Strategy in Resource Development: The Case of Low-Income Areas Within Developed Nations*

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The session title is undoubtedly intended to imply similarity in the problems of poor regions and poor nations. It can be argued that experience gained from economic development programs in underdeveloped countries is relevant to program design and operations in poor regions of rich nations. In fact, the bible prepared for the Appalachian program does argue thus:

> In many underdeveloped countries the conclusion was reached that investments in basic public facilities would have to be undertaken before economic development could occur. That part of our international program which fosters capital investment should be incorporated into Federal programs that affect the regional development program for Appalachia. (1, p. 28)

Several decades ago Ohlin's pathbreaking study explored the hypothesis that interregional and international trade (and perhaps development) are different species of the same genus of economic phenomena (2). Friedmann (3, p. 467) commences his discussion of the same subject with an impressive list of the "structural similarities" between poor regions and poor nations:

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- a low per capita income
- a low rate of economic growth
- low levels of labor productivity
- a low level of capital formation
- large unemployment and/or underemployment
- a high proportion of employment in mining and agricultural activities
- a large subsistence sector
- a high degree of dependence on external aid
- a low level of urbanization
- high fertility rates
- low indices of health
- high family dependency rates
- low levels of educational attainment

One can find enough specific exceptions both for poor regions and for poor nations to doubt the universal applicability of Friedmann's characteristics. Nevertheless, the thought of being able to treat the problems of poor nations and those of poor regions as symptoms of the same socio-economic malady is appealing. To ascertain the possibility of using the same kit of policy tools for either situation, we need a conceptual framework that will facilitate comparative analysis of poor regions and poor nations, especially as far as the appropriate strategies of resource development are concerned.

In the absence of a generally accepted conceptual framework for the study of regional economic growth, the writer discusses strategies of resource development in a way that implies a framework. This framework will not be defended; it will be elaborated only to the extent necessary to discuss how each category applies to poor regions and to poor nations.

These categories are:

1. Export-base theories in economic growth.
2. Barriers to the movements of economic inputs and outputs.
3. Private capital formation.
4. Community capital formation.
5. Human capital formation.
6. Investments in research and development.
7. Population parameters.

1. Theories of Regional Economic Growth

Two theories of regional economic growth compete for the favor of regional analysts.[1] The "export-base" theory is summarized as follows by Perloff et al. (4, p. 57):

> Growth in a given unit...is initiated by the response of the industries within this unit to an increase in demand arising outside the unit itself. This results in an expansion of economic activities, particularly local trade and service activities, through a multiplier process similar to the familiar investment-multiplier and foreign-trade multiplier in national income models. Central to the export-base theory is the distinction between export industries and activities or "residentiary" industries and activities.

The chief competitor of the "export-base" theory is the sector theory. Again, referring to Perloff et al. (4, pp. 58-59):

> ... a rise in per capita incomes in different countries or at different times is generally accompanied by a decline in the proportion of the labor force employed in agriculture and a rise, first in the proportion of employment in secondary activities (principally manufacturing), and then in tertiary or service activities. The main reasons for this shift in the relative importance of the different sectors are different income elasticities of demand for their products and differential rates of changes in labor productivity...the sector theory focuses on internal rather than external development; economic growth is seen as primarily an internal evolution

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1 Almost without exception, theories of regional economic growth have principal been elaborated by analysts whose [redacted] interest was in stimulating growth in an area (usually an urban area) or a region, or by analysts responding to "demand" from regional scientists with practical objectives.

> of specialization and division of labor, although external shifts in demand are not ruled out...

After import-substitution possibilities were incorporated, the export-base theory has in general been favored by regional scientists; the reason relates back to their practical objectives. For a poor region, the "export-base" theory appears to help more in deciding "what to do next". The sector theory appears to be [redacted] explanatory with more limited prescriptive capacity.

To what extent is the export-base theory useful in designing an economic growth program for a poor nation? From Adam Smith on, those classical economists who concerned themselves with economic growth were acutely aware of the importance of export industries as growth points. The assumptions they used in reaching this conclusion on the role of export industries were far more descriptive of conditions in advanced countries, but the conclusion was probably supposed to apply symmetrically to colonies and to other underdeveloped economies. The relevance of the export-base theory to less developed societies was probably greater before 1900 than it has been in this century.

Concern for economic growth in underdeveloped countries has revealed two phenomena that weaken the case for export activities. One is the dual economy, and the other is the administrative weaknesses of underdeveloped countries.

Recognition of the possibility of having side-by-side in an underdeveloped society a modern sector composed of export activities and a primitive sector composed of subsistence activities did not become general until after the end of World War II. Advice to a poor country's government on how to maximize the impact of export activities is readily available, but the specific measures may be beyond administrative or political capacities.

We follow Friedmann further (3, p. 468) in observing that a poor nation has more "closure" from the economic and political effects of the rest of the world than a poor region has from the rest of the country. That is to say, any region (particularly in a rich country) is not only free to outcompete a second region in the same country in the provision of goods and services for third regions, but it also is free to outcompete the second region in the production of "second-regional" specialties. In world markets, a poor country is free to compete with the second countries in the efficient production of goods and services required (and not produced) by third countries.[2] Poor countries can seldom succeed in exporting goods and services to another country that can produce those goods and services almost as efficiently as the poor country. Other aspects of "closure" will come in for discussion in some of the sections below.

2. Barriers to Movements of Factors and Products

Much of the closure between a poor country and the rest of the world is in the form of barriers or restrictions against the free flow of goods and services, production factors, or both. Both poor and rich countries may "protect" their production activities with quantitative and qualitative restrictions upon imports of goods and services.[3]

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2 If free trade would confer economic rent upon producers (or traders) in the poor country, the country providing the market may bargain away a portion of this economic rent.

3 Poor countries often levy duties against some exports but this is more of an effort to capture economic rent (and foreign exchange) from their own producers or traders than it is to shut off or limit of flow.

Economists have differed violently over the social efficiency of free trade *versus* protection at least since the time of the mercantilists.

Little closure exists between a poor region and the remainder of the country. The interstate commerce clause of the U.S. constitution specifically prohibits purely "economic" interferences with interstate trade; attempts to interfere on economic grounds have had to be disguised in the garb of other more acceptable objectives.[4] Factors and products move rather freely though not costlessly within a closed economy. Tangible factors and products have transportation costs; intangible factors and services may also have transportation costs or costs resembling transportation costs.

This significant difference in barriers means that integration of the poor region with the rest of the economy is a more promising path to economic growth than any attempt by poor nations to integrate their economies with the rest of the world is likely to be. Any poor region that succeeds in becoming efficient enough in one or more lines of production to compete in markets outside the region has probably initiated a self-sustaining growth process. A poor nation that achieves enough productive efficiency to be able to force exports into another country may be rewarded for their efficiency with another round of trade restrictions. With regard to activities with marked economies of scale or activities that depend for their efficiency upon the external effects of activities with marked scale economies, the poor nation would seem to be at a considerable disadvantage *vis-a-vis*

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4 Dairy groups, for example, have sometimes succeeded in limiting the size of a supply area artificially through the use of health or sanitary inspections; the nature of the regulations points strongly in the direction of economic motivation.

the poor region. On the other hand, a poor nation that does achieve a favorable position in the world market may have a larger market than the poor region, although this would not inevitably be the case.

3. Role of Private Capital Formation

Two aspects of private capital formation appear to be important in our discussion. What is the potential annual volume of real capital formation in poor regions and poor countries? What is the nature of the institutions for generating capital funds, and for allocating them efficiently?

Theoretically a poor region would have access to all sources of capital in a rich country. These sources would include: untaxed private (household and firm) savings, which would be much higher, on a per capita basis, than in a poor country; taxes, and funds created by the national monetary authority.[5]

How much of the greater volume of capital funds would in fact be made available in the poor region is a difficult question to answer. Poor regions probably "control" fewer funds per capita than other regions. The geographic allocation of capital funds is determined by tradition and institutional relations as well as by economic calculus. One would not be surprised to discover in poor regions a kind of "capital rationing" affecting many economic activities in the region. These disadvantaged areas may also have difficulty in developing the complementary activities that would make the activity in question a good investment, but this will not be discussed as a matter of capital availability. In a poor country, misallocations of capital funds are likely to be due more to

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5 If the socially tolerable rate of price inflation is the same in the rich as in the poor country, then the annual percentage increase in the money supply would depend in each case upon the rate and structure of underutilized production capacity.

informational lacks or to decisions based too much on political considerations.

A poor region in a rich country has no power to create purchasing power all by itself. A poor country has the power inherent in a nation state. While the monetary authority cannot be forced by the poor region to create additional purchasing power to sop up underutilized capacity, the authority is likely to be quite sympathetic with that policy. The poor country may lack the administrative and decision-making capacity to make optimum use of created purchasing power.

The upper limit to the capacity of the poor country for capital formation is provided, among other things, by the sum of untaxed savings, taxation (out of consumption or savings), credit creations, gifts or loans from outside the country, and a measure of ability to convert underemployed or unemployed resources into real capital. The poor region would be able to tap more than its own savings; the income of the remainder of the country could be taxed to provide capital funds for the poor region; these sources bear superficial resemblance to the external gifts and loans to the poor country. The poor region should be able to obtain relatively much more financial assistance from its state and nation than the poor country can from donor nations and international agencies.

As far as possibilities for private capital formation are concerned, the poor region would have most of the advantages and these would be considerable. One powerful advantage arises from the fact that income per capita in a poor region is often much above that in a poor country.

4. Tangible Community Capital Formation

Tangible community capital is taken here to be the physical facilities used to produce public goods and services not sold freely in the market. [redacted] These items include school buildings, hospital and health facilities, highways and streets, parks and museums, water supply and waste facilities, and so on. Intangible community capital is defined as public and formal organizations and institutions, and public and informal groups.

Linked productively together and provided with operating inputs, tangible and intangible community capital [redacted] become public enterprises that produce inputs for other economic activities, and goods and services for households. As far as economic growth is concerned, the crucial element in these public enterprises is the efficient production of inputs for other economic activities.

Compared to other regions in the same country, the poor region is likely to be deficient in efficient public enterprises. The deficiency may be either quantitative or qualitative; a poor region is much more likely to suffer qualitative deficiencies, although essential enterprises may sometimes be completely lacking. It often happens that the decision makers in the different areas of a region do not have sufficient appreciation of the role of community capital, although recognition is growing rapidly.

In a poor country, the deficiencies are likely to be both quantitative and qualitative; what public enterprise already exist may have serious qualitative shortcomings. Resources available for community capital formation are likely to be spread over the whole country[6] and opportunities for concentrating in one region are much less.

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6 Not always evenly; seaports, capital cities, and other clusters of civil servants are likely to receive favored treatment.

The production capacity for tangible capital is usually available to the poor region, although it may not be in the region; the problem is likely to be financing. In a poor country, the capacity for design and efficient production may be as much a problem as finance.

In general, community capital formation in a poor region or a poor country would be financed from the same sources as private capital formation. The earlier discussion of finance in section 3 would be applicable. Again, nearly all the advantages would be with the poor region.

5. Intangible Community Capital Formation

This form of capital and its requirements are less visible than the tangible. It is complementary with the tangible forms. The necessary but not sufficient input is human [redacted] Capital (to be discussed later); equally important is a culture that is generates "rational" responses to changing social, economic, political, and technical situations.[7] Effective public (formal and informal) organizations will evolve when the human capital availability and cultural conditions are both favorable.

In a poor country, human capital at the high end of the quality spectrum is not likely to be available in adequate quantities. Human capital formation requires a great deal of time. Imported human capital is expensive. Indespensable as it is to a poor country, high-quality human capital is probably worth more in an advanced country; for imported

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7 Rational responses are taken here to mean welfare-increasing, taking account of qualitative as well as quantitative considerations. The problem of interpersonal comparisons is ignored.

human capital, the poor country must usually pay its market value in the advanced country plus an incentive to induce the gifted person to take up residence.

An even more serious difficulty [redacted] arises from cultural sources. Poor countries and poor regions are both likely to have difficulty in creating new effective organizations or in transforming old ones. In either case the problem is not only one of know-how in establishing effective organizations but of active opposition from incongruent elements in the old culture. In solving problems standing in the way of economic growth, weaknesses are likely to crop up in all three stages of decision making.

1. Search for relevant alternatives;
2. Analysis of consequences; and
3. Choice criteria.

Unfortunately, it is not possible to specify a production function for a cultural environment favorable to economic growth. Experience seems to indicate that, in a poor country, the requirements in human resources <u>and</u> time will exceed those in an advanced country.

As far as intangible community capital is concerned, poor regions in rich countries would have these advantages over poor countries:

1. Larger initial stocks of human capital;
2. Initially, more favorable cultural environment;
3. Better possibilities for importing human capital;
4. Models of effective organizations in other regions to observe and copy; [redacted] and
5. More financial resources per capita to use for community capital formation.

<u>6. Human Capital Formation</u>

A poor region and a poor country are each likely to have simultaneously critical shortages in highly skilled categories of human capital and severe unemployment and underemployment in unskilled and semiskilled labor. Poor regions are in a better position to overcome shortages by direct capital formation, or by importing scarce skills from the rest of the country. Relative to needs, shortages in the highly skilled categories are likely to be greater in poor countries. This is particularly true of the skills used in developing and disseminating information required for planning and carrying out programs of economic development. Examples would be skills needed for natural resource investigations; for developing programs in agricultural research, extension, [redacted] and education; for setting up programs of general education; for feeding results gained from operating experience back into decision processes; and so on. Poor regions would have less trouble in obtaining the services of the needed skills.

In connection with human capital, three advantages might be brought into reality for the poor country. In a rich country it is often possible for private and public employers to "bank" skills likely to be needed in the future. When supply schedules for particular skills allow, employers set qualifications higher than the job requires. That is to say, education and/or experience are set high enough to screen out the excess supply of particular skills.[8] With the large need for skills, a poor country could set its educational qualifications at the minimum that would be satisfactory and set out deliberately to maximize the skills gained from on-the-job experience.

Another potential advantage may be more elusive for poor countries. For skilled occupations, market levels of remuneration and interoccupational differentials are established in advanced countries, as long as

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8 The rate of return on the incremental investment in human capital is less than the market rate; this statement ignores any nonmarket (consumption) value a particular employment might have for the individual.

some international migration is possible. A poor country would [redacted] have an advantage if it could achieve an income structure that would provide adequate incentives for gifted individuals to continue their education but with absolute levels low enough that all the people who can be trained can be employed in output-increasing activities without undue strain on the national budget.[9] A poor country that can keep down costs of the services of human resources without diluting the incentives for education, training and hard work creates options for economic growth in additional directions, as well as opportunities for more rapid growth.

A final potential advantage for a poor country is that of "creaming" its human population in making selections for education and training. If the country can develop satisfactory aptitude tests for that particular culture, it creates the opportunity of selecting, for the limited number of opportunities for education and training, those individuals with the greatest aptitude for learning the particular skills involved. Carrying out this selection and training effectively would also create options and opportunities that would not be available in a country following more traditional (egalitarian) procedures. Needless to say, cultural forces in many poor countries are likely to be quite violently opposed to the use of selection or promotion procedures based on merit or aptitude.

In a country with a short history of political independence, the popular ideology is likely to embody strong elements of egalitarianism. The political pressure to provide three or four years of universal education will be overwhelming, while no similar pressures will be exerted on behalf

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9 In some West African countries, a relatively small number of government employees receive between 10 and 20 percent of the national income; after the country achieved independence, native replacements for European civil servants took over the complete schedule of salary and fringe benefits including (initially) an annual trip to Europe for the bureacrat and his family.

of secondary or higher education. Many poor countries will find it very difficult to achieve any [redacted] kind of reasonable balance among the different elements in the over-all system of education and training.

In many poor countries the cultural attitudes toward education are more favorable than in poor regions. In [redacted] the one situation, the observer often finds among the masses a mystical and emotional commitment to education as a way out of poverty and misery; in the other, he finds a deeply imbedded, often virulent, variety of anti-intellectualism among local leaders.

In poor countries and, I suspect, in poor regions, popular acceptance of the importance of education and training will be based largely on its role as a entrance ticket to higher incomes, to the better life. In both poor regions and poor countries, the nature of the acceptance makes it difficult to achieve and maintain high quality in education and training efforts. This problem may be a bit easier for poor regions because models of excellence may be more visible.

In relative terms, losses in human capital due to migration may be much greater for the poor region. Migration to better economic (and cultural) opportunities may be much greater than emigration from poor countries. Interregional barriers to migration are much less than international ones; knowledge of opportunities outside the unit is likely to be much better in the poor region than in the poor country.

7. Investments in Research and Development

Poor regions and poor countries stand in need of more productive technology, as well as of the human capital to apply it. Although the poor region may be able to uncover elsewhere in the country technology that can be applied directly (with some adaptation) to improve resource efficiency, one may surmise that much of the new knowledge needed is more basic. Seldom will the adaptation of existing techniques suffice in the poor region. Needed are different techniques that may have to be based upon new knowledge. Poor regions would be extremely well served to have highly capable, diversified research organizations ready to tackle many of the technical, social and economic problems that do not respond to existing techniques. Examples of new techniques that are now serving poor regions are the pelletizing of low-grade iron ore, and use of aspen in paper making.

Poor countries do not need completely new techniques as much as effective adaptation of existing techniques to local conditions. For example, plant breeders in Asia, Africa and Latin America do not especially need new genetic principles, nor always new genetic material to incorporate; well known principles and techniques need to be applied to genetic material on hand in order to produce more efficient varieties that are well adapted to the particular environment. While "adaptive" research is not glamorous, it is research. This type of research requires an individual who is well qualified in his field. It cannot be carried out successfully by poorly trained, unimaginative, or unenergetic research workers.

The volume of "adaptive" research needed in poor countries is larger (measured in terms of normal costs) than the volume of basic and applied research needed in poor regions. In spite of the greater complexity of the research needed in poor regions, the needs in the poor country are likely to exceed (actual and short-run potential) research capacity much sooner. This is in spite of the fact that a large volume of existing knowledge can be adapted for use in production processes in poor countries.

Once welfare-increasing information is available for use in social production functions, the problem of getting the information incorporated into production will become acute, because of the two cultures. In each culture, considerable attention must be directed toward disseminating useful information and overcoming the cultural obstacles to its productive use.

8. Population Parameters

Another set of conditions operates upon resource development differently in poor regions than it does in poor countries. To begin with, population growth rates are almost always higher in poor countries than in rich countries; poor regions in rich countries are likely to have lower population growth rates than affluent regions, not so much because birth rates per thousand females 15-45 are less, but because selective outmigration has reduced below the national average the proportion females in the child-bearing age groups are of the total population.

For societies with serious deficiencies in all forms of capital, high population growth rates (say, 3 per cent per annum or more) increase substantially the capital and food required to provide for a specified growth rate in income per capita (6).

Two other population parameters have differential effects on growth processes in poor regions and in poor countries. In poor countries the dependency ratio (the number of nonworkers per worker) is high because birth rates are high while death rates have been reduced drastically [redacted] by the application of public health knowledge. The proportion of the population in the school-age groups tends to be very high; it is not only that the dependency ratios are high, but the preponderance of young dependents means that minimum expenditures per school-age child on education and training will absorb a large share of the total volume of funds that can be made available for capital investment.

In poor regions, dependency ratios are likely to be high because of the predominance of senior citizens in the population. Selective migration has taken out much of the population of working age; most youngsters have migrated with their employed parents, thus inverting, [redacted] for poor regions, the usual population pyramid. In a population distribution skewed toward older people, health expenditures will dominate, rather than the educational expenditures for a young population.

9. Summary of Strategies

On the surface, resource development problems of poor countries and of poor regions in rich countries appear to be similar. It is easy to generalize the need in poor regions and poor countries for more private capital, more community capital, more human capital, and for more efficient technology. When the analyst begins [redacted] to think about the detailed elements that make up resource development programs, he discovers large and significant differences both in the problems and in the alternatives that are relevant or feasible.

Most of these differences arise from one of the following: (1) differences in the degree of closure between a poor country and the rest of the world, and between a poor region and the remainder of the rich nation; (2) differences in the capital resources that can be obtained from outside the political unit; and (3) differences in the per capita requirements for the different forms of capital — private, community, human and technology.

Different degrees of closure have several effects. First, the poor region can rely more upon developing export industries. Where efficiency can be achieved, export industries must receive attention in poor countries; in the long run, import substitution industries may be more important as growth points for economic growth. Second, the poor region can much more easily obtain externally its need for human capital of high quality than can the poor country. Third, less additional human capital will be required in the poor region to incorporate existing knowledge into production processes.

Different availabilities of capital resource mean that poor regions can simultaneously form private capital, community capital, human capital, and create (or adapt) technology at a greater rate than poor countries.

Compounding the difficulties of poor countries are their greater deficiencies (relative to need) in all these forms of capital. Complicating the resource development problems even more are their population parameters; generally population growth rates are higher than in rich countries; a higher proportion of their population is found in the age groups below working age. In poor regions, population growth rates are likely to be less than in more affluent regions; the distribution of population is likely to be skewed toward the older ages.

[redacted]

Differences in resource development strategies may be summarized as follows. Population control programs are urgent for poor countries but have little importance for poor regions. Export industries will have more relevance for poor regions than for poor countries where import substitution will be useful. Poor regions can more easily and economically import their needs for human capital while poor countries must rely more upon creating their own; holding down the market costs of human capital (and human capital formation) creates advantages for a poor country, if the structure of incentives is not distorted; natural resource investigations are among the important uses for human capital in poor countries. In a poor region, much of the community capital needed as a base for economic growth will be financed as consumption; unfortunately, some of the essential items of community capital cannot be "afforded" as consumption, and must be justified as investments. In poor countries, [redacted] temptations to form community capital used largely for consumption must be resisted in favor of community capital used to produce outputs that are indispensable inputs for other economic activities. Principal research needs of poor regions are for basic and applied research, while poor countries are most in need of adaptive research and development.

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