

Infrastructure Economics
Department of Social Sciences
Prof. Nalin Bharati
Indian Institute of Technology, Madras

Module – 06
Lecture - 25
Infrastructure and Size of the Market

Let me begin the discussion on Infrastructure and the Size of the Market. Till now we have seen that, how infrastructure helps in developing the economy and this is one of the major boost for the economic growth process in any economy.

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BRIEF OUTLINE

- Meaning and Size of the Markets
- Some Microeconomic Tools
- Trade-Openness and Growth
- Few Growth Models
- Features of Developed Countries and Size of Markets




Today, we are going to discuss in brief the meaning and size of the market. And what is basically a size of the market means, when it is related to the developing and least developed countries. We will discuss the theoretical microeconomic tools to understand, how size of the market works. At the same time, we will also try to have some discussion on macroeconomic tools to understand the size of the market; some growth models will be discussed. And after that, before summing up the lecture, we will also try to find out, what are the main pictures of the developed countries and how these features are linked with the size of the markets.

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MEANING OF THE MARKET

- In Economics market is an arrangement where buyers and sellers interact to determine the prices and quantities of goods and services.




Let me begin with the discussion on the general meaning of the market. In economics, market is not a place, but it is an arrangement where buyers and sellers are interacting to find out the prices and quantities of goods and services. So, it is a condition, it is a situation, where we have the quantity demanded and we have the quantity supplied.

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COMPONENTS OF THE MARKET

- Existence of demand
- Presence of supply
- Institutional framework (government policies, legal framework)
- Infrastructure for functioning
- Availability of information on prices and costs
- Ease of entry and exit
- Reliability of contract enforcement



So, what are basically the components of the market? When we say existence of the quantity demanded and supplied, so in that case we have to have the existence of demand and the presence of supply. At the same time, institutional framework such as the

government policies and legal framework, infrastructure for functioning, availability of information on prices and cost and the ease of entry and exist in the market and at the same time, reliability of contract enforcement.

So, size of the market depends on what type of government policies are existing in terms of tax. Suppose a government provides a tax holiday situation and in that case, majority of the investors will try to join the market as an investor. Suppose, if the legal framework is clear, if the contract rules are clear for the investor, in that case investor will certainly have a freedom to choose the market. They will have the more flexible options to decide, what they have to produce and how they have to produce.


Because, rules are clear, but if the rules are not clear, legal framework is not certain, in that case investors will really have some constraints in their investment and they will not try to join the market. If the availability of information on prices of raw material, the cost of labor and other things are clear in the market, in that case market really works properly. We have seen in our previous discussion that how market fails and how rent seeking behaviors and other important issues are also influencing the size of the market and existence of the market.

In our few lectures, we have seen that how some of the factors really leads monopolistic conditions in the market and that is not really providing a competitive price for the consumer. When it comes to the infrastructure development, we have different argument that these infrastructure services and facilities should be provided on a price and that price which will be affordable. The price will be portable to the majority of the people in the developing country.

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SIZE OF THE MARKET

- Size of the market reflects in the number of buyers and sellers
- There has been shift from the traditional view of the size of the markets which was limited by the national borders
- With globalization and economic integration, size of the market is now more bigger
- Size of the markets is now linked to growth and trade openness
- Productivity is affected by the size of the market because huge markets allow firms to exploit economies of scale



When we say size of the market, size of the market is just reflecting in terms of the number of buyers and sellers. If we are adding more number of consumers and more number of suppliers, it means that our size of the market is expanding from the previous stage. So, there has been shift from the traditional view of the size of the market, which was limited by the national boundaries, today when we are more globalized and more integrated in the world.

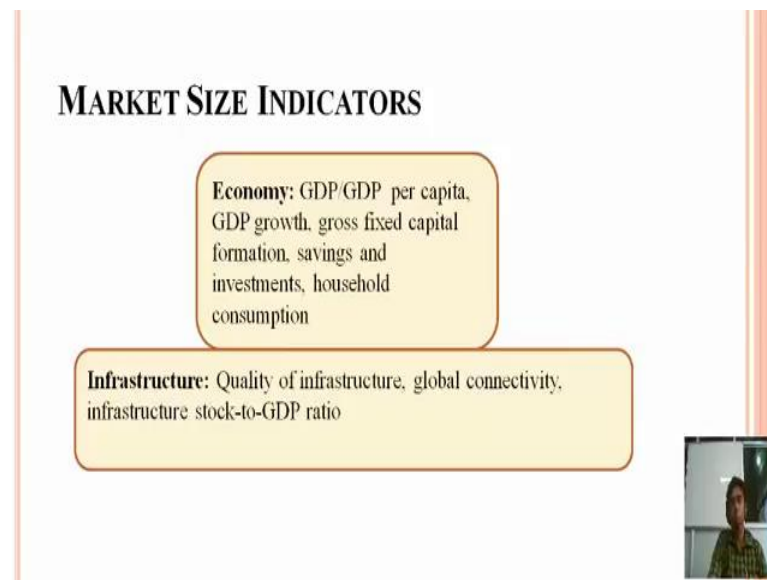
We are not considering the size of the market which is just related to the country, but we are really considering the size of the market which is more bigger, because we are considering entire globe as the market today. So, the size of the market is now linked to the growth and trade openness, after 1991 as we have seen that we are more open economic today, majority of the developing countries are not restricted economy.

And in that case, we have large number of products transmitting from one economy to other economy, services are crossing the boundaries, information technology in a well services are one of the example from India, which has attracted many country for offshore today and this shows that, how in certain sectors we have a growing size of the market.

So, the productivity is affected by the size of the market and this is happening when, if you are adding more consumer, your productivity affirms productivity, your countries productivity will certainly have expansion. If you are sinking in terms of size of the

market, the productivity has the negative impact, because you are losing your consumer. So, size of the market do influence the productivity and productivity, when you have reducing cost of the production, it cannot happen when you are not adding the large number of consumer in the market.

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So, what are basically the indicators? If one can say that what are the indicators of expansion in the size of the market. So, one can say that GDP per capita or GDP as a whole or the growth of GDP, gross fixed capital formation, savings and investments and household consumptions; that is also some of the indicators to find out the size of the market. At the same time, we can also see the quality of infrastructure, global connectivity and infrastructure stock to GDP ratio, as an indicator to find out how infrastructure is really added as a part of the expansion in the economy.

And if quality of the infrastructure, global connectivity and total infrastructure's a stock to GDP ratio is increasing; that is also one of the indicator to say that infrastructure has enhanced compared to the previous level of availability of the infrastructure and that shows that it has the chance to expand the size of the market.

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INFRASTRUCTURE AND SIZE OF MARKETS

- Adam Smith (1776) stated that the division of labour is limited by the extent of the market
- Size of the market leads to an increase in the division of labour and contributes to an increase in firm's productivity
- Productivity is affected by the size of the market because huge markets allow firms to exploit economies of scale
- Infrastructure stock renders increasing returns to scale
- Quality of infrastructure and ease of global connectivity has become an important factor in determining the size of the market



So, if we can find out the size of the market to discussion on size of the market in the traditional literature in the economics, in 1776 Adam Smith stated that the division of labour is limited by the extent of the market. And the size of the market leads to an increase in the division of labour and it contributes to an increase in the firms productivity. So, productivity is affected by the size of the market, because huge markets allow firms to exploit economies of a scale.

So, if the size of the market is limited to a particular town or limited to a particular city, if it is not added more consumers outside the city, outside the town, in that case productivity is going to be affected. So, infrastructure stocks basically renders increasing returns to a scale and the quality of infrastructure and ease of global connectivity has become important factor in determining the size of the market today.

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INFRASTRUCTURE AND SIZE OF MARKETS...

- Adequate infrastructure is vital for assuring the functioning of the economy
- Infrastructure decides the location of economic activity by limiting the area over which factors of production are mobile and eventually determine the size of the markets
- Quality infrastructure curtails the cost through integrating and connecting the national market to markets in other countries and regions of the world
- An effective transport infrastructure helps in getting goods and services to the market in a secure and timely manner and facilitates the mobility of the workers
- Transport and communications infrastructure networks are prerequisite for enlarging the size of the markets since they provide valuable information decision making of the businesses and increase economic efficiency



So, infrastructure and size of the market, the adequate infrastructure is vital for assuring the functioning of the economy. Because, infrastructure decides the location of economic activity by limiting the area, over which factors of production are mobile and eventually it also determines the size of the market. So, quality infrastructure really reduces the cost through integrating and connecting the national market to other markets, to other economies and the regions of the world.

An effective transport infrastructure helps in getting goods and services to the market in a secure and timely manner and it facilitates the mobility of the workers. Transport and communications infrastructure networks are prerequisite for enlarging the size of the market. Since, they provide valuable information for the decision maker in terms of business and increasing economic efficiency.


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PRODUCTION FUNCTION AND ISO-PRODUCT CURVE

- A firm produces a particular good using combinations of inputs such as capital (K) and labor (L)
- Production function of a firm shows the maximum amount of the good that can be produced using all the possible combinations of inputs

$$Q = f(K, L)$$

- To illustrate the possible substitution of one input for another, iso-product curves or iso-quants are used
- An iso-product curve shows the combinations of capital (K) and labour (L) that can produce a given level of output (Q_0)

$$f(K, L) = Q_0$$


So, in micro economic theory, we can see here that in terms of production, function and iso-product curve, a firm produces a particular goods using combination of input such as capital and labor. So, Q is the function of K and L, well the, where the K is capital and L is the labor. So, if it is iso-product curve Q_0 , which is again the function of capital and labor.

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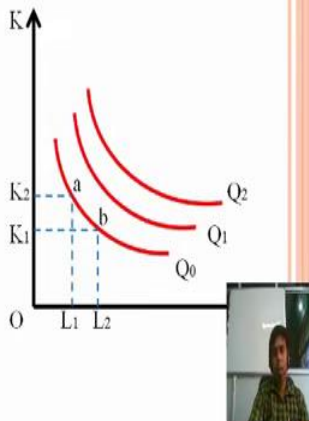
ISO-PRODUCT CURVE

Figure 1 shows iso-product curves. On any point on Q_1 or Q_2 the output remains fixed with variable inputs combination.

Here moving from point a to b the combinations of inputs changes from K_2L_1 to K_1L_2 , however, the total product or output remains constant (Q_0).

But a shift from iso-product curves Q_1 and Q_2 show higher iso-product curves means more product added .

Figure 1: Iso-Product Curves



And in this figure, one can see here that on a particular curve such as Q_0 , the two different points are shown here and that shows the two different level of combination

between the capital and labor. On point a, we are showing here K 2 and L 1 level of combination of capital and labor, while on b point b, we are saying K 1 and L 2 level of capital and labor combination. And ii shows that the total product or output remains constant, because iso-product curves are the curves, where on a particular curve any point on a particular curve shows the equal level of productivity.

But, when we move from the lower level of quantity, lower level of iso-product curve to the higher level of iso-product curve, we have the increasing productivity in the market. This is at the firms level, but even if this can be shown at countries level iso-product curve, this can be also shown at the national level or the entire economic level. Because, if we are enhancing from Q 0 to Q 1 or Q 1 to Q 2 in this particular diagram, we are finding that economic has move from or the firm has move from the previous level of productivity to the new level of productivity.

More we are going on the right hand side more we are having the productivity added and certainly the higher iso product curve shows as high level of combination between the capital and labor, which produces the higher level of product in the market. So, this also establish the expansion in the size of the market, because a productivity enhancement in the productivity is not possible, a producer cannot effect to go on the higher productivity level, if the productivity is not really beneficial for them.

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RETURNS TO SCALE

- Returns to scale of the production function determine how long-run output varies with varying all the factors of production or the inputs.
- Three types of returns to scale: increasing, decreasing and constant returns to scale
- Table 1 depicts increasing, constant, and decreasing returns to scale. If all the inputs (K and L) are multiplied by a positive constant p where $p > 1$, the output varies differently.

Table 1: Returns to Scale

Returns to Scale	Condition
Increasing	$f(pK, pL) > pf(K, L)$
Constant	$f(pK, pL) = pf(K, L)$
Decreasing	$f(pK, pL) < pf(K, L)$



So, another tool is the returns to a scale, where we can also see that returns to scale of the production function determines how long run output varies from the varying all the factors of production or the inputs. So, there are three types of returns to a scale increasing, decreasing and constant. When we are saying increasing, it means that the capital and labor, the price of the capital and labor... In table 1, it is shown here that if all the inputs capital and labor are multiplied by a positive constant p , where p is greater than 1, the output varies differently.


So, if after multiplying with p if the output is equal to the previous level of capital and labor, the product by the capital and labor, so in that case we are having the constant returns. But, when we are having compared to the previous level of capital and labor product or if it has increased productivity, in that case we are having more increasing returns. Because, whatever inputs we are putting for the capital and labor, we are having more output coming out from the capital and labor.

In case if the returns are not increasing not constant, that we finally have the decreasing trend and that is the three different level of returns to a scale, which again gives us the idea especially at the firms level, that where one has to continue in the production or one has to leave the production. If there are decreasing returns to a scale, the producer will not try to continue in the market, because the productivity has declaimed from the input level, from the level of the input. So, in such cases one cannot continue in the market, because the returns to a scale will be decreasing.

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SOME MACROECONOMIC ISSUES AND SIZE OF THE MARKET

- United Kingdom: unilateral trade liberalization (1846)
- US and Germany: -19th century: Adopted protectionism to promote industry
- Japan : 1950s-1960s-Protectionism
- South Korea :1960s-1970s-Protectionism
- South East Asian countries: developed with protectionism and strategic trade policies
- China and India: Selective protection and control over FDI



So, some other macroeconomic issues and the size of the market are like many countries has adopted different models to expand their size of the market. United Kingdom at unilateral trade liberalization restricted imports for many other countries. But, enhancing export for, only for the Union Kingdom and discontinued for many years, US and Germany in 19 century adopted the protectionism to promote industry.

Japan from 1950's to 1960's has also contributed the protectionism, South Korea 1960's to 70's continued with a protectionism South East Asian economies have also developed their economy with the protectionism and strategic trade policies and China and India also adopted the selective protection and control over FDI.

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TRADE-OPENNESS

- Foreign trade-to-gross domestic product (GDP) ratio is generally known as trade-openness
- It is the ratio of sum of exports and imports to the gross domestic product (GDP), the formula is:

$$\text{Trade-Openness} = \frac{\text{Exports} + \text{Imports}}{\text{GDP}} \times 100$$

- It is a measure of country's integration in the world economy.



So, one major indicator is the trade openness, more we are having the trade openness more we can have the addition ((Refer Time: 15:20)) size of the market. So, foreign trade to gross domestic product ratio generally known as the trade openness, it is the ratio of sum of exports and imports to the gross domestic products. And for this, this is the formula for trade openness is equal export plus import divided by GDP multiplied by 100. It is a measure of countries integration in the world economy.

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TRADE-OPENNESS AND GROWTH

- The evidence for trade liberalization boosted growth remained mixed
- High performing Asian economies' policy reforms were followed by a large increase in openness
- This proved that it is possible to develop through export-oriented growth
- However, such high growths were invisible in Latin American economies such as Mexico and Brazil
- Thus, trade-openness is important, but economies needs other supporting factors like quality infrastructure and policy framev accelerate on high growth trajectory



So, the evidence for trade liberalization boosted growth which is remained mixed, high performance Asian economies policy reforms were followed by a large increase in the openness. This proved that it is possible to develop through export oriented growth; however, such high growths were invisible in Latin American economies such as Mexico and Brazil. So, the trade openness is important, but economies needs other supporting factors like quality infrastructure and policy framework to accelerate, to expatiate to high growth process.

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Country	2000	2004	2008	2012
India	18.79	24.93	34.57	41.46
China	37.11	58.21	54.41	48.36
Brazil	18.61	23.08	20.57	20.53
Germany	53.20	59.59	68.72	75.18
US	18.65	18.93	21.27	24.01
UK	41.08	37.88	39.80	47.21
Singapore	-	-	360.0	358.03
Hong Kong	-	-	413.1 (2008-10)*	449.99
Thailand	101.77	119.19	119.48	130.47

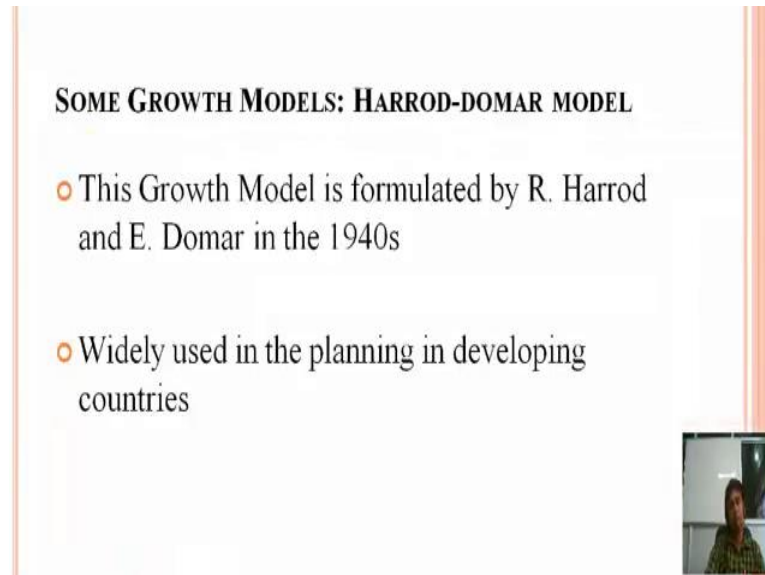
Source: WITS (World Bank), *WTO

So, if one can have the look on the trade openness of selected countries the index for India was 18.79 in 2000, which has rest to the new level of 41.46 in 2012 while in china 37.11 was in 2000, which already 48.36 percent while one can see here the Germany, which was 53.2 in 2000, now it has 75.18 while the Thailand has 101.77 percent which has now gone to 130.47 percent while the Hong Kong 449 percent and Singapore 358 percent. So, compared to Singapore Hong Kong Thailand even the Germany, India and China is just still and Brazil is not really as trade open as these smaller economics, especially in terms of the size of the consumers.

So, this shows that still certain protectionism is going on and this is the data from the World Trade Organization and this establishes the fact that some of the economies are really more trade open and they are really added their consumers outside their domestic


economy, they do their export promotion mechanism, export promotion model and that is their strategy to have the expansion of the size of the market.

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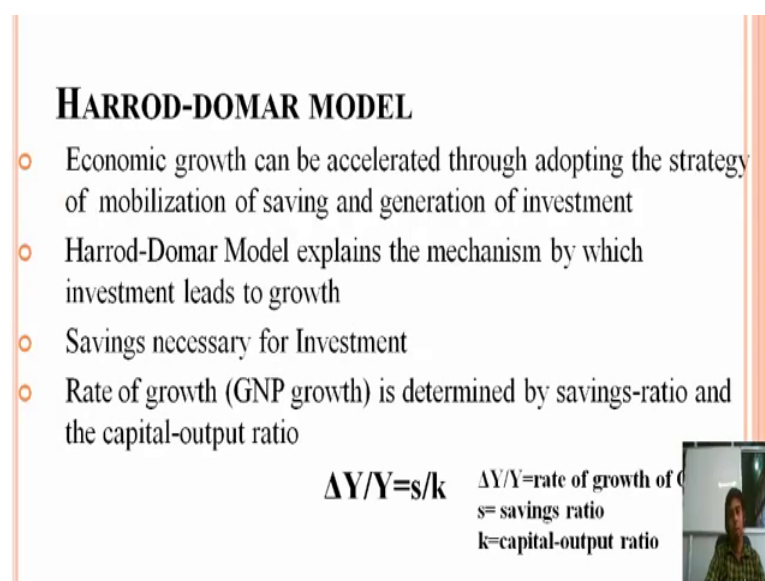
SOME GROWTH MODELS: HARROD-DOMAR MODEL

- This Growth Model is formulated by R. Harrod and E. Domar in the 1940s
- Widely used in the planning in developing countries



Some of the growth model if you can see here one of the very traditional growth model is the Harrod-Domar growth model, this growth model is formulated by Harrod-Domar in the 1940s widely used in the planning in development countries. It is one of the model of the closed economic.


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HARROD-DOMAR MODEL

- Economic growth can be accelerated through adopting the strategy of mobilization of saving and generation of investment
- Harrod-Domar Model explains the mechanism by which investment leads to growth
- Savings necessary for Investment
- Rate of growth (GNP growth) is determined by savings-ratio and the capital-output ratio

$\Delta Y/Y = s/k$ $\Delta Y/Y = \text{rate of growth of } Y$
s = savings ratio
k = capital-output ratio



Show the question of this model is a $\Delta Y/Y$ is equal to a small s/k , where the $\Delta Y/Y$ is the rate of growth of GNP while s is the saving ratio in the case of capital output ratio. So, saving is necessary for the investment; that is basically the model explains the mechanism by which investment leads to the growth investment in industry in infrastructure are investment in agriculture are especially in this maintain in the entire growth process this matters that is really the outcome of this model.

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HARROD-DOMAR MODEL

○ For instance:

Given that,

Capital-output ratio (k) = 4

Savings-ratio (s) = 8% of GNP

The growth rate, $\Delta Y/Y = s/k$

$$= 8/4$$

$$= 2\%$$




So, for instance say to capital output ratio k is 4 and saving ratio is 8 percent of GNP. The growth it $\Delta Y/Y$ will be equal to s/k 8 by 4; that is 2 percent.

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IMPLICATIONS OF HARROD-DOMAR MODEL

- Savings are necessary for every economy, even to sustain the existing capital stocks
- But to grow at a faster rate, investments in new capital stocks (new infrastructure facilities including buildings, ports, railways, waterways, telecomm etc.) are fundamental
- The trick of the growth is thus the national savings and investments in capital stocks




So, what are basically the implications of Harrod-Domar model. So, savings are necessary for every economy even to sustain the existing capital stocks, but to grow at a faster rate investment in new capital stocks such as a buildings, sports, railway, waterways, telecom etc. are fundamental. So, the trick of the growth is, thus the national savings and investments in to capital stocks.

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CONSTRAINTS TO GROWTH

- GNP growth is not linearly related to the share of investment expenditure in the GNP
- Low savings-rate in developing countries gives rise to savings-gap
- Savings and investments is a necessary condition but not a sufficient condition for economic growth
- There are leakages and injections in the economy



So, there are constraint to the growth GNP growth is not a linearly related to the share of investment expenditure in the GNP. Low saving rate in developing countries gives rice to

the saving gap, saving and investment is a necessary condition, but not a sufficient condition for economic growth and there are leakages and injection in the economy.

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NURKSE MODEL

- The balanced growth theory was pioneered by Ragnar Nurkse
- The theory suggests that there is a need for large investments in all the sectors simultaneously to achieve economic growth and development
- This will enlarge the size of the market, increase productivity, and will incentivize the private investments
- It also stresses on balance between social and economic overheads and between direct productive investments and external economies



One of the model is the Nurkse model, where we have again argued for the balanced growth theory. The theory suggests that there is a need for large investment in all sectors submitted simultaneously to achieve economic growth and development. This will certainly expand size of the market and increase the productivity and will incentivize the private investment it also stresses on balance social economic overheads and between directed productive investment and external economies.

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NURKSE MODEL...

- Balance is required between the demand and supply in the economy
- Emphasis is on the simultaneous development of intermediate goods, power, irrigation, transport, etc. and all other industries including consumer and capital goods
- “more or less synchronized application of capital to a wide range of different industries”- Nurkse



So, balance is required between demand and supply in the economic, emphasis is on the simultaneous development of intermediate goods power irrigation transports etc. And all other industries including consumers and capital goods, more or less synchronized application of capital to wide range of different industries are important for this particular balance in the economic growth process.

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VICIOUS CIRCLE OF UNDER DEVELOPMENT



So, if one can see here to vicious circle of under development the low productivity really generates low level of income, low level of income again provides a condition of low

saving, at low saving leads to the low investment and low investment again makes as the situation of the capital deficiency. And we are track basically many this develop countries and countries are trapped in the, to low productivity there are the low productivity; that is really these vicious circle of under development.

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NURKSE MODEL AND SIZE OF THE MARKETS

- The model focuses on how small size of the market in underdeveloped countries creates vicious circle of underdevelopment
- The size of the markets can be enlarged through large investments in different sectors of the economy, and expanding the economic infrastructure
- Nurkse elucidated the several determinants of the market size and stressed on productivity
- Size of the market will expand and the economy will develop if productivity levels rise in an under developed economy
- Size of the markets determine returns to scale



So, this Nurkse model focuses on how a small size of the marketing in under develop countries creates vicious circle of under development. And the size of the market can be enlarged through the large investment different sectors of the economy and expanding of the economic infrastructure. So, the dead lock in the development cannot be addressed if the investment is not really coming to different part of the economy, such as the small industry higher large industry and outside the agriculture sector.

So, the size of the market will expand and economy will develop with the productivity levels rise in an under develop economy and this productivity, rise in the productivity level is not automatic, but it is dependent on how much investment and what type of investment is received in which sector. So, when it happens, then the returns to a scale starts coming to the economy and this automatically leads to the expansion in the size of the market.

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ROSENSTEIN-RODAN MODEL

- It underlines that underdeveloped economies require large amounts of investments to accelerate on the path of economic development
- The major argument of the Rodan model is the contention of Social Marginal Product (SMP) of an investment and Private Marginal Product (PMP)
- Private individuals stresses on PMP of their investments and neglects SMP
- Rodan Model is basically an investment model and sets the condition of take-off
- Emphasis is on the multiplier effect of the investment




One more model is the Rosenstein Rodan model, where this model underlines that underdeveloped economies requires large amount of investment, the major argument of the Rodan model is the contention of the social marginal product of an investment and private marginal product, private individuals stresses on the private marginal product of their investment neglects the social marginal product and that is true.

In case of varieties of externality especially the negative externalities, which happen, because private marginal product are more important for the investors and they really avoid the social marginal product. So Rosenstein Rodan model is basically an investment model and sets the condition of take off and this has emphasis on the multiple effect of investment.

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RODAN MODEL ...

- The indivisibilities and external economies from minimum amount of investments are required for achieving economic development
- Three indivisibilities: Indivisibility of the production function (the supply of social overhead capital), indivisibility of demand, and indivisibility in the supply of savings
- High initial investment in social overhead capital is needed for the growth
- High investments will enlarge the markets and lead to growth and development




The individualistic, the indivisibilities and external economies from minimum amount of investments are required for achieving economic development and the three major individuality of the production function is the supply of social over head indivisibility of demand and the indivisibility in the supply of savings. So, high initial investment in social overhead capital is needed for the growth and high investment will enlarge the markets and lead to the growth and development.

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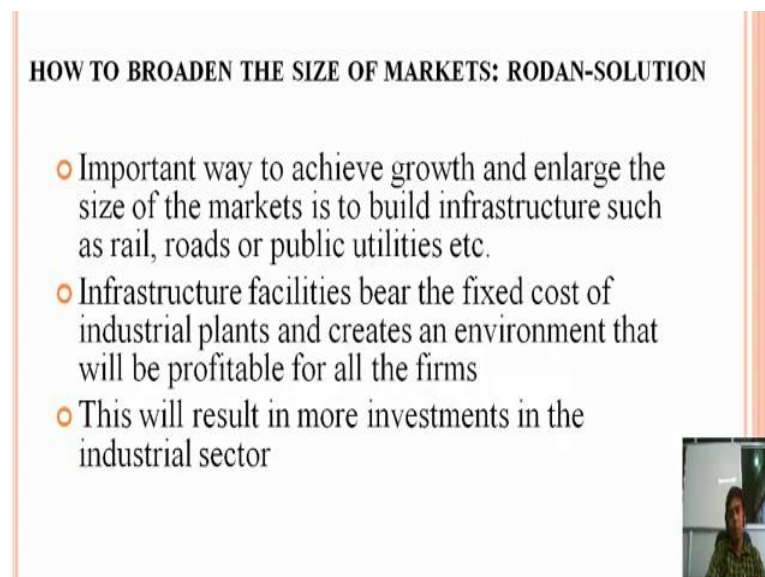
RODAN MODEL AND SIZE OF THE MARKETS

- Investment in one sector increases the demand for other sectors directly and so makes large-scale production in other sectors more attractive
- The complementarities between the simultaneously different sectors, which is the rationale for large-scale planned industrialization, gets magnified through size of the market
- High priority is given to infrastructural development and industry



Rosenstein Rodan model emphasis of the market is again summarized in a way that investment in one sector increases the demand for the other sector and it directly the investment in one sector and which is the remark for other sector more attractive. So, the large skill production in a other sector more attractive it is important to have the ongoing investment and the complementarities between the simultaneously different sectors, which is the national for large scale planned industrialization gets magnified through the size of the market. So, high priority is given to the infrastructure development and industry and this cannot happen possible without the large fill of investment in the production sector also in this infrastructure.

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HOW TO BROADEN THE SIZE OF MARKETS: RODAN-SOLUTION

- Important way to achieve growth and enlarge the size of the markets is to build infrastructure such as rail, roads or public utilities etc.
- Infrastructure facilities bear the fixed cost of industrial plants and creates an environment that will be profitable for all the firms
- This will result in more investments in the industrial sector

So, important way to achieve growth and enlarge size of market is to build infrastructure such as rail roads or public utility. And infrastructure facilities bear the fixed cost of industrial plants and creates an environment that will be profitable for all the firms this will result in the investment in the industrial sector.

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FEATURES OF DEVELOPED COUNTRIES AND SIZE OF THE MARKETS

Developed Countries have some common characteristics :

- High growth rates of output per capita and population
- Rapid increase in total factor productivity (TFP)
- Structural transformation
- Social and ideological transformation
- Search for markets and raw materials
- Limited Benefits of economic growth

- High growth of output and increase in TFP merit huge markets for their products
- This needed structural transformation of their economy
- Possible by investments in capital stocks (roads, ports, railways, communication networks, utilities, etc.)
- Market expansion through exploring new areas and economic integration
- Followed by developing and least developed economies




And the certain feature of develop country's such as high growth rate of output per capital rapid increase in total factor productivity a structural transformations social in the ideological transmission search for markets and raw materials and limited benefits of the economic growth. High growth of output and increase total factor productivity merits the huge markets for the product.

And this is requires the structure transformation for economy it is possible by investment and capital stock such as roads, ports, railways, communication, network etc. market expansion through the including new areas and economic integration and many developing and least developing countries are following such steps which were taken by the developed countries in the past. And this is not possible without the linking infrastructure with economic growth and development.

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TO SUM-UP

- Economic decisions are limited by the size of the market which in turn is decided by the stock of infrastructure
- Large investments are required in the social overhead capital to enlarge the size of the market and accelerate economic growth and development
- Quality infrastructure increases the size of the market and attract investments for industrial development



To sum up economic decision are limited by the size of the market, which in terms are decided by the stock of the infrastructure. So, we have also seen in case of newly industrialized countries, the growth model of the newly industrialized countries that how size of the market has really played an important role in terms of more GDP, more GDP per capital and in terms of consumption indicators.

And these large investments are required in the social overhead capital; we have also seen that these countries have not only developed in the physical infrastructure, but also social infrastructure. So, investment in both side physical infrastructure as well as the social infrastructure size, really enlarge the size of the market and that accelerated that really speed up the process of the economic growth and development. So, the quality infrastructure increases the size of the market and attracts investment for industrial development that is really the one line conclusion of this particular lecture.

And a country cannot really grow faster, cannot really have more income generation and the productivity growth without having the expansion in the size of the market. And the expansion of the size of the market cannot happen, it cannot be possible without having the quality infrastructure added and this quality infrastructure includes the physical as well as the social infrastructure.

Thank you.