

Sir Arthur Lewis

NOBEL LAUREATE ARTHUR LEWIS was born in Saint Lucia, British West Indies, in 1915. He left school at the age of fourteen, having completed the curriculum, and went to work as a clerk in the civil service. In 1932, when he was old enough to do so, he took the examination for a St. Lucia government scholarship and elected to go to the London School of Economics. He received the Bachelor of Commerce degree in 1937 and a Ph.D. in industrial economics in 1940. Between 1938 and 1948 he served as a lecturer at the London School of Economics before becoming a full professor at the University of Manchester in 1948. At Manchester, he began his systematic research in development economics, and also pursued research in the history of the world economy since 1870.

Since 1957 he has spent nearly as many years in administration as in academic scholarship. During the six years from 1957 to 1963, he was in turn U.N. Economic Adviser to the Prime Minister of Ghana, Deputy Managing Director of the U.N. Special Fund, and Vice-Chancellor of the University of the West Indies. From 1970 to 1974 he was President of the Caribbean Development Bank.

Since 1963, he has been at Princeton University where he occupies the James Madison Chair of Political Economy. In 1978, Sir Arthur was decorated by the Queen of England, and in 1979 he received the Nobel Memorial Prize in Economic Science for his classic work in development economics.

Among his earliest development studies are "An Economic Plan for Jamaica," *Agenda*, vol. 3, no. 4 (November 1944); "Industrialisation of Puerto Rico," *Caribbean Economic Review*, December 1949; *Industrial Development in the Caribbean* (Port-of-Spain, Trinidad: Caribbean Commission, 1949); with others, *Measures for the Economic Development of Under-Developed Countries* (New York: United Nations, 1951); and *Aspects of Industrialisation* (Cairo: National Bank of Egypt, 1953).

His most celebrated works in development economics were written in the mid-1950s: "Economic Development with Unlimited Supplies of Labor," *Manchester School of Economic and Social Studies*, vol. 22, no. 2 (May 1954); and *The Theory of Economic Growth* (London: Allen and Unwin, 1955).

Among his many other books are *Economic Survey, 1919–39* (London: Allen and Unwin, 1949); *The Principles of Economic Planning* (London: Allen and Unwin, 1949); *Politics in West Africa* (London: Allen and Unwin, 1965); *Development Planning: The Essentials of Economic Policy* (London: Allen and Unwin, 1966); *Some Aspects of Economic Development* (Accra: Ghana Publishing Co., 1969); *Aspects of Tropical Trade, 1883–1965* (Stockholm: Almqvist and Wiksell, 1969); *Growth and Fluctuations, 1870–1913* (London: Allen and Unwin, 1978); and *The Evolution of the International Economic Order* (Princeton, N.J.: Princeton University Press, 1978).

From some fifty articles, the following may be specially cited: “World Production, Prices and Trade, 1870–1960,” *Manchester School*, vol. 20, no. 2 (1952); “International Competition in Manufactures,” *American Economic Review*, vol. 47, no. 2 (1957); “Unlimited Labour: Further Notes,” *Manchester School*, vol. 26, no. 1 (1958); “Employment Policy in an Underdeveloped Area,” *Social and Economic Studies*, vol. 7, no. 3 (1958); “On Assessing a Development Plan,” *Economic Bulletin of Ghana*, vol. 3, nos. 6–7 (1959); “A Review of Economic Development,” *American Economic Review*, vol. 55, no. 2 (1965); “The Dual Economy Revisited,” *Manchester School*, vol. 47, no. 3 (1979); and “The Slowing Down of the Engine of Growth” (Nobel Lecture), *American Economic Review*, vol. 70, no. 4 (1980).

Development Economics in the 1950s

THE MANDATE GIVEN TO ME is to advertise myself; to recall what I was thinking about in the 1950s and how things have turned out. This has its attractions since some of my earlier books are still in print and could do with such a boost, but I have resisted this temptation. I have chosen instead to write a brief sketch of the problems with which development economists were then wrestling, with only occasional references to my own part. I have also narrowed the agenda to the two major obsessions of the day: what is the appropriate size of the industrial sector, and how is modernization to be financed.¹

Industrialization

What limits the size of the manufacturing sector? The preliminary answer—the productivity of the farmers whose marketable surplus will exchange for manufactures—has been in our literature a long time, since it was provided by Sir James Steuart.² In Adam Smith this proposition became the key to understanding what he called “The Natural Progress of Opulence”—what we would call today “development economics.” Adam Smith added an escape clause. If the farmers’ surplus was small, the expansion of industry might still be supported by exporting manufactures.³

These propositions were not known, or if known not usually understood, in 1950, so the question was debated interminably by the supporters of industry and the supporters of agriculture. I supported both. As I put it in 1949, writing on industrialization of the British West Indies, “A poor people spends a very high proportion of its income on food and shelter,

1. The most important topics excluded are models of historical change, like those of W. W. Rostow, and the quantitative study of sectoral changes associated with development led by Colin Clark, Simon Kuznets, and Hollis Chenery.

2. Sir James Steuart, *An Enquiry into the Principles of Political Economy*, Bk. I, chaps. 8 and 20.

3. Adam Smith, *The Wealth of Nations*, Bk. III, chap. 1.

and only a small proportion on manufactures. At their present low standard of living, the number of persons for whom West Indians can provide employment in manufacturing by their own purchases is extremely small."⁴ I took it for granted that overpopulated countries like the West Indies or India could not feed themselves over the next twenty-five years, and would have to import food and raw materials and export manufactures.⁵ But in writing about the Gold Coast I laid emphasis on the need for an agricultural policy that would have equal priority with import substitution.⁶

The agricultural option is really two options: to export or to produce for the home market.⁷ Hence three strategies are available for supporting industrialization: (1) to export more agricultural commodities (or minerals, which I shall not pursue); (2) to develop a self-sufficient economy, emphasizing the home market; or (3) to export manufactures. All three strategies imply vigorous industrial and agricultural policies. They differ only in their foreign exchange requirements and yields.

In theory, there is no need to choose between these strategies, since each must be taken to the margin of advantage. Appropriate data for a development plan matrix, if such data existed, would optimize the allocation of resources between domestic and foreign trade. But in addition to the unavailability of data and the crucial guesswork as to the future, it happens that each of these strategies develops in practice its own momentum, institutions, power structure, infrastructure, and outlook, so that one or another tends to dominate decisionmaking. Even if there were not real economic forces pushing this way, economic philosophers tend to become emotionally wedded to one or another of these strategies, and to emphasize all the arguments against the other two.

So it came about that most of what was said in the 1950s about development strategy defended or attacked one of these three strategies, and I shall use them as the framework of my comment.

Agricultural Exports

Let me begin with the strategy based on exporting agricultural products. The high emotional content of this discussion is well known. Myint⁸ originates the argument in Adam Smith's "vent for surplus," and we can

4. "The Industrialisation of the British West Indies," *Caribbean Economic Review* (May 1950), para. 50.

5. W. A. Lewis, *The Theory of Economic Growth* (London: Allen and Unwin, 1955), pp. 329, 351–52.

6. *Report on Industrialisation and the Gold Coast* (Accra: Government Printing Department, 1953).

7. The same good may be produced both for export and for domestic consumption; for example, rice in Burma.

8. H. Myint, "The Classical Theory of International Trade and the Underdeveloped Countries," *Economic Journal* (June 1958).

finger several cases that fit his model—Burma, Thailand, Gold Coast, Uganda, and others. Whether exports are an engine of growth or a handmaiden is of no significance. If the growth of industrial production for the home market is raising imports, then more exports will be needed. Alternatively, if agricultural exports are rising, any trade multiplier in excess of unity will stimulate industrial production for the home market. The historian wishes to know which came first; the economist is concerned that they henceforth match each other.

In the 1950s two arguments were developed against the agricultural export strategy: the terms of trade argument and the dependency argument. The terms of trade argument was in two parts, one historical and one theoretical. The historical argument was that since the commodity terms of trade have had a long-term bias against agriculture, primary production should be avoided. I never subscribed to this position. In *Economic Survey*, published in 1949, I said

In the past hundred years primary production has not failed to respond to the growth of manufactures; and if the economies of Asia are fructified by an influx of knowledge and of capital, which will stimulate both their manufactures and their primary production, there is no *a priori* reason to expect these two to grow at incompatible rates.⁹

Throughout most of this argument the data used related to U.K. prices, whether of manufactures or of primary products. My contribution was to construct an index of the prices of tropical products and an index of the prices of manufactures. These indexes showed that the terms of trade were more or less constant between 1870 and 1927, fell off during the Great Depression, and were back at the same level in the 1950s. But this index was not published until 1969.¹⁰

The theoretical argument is different from the historical. Whatever may have happened in the past, if primary producers develop their exports faster than the industrial countries demand, then the terms of trade must move against them. I spent some time trying to figure out what rate of growth of trade in primary products would leave the terms of trade unchanged in long-run equilibrium. Ultimately I settled for a rate of 85 percent (plus or minus) of the growth of industrial production in countries in the Organisation for Economic Co-operation and Development (OECD).¹¹ Neisser and Modigliani and Polak were on the same track.¹²

9. W. A. Lewis, *Economic Survey* (London: Allen and Unwin, 1949), p. 197.

10. W. A. Lewis, *Aspects of Tropical Trade, 1883–1965* (Stockholm: Almqvist and Wiksell, 1969).

11. W. A. Lewis, "World Production, Prices and Trade," *Manchester School of Economic and Social Studies* (May 1952).

12. Hans Neisser and Franco Modigliani, *National Incomes and International Trade* (Urbana, Ill.: University of Illinois Press, 1953); J. S. Polak, *An International Economic System* (London: Allen and Unwin, 1954).

That is a short-term answer. In a 1954 article¹³ I argue that in the long run in the less developed countries (LDCs) it is the factoral terms of trade that determine the commodity terms, and not the other way around. The factoral terms have moved continually against the LDCs since the beginning of the nineteenth century. The basic way to stop this is continually to raise the productivity of LDC farmers producing for the domestic market, thereby increasing the supply price of export crops.

The dependency argument is not like the usual arguments against imports, which turn on the difference between money costs and real costs, but is primarily about power and its cumulative accretion. Here is a brief summary. A peripheral country that begins to export agricultural commodities becomes paralyzed in ways that preclude an industrial takeoff. Its trade and all that goes with it—shipping, banking, insurance, port facilities—fall into the hands of a few foreigners, with or without association with a few rich local families. The profits of this trade are transferred overseas instead of being invested in the country. The best jobs are reserved to foreigners, so that local talent is untrained and unable either to compete in the old trades or to start new ones. The talented young become frustrated, lose confidence in their abilities, emigrate, or lower their horizons. Domestic industries are destroyed by imports. The foreign companies are interested in foreign trade and, if they can, will block attempts to create new industries that might diminish their trade or render it more costly. Mass advertising teaches the people to prefer imported consumer goods to their own products, thereby raising the propensity to import foreign brands or materials or machinery in place of local resources. This trend imperils the balance of payments, makes it harder to provide jobs, and pushes displaced workers back into the subsistence sector.¹⁴

This is a reasonable description of what was happening in most tropical colonies in the first half of the twentieth century, though it exaggerates the share accruing overseas, and underplays the superior investment in schools and other services in the colonies with highest exports per head. But it is not clear why independent countries should fall into such a trap. Thus, it is not a good description of Brazil, around 1880, which had already begun to build its own industrial bourgeoisie; or of Argentina, which was bossed by its great landowners rather than by foreign capitalists; or of the countries of Southern and Eastern Europe, whose stagnation through the nineteenth century is as much a puzzle for development analysts as is the history of Mexico.

For these reasons, my book of 1955 admitted the validity of elements of

13. "Economic Development with Unlimited Supplies of Labour," *Manchester School of Economic and Social Studies* (May 1954).

14. This is a composite of many different writers. The leader of the dependency school is André Gunder Frank; see, for example, his *Capitalism and Underdevelopment in Latin America* (New York: Monthly Review Press, 1967).

dependency theory, but limited its value; and my piece for the International Economic Association conference of 1962, though warmer, was equally restrictive.¹⁵ The dependency theory seemed to me to be important for the study of the second half of the nineteenth century, but not the second half of the twentieth century when independent governments were engaged in restructuring the place of foreigners in the country. As a contribution to deciding whether the small farmers should be encouraged to plant more tea or rubber, it seemed to me unhelpful.

Dependency belongs to a class of arguments that rejects the economists' usual objective, the maximization of output at prices equal to marginal costs. In dependency one seeks instead fast independent growth. In this class also belongs a preference for one set of institutions rather than another (for example, family farms as opposed to plantations) which will yield different outputs and prices. A basic needs strategy may also be in this class. Hanging over all is the problem that, since prices reflect the original and intervening distribution of resources, one can get several Pareto optimal price and allocation "solutions," no one of which is superior to all others. This is bad enough where the population is homogeneous in religion, race, language, and tribe; in plural societies ministers choose between one technology and another, one geographical layout and another, or one objective and another in terms of the demographic characteristics of gainers and losers, and may be doing so without malice in order to maintain national unity. Our welfare economics does not yield "scientific" solutions, but is rather a branch of Western political philosophy. Plural societies must develop their own system of evaluation.

Import Substitution

Let me set this aside, as most economists do, and come back to the fold. Apart from doubting the effects of exporting primary products, development economists were happily engaged in their traditional occupation of showing why, if not controlled, imports will be excessive.

One of the traditional arguments turns on money cost, as reflected by the market, not being the same as real cost. Manoilescu had spelled this out in 1931, with his claim that wages are always higher in manufacturing than in agriculture and therefore exaggerate the real cost of manufacturing. Around this we built the case of unemployment created by success. Take an export industry such as bauxite in Jamaica that can afford to pay wages three or more times higher than the rest. Wages in that industry pull up wages in all other industries beyond what they can pay. The success of this industry is therefore paralleled by even greater unemployment else-

15. *The Theory of Economic Growth*, pp. 347–50; and "Economic Development and World Trade," in E. A. G. Robinson, ed., *Problems in Economic Development* (London, Macmillan, 1965).

where, but there is no shortage of foreign exchange and so no pressure to devalue. I articulated this argument for Jamaica in 1964; Dudley Seers at about the same time reached a similar conclusion for Venezuela, using a wages fund approach.¹⁶ But not much notice was taken of us until the Netherlands began to experience the same phenomenon. Nowadays it is known as the Dutch disease, and its Europeanization has raised its academic standing. This line of analysis leads to shadow prices and benefit-cost analysis—a treacherous swamp, but unavoidable if one is to make decisions involving international trade.

In addition to arguments involving shadow pricing, development economists rounded out the arguments involving time (the learning factor), scale, externalities, or complementary (networks). These arguments were already in the theory books, though normally ignored in analytical case-work. Two more fundamental objections were also uncovered, one relating to resource mobility and the other to the inelasticity of export earnings.

The framework of international trade theory is that commodities may move across frontiers and therefore have everywhere the same price (excluding transport costs), whereas resources—labor, land, and capital—cannot cross frontiers and have different prices. If one is talking about the sugar industry in the late 1920s, which was dependent on migrant labor and foreign capital, the theory of international trade is hardly relevant. Capital will move to equalize its marginal productivities everywhere, and so will labor; as a result, submarginal countries will have no population. When making policy recommendations for the Ivory Coast, does one include the migrants from Upper Volta in the group whose income is to be maximized or treat them as an input at predetermined prices? The point is specially relevant when one is talking about customs unions, common markets, and optimal currency areas. When British economists were asked whether they favored joining the Common Market, half said yes and talked about the law of comparative cost. The other half said no and trembled at the possibility that British skilled labor, capital, and entrepreneurship would migrate to the continent, leaving the island in stagnation. Whose welfare is to be maximized?

The relevance of migration is enhanced by the phenomenon of the “growth pole,” also elaborated by development economists, including Myrdal and Hirschman.¹⁷ This refers to the tendency for people to mass in great urban concentrations, seldom exceeding 1 million before this century, but now up to as many as 13 million, well beyond the margin where the gain from geographical propinquity exceeds the cost of congestion. If

16. *Jamaica's Economic Problems* (Kingston, Jamaica: Gleaner Co., 1964). Dudley Seers, “The Mechanism of an Open Petroleum Economy,” *Social and Economic Studies*, vol. 13, no. 2 (June 1964).

17. A. O. Hirschman, *The Strategy of Economic Development* (New Haven: Yale University Press, 1958); and Gunnar Myrdal, *Economic Theory and Underdeveloped Regions* (London: G. Duckworth, 1957).

we wish to assess the effects of forming a customs union we have to ask where the growth poles are, and in what directions populations will flow. Comparative cost is then a minor element in the story. Much of the disillusionment with customs unions over the past thirty years comes from applying the wrong theories: foreign trade theory instead of location theory.

The case of inelastic export earnings was also opened up in the 1950s. International trade theory assumes that a country can always earn more foreign exchange by exporting more commodities or services. It is, however, logically possible for a country to have difficulty in earning more, whether because of barriers to its trade, low elasticities of supply, or low elasticities of demand for its products; or because its wage level is so tightly secured to its cost of living that devaluation raises costs in the same proportion. This opens up a number of possibilities:

- The two-gap model, worked on especially by Chenery,¹⁸ in which extra saving cannot be converted into imports of capital goods and is therefore frustrated.
- Structural inflation, a concept introduced to Anglophones by Dudley Seers,¹⁹ in which the marginal propensity to import exceeds the marginal propensity to export. Originally a Latin American export, this argument was discounted by OECD spokesmen until the British adopted it to explain their own stop-go system; so now it is included in the canon.
- Balanced growth, which we owe to Rosenstein-Rodan.²⁰ If imports and exports cannot be increased, production must follow a balanced growth path. This would be facilitated by issuing indicative plans and by small countries joining into customs unions within which large-scale industries might be operated more efficiently.

The logic of these three models seemed to me unchallengeable, and I was never involved in the huge critical literature that emerged. Most of this ignored the basic assumption and was unhelpful, except for Hirschman's stimulating treatise on the forces that convert imports into import substitutes.²¹ I did become involved with the Rosenstein-Rodan recommendations, especially the making of indicative plans and the creation of customs unions.²² But neither of these movements has been as successful as

18. For the model in operation, see H. B. Chenery and Peter Eckstein, "Alternative Policies for Latin America," *Journal of Political Economy* (July 1970), pt. 2.

19. Dudley Seers, "A Theory of Inflation and Growth," *Oxford Economic Papers* (June 1962).

20. P. N. Rosenstein-Rodan, "Problems of Industrialization of Eastern and South-Eastern Europe," *Economic Journal*, vol. 53 (June–September 1943).

21. Hirschman, *The Strategy of Economic Development*.

22. After a number of field experiences, I wrote a book on making indicative plans: *Development Planning* (London: Allen and Unwin, 1966). My 1950 piece, "The Industrialisation of the British West Indies," included the case for a customs union.

we had hoped, partly because the difficulty of earning foreign exchange, from which the models were derived, turned out to be not as great as we had feared; and partly because the planners were slow in learning that market prices are more powerful incentives than ministerial speeches.

Self-sufficiency

Self-sufficiency is the part of the import substitution strategy that relates to food production for the domestic market. Once one has grasped the point that agriculture and industry provide markets for each other's output, theoretical dispute ceases. Practical planning is more difficult. We do not know exactly how much to spend to set food production on a 3 percent or a 4 percent growth path. We do know that expansion of the extension system and the rest of the agricultural package takes time and runs into its own administrative bottlenecks. So we choose a program that seems administratively viable as well as reasonably effective for the money.

The principal reason for our limited success on this front has been that, with exceptions, the developing countries did not wake up to the importance of agriculture until rising food deficits began to produce rising foreign exchange bills. Economists on the whole are not to blame for this. Nothing was more popular with us in the 1950s than land reform, on grounds both of equity and of expected effect on output. (I wrote two articles on this subject.²³) The Third World's failure with agriculture has been mainly at the political level, in systems where the small cultivator carries little political weight.

The agricultural problem is not simple, however. The wet tropics is capable of having its food production grow at 4 percent a year over the next thirty years, but we do not know how to average even 2 percent a year over that period in the dry tropics. At least 500 million people live on the fringes of the great Asian and African deserts, where rainfall is either inadequate or uncertain. This is one of the reasons for the wide spread of LDC growth rates and of LDC per capita incomes. These gaps will widen until the agronomists make a major breakthrough in tropical dry farming.

Exporting Manufactures

The last option is to export manufactures. This is the obvious strategy for countries that are overpopulated, and several of us were saying this from the 1940s onward. But the current expansion did not come from this.

23. "Issues in Land Settlement Policy," *Caribbean Economic Review* (October 1951); and "Thoughts on Land Settlement," *Journal of Agricultural Economics* (June 1954).

It followed upon import substitution. The backlog permitted manufacturing for the home market to grow by as much as 7 to 10 percent a year for a couple of decades, after which it was exhausted, and fast industrialization could then be sustained only by exporting manufactures. This was like the breaking of a spell. For over a century tropical peoples had been told that manufacturing industry was unsuitable for their countries, and that their comparative advantage lay in exporting agricultural commodities. Then suddenly they were selling manufactures in the markets of developed countries, and the leaders of these developed countries were running around in a panic and adopting special discriminatory measures to keep out LDC manufactures. It involved a spiritual revolution as great as that experienced by economists over the age of thirty who were converted to Keynesianism in 1936.

One aspect of the export of manufactures that causes pain is its dependence on foreign entrepreneurship. LDCs manage without multinational corporations in agriculture, public utilities, banking, and wholesaling, in which they were concentrated before 1950, and from which they are now disappearing. In manufacturing, multinationals contribute high technology to industries where technology is changing rapidly, but these are of interest only to the more sophisticated LDCs. For standard items such as shoes or cement the technology is available to all, and factories can be purchased off the rack. More widely significant is that multinational corporations frequently also contribute access to markets. These may be domestic markets that they have been supplying with imports. Where multinationals tend to be indispensable is in initiating exports of manufactures to other markets in which they are already established. Domestic entrepreneurs learn how to sell manufactures overseas, but foreigners usually take the first steps.

I have never felt that LDCs should hold back the diversification of their manufacturing sectors from fear of multinationals, since in independent countries they operate on the country's terms or not at all. The most important control is the use of work permits to force the firms to hire and train local recruits at managerial and professional levels. I have received much criticism for this stand over the past thirty years, but the heat seems to be diminishing as Third World governments gain confidence in their own bargaining skills.

The future of the option to export manufactures cannot be predicted. World trade in manufactures could not grow indefinitely at 10 percent a year when world production of manufactures was growing at only 5 to 6 percent a year. The behavior of the developed countries is also not predictable; their attitude toward free trade in manufactures will be affected by whether they return to fast growth of GDP. Third World exports to each other are just beginning to take off; they will presumably grow fast if the industrial countries are protectionist, and less fast if the industrial countries maintain an open door.

Finance

In the 1950s we were obsessed not only by the appropriate size of the industrial sector but also by how modernization was to be financed. This second obsession was widely but not universally dominant. The approach of many older economists was that the world's capital is scarce and should be invested where it would be most profitable. If that turned out to be the rich countries, then so much the worse for the poor countries. Other economists thought that the amount of capital required would not prove to be a problem because the absorptive capacity would prove to be small—even Myrdal touted the low absorptive capacity. Eugene Black told a U.N. delegation of which I was a member, in 1951, that the maximum amount the Third World could absorb in Bank lending would be \$250 million a year. I never took any of this capacity talk seriously because my mother had brought me up to believe that anything they can do we can do. This is not a scientific proposition, but it turned out to be true, since by 1960 the capacity of LDCs to absorb capital fruitfully was being demonstrated by their low capital-output ratios.

Capital Intensity

We were much concerned about the economical use of capital, which sprouted a large literature in the first half of the 1950s. A famous article by Galenson and Leibenstein²⁴ invited us to choose capital-intensive strategies, as did P. C. Mahalanobis in expounding his plan framework for India. But most economists rejected their reasoning, preferring the analysis and conclusions of neoclassical shadow prices. The Indian government put a lot of resources into modernizing small-scale workshop and handicraft production. My 1955 book has several pages on the subject. We did not espouse the extremist position of Schumacher,²⁵ but most of us desired new and more appropriate technologies to be devised and utilized.

This discussion involved setting the present against the future. Should we adopt policies which would hold down mass consumption now in favor of a faster rate of growth of output, or should we have more consumption now and not so large an increase a decade later? The appendix to my 1955 book argued the case for moderation. The popular view today that the economists of the 1950s did not care about distribution is wide of the mark. As I mentioned before, we were all in favor of land reform, for reasons of equity as well as output. As for the urban worker, I wrote in 1955:

24. W. Galenson and H. Leibenstein, "Investment Criteria, Productivity and Economic Development," *Quarterly Journal of Economics* (August 1955).

25. E. F. Schumacher, *Small Is Beautiful* (New York: Harper and Row, 1973).

Neither is there any excuse for not developing a proper range of social services—medical services, unemployment pay, pensions and the like—in the absence of which the industrial worker is forced to keep one foot in the village so that he can return to it in case of need. The effect would be a healthier labour force, more settled, and more anxious for improvement on the job. These things cost more, but they also pay off in extra productivity, as well as in human happiness.²⁶

My concern in those days was not with the amount of money paid to urban workers, which I assumed would be directly related to the productivity of the small farmers, but rather with the social wage, especially education, health services, water supplies, workmen's compensation, unemployment pay, pensions, and such. This network of social provision seemed to me, as a social democrat, to be one of the best products of the past hundred years. Now as then I single out education, about which I wrote in 1955 in the course of a thirty-five page chapter on "Knowledge," which was probing for priorities: "The difficulty education raises is that it is both a consumer and an investment service. In so far as it is an investment, it contributes directly towards increasing output."²⁷ I followed this up with three articles and a section in my book, *Development Planning*.²⁸ But I did not get into the mainstream of the enormous literature initiated by Gary Becker in 1964. This was because whatever value the econometric exercises may have in measuring the private rate of return, they are quite misleading as measurements of the social rate of return, especially in developing countries. The line I was following led instead to manpower budgeting, a less controversial subject, but what the ministry has to use in the end, despite its weaknesses.

Sources of Finance

The government was going to need a lot of money, given the cost of the social programs and its contribution to financing capital formation. In 1956, along with Alison Martin,²⁹ I started a line of inquiry to establish norms of government revenue and expenditure. This stimulated a string of articles by other writers. In the hands of the staff of the International Monetary Fund, the subject metamorphosed into a test of how much revenue one could reasonably expect governments to raise, given the different structures of their economies; and this looked as if it might even

26. *The Theory of Economic Growth*, pp. 193–94.

27. *Ibid.*, p. 183.

28. The articles were: "Education and Economic Development," *Social and Economic Studies*, vol. 10, no. 2 (1961); "Education for Scientific Professions in the Poor Countries," *Daedalus*, vol. 91, no. 2 (1962); and "Secondary Education and Economic Structure," *Social and Economic Studies*, vol. 13, no. 2 (1964).

29. "Patterns of Public Revenue and Expenditure," *Manchester School of Economic and Social Studies*, vol. 24, no. 3 (1956).

become one of the elements determining how much assistance a country deserved to receive.

Taken as a group, governments of less developed countries (LDCs) have, in fact, passed reasonable tests. There are four times as many children in school as there were in 1950. The infant mortality rate has fallen by three-quarters. The multiplication of hospital beds, village water pipes, all-season village roads, and other mass services is faster than at any period in the history of the countries now developed. Much of the disillusionment with the results of the past three decades originates with people who do not understand the importance of the social wage, who have no idea what the conditions of the masses were like in 1950, or who have forgotten the extent to which LDC peoples live in semi-arid lands for which we have yet to make the technological breakthrough.

In the event, part of the answer to where money for capital formation is to come from is taxation. LDC governments need to have surpluses of current revenue plus public enterprise profits over current expenditures, and do in fact have substantial surpluses. But the bulk of the finance, even with foreign aid, has to come from increases in private domestic saving. The problem was to elucidate how this comes about.

How had it come about in the nineteenth century? For Europe it was from a rising share of profits in the national income. And what caused this rise in the share of profits? Neoclassical economics was no help. Keynes's model provided for the profits share to rise in the cyclical upswing. The evidence showed, however, that profits share and the savings share were more or less constant in the long run after 1870, in both Britain and the United States. What we were getting from the neoclassicists, whether Duesenberry or Friedman or Modigliani, were demonstrations of how to combine long-run savings constancy with short-run savings volatility. This was of no use to us, since what we were trying to understand was a long-term rise in the savings propensity.

As I was walking down a road in Bangkok one morning in August 1952, it suddenly occurred to me that all one needed to do was to drop the assumption—then usually (but not necessarily) made by neoclassical macroeconomists—that the supply of labor was fixed. Assume instead that it was infinitely elastic, add that productivity was increasing in the capitalist sector, and one got a rising profits share. It also occurred to me that this model would solve another problem that had bothered me since undergraduate days: what determined the relative prices of steel and coffee? I had been taught that marginal utility was the answer to this question, but this answer made no sense to me. If, however, one assumed an infinite elasticity of labor in terms of food to the coffee industry, and an infinite elasticity also in terms of food to the steel industry, then the factorial terms of trade between steel and coffee were fixed, and marginal utility was out the window.

So in three minutes I had solved two of my problems with one change of assumptions. Writing this up would take four articles from me, and further exploration by Fei and Ranis and others.³⁰ The thing became for a time a growth industry, with a stream of articles expounding, attacking, testing, revising, denouncing, or approving. The upshot seems to be that the model is illuminating in some places at some times, but not in other places or other times. This was said when it was first presented.

What was the basis of near infinite elasticity? Critics fastened on disguised unemployment among small farmers in a half-dozen overpopulated countries, but this was only one item in a long catalog covering four pages of the first article. Other items were: technological unemployment, which Marx thought powerful enough by itself to create a growing labor surplus; underemployment in urban areas, in what has now come to be called the informal sector; the movement of women from the household into the labor market; and the increase of population. This last turned out to be the dominant factor. With population growing at 3 percent a year, the supply of labor could not be other than very highly elastic.

Population deserves more than a mention. I think the biggest mistake development economists were making in the 1950s was to underestimate the likely growth of population. We expected it to average 1.5 percent. That the death rate might drop by 10 to 15 points per thousand over the next ten years never entered our heads.

Rapid population growth was a blow to development in LDCs in ways that I enumerate, but do not need to elaborate. It aggravated the food problem, already acute in the semi-arid lands. It put stress on the balance of payments. In countries already overpopulated, it reduced the savings potential. It led to rapid urbanization, which is extremely expensive in terms of infrastructure.

Rapid population growth also made the problem of urban unemployment insoluble. This first struck me in Ghana in 1954. I wrote about it in 1957, saying:

[Urban unemployment] is also due partly to the growing wage gap itself, which by raising the level of those who have employment in the towns, attracts more and more people to come into these towns. It is very difficult to know how to cope with this increase in urban unemployment. The normal way to cope with unemployment is to provide work, but this is no solution in this case. On the contrary, it merely aggravates the problem, because the more work you provide in the towns, the more people will drift into the towns, and there is no certainty that you can

30. Interest was greatly stimulated by an article by Gustav Ranis and John Fei, formalizing various aspects of the model, and by their book, *The Development of the Labor Surplus Economy* (Homewood, Ill.: Richard D. Irwin, 1964).

win the race . . . No one ought to say that he knows how to cure unemployment in this situation.³¹

This problem still remains without solution, except insofar as the solution is to make more jobs in the countryside. Todaro's model³² and the subsequent literature on migration and the labor markets are illuminating, but we need clearer links between growth poles and migration, and we also need to hear more from the sociologists and the historians about why people move, other than for wage differentials.

Now let me come back to my question: where had the money come from to pay for modernization in the past? The short answer was that profits had risen relative to the national income, because productivity had risen faster than wages. I was frequently attacked for recommending this change in income distribution, but I was not making recommendations; I was trying to understand, not to prescribe. This was not specifically a capitalist answer, since the same answer could be reached for the U.S.S.R., with the profits of the state firms and the turnover tax performing the same function as the sources of increasing savings.

Inflation

Ragnar Nurkse opened the door to what looked at first like a painless solution: use surplus labor for capital formation. A great deal of construction can be done with minimal equipment: building roads, bridges, irrigation channels, terraces, anti-erosion barriers, and so on. The meaning of surplus labor gave rise to an unhelpful literature. Nurkse believed that one could mobilize people for capital works at certain times of the year without reducing other output significantly. Both the works and the people would be rural. It was obvious that one could do this in the six months of the agricultural off-season, and obvious that one could not do it during the four weeks of harvesting. Argument centered on whether in some parts of India the labor force in agriculture could be reduced by as much as 5 percent of the farmers of five acres or less, without a significant fall in total output. Why this became the issue is not clear, since those schemes in practice are timed to complement the agricultural season and not to compete with it.

By definition, surplus labor could be used without reducing other output significantly, especially during the long agricultural off-season. It was therefore costless in real terms. We had great hopes in the 1950s for the

31. "Employment Policy in an Underdeveloped Area," *Social and Economic Studies*, vol. 7, no. 3 (1958); and "Unemployment in Developing Countries," *The World Today*, vol. 23, no. 1 (1967).

32. M. P. Todaro, "A Model of Labor Migration and Urban Unemployment in Less Developed Countries," *American Economic Review*, vol. 59 (1969).

community development movement using unpaid labor, and some governments made a go of it, but enthusiasm usually petered out. Labor has to be paid whether it is in surplus or not.

Since the use of surplus labor results in increased output, one is tempted to bring this about by increasing the money supply. How much inflation this would cause must be analyzed at two levels. At the primary level the amount of inflation would depend on what the surplus labor was used for. If it was used productively, say, to dig irrigation channels and thereby increase the output of mass consumer goods, we would be matching extra money with extra consumer goods, and the inflation would be damped. If, however, the money was used to pay soldiers or civil servants, without increasing the output of consumer goods, we would get the full blast of inflation.

The secondary level is the reaction to the inflation created at the first level. The money spent there enters into circulation and turns up as extra incomes for various groups of people. If those who gain invest the proceeds productively, we get a secondary round of additional capital formation. If not, they consume more and others consume less. Whether the gainers can retain their gains depends also on the simple-mindedness or powerlessness of the people who lose. If the losers are able to insulate themselves against inflation—for example, by having their wages and their lendings indexed—then the propensity to save would not be changed.

Most of the debate on inflation is about what happens at the secondary level, and it ignores the fact that the primary objective of spending is attained whatever the secondary consequences may be. Putting the primary and the secondary levels together offers four corner choices. In one corner is productive primary use plus an increased propensity to save, and the resultant inflation is damped. In the opposite corner is wasteful primary expenditure and zero addition to saving, so inflation is maximized. I entered the 1950s standing firmly in the first corner, but quit the 1950s disillusioned into expecting only the opposite extreme. That is to say, I was hopeful in 1950 that a country like India could launch a big program of land improvement and would not be deterred from this merely because it might raise the price level by 3 percent a year. There was some such program, especially for irrigation, but it was not big enough. Instead, the continent where inflation raged was Latin America, where neither the primary nor the secondary phases contributed significantly to capital formation, since “rational expectations” by now prevailed. As I put it to the Rio Conference on Inflation and Growth in Latin America in 1963:

A big inflation cannot go on for long without turning into spiral inflation, because in a big inflation everybody soon gets the point, and learns to protect himself by demanding higher money income. In this sense, by having prolonged large spiral inflations, which have achieved nothing,

Latin America has already wasted her inflationary potential, and barred herself from turning now to useful self-liquidating inflations.³³

The Rio conference was more widely concerned with the connection between monetary equilibrium and balance of payments equilibrium—a topic about which Latin American economists had been fighting with the IMF throughout the 1950s. In the 1960s developed countries began to have the same problems with Bretton Woods as the LDCs, and by the 1970s were using essentially the same language that had originated in Latin America. The subject now has an enormous bibliography.³⁴

Foreign Aid

The economists of the 1950s sought answers to three questions. The first was: why did LDCs need foreign aid when the countries now developed had not needed it? Some of our answers have survived less well than others.

We used to talk about the need for a big push, and about the low-level equilibrium trap, but have fallen silent about these.

We used to point out that the industrial countries had all been borrowers at some point—even Britain in the eighteenth century and the United States in the nineteenth. But these were small amounts.

We produced the two-gap model to show why countries may be forced to save less than they would like to, but this was hard to square with the buoyancy of world trade in the 1950s and 1960s.

We noted that LDCs were growing about twice as fast as European countries grew in the nineteenth century—partly because of the population explosion—and therefore needed higher investment ratios.

Finally, we made the point that LDCs are also urbanizing more than twice as fast as was Western Europe around 1900, and this is an expensive process.

The second question that worried us was: who should get foreign aid? The question was not asked of bilateral aid, which was distributed on political lines. But there were already sizable multilateral programs, and the LDCs kept asking the General Assembly to establish a large U.N. concessional fund. What would be the basis for distributing such a fund?

There were many candidates. Rosenstein-Rodan published a list emphasizing absorptive capacity.³⁵ The Alliance for Progress was to emphasize good performance in social and economic policies. I emphasized good

33. "Closing Remarks," in W. Baer and I. Kerstenetzky, eds., *Inflation and Growth in Latin America* (Homewood, Ill.: Richard D. Irwin, 1964), pp. 31–32.

34. My small contribution to this was historical. "The LDCs and Stable Exchange Rates," Per Jacobsson Lecture, in IMF, *The International Monetary System in Operation* (Washington, D.C., 1977).

35. P. N. Rosenstein-Rodan, "International Aid for Underdeveloped Countries," *Review of Economics and Statistics* (May 1961).

performance in raising the share of saving and taxes in national income.³⁶ Chenery emphasized balance of payments needs, especially where reflected in two-gap disabilities. In the end, the prize went to distribution on the basis of poverty, giving proportionately more to the poorer countries. The U.N. made a list of the twenty-five least developed countries and asked bilateral as well as multilateral donors to give priority to them. This basis of choice runs the highest risk of waste, but may also be the most worthwhile.

The third question we asked ourselves was how to prove to the rich countries that they would benefit economically by giving to the poor. We have the theoretical tools for tackling this subject—economies of scale, external economies, the terms of trade, comparative cost, growth poles—but since the answer yielded by our tools is that the result may go either way, we cannot reach a conclusion without collecting a lot of data, measuring a lot of elasticities, and guessing a number of possibilities. So this question remains in the sphere of problems to which there is no satisfactory solution at the level of economic analysis. For my part, the maxim that the rich should help the poor suffices, but it is not an economic theorem.

Conclusion

Let me wind up on finance. My overwhelming impression is that the LDCs have done much better by their own efforts than we had considered likely. Both domestic saving and government revenue have risen to the point that the median share of private consumption in national income has fallen by about ten percentage points over twenty years. This is an achievement on which a country should be congratulated, as should the economists who have pushed in this direction.

The performance is of course mixed. When one lists the factors that cause countries to be at the bottom of the growth list, political instability is prominent; countries grow fastest whose citizens think it safe to save and invest at home. We underestimated this factor in the 1950s. It will probably cease to be so common as the new sovereignties created since the Second World War acquire experience and legitimacy. We also overestimated the likely efficiency of new governments and their commitment to improving the conditions of the poor (which varies widely).

Meanwhile, all LDCs are menaced since 1973 by the international recession, by rising protectionism in the industrial countries, by the high price of oil, and by the enormous debt this has created. These disasters are beyond their control and call for special measures by the whole international community. But the viability of LDCs in normal times, like the 1950s and the 1960s, is now beyond all doubt.

36. "A Review of Economic Development," Richard T. Ely Lecture, *American Economic Review* (May 1965).

Comment

Arnold C. Harberger

PROFESSOR LEWIS has given us a pleasantly wistful and nostalgic tour of development economics in the 1950s, in which are blended many of those nuggets of insight and wisdom for which he is justly famous. The juxtaposition of these two elements enlivens the task I face in commenting on his work.

The nostalgic parts appear to me as being exactly that—these parts invite, indeed virtually demand, a juxtaposition of the approaches and views that were popular in the 1950s with those that are now more current. The emphasis here would be on the evolution of ideas—how fads that attract a lot of attention in an earlier era tend to evaporate, even almost disappear through the erosion of time; and how small seeds, barely noticeable in the earlier period, sprout massive progeny that end up occupying important places in the intellectual vista of a later time.

The nuggets of wisdom are quite the opposite; they render insights and observations that, while not necessarily timeless in a philosophical sense, at least do not appear to be bound to any narrow time dimension within our span of evidence and observation.

In what follows I shall try to explore the interplay of these two quite distinct elements in each main part of Arthur Lewis's paper.

Industrialization

In introducing this topic, Professor Lewis outlines three strategies for supporting industrialization: more agricultural exports, a self-sufficient economy, and export of manufactures. He follows the presentation of these with two sentences:

In theory, there is no need to choose between these strategies, since each must be taken to the margin of advantage.

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This is solid and “timeless” economics, a thought which could be developed so as to present in detail some of the more essential elements of policy economics that are involved in this area. The second sentence, immediately following, says:

Appropriate data for a development plan matrix, if such data existed, would optimize the allocation of resources between domestic and foreign trade.

Now this sentence harks back to an era long past—in which countries actually spent important amounts of resources in creating development plan matrices and actually took the resulting numbers seriously. This is no longer the vogue, the fruitlessness of the effort having been learned many times over. I would think the modern counterpart of the second sentence would more properly read:

The optimum allocation of resources between the production of importables, exportables, and nontraded goods and services would result if we had an appropriate estimate of the social opportunity cost of foreign exchange, and if we implemented policies that led economic agents to perceive this (1) as the effective local-currency cost (to them) of the foreign exchange they spent and (2) as the effective local-currency yield (to them) of the foreign exchange they generated, through either export or import-substituting activities.

Thus, although Professor Lewis comes to the “right” conclusion in the first sentence, its force is palliated in the second by what strikes me as unnecessary lip service to a bygone fad.

Agricultural Exports

In the section on agricultural exports we have first a nugget of wisdom. On the idea of a long-term bias against agriculture, Lewis cites his 1949 pronouncement:

In the past hundred years primary production has not failed to respond to the growth of manufactures; and . . . there is no *a priori* reason to expect these two to grow at incompatible rates.

I consider this conclusion a sound inference from past data, and also a sound deduction from the applicable theory.

But this is followed by an observation that is hard (for me) to understand.

The factoral terms [of trade] have moved continually against the LDCs since the beginning of the nineteenth century. The basic way to stop this is continually to raise the productivity of LDC farmers producing for the domestic market, thereby increasing the supply price of export crops.

The underlying idea here is that if, perhaps through technical advances, farmers can earn high incomes in producing, say, truck crops for the domestic market, then market equilibrium will require that those left producing export crops also earn higher incomes. The supply curve of export crops will shift to the left, and the world price will tend to go up. However, there is little reason to expect that technical advance will be limited to crops produced for the domestic market; moreover, technical advance itself shifts the supply curve of the affected crops to the right, producing a downward pressure on their price. (Technical advance in the production of a domestic crop would actually tend to draw resources to its production only if the price elasticity of demand for it were greater than unity—a rather unlikely event in the case of agricultural goods produced just for the local market.)

The above interprets the rise in productivity of LDC farmers as stemming from technical advance. Another way of raising the supply price of export products would be through the increase in the demand for agricultural products in the domestic market. This would lead with more certainty to a reduction in the supply available for export, and may be what Professor Lewis had in mind. But it would normally entail (for given technology) a fall rather than a rise in the physical productivity of farmers in producing the affected crops.

My main observation here is that, in general, rises in the productivity of farmers for the domestic market and rises in the supply price of export crops are not readily subject to policy determination by LDC governments, except through the introduction of taxes, subsidies, or other distortions in the affected market. No case is made by Professor Lewis to suggest that such interventions would act as correctives for preexisting negative externalities or distortions; my presumption, therefore, is that no serious policy solution has been proffered.

Dependency Theory

Professor Lewis's judgments on dependency theory appear to me to go straight to the point:

The dependency theory seemed to me to be important for the study of the second half of the nineteenth century, but not the second half of the twentieth century when independent governments were engaged in restructuring the place of foreigners in the country. As a contribution to deciding whether the small farmers should be encouraged to plant more tea or rubber, it seemed to me unhelpful.

In the text preceding the above, Lewis describes the dependency syndrome as one in which the dominance of foreigners (or colonialists) on the scene limits opportunity for local talent, and biases against domestic development are consciously introduced or perpetuated. I find this a much more congenial definition of dependency than the simple fact that a small

country's prosperity depends largely on the movements of the prices of its principal export goods. That kind of dependency prevails (on wheat prices) in Kansas and Manitoba as well as Argentina and (on copper prices) in Montana and Arizona as well as Chile and Zaire.

Import Substitution and Customs Unions

In Professor Lewis's discussion of import substitution and customs unions, his most profound remarks concern the phenomenon of migration.

[For] the sugar industry in the late 1920s, which was dependent on migrant labor and foreign capital, the theory of international trade is hardly relevant. . . . When making recommendations for the Ivory Coast, does one include the migrants from Upper Volta in the group whose income is to be maximized or treat them as an input at predetermined prices? . . . [Concerning] joining the Common Market, half [of British economists] said yes and talked about the law of comparative cost. The other half said no and trembled at the possibility that British skilled labor, capital, and entrepreneurship would migrate to the continent, leaving the island in stagnation. Whose welfare is to be maximized?

But side by side with these thought-provoking comments we find lip service again being paid to the two-gap model, structural inflation, and balanced growth (linked to the use of indicative plans and, for small countries, to customs unions). Of these Lewis says, "The logic of these three models seemed to me unchallengeable, and I was never involved in the huge critical literature that emerged." He asserts that most of the critical literature was "unhelpful," ignoring the basic assumption. But he does not address the real issues here—the unwillingness of two-gap model enthusiasts (or anybody else) to take seriously, in all policy dimensions, the exaggerated shadow prices of foreign exchange and of capital that are typically produced by such models; the absence of serious evidence on the existence of structural inflation, except when chronic fiscal deficits financed by the printing of money are considered a structural phenomenon (in which case monetarists and structuralists agree); and the implausibility of at least the premise in the statement "If imports and exports cannot be increased, production must follow a balanced growth path."

Nonetheless, and characteristically, he ends the section with a solid proposition:

But neither [the making of indicative plans nor the creation of customs unions] has been as successful as we had hoped, partly because the difficulty of earning foreign exchange, from which the models were derived, turned out to be not as great as we had feared; and partly because the planners were slow in learning that market prices are more powerful incentives than ministerial speeches.

Self-sufficiency

Professor Lewis's remarks on self-sufficiency have a puzzling prelude and a sobering postlude. The prelude:

Self-sufficiency is the part of the import substitution strategy that relates to food production for the domestic market. Once one has grasped the point that agriculture and industry provide markets for each other's output, theoretical dispute ceases.

It always seemed to me that self-sufficiency meant having domestic supply equal to (or perhaps greater than) domestic demand. It can be in food, in lumber, in sugar, in steel, in anything. If one is to have it, one cannot have it in everything without totally isolating the economy (or denuding it through perennial export surpluses). One can, moreover, have a very firm strategy of import substitution (say, by a uniform 30 percent tariff) without producing all one's food or providing all one's agricultural products. So I basically fail to perceive self-sufficiency as relating specifically to food production for the domestic market. But much more important, I see enormous scope for dispute (on both theoretical and policy grounds) concerning what incentives, if any, should be given to domestic production of food or of anything else. As far as I can see, the modern answer would begin with the principle set forth above (page 139), in my update of a statement of Lewis, and from there perhaps proceed to set forth particular reasons why in some cases a country should be willing to incur higher domestic resource costs for producing substitutes for imported food than for producing other import substitutes. This line of reasoning is not pursued at all in the paper.

Professor Lewis's sobering postlude:

[Although] wet tropics . . . food production [can] grow at 4 percent a year . . . we do not know how to average even 2 percent a year over [the next thirty years] in the dry tropics [where] at least 500 million people live . . . This is one of the reasons for the wide spread of LDC growth rates and of LDC per capita incomes. These gaps will widen until the agronomists make a major breakthrough in tropical dry farming.

Professor Lewis is not really referring to self-sufficiency as such, but is rightly recognizing that the future of the half billion people in the dry tropics is likely to be strongly linked to agriculture for decades to come. Food production for local consumption need not expand to meet demand, but any major shortfall will have to be substantially covered by a growing export surplus in items such as cotton, jute, wool, and tea. This observation, however, does not invite policies to discriminate in favor of producing food and other agricultural products at the expense of manufactures,

handicrafts, and so on. Rather, it reflects a highly plausible judgment that these latter items are unlikely to provide the source of a major turnabout in the growth prospects of the half billion inhabitants of the dry tropics.

Exporting Manufactures

On the subject of exporting manufactures we benefit once again from Professor Lewis's experience and judgment:

One aspect of the export of manufactures that causes pain is its dependence on foreign entrepreneurship. . . . I have never felt that LDCs should hold back the diversification of their manufacturing sectors from fear of multinationals, since in independent countries they operate on the country's terms or not at all. The most important control is [to require] the firms to hire and train local recruits at managerial and professional levels.

That genuine externalities are involved in the upgrading of a country's labor force is rarely disputed; moreover, multinationals and other foreign companies have more often gained than lost by replacing their own (expensive) expatriate employees with local, trainable talent that in the end turns out to be just as good, but significantly less costly. The policy suggested by Lewis is in such cases simply a catalyst which sets in motion a process often beneficial to the local population and the foreign company alike.

On LDC Achievements

Professor Lewis serves the profession well in emphasizing that the story of the past two or three decades is not all that bad:

Taken as a group, LDC governments have, in fact, passed reasonable tests. There are four times as many children in school as there were in 1950. The infant mortality rate has fallen by three-quarters. The multiplication of hospital beds, village water pipes, all-season village roads, and other mass services is faster than at any period in the history of the countries now developed.

Too much of the discussion of LDC problems has focused on the allegedly widening gap between them and the more developed parts of the world. In fact the gap has narrowed significantly in relative terms, dramatically so if one includes in the measure of welfare such items as increased life expectancy, increased educational levels of those still in school, and reduced infant mortality, none of which are directly reflected in our standard macroeconomic measures of real income and product.

Infinitely Elastic Labor Supply

The vision of an infinitely elastic labor supply formed the basis of some of Professor Lewis's most famous early writings and of much subsequent work. Controversy has raged over the subject for something like three decades, and surely it will not be settled here. But perhaps I can help to clarify some of the issues by pointing out that, in my opinion, much of the dispute has been between one group (Lewis's critics) which on the whole interpreted the notion of an infinitely elastic labor supply in a rather precise, technical way, and another group (including Professor Lewis) which interpreted the concept much more loosely.

Taken literally, an infinitely elastic labor supply means that there exists a wage level at which anyone can hire all the workers he wants, and below which he can get no one. It is incompatible with seasonal variations in the agricultural wage (which are very strong, for example, in India and some other Asian countries). Moreover, it is difficult to rationalize a secularly rising real wage under a strict interpretation of infinitely elastic supply. Must not last year's unhired workers plus this year's new additions to the labor force both be fully absorbed *before* real wages (in the open market) can rise? And at that point, is not the surplus fully absorbed?

Lewis lists in his paper some of the sources of infinite elasticity of labor supply:

What was the basis of near infinite elasticity? Critics fastened on disguised unemployment among small farmers . . . but this was only one item in a long catalog . . . Other items were: technological unemployment, which Marx thought powerful enough by itself to create a growing labor surplus; underemployment in urban areas, in what has now come to be called the informal sector; the movement of women from the household into the labor market; and the increase of population. This last turned out to be the dominant factor. With population growing at 3 percent a year, the supply of labor could not be other than very highly elastic.

Careful scrutiny reveals that none of the above causes leads labor supply to disappear when demand is reduced. Each and every one of them is fully compatible with wages falling when labor demand decreases, and with wages rising when labor demand expands. Each is a good reason why the secular upward trend in real wages has not been stronger, but is not evidence of (or a basis for) infinite elasticity of labor supply.

The problem is a serious one, since most of the conclusions extracted from the infinite-supply-elasticity model do indeed depend on the strict interpretation (rather than any of the many looser ones) of the term.

Migration-fed Unemployment

I was delighted to find in Lewis's paper an old quotation, documenting his early perception of the concept (later emphasized by Harris and Todaro, myself, and numerous others) of migration-fed unemployment. According to this notion, urban unemployment can be an equilibrium phenomenon. When some force holds the urban wage level above the supply price at which migrants are willing to come in from the countryside, they will continue to come until some other factor (in this case, a sufficiently high urban unemployment rate) dissuades them. In Professor Lewis's own words of 1957:

[Urban unemployment] is also due partly to the growing wage gap itself, which by raising the level of those who have employment in the towns, attracts more and more people to come into these towns. It is very difficult to know how to cope with this increase in urban unemployment. The normal way to cope with unemployment is to provide work, but this is no solution in this case. On the contrary, it merely aggravates the problem, because the more work you provide in the towns, the more people will drift into the towns, and there is no certainty that you can win the race . . . No one ought to say that he knows how to cure unemployment in this situation.

Inflation

One of the most nostalgic notes struck by Professor Lewis in his paper is surely contained in his discussion of inflation. He begins by citing Ragnar Nurkse's idea of using surplus labor for capital formation, and then continues:

By definition, surplus labor could be used without reducing other output significantly . . . It was therefore costless in real terms. We had great hopes in the 1950s for the community development movement using unpaid labor, and some governments made a go of it, but enthusiasm usually petered out. Labor has to be paid whether it is in surplus or not.

In these few sentences one can see how much our image of labor markets has changed in three decades. The first two sentences reflect the vision of the time—unless people were drawn away from other employments, their labor was “costless in real terms.” Yet the multiple alternative activities of the so-called surplus did have some value, at least to those workers themselves (and perhaps their families), and this alternative value, or opportunity cost, was reflected in a positive supply price of labor. Therefore such labor “has to be paid,” as Lewis senses when he recalls the

promotion of programs with unpaid labor. These programs did not work. Lewis concludes that "labor has to be paid whether it is in surplus or not." Many economists today would say that when labor has to be paid, it usually ceases to be in surplus (that is, costless) in the Nurkse-Lewis sense.

Professor Lewis's next point concerns the relationship between the printing of money to hire surplus labor on the one hand, and the subsequent inflation on the other.

If [the surplus labor] was used productively . . . we would be matching extra money with extra consumer goods, and the inflation would be slight. If, however, the money was used to pay soldiers or civil servants, without increasing the output of consumer goods, we would get the full blast of inflation.

This remark savors of the "real bills doctrine," though in a somewhat different guise. The modern approach to the problem involved is numerical. Say that national income is initially 100, the money supply 20, and the price level 1.0. Other things being equal, an autonomous increase of 5 in the money supply will bring the price level to 1.25. If, however, the increase of 5 is spent on investment goods, and they in turn have a (rather high) real marginal productivity of 20 percent a year, then output will go to 101, and the price level will go only to 1.24. There is indeed a difference between a highly productive and a zero-productive use of the extra money, but (with plausible parameters) it is so small that in effect it gets lost in the shuffle.

Yet, when all is said and done, Arthur Lewis comes out with a sound judgment.

In one corner is productive primary use [of newly printed money] plus an increased propensity to save, and the resultant inflation is damped. In the opposite corner is wasteful primary expenditure and zero addition to saving, so inflation is maximized. I entered the 1950s standing firmly in the first corner, but quit the 1950s disillusioned into expecting only the opposite extreme.

Today we would use different wording, but would still come out with the conclusion that price level movement overwhelms the real effects of any major resort to inflationary finance.

Conclusion

As should by now be evident, there is much in Professor Lewis's paper that evokes feelings of nostalgia, but also many of his ideas dating from the 1950s reflect remarkable prescience. In addition, the judgments that he renders from the vantage point of the 1980s distill a professional lifetime

of experience, in which he remained ever ready to be sensitive to evidence and to learn from new experience.

Yet one cannot avoid noting a sort of “generation gap.” The emphasis on savings is heavy compared with other topics in the economic development field. The implicit judgment that it is good to reduce the share of private consumption in national income is not sufficiently tempered with warnings about public sector waste.

Finally, there is little reflection of some of the main lessons we have learned in the past twenty years. Nowhere in the paper, for example, is the distinction between tradable and nontradable goods, and within the tradables the distinction between importables and exportables, even mentioned, let alone given the weight it came to have in the trade and development literature of the 1970s. Nor does one find reference to the concept of effective protection or to the voluminous literature (both theoretical and empirical) that has grown up around this concept since the 1960s. So too it is with monetary and exchange rate policies. Developing-country experience with the phenomenon of inflation has multiplied in the past decade, both the number of countries affected and the range and variety of inflationary episodes. The same can be said of trade and exchange rate regimes, new varieties of which seem to have emerged as if from a botanical laboratory.

I cite the absence of discussion of these matters, not in criticism—because, after all, a paper entitled “Development Economics in the 1950s” has every right to concentrate on that decade—but as a way of calling attention to the essential nature of the piece. We have here not a view of the 1950s from the standpoint of where economic science has come in the interim (the current “state of the art”), but rather the view of a patriarch who did much to forge the early outlines of development economics, looking back on those exciting and fruitful years.