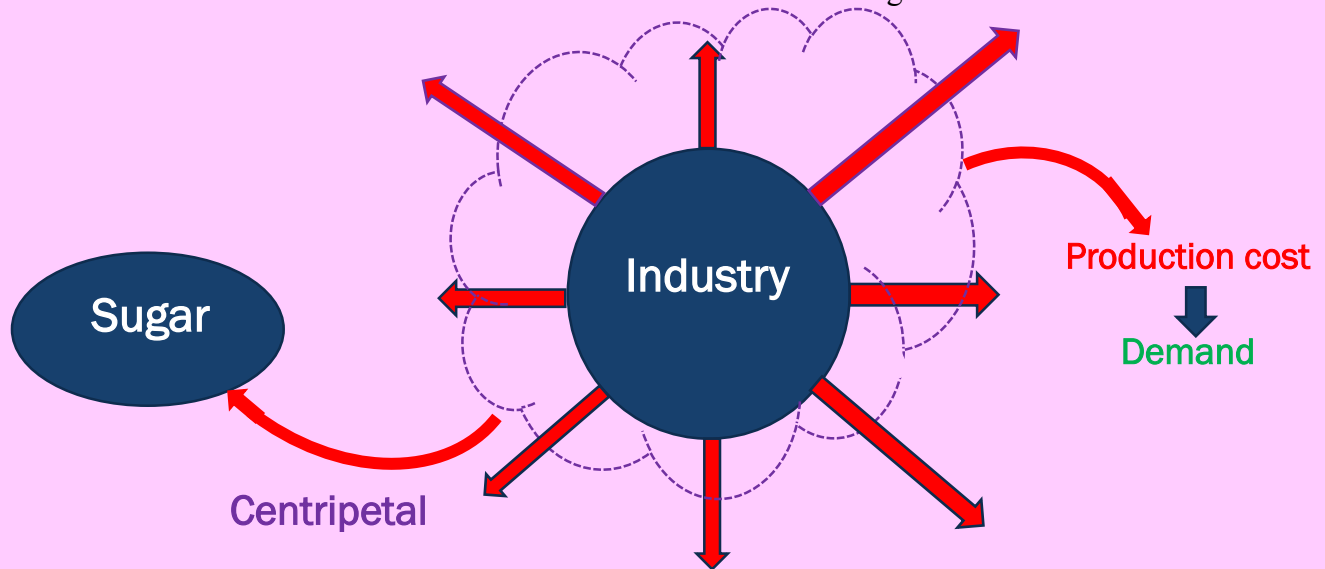
Backward Linkage:

An industry encourages investments in the earlier stages of production by expanding its demand for inputs (which are the outputs of industries in the earlier stages of production) e.g. – sugar Industry.

Centripetal force is related to backward linkage.

Forward linkage:

An industry encourages subsequent stages of production either by transmitting innovations on effects of innovations forward centrifugal force is related.



Innovation → Low cost of production → Low price → Demand increase → Industry expansion.

Thus **Schumpeterian** theory of development, theory of backward and forward linkages acts as a fulcrum to establish activates, industries of services in an urban area from there originates centrifugal forces and to which centripetal forces are attracted.

Growth centers:

In the growth pole theory, advocated by **Perroux**, growth centers are the second-ranking centers identified for economic development. In other words, a growth centers is smaller in size and structure as compared to growth pole. The dominant economic activities in the growth centers are secondary (industries) and tertiary (service) sectors. Generally, the basic industries are missing, the have the dominance of production activities with a focus on consumer goods and services. The population of a growth center may vary between one to five lakhs within their zones of influence.



These industrial hubs are equipped with the facilities of grain, vegetable and fruit markets, and storage facilities for agricultural commodities. At growth centers, the agricultural inputs like fertilizers, insecticides, pesticides, equipment's and other goods of daily requirements are found. In addition to these, there also exist educational, medical, cultural and recreational facilities.

The growth centers are spread in all the developed and there developing countries. In the Northern Plains of India, there are numerous towns and cities which may be placed in the category of growth centers. In the proximity of the national capital city of Delhi the towns and cities of Faridabad, Gurgaon, Sun-city, Rewari, Bhiwadi, Jhajjar, Bahaduragarh, Ghziabad, Noida, Dadri, Dankaur, Khurja and Hapur may be categorized as the growth centers.

Growth point:

The population of a growth point is less than one lakh in the developing countries. In the developed countries it may be much smaller ranging from one thousand to ten thousand, depending on the size and total population of the country. The growth points render some of the important services to the threshold areas and have the emergence of food processing and other consumer goods industries.

Basic Concepts of Growth Pole and Growth Centre:

According to Glasson (1974), the basic economic concepts and their geographic developments from the writings on the growth pole and growth center theories are: (i) the concept of leading industry, (ii) the concept of polarization and (iii) the concept of spread effects.

The center of growth pole refers to a center of nodal region containing propulsive firms, i.e. large scale farms, technically advanced innovating and dominating. There may be one or more such type of farms forming an industrial complex. These exert a strong influence on their environment for their -fast growing nature and sustained capacity of growth for a prolonged period of time. The location of these industries are due to several factors-localization of natural resources, man-made advantages, and or possible just chance. In reality of growth points are often grafted on to the existing frame-work of central places. Although most growth points lead to the growth of industries, not all leading industries are growth points as these may be local phenomenon and there may be inherent danger of reliance on single industry. The development of an industrial complex with varieties of farms can provide solution.

The concept of polarization states that the rapid growth of the industries induce polarization of other economic units into the pole of growth due to the advantage of external and internal economy of location. This process of polarization is evident in various agglomeration economies. There may be certain limitations of polarization. The leading industry may decline, diseconomies of scale may begin to overweigh the agglomeration benefits, rise in various costs may effect industrial growth.

The economic polarization will relatively lead to geographic polarization with the flow of resources to and the concentration of different economic activities at different centers within a region. This is nothing but spread effect of the dynamic propulsive qualities of the growth pole radiating outwards into surrounding region. These trickling down effects' on spread effects from a growth pole are particularly necessary for regional development, though there is little empirical evidence that does in fact take place.



Effectiveness of this theory for Regional Planning:

According to Glasson (1974), the growth pole and growth center theory is attractive as a policy tool for the following reasons:

- (i) It tends to be an efficient way of generating growth and subsequent development: in the surrounding due to various agglomeration economics.
- (ii) Concentration of function in specific locations reduces the cost of investment.
- (iii) The spread-effects out of the growth points will help to solve the problems of less developed area.

Criticism of the theory:

The growth pole concept has, however, been criticized on several counts. Some of the important criticisms are as under:

1. The first problem is the identification and selection of growth pole. If an independent or arbitrary decision is made, the resource base may not be sustainable.
2. The nodal points and growth poles develop because of certain favorable geographical locations and not because of selection of arbitrary sites.
3. The problem of threshold – overlapping.
4. Problem about the sectorial composition of growth pole.
5. Problem of establishment of regional network of firms.
6. Problem of social acceptability.
7. Each of the growth poles may thus lead to new socio-economic and ecological problems.
8. The selection of growth pole motivated by political consideration may not be sustainable. It has happened in the case of Baruni and Bongaigaon, which have created new socio-ecological problems.
9. It is not necessary that growth poles and growth centers may remove the regional inequalities, leading to an overall regional development. The impact of Bhilai and Rourkela can hardly be seen in the surrounding tribal areas of Chhattisgarh and Orissa.
10. Problem of appropriate span over which to judge success of failure- say 16 to 25 years may be too long in any social order and political system. In fact, an elected government would like to have positive results within four or five years before the commencement of the next election.

According to Blazek, 2008, the results, however, fell behind expectations with the reasons for this failure being:

- a. Failing to differentiate between natural and artificial growth pole or between a spontaneously created center and an attempt to affect the enter from the outside.
- b. Implementation of the concept vary in different contexts – these being (a) neglected regions, (b) cities to moderate the process of suburbanization as well as (c) achieving the modification of urban structure.
- c. Underestimation of the critical amount of initial investment to create new growth center.
- d. Insufficient analysis of the newly founded facility of the propulsive industry.



Applicability of Growth pole theory or relevance:

Growth pole concept has become popular because of its orientation towards “dynamic industry” (i.e.-dynamic propulsive firm & leading propulsive industry) “Polarization and agglomeration” (inter – industry linkages of external economies) and the promise of censuring “Spread effects”.

The success and failure of a growth pole depends upon the extent of the resource availability and productive demands of the society. The growth pole may thus create new socio-economic problems and may not be helpful in removing the regional inequalities.

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