

## **The Life and Times of Arthur Lewis**

**by Robert Tignor**

### **CHAPTER III**

#### **UNLIMITED SUPPLIES OF LABOR**

The field of development economics burst through the dikes of standard economic analysis and came of age in the decade and a half that followed World War II. Lewis was the acknowledged pioneer of this field although many other scholars and organizations made contributions. Among the groups in the forefront was the Economic Commission for Latin America (ECLA), founded in 1948 under the auspices of the United Nations and charged with the task of promoting growth in the Latin American economies. As its executive secretary and driving force from 1950 onwards, Raul Prebisch was responsible for assembling an impressive team of social scientists and articulating a distinctive strategy for spurring economic development, based on the premise that primary product exporters like the Latin American states were disadvantaged in their trade with the industrialized parts of the world. The ECLA formula was local industrialization behind protective tariff barriers, coupled with a lesser reliance on the cultivation and export of cash crops. These initiatives, they contended, would lead to rapid economic growth and ultimately prosperity.

No article was more frequently cited in the literature of the new field than that of Lewis's colleague at the University of London, Paul Rosenstein-Rodan. Dr. Rosenstein-Rodan sketched out an industrialization program for Eastern and Central Europe that he believed would catapult these war-ravaged territories into the front rank of developed

countries.<sup>1</sup> Inspired by this article, economists, dealing with colonial and post-colonial societies, sought to adapt Rosenstein-Rodan's formulations for industrial change, based on the notion of a 'big push' into industrialization, to their regions of the world. Even scholars with rigorous training in neo-classical economics took their turn at developmental problems, the most notable perhaps being another of Lewis's contemporaries at the London School of Economics, Nicholas Kaldor, whose influence Lewis readily acknowledged. An advocate of state planning and a devotee of industrialization programs for less developed countries, Kaldor moved back and forth freely from the industrialized to the industrialized world, at home as a consultant in Britain or India. If not towering above the others, then certainly primus inter pares, was Lewis himself.<sup>2</sup> He was not merely the most rigorously trained economist from the less developed world. His publications focused sharply on the critical issues of poverty and development. His ideas were persuasive and compelling, his arguments powerful, and the corpus of his writings suffused with the optimism that marked this era of political decolonization.<sup>3</sup> Of the pioneers of development economics, he was the best synthesizer, the best able to handle multi-causal relationships. His book, The Theory of Economic Change, masterfully merged economic analysis with social and political analysis.

Although development economics endeavored to make itself into a distinct sub-field of the larger discipline of economics, in fact, it was closely tied with a world wide concern with economic growth. In the words of Amartya Sen, "growth was everybody's concern (after World War II), and it is no wonder that in such a milieu growth theory was pampered by the attention of economists."<sup>4</sup> Not only were colonial officials and nationalist leaders concerned about the development of the colonies, but Europeans

wanted to rebuild their economies quickly. Socialist and communist countries were determined to show the rest of the world that their formulas for rapid economic development were better than those of the capitalist West.

All of the economic experts of this period acknowledged the pioneering work in growth economics of R. F. Harrod, whose 1939 article, "An Essay in Dynamic Theory, published in the Economic Journal, served as the break-through statement of the post-war era. Harrod's article suited the post-war period, which was a time of robust economic, social, and political change, featuring the reconstruction of the European economies after the war and the decolonization of Asian and African countries, with India leading the way to political independence in 1947. Economic progress had a high priority everywhere. Europe's capitalist classes in unison with the elites of the newly emerging independent states shared the belief that the pathways to economic success led through the nationalization of big business firms, national planning, and directed industrialization. In addition, the desire for economic change took place under Cold War pressures, in which the Soviet Union and the United States vied to win political allies and to demonstrate the superiority of their economic and political approaches.

By the late 1940s and early 1950s Lewis was preoccupied with the very questions that stirred the political and business elites in Europe and the decolonizing world: economic development. Personal interest, repeated student pleas for courses on colonial economic growth, and Colonial Office consultancies had already focused his scholarship precisely on those questions that had vexed him since his days growing up in the West Indies and now urgently required answers. Why was one part of the world, the West, so rich while the rest so poor? Was the wealth of the industrialized countries the result of

the poverty of other parts of the world? Were there formulas to be found for breaking the 'vicious cycles of poverty' that seemed to trap so many Asian, African, and Latin American countries? Could new economic programs set a process of sustained development in motion? Moreover, Lewis was now able to devote himself exclusively to these personal and intellectual passions. With the war at an end and his secondment to government agencies finished, he concentrated his teaching, research and government consultancies on this research agenda. His appointment in 1947 to one of England's most prestigious economic chairs—the Stanley Jevons Chair in political economy at the University of Manchester—provided him with a secure academic position at an extraordinarily young age. He consulted with the Colonial Office, the United Nations, and foreign governments on his own terms and at his own choosing, benefiting from a growing reputation as an expert on economic development. Hence, his years as professor of political economy at Manchester University, 1947-1957, were to be his most productive in research and teaching.

The 1979 Nobel commendation cited Lewis for his luminous article, "Economic Development with Unlimited Supplies of Labour," which the journal, The Manchester School, had published in its 1954 issue. It was unquestionably his outstanding scholarly achievement. A few individuals, perhaps resentful critics, would go even further, contending that only this publication was worthy of the Nobel award. This would be unjust since such a comment ignored Lewis's many important contributions in economic analysis and economic history. But it is true that the article galvanized the new field of development economics, providing it with a legitimacy that it had not previously enjoyed.

Moreover, nearly all of his later studies in economic history bore the imprint of the article.

### **Lewis's Preparation for 'Unlimited Supplies of Labour'**

What made the Lewis article an overnight sensation and produced a wide readership is that it was short, well-written, easy to understand, original and self-evident, at least to non-specialists. A lay reader could grasp its basic argument. But so too could professional economists who were impressed with Lewis's rigorous use of data and the clarity of his economic analysis. Of all the theorems being put forward at the time (big push, unbalanced growth, forward and backward linkages, and take-off into sustained economic growth), many preferred Lewis's on the grounds that it was the most rigorous and the most easily modeled. Thus, it appealed even to those economists who were suspicious of the new field on development economics on the grounds that the field lacked mathematical rigor and could not be formally modeled.<sup>5</sup> Moreover, its major tenets fit comfortably within the economic consensus of the period.

Lewis started from a premise that most non-economists accepted without question. The poor countries of Asia and the Caribbean were characterized by two separate and distinct economic sectors--a traditional agrarian sector and a capitalist industrial sector. The agrarian or traditional sectors were burdened by a large pool of surplus or redundant workers who contributed little or nothing to output. Indeed, in some cases, their output was negative. This situation of stagnation, however, had a silver lining since workers could move out of this sector with no loss of agricultural output occurring there and at near subsistence rates into the modern sector, turning the latter into an engine of economic change. Critical to this process of labor transfer were the

activities of a nascent entrepreneurial class or an emergent interventionist state, so long as they were capable of recognizing the opportunities that an 'unlimited supply of cheap rural labor' created for rapid industrialization.

Lewis's overriding contribution to a field that was increasingly preoccupied with formulas for facilitating industrialization drew attention away from the state, which much of the literature stressed, and highlighted the role of cheap and abundant labor in economic growth. While other studies stressed state-led industrialization or consumer demand, believing that societies with growing internal markets for manufacturers could establish and expand infant industries behind tariff barriers--a formula labeled import substitution industrialization, Lewis shifted the emphasis from the state and from trade policies and placed it squarely on cheap labor supplies as the major element in economic growth. Moreover, labor was an abundant resource, which Lewis believed was capable of being easily and productively drawn out of a backward agrarian sector.

The attraction of the Lewis article was that it stressed a factor--labor--that other economists had considered and that Lewis now elevated to the highest prominence. In his critically important 1943 article, Rosenstein-Rodan had posited "a country in which 20,000 'unemployed workers . . . are taken from the land and put into a large new shoe factory. They receive wages substantially higher than their previous income in natura." Indeed, Lewis's earlier writings from the late 1940s and early 1950s regularly described societies characterized by unlimited supplies of labor. Even his undergraduate essays on the labor in the West Indies had promoted industrialization as the solution to employment for the large peasant work forces trapped in the countryside.

Between 1949 and 1954 Lewis began to identify the linkages between surplus workers in the traditional sector and industrialization, thereby laying the analytical foundations for his 1954 article. In doing so, he shifted his gaze from the West Indies and turned instead to the writings of the classical British and European economic historians of the nineteenth century, whose essays, he asserted, demonstrated that the British industrial revolution and the subsequent European industrial revolutions had used the very same elements of surplus labor that now existed in many less developed countries. Lewis's advice to his economist colleagues was brief and to the point. Surely drawing on Robbins's famous lectures on the nineteenth century classical economists, Lewis urged his colleagues in development economics to return to the classics. Reread the works of the great nineteenth-century economists, in particular Adam Smith, David Ricardo, Thomas Malthus, and Karl Marx, for, in his view, they had described the English economy at the turn of the nineteenth century in precisely the terms that now applied to Asia and the Caribbean. Equally large and unproductive reservoirs of cheap, unskilled labor that Lewis observed in Asia and the Caribbean had been trapped nearly a century and a half ago in the English countryside. British labor surpluses had made possible the industrial revolution and burnished the reputations of Britain's entrepreneurs. Adam Smith in his Wealth of Nations and Karl Marx in Capital, properly read, offered nothing less than a blueprint for contemporary industrialization.

The first of four essays that reveal the direction of Lewis's thinking on labor supplies and industrialization between 1949 and 1954 was a brief note, entitled "Colonial Development," which he published in 1949. In the introduction he noted that the article was intended to do no more than "clear my own mind." It would lay out "a road map of

the whole area (of colonial development) as a guide to further exploration.”<sup>6</sup> Not infrequently, Lewis wrote summary, state of the art essays to force himself to see where the field of study was and what large questions still needed to be solved. Lewis’s essays of this genre tended to be short and deceptively simple. Yet, not only did they give Lewis and other scholars a chance to take stock, but in retrospect they offer markers to outsiders looking back on these years of the evolution in Lewis's thinking.

The 1949 essay represented an overview of the advice that Lewis had been offering to the officials at the Colonial Office more than any new perspective. Still, it displayed his penchant for viewing issues of development as a whole. Lewis was at heart a proponent of general equilibrium theories, believing that no part of the development picture could be separated from the rest and that economic imbalances, say a rapid increase in investible capital or large, unproductive labor forces in the countryside, would reverberate through the economy until a state of balance was achieved. Lewis as a general equilibrium theorist, with a view of the economy that incorporated many non-economic factors, drew upon his broad training in economics and economic history at the London School of Economics and his teaching of a wide range of courses at LSE and Manchester.

As a summing-up essay, the 1949 work was full of the immediate post-war feelings of optimism toward colonial economic development. Lewis continued to stress the need for mass education that mobilized all segments of colonial societies in the development effort, adults as well as children. Caught up in the enthusiasm about the new generation of Asian and African nationalist leaders, he looked to this dynamic political elite, whom he labeled “real democrats,” to energize the rank and file of the population

and enlist them behind the goals of economic development. Lewis believed that the highly charged political atmosphere of late colonialism and the five-year development plans that colonial governments were devising would lead to visible and immediate improvements for the people. “The colonies,” he exclaimed, “will have planning, plenty of planning, and planning of the highest order.”<sup>7</sup>

The second publication in this period resulted from a United Nations project to examine employment and economic growth in the less developed parts of the world. In 1951 the United Nations asked five leading economists to provide advice on the prerequisites for full employment in the less developed countries of the world. The study was a follow-up to an earlier report that had examined the national and international measures required to achieve full employment in industrialized countries. The five individuals selected were Alberto Batta Cortes, professor of economics at the National University of Chile, D. R. Gadgil, director of the Gokhale Institute of Politics and Economics at Poona, India, George Hakim, counselor of the Legation of Lebanon in Washington, D. C, Theodore W. Schultz, chair of the economics department at the University of Chicago, and W. Arthur Lewis. Although Hakim was designated the chair, Lewis exercised the dominant influence within the committee. The major findings of the report represented his views.

Not only did the report elaborate a framework that was becoming the hallmark of Lewis’s thinking, namely that economic development could occur when supplies of labor were 'unlimited', but the tension within the committee over this issue, particularly between Lewis and Schultz, became well known. Schultz was a specialist in agricultural economics and a passionate defender of the rationality and efficiency of peasant farmers.

Later he regretted signing the report because of its emphasis on disguised rural unemployment. John P. Lewis, a fellow development economist and later a colleague of Lewis's at Princeton University, believed that the vehemence of some of Schultz's subsequent writings concerning Lewis and the concept of unlimited supplies of labor stemmed from his having agreed to a document that claimed that "the marginal product of farmers could be zero (that was heresy for a Chicago economist . . .)." <sup>8</sup> Ironically both men shared the Nobel Prize for economics in 1979.

The authors of the UN report began by defining "underdeveloped countries," the term of preference at the time. They were countries with low per capita income in comparison with the United States, Australasia, Canada, and Western Europe. "In this sense, an adequate synonym would be 'poor' countries." Yet poor countries, even those lacking abundant natural resources, need not be doomed to poverty. "All countries are currently in a position where their national income could be greatly increased by better utilization of what they have." <sup>9</sup>

The task of the five-person committee was to make recommendations that would enhance third world employment. To this end, the report identified four categories of unemployment: cyclical, seasonal, technological, and disguised. The first three were standard terms in the economic literature at the time. Seasonal unemployment was particularly well known in the agrarian sector where employment was likely to fall off when labor demands, such as planting and harvesting, declined. Cyclical unemployment was thought to accompany the cycles of economic boom and decline that many economists believed were an inevitable feature of capitalism. Technological unemployment came about when labor-saving capital equipment was substituted for

workers. It was, however, the fourth category of unemployment—disguised unemployment—that was to prove the most controversial and that reflected Lewis’s own predilections. To be sure, the term disguised unemployment was hardly new, having appeared in the economic literature as early as the 1920s, but it had yet to acquire the formal status that it would later in the decade. According to the report, “the disguised unemployed are those persons who work on their own account and who are so numerous relative to the resources with which they work that if a number of them were withdrawn for work in other sectors of the economy, the total output of the sector from which they were withdrawn would not be diminished even though no significant regionalization (specialization?) occurred in the sector.”<sup>10</sup>

On the surface, the statement seemed both an accurate and unobjectionable description of poor countries with large rural populations, like those that existed in Asia and many parts of Latin America. But the implications of this concept, barely spelled out in the UN report, were far-reaching. They implied that the marginal productivity or the additional product of many rural workers was zero, perhaps even negative—a stance that should have been anathema to free-market, neo-classical economists, especially those who specialized in agriculture, like Schultz.

The committee went on to argue that only dramatic increases in economic growth could reduce the high levels of unemployment and underemployment and the alarming rates of population increase characteristic of underdeveloped economies. The Lewis formulas for spurring economic growth were as clear in this section of the document as was his concept of disguised unemployment. These entailed a broad range of economic and non-economic factors that had been high on his agenda since the 1930s. They

featured a prestige system that rewarded economic innovation and the breaking of “the concentration of economic and political power in the hands of a small class, whose main interest is the preservation of its own wealth and privileges.”<sup>11</sup> Privilege had to go; and the political leaders from whom “the people take their cue” had to be committed to change.

The authors of the report approached the state's economic role gingerly. While recognizing that governments had many things to do, they warned those who favored statist approaches that some things were better left to the private sector. Yet, they were of the opinion that “there is a large borderland of functions which they (governments) ought to perform for the simple reason that they are important and are not carried out or not carried out sufficiently by private efforts.”<sup>12</sup> In particular, the state could play an effective role in market research, ecological surveys, pioneer industries, risk capital, and industries where monopoly arrangements are likely to be beneficial.

Lewis's voice was obvious in the section of the report extolling the virtues of mass education. Rapid economic growth would only be possible if “popular political leadership” existed, and cadres of teachers and advisers were dispatched into the countryside.<sup>13</sup> Individuals with only one or two years of specialized training could still be effective in familiarizing village communities with new industrial techniques and inculcating a commitment to economic progress.

Among the crucial claims of the report was a finding that rapid growth occurred when capital formation doubled from roughly the 5 per cent of GDP that characterized most traditional economies to 10 per cent or even more.<sup>14</sup> In the West, population growth had proven a spur to economic progress, but this was because in the nineteenth century it

had rarely exceeded one per cent per year, at which level it was a powerful stimulant of consumer demand. Not so in the economies of the rest of the world. Here population growth rates of 2 and even 3 per cent threatened to wipe out the gains of even the best laid economic plans and to force late-developing societies to aim for nearly impossible growth rates of 5 per cent per year.

The report concluded that few of the underdeveloped countries had the resources at this time to double their investment rates. Taking the whole of the less developed countries together, the authors estimated that no less than \$19 billion annually, or 20 per cent of the total national income of these countries, was needed to raise income levels by approximately 2 ½ per cent per year, taking no account of population increase.

Unfortunately, these countries had only \$5.2 billion in readily available savings, leaving a shortfall of close to \$14 billion, some \$4 billion of which the authors believed could come from squeezing domestic sources harder. That still left \$10 billion, which would have to come from the outside. While aware of the enormity of such a sum, the experts were sanguine that developed countries would be willing to set aside 2 per cent of their national incomes as an investment in the well being of the world's impoverished communities. They particularly hoped that the Western world's most powerful vehicle of foreign investment—multinational corporations—would play a significant role in channeling large investment sums to the rest of the world. Still, the fact that 70 per cent of multinational investment in the rest of the world was directed into the petroleum industry and very little to industrial development and agricultural modernization was a cause for concern. Because multinationals had proved to be such reluctant investors in non-petroleum enterprises, worried, as these firms were, by poor rates of return and

threats of nationalization, the authors looked to government agencies like the World Bank and the American Import-Export Bank to demonstrate that third world economies offered profitable investment opportunities.<sup>15</sup>

The United Nations report was full of optimism. As a guide to eradicating unemployment and stimulating third world economic development, its publication was intended to spur foreign investment. Nonetheless, its rosy perspectives did not go unchallenged. The Oxford economist and expert on African economics, Professor S. Herbert Frankel, writing in The Quarterly Journal of Economics, objected to many of its assumptions, not the least of which was the notion that rapid economic development had a good chance of taking place. On the contrary, the economic history of the West proved that economic growth was a slow and gradual process, offering few short cuts. Trying to persuade investors to channel capital into less profitable areas of the world economy was both unwise and unproductive, and looking to industrialization as the solvent of poverty and unemployment was equally unrealistic when the preconditions for industrial development had yet to be put in place.<sup>16</sup>

Since the UN report represented so much of Lewis's handwork, it was hardly surprising that he sprang to its defense. While conceding many of Frankel's criticisms, Lewis reminded Frankel that the committee's assignment was to suggest ways in which economic development could be radically accelerated so that disguised and other forms of unemployment were overcome. The authors were fully aware of the depth of the problem and the lessons of history. Yet Lewis reaffirmed his belief that economic progress could be dramatic since the methods for achieving rapid economic growth were now much better understood than they had been a century ago. Armed with this

knowledge, economic planners and government officials could improve the standards of living of poor peoples around the world. Altering “the ways of doing, living, and thinking” will take a long time, “but if one means, as the report meant, only those ways immediately relevant to increasing the yields per acre of land, then he (Frankel) is being proved wrong every day in every underdeveloped country where these new techniques of mass education are being tried out in the countryside.” As evidence of this rural transformation, Lewis referred to the agricultural extension services that were raising crop yields in Indian villages.<sup>17</sup>

Frankel criticized another of the report’s contentions and one that was central to Lewis’s views about economic growth. He complained that the concept of disguised unemployment was not well defined and not used in a geographically specific way. Lewis responded that he never intended this concept of unemployed labor to apply everywhere in the rest of the world, least of all to sub-Saharan Africa where he was aware that labor was in short supply. But he believed that in many parts of Asia and Latin America there were significant labor surpluses. Although the exchange over labor surpluses formed only a small part of the debate between Lewis and Frankel, it was to become one of the most contentious issues of the Lewis model of economic development, especially when he later developed his notion of unlimited supplies of labor as a primary factor in economic growth.

The third of Lewis’s four publications in this period stemmed from his visit to Egypt in the spring of 1953--a visit arranged at the invitation of the Egyptian Society of Political Economy, Statistics, and Legislation, where so many of the intellectual elite of the country gathered. The Society was responsible for publishing Egypt’s leading

scientific journal, *l'Egypte contemporaine*. Lewis had agreed to deliver three lectures on industrialization. The visit made a profound impression on him. Unlike most of the tropical African countries whose development plans he was reviewing for the Colonial Office, Egypt, like the West Indies and many parts of Asia, had a huge and rapidly expanding population and limited land and agricultural resources. It seemed to conform as closely as any country that he had visited or studied to his view of disguised unemployment—a view that was already beginning to arouse considerable interest as well as some opposition among economists. Henceforth, Egypt and India would be the countries that Lewis most frequently cited as examples of surplus labor.

Egypt's new ruling military rulers who had come to power in 1952 hoped that Lewis would suggest solutions to the question that they regarded as critical: how to promote rapid industrial development in a poor country with an expanding population. Lewis did not leap straight into a discussion of industrialization and central planning, however. Nor did he expostulate on the place of a surplus labor force locked in the agrarian sector even though this appeared to be an obvious reality in Egypt. Instead, he turned to agriculture in Egypt, which most observers regarded as highly efficient in spite of the country's large rural labor force. After all, Egypt was the world's leading producer of high quality, long-staple cotton, and its elaborate irrigation system produced some of the world's highest yields per acre.

Yet, Lewis offered a message that he felt was equally as important as any advice he might have on industrial development. He reminded his audience that industrialization required a home market and that the surest way to create a home market was to improve agriculture, particularly foodstuff productivity. Cash crops, like cotton,

which had undergirded the Egyptian economy for nearly a century, could provide only limited help particularly if farmers failed to increase the overall productivity of agriculture and achieve greater farm output. Balanced industrial and agricultural growth was essential to sustained economic progress. To industrialize, without promoting agricultural improvement “is to ruin the industrialists (who won’t have enough workers or consumers) and to improve agriculture without industrialization will ruin farmers (who will live in a society with vast hordes of unemployed).”<sup>18</sup>

Having treated agriculture, the importance of which he believed to be greatly underrated, Lewis devoted the remainder of his remarks to industrialization. In his view, Egypt and India were alike in having large labor surpluses, which depressed the wages of workers yet created opportunities for entrepreneurs to establish labor-intensive industries. In Lewis’s calculations, roughly one-quarter of the agricultural populations of these two countries could be regarded as surplus, which meant that “the marginal productivity of labor in agriculture is zero. It may even be negative.”<sup>19</sup> A country as populous and urbanized as Egypt had great potential for industrial expansion. Lewis identified the following industries as having a large enough domestic market to support local manufacturing: cement, brick-making, glass, pottery, wood, leather, processed food, textiles, clothing, shoe, and tobacco industries. Although he did not employ the term import-substitution industrialization, he was promoting precisely that strategy.

Lewis was also aware that this stage of industrialization was a relatively easy one. A consumer market already existed, and the capital requirements and technical skills needed to establish these factories were not great. While he did not lay out the drawbacks to import substitution industrialization, such as trade imbalances and over-

valued currencies, he knew that sustained industrial development would necessitate moving on to more complex levels of production. Egypt was at a real disadvantage for a capital goods industry, which Lewis believed to be the next industrial stage. It lacked iron ore and cheap energy. The absence of iron ore “about halves the amount of manufacturing that could be done for the market.”<sup>20</sup> But an iron and steel industry, essential for capital goods production, could flourish by importing ingots, provided that the productivity of labor was high and fuel costs were low.

Even if some preconditions did not favor heavy industry, Egypt's abundant supplies of cheap labor put the country in a position to become an exporter of a small, but potentially highly lucrative range of labor-intensive manufactures. Provided that industrial labor costs remained competitive with surrounding countries—and they should in the case of Egypt (or India) because these countries were “overpopulated” in relation to agricultural resources—the prospects for exporting textiles, processed foods, shoes, and other items were “unlimited.”<sup>21</sup> Indeed, the only barrier to becoming a large-scale exporter of a small range of manufactures was that trade union pressures or government regulations would force up the levels of industrial wages. Lewis did not oppose tariff protection for nascent industries, but wanted industrial protections to be removed at the earliest possible moment so as to force industries to compete in world markets.

Lewis was distressed by the fact that one feature of the labor-surplus economies of India and Egypt did not conform to his model. Their industrial work forces were relatively highly paid, mainly because governments, business leaders, and trade unions conspired to pay high wages in the new industrials. The results were entirely counterproductive for the countries' economic progress. "These countries are therefore in

the awkward position that they are keeping their standard of living down because they are determined to keep their standard up. They are keeping their output low and unemployment high for the sake of those few who can be employed in producing manufactures for the home market.”<sup>22</sup> In Lewis’s view, the only way out of this dilemma was for governments to resist the demands of trade union leaders and politicians to keep wages high in the manufacturing sector and for trade union leaders to be willing to sacrifice immediate political and economic gains for long-term development goals.

The importance that Lewis attached to low industrial wages in the early stage of industrial development has led critics to suggest that he was anti-worker and that he even favored government coercion of the work force. Certainly, this stress can be seen in the lectures on industrialization that he delivered in Egypt. Later on, when he was Kwame Nkrumah’s chief economic adviser in Ghana, he was willing to squeeze African cocoa farmers so that profits from cocoa exports could be channeled into programs of economic development. He was, however, a thorough-going democrat. He abhorred the coercive techniques that Nkrumah and other post-colonial rulers employed, and he regarded Nkrumah and other African leaders’ arguments in favor of one-party rule as a sham, little more than self-serving propaganda designed to keep themselves and their small coterie of followers in power. Countries with surplus labor forces could, in his view, turn this dire situation to their advantage by creating labor-intensive industries based on a cheap labor force but the new industrial labor forces should not be deprived of their political rights, including their right to organize labor unions and to bargain for higher wages. Moreover, he believed that the economic lessons of Western countries demonstrated that the pathway to sustained economic progress and rising standards of living for all, whether it

took place in laissez-faire nineteenth century England or under Stalinist Russia, entailed hardships in the early stages. He believed that the only morally acceptable route to economic change was through democratic and popularly-based leadership, rather than authoritarian rulers and elaborate coercive apparatuses, like those that had become so widespread in the Communist countries.

In many ways, the Egyptian lectures previewed the main ideas in Lewis's 1954 article. But the fourth article of this period, based on Lewis's first extended trip to South and Southeast Asia in 1952, truly crystallized his ideas on labor surpluses. Commenting on his impressions of Malaya, Iran, Burma, India, and Ceylon in an article published in the District Bank Review in December 1952, he remarked that the "dominating problem . . . (in this area of the world) is the shortage of food."<sup>23</sup> At the time Burma, Thailand, and Indochina exported their food surpluses to India, Ceylon, and Malaya. But time was not on the side of the food-importing countries, and unless the countries of the region dramatically increased their agricultural productivity food shortages were inevitable. India's population problems impressed him profoundly. Already the sub-continent had exhausted its reservoirs of uncultivated land, and a population of 350 million now toiled on only 250 million acres. In Britain, with its high levels of agricultural productivity, it took an average of one acre of land to feed one person. Of all the countries that Lewis had seen, none struck him more forcefully as having a "surplus" agricultural population or being more desperately in need of industrialization than India.<sup>24</sup>

### **'Unlimited Supplies of Labour'**

In one of Lewis's brief autobiographical musings, he identified August 1952 as the moment when his two sector model of economic development sprang into his mind.

At the time, and indeed, for some time, he had been wrestling with two questions. The first was why industrial products (in Lewis's thinking steel was the exemplary product) sold for such high world prices compared to agricultural products, such as coffee. The second was why so many of the countries in the less developed world had large and impoverished populations. "Walking down the road in Bangkok (Thailand), it came to me suddenly that both problems (the relative prices of coffee and steel and the wealth and poverty of nations) have the same solution. Throw away the neo-classical assumption that the quantity of labor is fixed. An 'unlimited supply of labor' will keep wages down, producing cheap coffee in the first case and high profits in the second. The result is a dual national or world economy where one part is a reservoir of cheap labor to the other."<sup>25</sup>

Often a flash of insight, in this case a relatively simple proposition about large labor supplies, commodity exchanges in world trade, and poverty and wealth, is the basis of an intellectual breakthrough. It was for Lewis. The fundamentals of his unlimited supply of labor had seemed to fall suddenly into place, though in reality most of the separate pieces of the argument had been there for some time. Virtually all of Lewis's subsequent writings, certainly those in economic history and even those on education and race, bore the imprint of this new understanding of the place of labor surpluses in economic growth. Indeed, one of his most ardent supporters, the economist, Ronald Findlay, called the Lewis article on unlimited supplies of labor his "one big idea," claiming that all of his work ought "to be seen as an extended commentary on the meaning and ramification of this central idea."<sup>26</sup>

When Lewis's article on unlimited supplies of labor appeared in 1954, it created a sensation. It did precisely what Lewis hoped: it placed the emerging field of development economics squarely on the map of the economics profession, providing it with a set of bedrock working theorems, however controversial they might be. Moreover, just as he had intended, his hypotheses set the field of development economics apart as a distinctive branch of study, particularly because, according to Lewis, it was not governed by neo-classical assumptions concerning the marginal product of labor.<sup>27</sup>

Still, Lewis did not intend to unmoor development economics from the discipline, only to establish it as a distinct sub-field, requiring its own specialized training. He was not prepared to follow the lead of certain economic anthropologists, who were arguing at this time that homo economicus, or the rational economic actor, was a unique historical creature, a personality type that had emerged only out of the capitalist ethos of the West. Lewis had little patience for scholars who contended that peoples in the less developed regions of the world behaved differently from peoples of European descent, that they valued communal solidarities over individual achievement, even at times scorning economic gain. Rather, he sought to connect the new field of development economics with classical economics, whose earliest practitioners he thought dealt with problems similar to those that faced contemporary Asian and African countries.

Over and over again, as Lewis worked through the principal ideas that informed his path-breaking article, he felt certain that the existence of unlimited supplies of labor in certain parts of the world explained why products exported from the industrialized parts of the world and requiring no more back-breaking labor than cash crops from Asia and Africa, required so much more of a third-world farmer's work time to purchase than

the coffee, tea, and cotton that a factory worker bought. It also explained why the primary producing countries of the world, whose populations were not lazier than those of the industrialized communities, were so much poorer. Neo-classical economics, in his view, offered no answers. Reflecting back on his thinking in this period, Lewis wrote: “From my undergraduate days I had sought a solution to the question what determines the relative prices of steel and coffee. The approach through marginal utility made no sense to me.”<sup>28</sup>

Lewis’s search for insight into the pressing question of why some countries were wealthy and others were poor and his dissatisfaction with neo-classical marginal utility methods drove him back to the classical economists, whose writings the economics profession were rediscovering at this time.<sup>29</sup> Rereading the treatises of Adam Smith, David Ricardo, Thomas Malthus, and Karl Marx persuaded Lewis that these men had lived through and written about the great period of transition from predominantly agrarian societies to industrial countries. Their observations, rather than the writings of neo-classical economists like Alfred Marshall, the high priest of the field, and even John Maynard Keynes, were more appropriate to the conditions facing less developed countries than the texts that were required reading in university economics departments.

Of the classical economists, Lewis felt temperamentally closest to Smith. Ricardo and Malthus were too pessimistic for his taste. They foretold a world in which population growth would ultimately outstrip economic resources and which would be overtaken by poverty and other catastrophes. Marx was too doctrinaire, too committed to the importance of class struggle in history to satisfy Lewis. Adam Smith, with his rosier view of development, appealed to Lewis who retained an optimistic view of the future.

In Lewis's estimation, Smith was the true champion of a progressive form of capitalism—one that read in the right way included all racial groups and produced rising standards of living for all peoples. All that was required for Smith, and for Lewis, who often thought of himself as a disciple of Adam Smith, was a clear understanding of the principles of economic growth and a determination to apply them whatever the short-run political costs.<sup>30</sup>

Equally eye-opening for fathoming the mainsprings of the English industrial revolution were the works of British economic historians. Heading the list of studies that influenced Lewis was Barbara and John Hammond's three-volume examination of British workers at the end of the eighteenth century.<sup>31</sup> Their study, coupled with the copious statistical data that Phyllis Dean and G. D. H. Cole had gathered on all aspects of the British economy from the end of the seventeenth century to the middle of the twentieth century, provided powerful evidence that contrary to the assumption that informed much of neo-classical economics, workers' wages had stagnated even as the industrial sector expanded. The British industrial working classes did not benefit materially from the industrial revolution until well into the nineteenth century, by which time Britain had already become the world's leading industrial country and had a larger proportion of its population living in cities. Although Deane and Cole did not publish their study of the British economy until 1962, Lewis was delighted to learn that their statistical findings supported his argument about the constancy of industrial wages and the rise in business profits during the industrial revolution. Deane and Cole's figures demonstrated that the British economy had not grown rapidly until 1770 but surged forward at unprecedented

rates for the next five decades, by which time Britain had been transformed into the world's most urban and industrialized country.<sup>32</sup>

Other economic work underscored these findings. W. W. Rostow identified a two-decade period of time (1780-1802) when he claimed that Britain enjoyed its industrial breakthrough, or what Rostow called "the take-off into sustained economic growth."<sup>33</sup> The work of these economic historians suggested to Lewis that the British working classes had themselves served as a reservoir of surplus labor—the so-called unlimited supply of labor—which Britain's industrial leaders were able to draw out of the agrarian sector at little more than subsistence wages. Thus, in the short run, the real beneficiaries of the British industrial revolution were the industrialists themselves, and they were the ones who kept the economic expansion going by reinvesting the lion's share of their profits in their own business enterprises.

Another economic historian to influence Lewis was T. S. Ashton whose tome, The Industrial Revolution, 1760-1830, published in 1948, was a brief but authoritative overview that most scholars regarded as the best study of the period.<sup>34</sup> Ashton held the chair in economic history at the London School of Economics during part of the time that Lewis was on the faculty there. They would have had many conversations about British economic history. Ashton was also a leader of a group of economic historians who were modifying the long-standing perspectives on the industrial revolution that went back to the 1884 publication of Arnold Toynbee's Lectures on the Industrial Revolution. Following Toynbee, straight up to World War II, historians described the industrial revolution as a short and abrupt transformation that had inflicted immense suffering upon the working class while enriching a small group of industrialists. Revisionists, like

Ashton and Robert Hartwell, while not blind to the suffering that industrialization had imposed on the British working classes, argued that only because of its industrial achievements were Britain and other heavily-populated societies able to support such large numbers of people at the high material standards of living that were commonplace in developed parts of the world.<sup>35</sup> The final two sentences of Ashton's book, frequently cited in favor of industrialization, made clear the need to spread the benefits of industrial development throughout the world. "There are today on the plains of India and China men and women, plague-ridden and hungry, living lives little better to outward appearance, than those of the cattle that toil with them by day and share their place of sleep at night. Such Asiatic standards, and such unmechanized horrors, are the lot of those who increase their numbers without passing through an industrial revolution."<sup>36</sup>

On the basis of his reading of British economic history and the classical economists, Lewis stressed two ingredients that he believed had produced the industrial revolution and that could be transported successfully to the third world. The first stemmed from his readings of the Hammonds. British industrialists had benefited from vast supplies of cheap labor released from the agrarian sector. The second, drawn mainly from Cole and Deane, was that the availability of cheap labor caused industrial profits to soar and enabled businesspersons to reinvest their profits in business expansion. Citing the work of the Hammonds, Deane and Cole, and Ashton, Lewis concluded that the British industrialists represented a new element in European society. Unlike landlords and peasants, who used increases in wealth to purchase more land, or merchants, who sought to expand their sales of merchandise, or government officials who used gains that came to them to purchase items of conspicuous consumption and markers of wealth and

prestige, the industrialists, perhaps because of their Protestant ethic (though Lewis never developed this critical part of his argument at any great length), became infatuated with their industrial successes. They plowed business profits back into their firms, thus becoming the engine of rapid economic growth in the early stage of industrialization. Moreover, as their proportion of the national income rose, so the industrial revolution advanced until finally the whole of the surplus labor force, once trapped in the agrarian sector, was absorbed. At this point, the theories of the classical economists, resting on assumptions of unlimited supplies of labor, no longer pertained. Neo-classical economics, as enunciated by Alfred Marshall and his disciples, took over, based as it was on limited supplies of labor, marginal utility rates, and intersecting curves of supply and demand.

Lewis's belief that Britain's industrial revolution offered guidelines for the industrialization of the third world did not mean that this experience had to be replicated in third world industrialization. He was concerned about the welfare of the working classes in the early stages of industrial development and was painfully aware that Britain's industrial revolution had been at the expense of the working classes. The lessons of history could be used to prevent the gross injustices that British factory workers endured from occurring elsewhere in industrializing countries. In a 1937 article that he wrote for The Keys, entitled "African Economic Problems," he stated: "This much is clear: uncontrolled industrialism destroys more happiness than it creates. Study England in the throes of the Industrial Revolution or any country from America to Japan, and we find always that legacy of slums and misery, which uncontrolled industrialism hands down to future generations."<sup>37</sup> Knowledge of these gross injustices could,

however, enable planners to avoid the mistakes of the past and carry out economic program that were mindful of the welfare of all classes, even though successful industrialization, in Lewis's formula, required an industrialist class able to hire workers at subsistence wages and to benefit from a rise in the proportion of profits in national income accounts.

There is, of course, considerable irony in Lewis's innovating vision. He claimed to be elaborating a new field of economic analysis, more in touch with the realities that the leaders and the peoples of the third world had to deal with. He had come to the conclusion that his training at the London School of Economics was woefully inadequate for understanding the rest of the world. Yet, he did not find his guide in those disciplines, especially anthropology, that were seeking to differentiate the behavior of 'backward' or 'primitive' peoples from their 'civilized' counterparts. Nor did he look for inspiration for his ideas from an intensive study of less developed economies. Rather, the key that unlocked his economic puzzle came to him through a careful investigation of Europe's first industrial revolution and in the writings of those classical economists who had written about this experience.

A careful reading of Barbara and J. L. Hammonds's three volume study of the English working classes during the industrial revolution (The Village Labourer, The Town Labourer, and The Skilled Labourer, published between 1911 and 1919) demonstrates how steeped Lewis's 1954 article was in the English historical tradition. The Hammonds were Fabian socialists, members of an intellectual elite that emerged at the turn of the twentieth century. Their non-revolutionary and economically-driven predispositions appealed to Lewis. They dedicated their second volume, The Town

Labourer, to two leading contemporary Fabians, J. H. Hobson and Leonard Hobhouse.

This volume is particularly revealing. Remove the Hammonds's passionate embrace of the working classes and their moral outrage at the ruling industrial elite and the landed aristocrats, add a pinch of dispassionate economic analysis and a modicum of empirical validation, and one has the framework of Lewis's 1954 article.

Certainly Lewis's belief that the English industrial revolution arose out of an abundant and cheap work force paid at subsistence wages and a dynamic, emerging new class of business innovators is writ large on all of the Hammonds's pages. The sub-title of the second volume, The New Civilisation, also reverberates through Lewis's writings of the 1950s and 1960s. The Hammonds claimed that the new industrialists "had only to stamp on the ground to turn empty valleys into swarming hives of work people."<sup>38</sup>

Surplus labor came from Ireland, the demobilization of troops following wars with France on the continent, the exodus of villagers from the countryside following the enclosure movement, and natural population increase. They came en masse, willing to work for the going wages "as they were accustomed to low wages."<sup>39</sup> The new industrialists were able to make themselves into a group apart. They were the forgers of this new civilization, "in which human life seemed a good deal less important than the profits of capital." These individuals had raised themselves "by their own efforts commencing in a very humble way, and pushing their advance by a series of increasing exertions . . . Competing wildly for the new opportunities of wealth and enabled by law successfully to resist the claims of the workmen to a living wage, (the capitalists) forced the new society into this mould."<sup>40</sup> From the vantage point of the 1950s, Lewis found the ire that led the Hammonds to assert: "the general feature of the times was the rise of a

class of rich employers and the creation of a large and miserable proletariat,” less persuasive than the vivid descriptions of just how this new industrial world had come into being.<sup>41</sup>

An additional conservative feature marked Lewis’s intellectual breakthrough. By positing traditional and modern sectors, admittedly abstractions and ideal types rather than precise descriptions of any less developed economy or the economies of Europe at the beginning of the nineteenth century, he was aligning himself with a vast body of non-economic, social scientific literature, loosely labeled at the time modernization theory. Whether consciously or not, Lewis was writing in the tradition of the leading social scientists of this period, individuals like Daniel Lerner, the title of whose book, The Passing of Traditional Society, reflected the mantra of this school, as well as others like David Apter, Talcott Parsons, Cyril Black, and Marion Levy, to mention only a few of the prominent figures who were publishing in this decade. These authors believed that the world was divided between the modern countries, mainly to be found in Western Europe, Australasia, and North America, and the traditional ones. The great challenge of the post-war era was the transition of traditional countries to modernity—a process that they labeled modernization. Thus, although Lewis saw himself as breaking moulds, founding a new field, and challenging prevailing assumptions of an established field, his formulations were deeply rooted in European experience and dove-tailed with the predominant social scientific vision of the period.

Lewis began his article on unlimited supplies of labor by defining his crucial, underlying concept. Unlimited supplies of labor existed where “the marginal productivity of labour is negligible, zero, or even negative.”<sup>42</sup> This was to prove one of

the most disputed parts of the article and to cause him no end of grief for the rest of his career. The United Kingdom, Northwestern Europe, and parts of Africa did not have unlimited supplies of labor. But India, Egypt, and Jamaica did, and for these parts of the world Lewis proposed “to elaborate a different framework . . . which the neo-classical (and Keynesian) assumptions do not fit.”<sup>43</sup> In these areas labor could be withdrawn from the sector where it was in surplus without any effect on the product. Such conditions were most apparent in the agricultural sectors of Asian and Latin American countries, but they were not confined to agriculture. They existed as well, though they were not so visible, in casual jobs, petty trading, and domestic service. In all of these activities labor was paid a subsistence wage, and yet even at this meager level the supply of workers exceeded the demand.

This otherwise depressing state of affairs—for Lewis the essence of a stagnant traditional economy—had potentially beneficial consequences. Once a modern, forward-looking sector had come into being, for example through the creation of new industries, a ready made pool of cheap, albeit unskilled workers, was available, consisting, of course, of redundant peasant farmers, petty traders, retainers, wives and daughters of the household, and that part of the population that was expanding. As soon as a modern economic sector arose, a dual economy existed, which Lewis described as “heavily developed patches of the economy, surrounded by economic darkness.”<sup>44</sup> Lewis believed that wages in the modern sector would need to be only about 30 per cent above subsistence to attract workers from the traditional sector and to facilitate their migration to the cities and their settling in.

This, then, was the mechanism of economic modernization. As Lewis so aptly put it: “Now the play begins. For we can now begin to trace the process of economic expansion.”<sup>45</sup> Two critical ingredients characterized the growth of the economy at this stage. First labor moved from the traditional to the modern sector, and second, the entrepreneurs accumulated capital from the profits of their businesses in the modern sector. If these profits were reinvested in the modern sector, they would cause the modern segments of the economy to grow over time until the modern wage sector had absorbed all the cheap and surplus labor that had once been trapped in the traditional sector. At that point labor was no longer in surplus. The dual nature of the economy would cease to exist. Workers now labored for above-subsistence wages, labor shortages existed, higher and higher levels of labor productivity began to take place, and, in short, all of the ingredients of the neo-classical and Keynesian economy now existed.

During this transitional phase of economic change the levels of investment rose from 4 to 5 per cent of national income to 12 to 15 per cent. They did so because the ratio of profits in national income accounts ascended steeply, based, as it was, on the expansion of modern economic activities, in turn fueled by cheap labor. Here, the reader can see a strong element of the classical theory of labor value, even the Marxist notion that the capitalist class captured the largest share of the economic gain of development. Yet, Lewis did not deplore the ascent of the rate of profit in national income accounts, as many of the Fabians did. He saw this development as highly progressive. As a Fabian socialist, he believed that income levels would ultimately become more equal especially as a consequence of democratic politics and trade union activity.

The Lewis model not only expected gross income disparities in the early stages of economic change. It demanded them. The real driving force behind economic growth was the modern sector entrepreneur. Backward countries saved little, according to Lewis, not because they were poor but “because their capitalist sector is too small. Inequality in and of itself was no guarantee of development. Inequality is omnipresent in the world. It is only useful when it creates a capitalist class, that is to say, . . . a group of men who think in terms of investing capital productively.”<sup>46</sup>

In the 1954 publication, Lewis was buoyantly optimistic. Economic growth had an aura of inevitability, as if the processes of economic change that he had outlined would follow automatically, even mechanistically, wherever labor surpluses existed. Lewis was soon forced to explain the disappointing record and the obvious difficulties that most less developed countries experienced in the 1960s and 1970s. There was no gainsaying that change was neither automatic nor easy. One of the problems that soon became apparent to him and others was the failure of a dynamic capitalist class to emerge. Experience revealed to Lewis that, in many of the poorer countries of the world, leaders in the modern sector were not so liberated from traditional values and ways of doing things as he had predicted. Often these individuals came from the old landed elites and had not shed their agrarian and traditionalist ways in favor of a profit maximizing mentality. They were not willing to reinvest profits in their modern enterprises, preferring instead to purchase land, engage in conspicuous consumption, and curry political favor. Lewis also admitted that the creation of this capitalist class in England, Western Europe, and North America was a profound historical riddle. He thought it likely that the early capitalists in the West were drawn from marginal, immigrant groups,

and no doubt he was alarmed, though he never wrote about the subject, when populist nationalist leaders like Idi Amin in Uganda and Abdel Nasser in Egypt, expropriated the wealth of their local capitalist classes and sent those who were foreigners and even foreign-born nationals into exile. These were the very marginal groups who were so vital to economic change in other settings.

Lewis defined a capitalist class as having “a passion . . . for ruling over bigger and better factories.” Priests, traders, landlords, soldiers, and princes did not work for this goal. They hoarded money or speculated or invested in real estate. While “the banker wants more deposits, only the industrialists’ passion drives toward using profits to create a bigger empire of bricks and steel.”<sup>47</sup> Having observed the industrial achievements of the Soviet Union under Stalin’s five-year plans, Lewis believed that a class dedicated to economic growth could arise even within the public sector. There, too, bureaucrats had become as ardent for economic growth and for the reinvestment of public sector profits in economic enterprises as their private sector counterparts elsewhere in the world.

The article had an immediate impact. Although it encountered some rough water and incisive criticism, the development economist and colleague, John P. Lewis, was not far from the mark when he commented that “most development economists consider it the single most influential article in the history of the field.”<sup>48</sup> So close was its association with Manchester University and the journal, The Manchester School, that on the 25<sup>th</sup> anniversary of its publication an entire issue of the journal was devoted to assessing its strengths, weaknesses, and influence. By then the concept of a two-sector model of economic change in which resources were transferred out of a traditional sector into a modern one was being referred to as the Lewis model.

Lewis's article was one of many that competed for recognition in the new field of development economics in the 1940s and 1950s. Rosenstein-Rodan had first coined the expression the 'big push.' W. W. Rostow likened rapid economic growth to a plane accelerating down the runway seeking to achieve the requisite speed to become airborne. His image of the 'take-off' into self-sustained economic growth was widely cited at the time. Albert Hirschman developed the idea of forward and backward economic linkages in industrial programs and stressed the advantages of 'unbalanced growth' as key to economic progress. But no term had a wider impact or became more vital to the field than Lewis's 'unlimited supplies of labor.' As Rosenstein-Rodan himself had pointed out long before Lewis published his article, "the concept of 'agrarian excess' or 'surplus population' or of 'disguised unemployment in agriculture' was hardly new, having appeared in the economic literature as early as the late 1920s.<sup>49</sup> Lewis, however, made it central. From 1954, developmentalists could not avoid it when describing barriers to development and potentials for growth. According to Albert Hirschman, "there was, moreover, something arcane about the concept (of unlimited supplies of labor), often also referred to as 'disguised unemployment,' that served to enhance the scientific aura and status of the new field."<sup>50</sup>

The article also fit comfortably within a new orthodoxy in British economic thinking-- growth economics that was associated with the writings of R. F. Harrod and Evsey Domar. Both economists had spurned much of the conventional economic analysis, even Keynesianism, on the grounds that it concentrated on conditions of equilibrium and ignored "steadily continuing" economic change. In his 1939 article, "An Essay in Dynamic Theory," published in the Economic Journal, Harrod stressed the need

"to give the outline of a 'dynamic theory'" in contrast to "static theory." His goal was "to develop a similar classification and system of axioms to meet the situation in which certain forces are operating steadily to increase or decrease certain magnitudes in the system." He proposed "the study of change analogous to that provided by static theory for the study of rest."<sup>51</sup> By the early 1940s Harrod and Domar had concluded that the essential ingredient responsible for disequilibrating economic change and dramatic economic growth or decline stemmed from changes in the rate of savings. Although Harrod and Domar did not work on developing economies, their equation that economic growth ( $g$ ) equaled savings ( $s$ ) divided by capital output or  $c = s/k$  meant that a high savings rate and low capital intensity industrialization would result in extremely high economic growth rates. This was precisely the argument that Lewis was making in his unlimited supplies of labor article and thus made the essay immensely attractive to economists and policy makers.<sup>52</sup>

Like all powerful and novel approaches, Lewis's article came in for searching criticism, which he addressed over the remainder of his life in a series of further statements and reformulations. Even though nearly everything that he published after 1954 bore some relations to the original article, Lewis dealt specifically with his critics in articles published in 1958, 1968, and 1979, the last occasion being the 25<sup>th</sup> anniversary issue of the publication of the original article.

Lewis's 1958 article reaffirmed his indebtedness to the classical economists whom contemporaries had appreciated until recently, he wrote, only because they foreshadowed the "neo-classical theory of value."<sup>53</sup> In truth, their old-fashioned labor theory of value, with its maligned claim that workers were in surplus, that they produced

a surplus beyond their wages, and that this surplus accrued to capitalists and landlords in the form of profits and rents, were insights of great power for understanding the transition from pre-capitalist to capitalist forms of economic activity and thus essential for promoting the process of development under way in the third world. For Lewis the statement that “the laborer works with the means of production which do not belong to him to produce a commodity (or service) which is sold for a profit” was not a biased or flawed way of describing production. It was true of the early stage of capitalist development in the West and highlighted a core ingredient of capitalism development taking place in less developed parts of the world.<sup>54</sup>

No statement in Lewis’s article provoked more opposition than his contention that the supplies of labor were unlimited in many traditional economies and that the marginal product of workers in the traditional sector was negligible, zero, or even negative. One of the first to criticize this argument was a fellow development economist, P. T. Bauer, who in reviewing Lewis’s book, The Theory of Economic Growth, claimed that while the author purported to eschew any general theory of development, in fact, “there is a particular model from which his main theme springs.”<sup>55</sup> This was Lewis’s belief in labor surpluses, which has “misled Lewis on some fundamental issues.” To begin with, Bauer believed that Lewis drew too sharp a distinction between the traditional and modern sectors. He was blind to the innovativeness existing within peasant farming. “Small-scale is often far from stagnant,” Bauer wrote. He also attacked Lewis for ignoring “the opportunity cost of labour in the subsistence sector,” which can involve “seasonal activity, various other activities, and also . . . preferred leisure.”<sup>56</sup>

Theodore W. Schultz, who had worked with Lewis on the UN report on unemployment in underdeveloped countries and had reluctantly signed the final report that recognized disguised unemployment as a condition in these countries, now joined the chorus of protest. He wrote a series of articles, culminating in his celebrated book, Transforming Traditional Agriculture, which incorporated a reasoned critique of labor surpluses and argued in favor of the rationality, efficiency, and creativity of the small farmer. In Schultz's view, numerous case studies of the agricultural sector in less developed societies showed that when labor was withdrawn from the agrarian sector "the output of the traditional sector falls."<sup>57</sup>

Of the specific studies that Schultz cited, the work of the development economist, Bent Hansen, who had made detailed studies of Egyptian agriculture, a case that should have conformed closely to the Lewis model, did the most damage to Lewis's argument. Hansen found no real labor surpluses in rural Egypt. Rather, he found large variations in agrarian wage rates and considerable seasonal unemployment. If, in fact, a country with the population density of Egypt, one of the highest in the world, did not have rural labor surpluses, then what part of the world was likely to conform to the Lewis model?<sup>58</sup>

Finally, econometricians and economic logicians entered the debate. A Princeton-based economist made a telling critique of the Lewis argument in a statement that critics of the Lewis model have cited over and over again. Jacob Viner wrote: "As far as agriculture is concerned, I find it impossible to conceive a farm of any kind on which, other factors of production being held constant in quantity, and even in form as well, it would not be possible, by known methods, to obtain some addition to the crop by using additional laborers in more careful selection and planting of the seed, more intensive

weeding, cultivation, thinning, and mulching, more painstaking harvesting, gleaning, and cleaning of the crop.”<sup>59</sup> Nor could he believe that employers of agricultural labor would be willing to “hire at any wage-rate additional units of labor beyond the point at which they know the labor will add less in value to the product than the wage-cost, to say nothing of the case where the labor will add nothing to and may even subtract from the product.”

Lewis had obviously struck a raw nerve. In part, the nerve was the very one that other social science disciplines had pricked during these years when their practitioners divided the world into traditional and modern countries. This approach produced passionate controversies. In part, Lewis's criticisms of the prevailing neo-classical economic assumptions and his arguments in favor of development economics as a distinctive sub-field of economics were bound to generate opposition. Finally the underlying political analysis of the article was capable of different and conflicting interpretations. Conservatives could applaud it for extolling the capitalist class while leftists could embrace it because it provided a labor theory of value. For the proponents and critics of modernization studies the questions were endless. Lewis's article suggested that the communities of the world should be seen, however heuristically, sharply divided between those that were modern and those that were not. Critics of modernization theories were quick to point out that these distinctions broke down in real-life case studies, that the modern sector behaved in traditional ways, and that traditional actors seemed to look at the world in more rational ways than the theorists indicated. Close-to-the ground economic anthropologists, like Schultz, bristled at the suggestion that farmers did not behave in rational, profit-maximizing ways, and general

theoreticians, like Viner, came to the defense of their profession by attacking arguments that challenged the universal validity of profit optimization approaches and neo-classical economics.

Lewis did not give way. His 1968 pamphlet provided a set of comprehensive answers to his critics. He assured detractors that his dual model did not posit a traditional agrarian sector and a robust industrial one. Industrialization was not the only vehicle of economic growth since the agrarian sector could also provide the capitalist lead. A capitalist for Lewis was not necessarily an industrialist. He was quite simply an individual “who hires labor and resells its product for a profit.”<sup>60</sup> Nor was the model anti-socialist since the capitalist innovator could operate as energetically in a public sector economy as in a private sector. Lewis had, in fact, made all of these points in his original statement though he had not stressed many of them. He felt that he had a right to be annoyed, believing that critics had not given his essay a careful reading.

Lewis took pains to deal with the criticism of the marginal productivity of labor, particularly his claim that it could be negligible or even zero. He admitted the veritable groundswell of opposition to the claim that labor productivity might be negligible. His defense was that he was not dealing with the marginal productivity of man-hours. Viner was, of course, right that better weeding, more careful seed selection, and the like would increase output. But he was referring to workers, not man-hours. Individuals could be withdrawn from the traditional sector without any diminution of the product because those who remained behind would and could work longer and make up for the missing individuals. Nonetheless, he reformulated the notion of unlimited or surplus labor

supplies by asserting that in his argument “the marginal product of man hours was positive even while the marginal product of persons was negative.”<sup>61</sup>

Still, he was willing to concede that he had created a firestorm for himself and to have done so needlessly. He recognized that the implication for some economists, especially those who specialized in the study of peasants, was that African, Asian, and Latin American farmers were idle and that they preferred to laze about rather than work hard. But he went on to argue that a marginal productivity of zero or near zero was not essential for the functioning of his model. All that was required was for the supply of labor to exceed demand within the traditional sector. In his view, even Hansen's article, with its descriptions of varying agricultural labor rates and seasonal unemployment, supported his claims. In spite of some wage variations and seasonal unemployment, the Egyptian agricultural sector, as Lewis had assumed, revealed a vast reservoir of labor, available at subsistence or near subsistence wages outside agriculture. In fact, in his view, the case studies that he had read about all supported his two-sector model and suggested that a modern sector could be brought into being on the basis of cheap labor that would lead to high rates of profits and savings.<sup>62</sup>

Lewis introduced further refinements in his 1979 article. He now eschewed the phrase surplus labor “since it causes emotional distress.”<sup>63</sup> He also agreed that migration of labor from the traditional to the modern sectors had not been occurring as smoothly and as automatically as he had originally thought. He even agreed that some coercive and incentive mechanisms, like taxation and housing subsidies, might be required to prime the pump of rural migration. He was by now more fully aware that many parts of the world, which while seemingly over-populated and holding large labor reservoirs, did

not seem to have abundant and cheap labor supplies. Instead they suffered from critical labor shortages. This reality caused Lewis, no doubt with the African continent very much in mind, to restate his argument. The model only worked in “countries which have . . . reached a demographic situation where, at the current level of wages in the modern sector, the supply of labor to the modern sector exceeds the demand.”<sup>64</sup>

By 1979 Lewis was also faced with the reality that most of the poor countries had not achieved rapid economic growth. Thus, much of this essay was devoted to understanding why this was so. In his view the biggest barrier to economic progress was population growth. In Western Europe during the era of rapid economic progress in the nineteenth century populations had grown at not much more than one per cent per year. In the twentieth century, in contrast, population growth in the developing countries of the world was reaching rates of 2 and 3 per cent, thus forcing economic growth rates to go at an even higher pace. If the modern sector was expected to absorb all of a country’s population increase, expanding at 3 per cent per year, and if this sector constituted 30 per cent of the total labor force, “the modern sector would have to grow at 10 per cent per annum which it cannot do.”<sup>65</sup> In addition, the wages in the modern sector were significantly higher than Lewis had anticipated. He had expected that a wage rate 30 per cent higher than that in the traditional sector would succeed in attracting a steady labor supply. In reality, because of timorous governments, pressure from organized trade unions, and conscientious business owners, urban work forces were earning anywhere from 50 to 80 per cent more than their rural counterparts. Not only did this lead industrialists to prefer machinery to workers, but it also reduced the proportion of profits

and savings in the national income, the critical ingredient for economic change in the Lewis formulation.

Although Lewis had his critics, a legion of followers rallied to his defense. Gustav Ranis and John C. H. Fei gave the Lewis model a formal economic elegance in a series of important publications.<sup>66</sup> Amartya Sen used mathematical formulations and a logician's approach to undercut the criticisms of Theodore Schultz and especially Jacob Viner's assertion that it was impossible for the marginal productivity of labor to be zero or negligible. He argued that all the Lewis model required to work was for "the average product of labor in the subsistence sector—the sector which does not use reproducible capital—to be less than the marginal product in the incipient capitalist sector." Sen concluded: "This is the core of the model, and it remains unaltered by the many acknowledgements and refinements submitted by Lewis in later papers."<sup>67</sup> Writing in the 1979 25<sup>th</sup> anniversary issue of the Manchester School, two development economists, Keith Griffin and Jeffrey James, pointed out that much of what Lewis claimed would happen in developing economies had indeed happened. Wage rates in the traditional rural sector did not rise. The share of profit in the industrial sector along with investment rates also rose. Alas, what did not change was third world poverty and underdevelopment. Lewis's optimism, in their opinion, had been misguided<sup>68</sup>.

At the very least, it could be said in the 1960s and part of the 1970s that the dual sector model stood alongside the social science theory of modernization as a dominant scholarly paradigm for understanding the processes of economic and social change in third world countries.<sup>69</sup> In spite of deficiencies, it outperformed its rivals for explaining the experience of economic growth in much of the Third World. It was the opinion of the

economist, Avinash Dixit, who after reviewing the debate over dual economy models, concluded that “the dual economy has, over the last decade, proved itself to be a useful conceptual framework for analyzing several problems of economic development.” Dixit added that “dual economy models provide a significantly better description and understanding of the problems of development than any aggregate model, not because two sectors are better than one . . . but because the sectoral division chosen reflects several vital social and economic distinctions in the type of economy being analyzed.”<sup>70</sup>

### **The Theory of Economic Change**

Just one year after the appearance of the article on unlimited labor supplies, Lewis published a second major work in the field of development economics, The Theory of Economic Growth. It soon became the primer for the whole field of development economics and a work that everyone interested in this emerging field, whether an economist or an interested outsider, turned to first of all. It achieved its high standing because, like all of Lewis's writings, it was clearly and forcefully written. It also developed the idea, so essential in general equilibrium analyses, that all elements in a society, economic as well as non-economic, have an impact on economic growth. Lewis, with his wide reading in history and literature, was just the right person to offer a general work of synthesis, not an original statement, at this critical moment in the development of this sub-field in economics.

The Theory of Economic Growth offered a comprehensive framework for viewing economic change and gave an overview of a subject that had not had a general overview, in Lewis's opinion, since John Stuart Mill published his Principles of Political Economy in 1848. Although the topic of political economy had engaged “world wide

interest . . . no comprehensive treatment of the subject has been published.”<sup>71</sup> Originally Lewis contemplated the inclusion of two or three case studies, but his reading of the economic histories of Egypt, Greece, Rome, Islam, China, Japan, and the end of the Middle Ages, persuaded him that he had “derived more pleasure than knowledge, especially of the periods before 1500 AD, partly because so little is known with certainty about early economic history.”<sup>72</sup> In the preface he thanked P. T. Bauer, Max Gluckman, J. M. Low, J. Mars, K. Martin, the Reverend R. H. Preston, and P. Rosenstein-Rodan, an impressive list of younger and older social scientists, with diverse specializations.

The issue that Lewis chose to make the focal point of the study was economic growth, specifically the growth of output per head. He was mindful that economic change entailed much more than a general rise in output and that a fuller analysis would deal with distribution, consumption, and welfare matters. But at this stage, he felt that a detailed study focusing on goods and services, rather than welfare satisfaction and happiness, was in order. Moreover, studies of economic growth were fashionable at the time. Lewis’s citations are replete with references to books on the subject, especially two studies that had become veritable classics at the time: Evsey D. Domar, Essays on the Theory of Economic Growth, a 1957 collection of essays that had appeared in journals before, and Ragnar Nurske, Problems of Capital Formation in Underdeveloped Countries (1953).<sup>73</sup> But Lewis, in contrast to some of the other theorists of economic growth, wished to understand not only the fundamentals of growth but also why growth was so strong in some societies and not in others. Was this because of institutional legacies, beliefs, race, or geography or was it perhaps the consequence of historical accident? After reviewing a wide range of existing explanations, Lewis identified three proximate

causes of wealth and poverty, each of which he said he would examine in detail. These were the will to economize, the accumulation of knowledge, and the accumulation of capital.

Lewis's longest chapter, slightly more than 100 pages in a book of 450 pages, dealt with capital accumulation and stands out from the others as the subject that occupied most of his thinking in this volume. As usual, Lewis stressed that economic change required elevating the saving and investment rates in societies from 5 per cent to 12 per cent. But this kind of a change was not purely a technical matter nor an exclusively economic issue. Raising savings and investment rates required fundamental transformations in institutions, attitudes, belief systems, the ways of acquiring and distributing knowledge, and politics. Lifting the investment levels to those that economic growth demanded required "the emergence of a new class in society—the profit-making entrepreneurs—which is more thrifty than all the other classes (the landlords, the wage earners, the salaried middle classes) and whose share of the national income increases relative to that of all others."<sup>74</sup> Governments can be instruments of capital accumulation, as they were in Japan and the Soviet Union, and as Lewis believed they were becoming in Ghana and Uganda. But the only sure route to sustained economic development was to extract savings out of business profits and to plow them back into the business sector.

"The capitalist is therefore the only person whose ambition drives in the direction of using his income to create an empire of bricks and steel. All other classes fulfill their ambitions in other ways—the salaried classes by conspicuous consumption and the agricultural classes by buying land or holding office."<sup>75</sup> Other than by the government squeezing the peasantry, as Stalin did in the Soviet Union, the only way to achieve 12 per

cent investment rates was to increase the share of profits in the national income. As Lewis had argued in his article on unlimited supplies of labor, this transformation occurred only when workers were moving from the non-capitalist sector to the capitalist sector at close to subsistence wages.

Nonetheless, governments could facilitate the transition. Their spending on vital public works and public utilities would expand the modern sector and encourage workers to move in to it. Lewis guessed that a government expenditure rate of 7 per cent of national income was about right. At the same time, this man, whose name was so closely associated with development planning, cautioned that governments often failed because they tried to do too much rather than too little. In particular, “detailed centralized planning” had pitfalls too numerous to mention. In addition to being “undemocratic, bureaucratic, inflexible, and subject to error and confusion, it is also unnecessary.” Greatly to be preferred was “piece-meal planning; that is to say, for concentrating on a few matters which it is particularly desired to influence, such as the level of exports or of capital formation, or of industrial production, or of food production, and leaving all the rest of the economy to adjust itself to demand and supply.” This kind of individualized planning was most desirable for those parts of the economy “where demand and supply are out of equilibrium at the ruling prices,” especially as a result of shortages of capital, skilled labor, and foreign exchange.<sup>76</sup>

Glowing reviews greeted the book’s publication. The well-known British development economists, Dudley Seers, called it “the first book in the twentieth century to cross the accepted frontiers of the subject and to deal with the inter-relations between economic growth, social structures, political systems, scientific knowledge, and religious

doctrines in the grand tradition of political economy, the tradition of Adam Smith, Ricardo, Marx, and John Stuart Mill.” While Seers found the style often “ponderous . . . or supercilious,” he praised Lewis for offering readers a balanced and fair-minded introduction to contentious issues. In his view, the very best part of the work was the appendix, where Lewis set forth a sober and realistic balance sheet of economic progress, comparing the positive gains from economic growth (longer and materially more comfortable lives) with the potential drawbacks (lack of guaranteed happiness and possible psychological discomfort).<sup>77</sup> There were many other favorable reviews, such that the book soon became a definitive work on economic development, the study that most development economists sent students to first of all.<sup>78</sup>

P. T. Bauer, though acknowledged in the preface, was not swept up in the crescendo of praise. His critical review of the book angered Lewis. In an exchange of letters between the two men who had overlapped at the London School of Economics in the 1940s, Bauer apologized for not having submitted a draft of the review to Lewis so that they could “hammer out a more or less agreed version.”<sup>79</sup> But Bauer admitted that he had been displeased with Lewis’s critical review of his 1952 book, West African Trade, which appeared in the Manchester Guardian. There, Lewis took Bauer to task for not appreciating the positive role that African marketing boards were playing in channeling financial resources to schools, hospitals, and roads and keeping inflation in check.

While commending the book for its comprehensive approach to the question of economic development and pointing out that Lewis “ranges even more widely than the English classical economists,” Bauer claimed that Lewis’s use of the concept of

unlimited supplies of labor “has misled him on some fundamental issues.” In particular, Lewis drew too sharp a distinction between the traditional and modern sectors. “Small-scale agriculture is often far from stagnant,” while the process of economic growth, in Bauer’s opinion, was much more gradual, less punctuated by dramatic spurts. Bauer also faulted Lewis for a lack of clarity over key terms, such as what constituted output and how output was to be measured, and whether the move from investing 5 per cent of national income to 12 per cent was the cause of economic development or the result. Bauer also objected to Lewis’s claim that capitalists “are the only source of productive saving; other classes and groups do not save or invest significantly.” To Bauer, this was a tautology, as if one were saying “that only capitalists save productively and those who save productively are capitalists.” He interspersed his reservations with strong words of praise, writing that Lewis’s two-sector model, however much he disagreed with parts of it, “illuminates important aspects of many underdeveloped economies, much more so than other formal models currently proposed.” But his final assessment could not have pleased Lewis. “This book fails in its principal purpose, especially in its aim to serve as the basis for policy. The broad-brush technique neglects distinctions without which it is not possible to frame or assess meaningfully particular measures of policy.”<sup>80</sup>

Lewis was stung. He penned a letter to the editor of the American Economic Review, which had carried the review—B. F. Haley—laying out eleven “incidents” in which he believed that Bauer had misread his book or made false assertions about it. Haley was sympathetic, offering his own opinion that the volume was “a splendid work” and adding that Lewis had a right “to be irritated by the review.” But Haley, who took considerable pains assessing Lewis’s complaints against Bauer’s review, concluded that

he did “not find them to be nearly as serious as you do.” Haley was, therefore, unwilling to open the Review “to an interchange between you and Bauer on this matter unless I can satisfy myself that he was seriously derelict in his duty as a reviewer. This I have been unable to do.”<sup>81</sup>

### **Further Refinements on 'Unlimited Supplies of Labour'**

A relatively modest segment of Lewis’s original Manchester Studies essay on unlimited supplies of labor dealt with a so-called open economy, that is one in which trade, investment, and labor moved freely from inside the country from one sector to the other and from the outside as well. As Lewis began to refine his argument, he came increasingly to focus on open economies, in large part because many economies in the post-World War II period were open to foreign trade and investment. This was especially true of third world economies. It was also a condition that Lewis favored since he regarded foreign investment as a potentially positive factor in promoting high economic growth rates. In his 1954 essay, Lewis had dealt mainly with the closed economy model, which posited little or no exchange between the modern and traditional sectors, except for the movement of surplus labor. He had done so largely for heuristic purposes in order to highlight for readers the process by which economic growth got under way. But he recognized that most economies in the world were not closed.

The closed economy was a part of the Lewis model that was easy to fault. Indeed, two devoted disciples, Ranis and Fei, came to the conclusion that if the modern and traditional economic sectors were as water-tight as Lewis sometimes implied long-term growth would be jeopardized because of huge bottlenecks within the traditional sector.<sup>82</sup>

A second reason that Lewis began to emphasize open economies was that the model offered a powerful explanation of why economic change had been so sluggish in less developed countries. The original Lewis model had been an optimistic blueprint. It turned what seemed to be a mammoth obstacle to economic progress—unproductive and unskilled surplus workers in the traditional economy—into an asset and made workers the very source of profound and rapid economic transformation. But the accumulating evidence of the 1960s and 1970s that Lewis had hoped to be decades of explosive economic growth for poorer countries compelled Lewis to respond to criticism and to revise his model. Lewis's original explanation that rapid population growth and inflated wages for the unskilled workers in the modern sector impeded progress did not convince everyone. Nor did his reminder that excellent growth rates of between 4 and 5 per cent in many Asian, African, and Latin American countries dispel the complaint that these economies lagged far behind those in the developed world and that a desperate state of poverty was still the fate of most residents of these countries.<sup>83</sup>

Lewis became increasingly convinced that in relatively open economies what he called the factorial terms of trade doomed the third world to poverty and economic marginality. In a number of essays that had a global as well as a historical orientation, he reminded his readers that a close examination of the terms of trade between developed and less developed countries enabled one to isolate the factors that impeded economic progress in poorer countries. Economists measure terms of trade in three ways. First are the commodity terms of trade—how much a particular unit of one country, say cotton, trades for a unit, say textiles, from another country. Second are the income terms of trade that measure how much of the whole of a country's annual exported cotton crop buys of a

basket of imports. Lewis was, however, interested in a third measure of international trade, the factorial terms of trade, which involve comparing the indexes of labor productivity between the trading countries. By concentrating on factorial terms of trade, Lewis returned to the question that had so frequently haunted him—why the world price for coffee, an agricultural commodity, was so low in comparison with the world price of steel, an industrial product. In Lewis's view, the crux of the continuing lack of robust economic progress in the third world was the inability of less developed countries to improve their factorial terms of trade.

Lewis believed that the factorial terms of trade had crystallized against the non-European and South American parts of the world during the nineteenth century. At that time widely disparate rates of agricultural productivity became fixed and differentiated the world economy into developed and less developed areas. As a result of what Lewis called 'the great divide', British farmers produced 1600 lbs of wheat per acre at the end of the nineteenth century compared to farmers in tropical countries who produced only 750 lbs of grain.<sup>84</sup> Moreover, the huge out-migration of European and Asian peoples to various parts of the world during the nineteenth century—100 million Europeans to the temperate countries in the Americas and Australasia and an equal number of Asians to Southeast Asia and Africa—resulted in the transfer of these different levels of agricultural productivity across the globe and spread the gap between the highly productive temperate economies and the less productive economies of the tropics all over the globe. As long as the rates of agricultural productivity in the tropics remained below those of the developed countries, the factorial terms of trade would always result in an exchange of commodities that favored the developed economies.

Lewis's argument about the factorial terms of trade represented a dramatic shift in his thinking. He had begun his studies as an undergraduate by investigating West Indian economies and had concluded that industrialization provided the only hope for the West Indies. His protestations notwithstanding, his 1954 article on unlimited supplies of labor underscored the importance that he attached to industrialization and urbanization in economic progress. But, as a result of his experiences, many of them in Africa where labor was not abundant, he gained a new appreciation for the importance of agriculture. While he had always insisted on balanced economic growth and balked at the criticism that he was single-minded in his advocacy of industrialization, his later conclusion that without an agricultural revolution, like that which Europe and North America had experienced, and without dramatic improvements in crop yields, especially food crop yields, third world economies were doomed to be stagnant marked a change in emphasis.

### **Conclusion**

Lewis set the pace for the emerging field of development economics in the 1950s. Although he had many collaborators, even colleagues at the London School of Economics, like Nicholas Kaldor, Paul Rosenstein-Rodan, and P. T. Bauer, he was one of a small group who made the question of economic growth of poor countries the central research goal. Others, like Kaldor and Joan Robinson at the University of Cambridge, dealt with problems of economic growth in less developed countries but only as a part of their research agendas.

Lewis worked to legitimize a field and create a consensus on development. His work yielded a surprising degree of agreement during the 1950s and 1960s among development economists. They agreed that the problems of economic development for

less developed countries were solvable, even though large and difficult, that they needed a quick resolution lest the world be plunged into spasms of revolutionary violence, and that they required substantial economic assistance from the richer countries. Although most development economists were not active participants in the Cold War debate, they were aware of the political dimensions of their work. If poverty was not overcome and economic growth did not take place, social revolutions were likely to follow. Lewis himself was a Fabian and was entirely opposed to highly coercive, non-democratic approaches to economic development. Nor did he favor authoritarian and highly centralized economic planning. Nonetheless, like many development economists he believed that free markets left much to be desired. They were likely to be wasteful of resources, lead into unpromising avenues of economic activity, and prove too slow to eradicate poverty and generate economic growth. Although Lewis and his colleagues all valued the role of entrepreneurs as pioneers of European and North American industrialization, they were acutely aware that in most of the rest of the world entrepreneurial talents were in short supply. Fortunately, this defect could be overcome through state intervention, rigorous development planning, and programs of domestic taxation and incentives for foreign investment that would increase the levels of investment and facilitate industrialization.

Lewis developed a special niche within the general field of development economics. His writings emphasized balanced growth. He argued against permitting any sector, not least the industrial sector, to progress more rapidly than the others. Nor did he disparage the market. In the view of one of his followers, Jagdish Bhagwati, he was the champion of “planning through the market.”<sup>85</sup> He also attached importance to the role of

innovators as a new breed of entrepreneurs who were the most modern members of a society and most set apart from other groups, like bureaucrats, priests, merchants, and landlords. The latter groups could not free themselves of traditional values. In contrast the new capitalist class was consumed with a passion for economic growth and devoted their newfound wealth to economic expansion.

During the 1950s, as many parts of the colonial world pressed forward toward independence, Lewis emerged as one of the most visible and accessible practitioners of development economics. His stress on industrialization through planning was what Asian and African leaders wanted to hear. In addition, he was the only one of the new group of world-class development economists who had grown up in the developing world. He was a man of color, with life-long ties to rising new nationalist elites. His sympathies for pan-Africanism dated back to childhood days when his father had taken him to hear Marcus Garvey speak. Thus, when Kwame Nkrumah, the Prime Minister of black Africa's first modern independent state, approached him in 1957 and asked him to act as the country's chief economic adviser, he leaped at the prospect. Lewis counted on popular leaders to galvanize the population in support of development. Nkrumah was Africa's most compelling nationalist, a man educated in the United States and Great Britain, a pan African loyalist, and a darling of the Ghanaian electorate, whose party, the Convention Peoples Party, had won three straight elections in the run-up to independence (1951, 1954, and 1956). The possibilities seemed limitless, as Lewis, still a young man (43 years of age), embarked with his wife Gladys and his two young daughters on a new and challenging phase of his career.

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<sup>1</sup> P. N. Rosenstein-Rodan, "Problems of Industrialization of Eastern and South-Eastern Europe," The Economic Journal, vol. 53, nos. 210-211, June-September 1943, pp. 202-211.

<sup>2</sup> This is, at least, the view of Jagdish N. Baghwati, who identified Raul Prebisch, Paul Rosenstein-Rodan, Ragnar Nurske, and Lewis as belonging "to a most distinguished *small* (sic) group of pioneers." He singled out Lewis and Prebisch for shattering the myth that "fundamental thinking (on economic issues) required that one belonged to the center, not the periphery." Jagdish Baghwati, "Comment," in Pioneers in Development, p. 197.

<sup>3</sup> The literature on the rise of development economics in the aftermath of World War II is voluminous. H. W. Arndt has written two overviews, though of a decidedly negative cast: Economic Development: the History of an Idea (Chicago, 1987) and The Rise and Fall of Economic Growth: A Study in Contemporary Thought (Melbourne, 1978).

Frederick Cooper focuses on the uses of the ideas of development theory in Africa in "Modernizing Bureaucrats, Backward Africans, and the Development concept," in International Development and the Social Sciences: Essays on the History and Politics of Knowledge, edited by Frederick Cooper and Randall Packard (Los Angeles, 1997). A. T. Killick's study, Development Economics in Action: A Study of Economic Policies in Ghana (New York, 1978) is a brilliant case study of the panoply of ideas that formed the consensus behind economic development of the 1950s through the 1970s as they were applied to the state and economy of Ghana. I will draw on it freely but also critique it in chapters 5 and 6 of this study. First-rate sketches from the leading development economists of this period, including one by Lewis, can be found in Gerald M. Meier and Dudley Seers, ed, Pioneers in Development: A World Bank Publication (New York,

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1984). Here the reader can note the different emphases that each one of the pioneers in this field brought to his and her work. The volume contains essays written by P. T. Bauer, Colin Clark, Albert O. Hirschman, Arthur Lewis, Gunnar Myrdal, Raul Prebisch, Paul N. Rosenstein-Rodan, Walt Whitman Rostow, H. W. Singer, and Jan Tinbergen: in short the true movers and shakers of the development revolution in economics.

<sup>4</sup> Amartya Sen, "Introduction," in Growth Economics: Selected Readings, edited by Amartya Sen (Harmondsworth, England, 1970), p. 9.

<sup>5</sup> Paul Krugman, "Toward a Counter-Counterrevolution in Development Theory," Proceedings of the world Bank Annual Conference on Development Economics, 1992, p. 22. Krugman is particularly critical of Lewis's work in development economics. Of Lewis's best known book, The Theory of Economic Growth, he commented that the "1955 text on economic growth seems fairly innocent of the whole idea of external economies; indeed, the term does not even appear in the index." While conceding that Lewis's article on unlimited supplies of labor was "probably the most famous paper in the literature of development economics," he added, "in retrospect, it is hard to see exactly why." For more on Krugman's criticism of Lewis and replies to the criticisms, see the discussion in this chapter on Lewis's article on economic growth with unlimited supplies of labor.

<sup>6</sup> W. Arthur Lewis, "Colonial Development," Transactions of the Manchester Statistical Society, Section 1948-49, January 12, 1949, p. 3.

<sup>7</sup> Ibid., p. 22.

<sup>8</sup> John P. Lewis, "William Arthur Lewis," Luminaries, Princeton Faculty Remembered, edited by Patricia H. Marks (Princeton, 1996), p. 159.

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- <sup>9</sup> United Nations, Measures for the Economic Development of Under-Developed Countries: Report by a Group of Experts Appointed by the Secretary-General of the United Nations (New York, 1951), pp. 3-4.
- <sup>10</sup> Ibid., p. 7.
- <sup>11</sup> Ibid., p. 16.
- <sup>12</sup> Ibid., p. 18.
- <sup>13</sup> Ibid., p. 33.
- <sup>14</sup> Ibid., p. 35.
- <sup>15</sup> Ibid., pp. 75ff.
- <sup>16</sup> S. Herbert Frankel, "United Nations Primer for Development," The Quarterly Journal of Economics, vol. 66, no. 3, August 1952, pp. 301-316.
- <sup>17</sup> W. Arthur Lewis, "United Nations Primer for Development: Comment," Quarterly Journal of Economics, vol. 67, no. 2, 1953, p. 274.
- <sup>18</sup> W. Arthur Lewis, Aspects of Industrialization: National Bank of Egypt, Fiftieth Anniversary Commemoration Lecture (Cairo, 1953), p. 7.
- <sup>19</sup> Ibid., p. 8.
- <sup>20</sup> Ibid., p. 6.
- <sup>21</sup> Ibid., p. 7.
- <sup>22</sup> Ibid., p. 7.
- <sup>23</sup> W. Arthur Lewis, "Reflections on South-East Asia," District Bank Review, no. 104, December 1952, p. 3.
- <sup>24</sup> Ibid., p. 11.

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<sup>25</sup> W. Arthur Lewis, "Autobiographical Note," Social and Economic Studies, p. 3. The development economists, Raul Prebisch and H. W. Singer, had investigated the terms of trade between primary exports and manufactures and concluded that the terms worked against primary product exporters. Their studies purported to show that the world demand for foodstuff exports, such as cocoa, coffee, and tea and other agricultural products, like cotton would not expand as rapidly as the demand for manufactures. Hence, primary product exporters would never have the high growth rates that the industrialized parts of the world enjoyed. Lewis accepted this view up to a point; yet his researches also convinced him that the ratio of third world trade in world trade was a fixed percentage. Primary product exporters would share in the benefits of an expanding world economy as much as the industrialized parts of the world. Asia, Africa, and Latin America needed industrialization because this was the only way to achieve rising standards of living.

<sup>26</sup> Ronald Findlay, "On W. Arthur Lewis's Contributions to Economics," The Theory and Experience of Economic Development: Essays in Honor of Sir W. Arthur Lewis, edited by Mark Gersovitz, Carlos F. Diaz Alejandro, Gustav Ranis, and Mark Rosenzweig (London, 1982), p. 3.

<sup>27</sup> Lewis's claim that neo-classical economics did not work in understanding the British industrial revolution and was leading economic planners astray in developing plans for less developed economies did not arouse as much opposition as his argument about the zero marginal productivity of workers in the traditional sector. But it did not go unchallenged. The economic historian, Jeffrey G. Williamson, wrote a series of articles in the 1980s claiming that standard neo-economic analysis was superior to the Lewis

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labor surplus model for explaining Britain's industrial revolution. In his view any labor surpluses that existed in the British economy at the time were not crucial to the country's industrialization. Nor was there any rapid rise in the British savings rate as Lewis assumed. See in particular, Jeffrey G. Williamson, "The Historical Content of the Classical Labor Surplus Model," Population and Development Review, vol. 11, no. 2, June 1985, pp. 171-191 and Jeffrey G. Williamson, "Why was British Growth so Slow during the Industrial Revolution?," The Journal of Economic History, vol. 44, no. 3, September 1984, pp. 687-712.

<sup>28</sup> Lewis, "Autobiographical Note," Social and Economic Studies, p. 3.

<sup>29</sup> See the biography of Nicholas Kaldor by Ferdinando Targetti, Nicholas Kaldor: The Economics and Politics of Capitalism as a Dynamic System (Oxford, 1992), particularly chapter 5 where the author describes the efforts of leading Cambridge-based economists such as Piero Sraffa, Joan Robinson, and Kaldor to revive an interest in the writings of Smith, Malthus, Ricardo, and Marx. What fascinated these scholars, as well as Lewis, was the attention the classical economists paid to issues of economic growth and the distribution of wealth.

<sup>30</sup> Lewis's views on Adam Smith are sprinkled throughout many of Lewis's essays. Nowhere did Lewis write in detail about the classical economists. His notion that Smith was different from Malthus and Ricardo in believing that economic growth could be continuous does not fit the standard reading of Smith's works. The one occasion on which Lewis had an opportunity to spell out his ideas came when he was invited to write an essay for the bicentenary of the publication of Adam Smith's Wealth of Nations. Although he paid his respects to the work of Smith, Lewis elected to write about the

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diffusion of development. W. Arthur Lewis, "The Diffusion of Development," in The Market and the State: Essays in Honour of Adam Smith, edited by Thomas Wilson and Andrew Skinner (Oxford, 1976).

<sup>31</sup> Barbara and J. L. Hammond, The Village Labourer, 1760-1832: A Study of the Government of England before the Reform Bill; The Town Labourer, 1760-1832; and The Skilled Labourer, 1760-1832 (London, 1911-1919).

<sup>32</sup> Phyllis Deane and W. A. Cole, British Economic Growth, 1688-1959: Trends and Structures (Cambridge, 1962). Research over the last half century, however, has undermined many of the findings of Deane and Cole. While all of the recent British historians acknowledge their debt to Deane and Cole and draw heavily on these findings, they have substantially revised the tables and many of the conclusions of their book. The resulting picture is a British economy that grew with much less discontinuity. Nor does it appear, as Lewis and Rostow argued on the basis of the Deane and Cole statistics, that any great surge in the rate of industrial investment occurred at the end of the eighteenth or the beginning of the nineteenth centuries. Economic change seems to have been slow and gradual, stretching far back into the past. Moreover, while no one doubts that workers were released into the industrial sector in response to industrial expansion, especially the textile sector, agriculture was far from static or stagnant. The recent work in British agricultural history demonstrates that agriculture was as innovative and as productive as the most productive parts of the industrial sector and that agricultural innovation was a significant factor in releasing labor into the industrial sector.

<sup>33</sup> W. W. Rostow, The Stages of Economic Growth (New York, 1960), and also W. W. Rostow, "The Take-Off into Self-Sustained Growth," The Economic Journal, vol. 66, no.

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261, March 1956. See footnote 1 on page 33 where Rostow cites Lewis's article on unlimited supplies of labor.

<sup>34</sup> T. S. Ashton, The Industrial Revolution, 1760-1830 (London, 1948).

<sup>35</sup> For the evolution of interpretations of the British industrial revolution, see David Cannadine, "The Present and the Past in the English Industrial Revolution," Past and Present, vol. 103, 1984, pp. 131-72. See also R. M. Hartwell, "The Rising Standard of Living in England, 1800-1850," Economic History Review, Second Series, vol. 13, 1961, pp. 397-416.

<sup>36</sup> Ashton, The Industrial Revolution, p. 129.

<sup>37</sup> W. Arthur Lewis, "African Economic Problems," The Keys, vol. 5, no. 1, July-September 1937, p. 15.

<sup>38</sup> Barbara and J. L. Hammond, The Town Labourer, p. 11.

<sup>39</sup> Ibid., p. 12.

<sup>40</sup> Ibid., p. 14.

<sup>41</sup> Ibid., p. 96.

<sup>42</sup> W. Arthur Lewis, "Economic Development with unlimited Supplies of Labour," The Manchester School, vol. 22, no. 2, 1954, p. 141.

<sup>43</sup> Ibid., p. 141.

<sup>44</sup> Ibid., p. 148.

<sup>45</sup> Ibid., p. 151.

<sup>46</sup> Ibid., p. 159.

<sup>47</sup> Ibid., pp. 160 and 169-70.

<sup>48</sup> John P. Lewis, "William Arthur Lewis," in Luminaries, p. 158.

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- <sup>49</sup> Paul N. Rosenstein-Rodan, "*Natura Facit Saltum: Analysis of the Disequilibrium Growth Process*," in Pioneers in Development, edited by Meier and Seers, p. 212.
- <sup>50</sup> Albert O. Hirschman, "The Rise and Decline of Development Economics," in Essays in Trespassing: Economics to Politics and Beyond (Cambridge, 1981), p. 10.
- <sup>51</sup> R. F. Harrod, "An Essay in Dynamic Theory," Economic Journal, vol. 49, no. 193, March 1939, p. 14. One should also consult R. F. Harrod, Towards a Dynamic Economics: Some Recent developments of Economic Theory and their Application to Policy (London, 1948).
- <sup>52</sup> Dudley Seers, "The Birth, Life, and Death of Development Economics," Development and Change, vol. 10, no. 4, October 1979, p. 711.
- <sup>53</sup> W. Arthur Lewis, "Unlimited Labour: Further Notes," the Manchester School, vol. 16, no. 1, p. 8.
- <sup>54</sup> Idem.
- <sup>55</sup> Bauer's review first appeared in the American Economic Review, in June 1956, but I am quoting from his reissue of the review in his book, Dissent on Development: Studies and Debates in Development Economics (Cambridge, 1972), p. 435.
- <sup>56</sup> Ibid., p. 437.
- <sup>57</sup> Theodore W. Schultz, Transforming Traditional Agriculture (New Haven, 1964), p. 56.
- <sup>58</sup> Bent Hansen, "Employment and Wages in Rural Egypt," The American Economic Review, vol. 59, no. 3, June 1969, pp. 298-313.
- <sup>59</sup> Jacob Viner, "Some Reflections on the Concept of 'Disguised Unemployment,'" Contribuicoes a Analise do Desenvolvimento Economico (Rio de Janeiro, 1957), p. 347.

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- <sup>60</sup> W. Arthur Lewis, "Reflections on Unlimited Labour," Research Project, Woodrow Wilson School, Princeton University, Discussion Paper, No. 5 (Princeton, 1968), p. 2
- <sup>61</sup> Ibid., pp. 8-9.
- <sup>62</sup> Ibid., pp. 13-14.
- <sup>63</sup> W. Arthur Lewis, "The Dual Economy Revisited," Manchester School of Economic and Social Studies, vol. 47, September 1979, p. 211.
- <sup>64</sup> Ibid., p. 218.
- <sup>65</sup> Ibid., p. 219.
- <sup>66</sup> Gustav Ranis and John C. H. Fei, "A Theory of Economic Development," The American Economic Review, vol. 51, no. 4, September 1961, pp. 533-565.
- <sup>67</sup> Amartya Sen, "Peasants and Dualism with or without Surplus Labor," The Journal of Political Economy, vol. 74, no. 5, October 1966, pp. 425-450.
- <sup>68</sup> Keith Griffin and Jeffrey James, "Problems of Transition to Egalitarian Development," The Manchester School of Economic and Social Studies, vol. 47, no. 3, September 1979, pp. 248-69.
- <sup>69</sup> Keith Worrell, "The Dual Economy since Lewis: A Study," Social and Economic Studies: Special Issue in Honor of Sir William Arthur Lewis, vol. 29, no. 4, December 1980.
- <sup>70</sup> Avinash K. Dixit, "Models of Dual Economies," in Models of Economic Growth: Proceedings of a Conference held by the International Economic Association at Jerusalem, edited by James A. Mirrlees and N. H. Stern (New York, 1973), p. 325.
- <sup>71</sup> W. Arthur Lewis, The Theory of Economic Growth (Homewood, Illinois, 1955), p. 5.
- <sup>72</sup> Ibid., p. 6.

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<sup>73</sup> See the “Bibliographical Note” at the end of the chapter on Capital on pages 302-303 of The theory of Economic Growth for the articles and books that Lewis found the most helpful in writing this important chapter.

<sup>74</sup> Ibid., p. 226.

<sup>75</sup> Ibid., p. 232.

<sup>76</sup> Ibid., p. 384.

<sup>77</sup> See his review in West Africa, January 28, 1956, p. 85.

<sup>78</sup> Of the reviews in this genre, see those by A. D. Knox in Economica, New Series, vol. 26, no. 102, May 1959, pp. 171-72 and A. K. Cairncross in The Economic Journal, vol. 66, no. 264, December 1956, pp. 694-97. In comparing the book with others that had appeared recently, Knox concluded that “it may safely be said that it retains a pre-eminent position.” (p. 171). Cairncross concluded his long and in many ways critical review with the following summary statement: “The theory of growth is an enormous canvas on which to paint: after all, is not all economic theory about growth except when the possibility is deliberately excluded? If some of the painting is a little sketchy, the whole is still remarkable. Few economists could sustain for so long, and with such clarity and good judgment, an argument that embraces most of the major issues of economic policy.” (p. 697).

<sup>79</sup> P. T. Bauer to W. Arthur Lewis, May 2, 1957, W. Arthur Lewis Papers, Box 13.

<sup>80</sup> See the review in Bauer’s Dissent on Development, pp. 435-447. The review appeared in the American Economic Review in June 1956.

<sup>81</sup> B. F. Haley to W. Arthur Lewis, November 21, 1956, W. Arthur Lewis Papers, Box .  
Unfortunately, the Lewis papers do not contain a copy of Lewis’s letter of complaint to

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the journal editor. Hence, I do not know precisely what Lewis included in his eleven “incidents.”

<sup>82</sup> Ranis and Fei, “A Theory of Economic Development,” The American Economic Review, 1961, p. 534.

<sup>83</sup> See Lewis’s article “Unemployment in Developing Areas,” in A Reappraisal of Economic Development: Perspectives for Cooperative Research, edited by Andrew H. Whiteford (Chicago, 1964).

<sup>84</sup> A succinct statement of this perspective may be found in W. Arthur Lewis, “The Diffusion of Development,” in The Market and the State: Essays in Honour of Adam Smith, edited by Wilson and Skinner, pp. 135-56. In Lewis’s Wicksell lectures, Aspects of Tropic Trade, 1883-1965, The Wicksell Lectures (Stockholm, 1969), he explained the failure of the tropical economies to gain greatly from their export of cash crops because their chief product was food, not cash crops. Thus, “their standard of living is determined in the first instance by their output of food per head.” (P. 17). In his Janeway lectures, Lewis gave a historical dimension to temperate and tropical economic development, arguing that the great economic divide occurred at the end of the eighteenth century with the agricultural and industrial revolutions taking place in Britain and spreading to Western Europe and North America. Europe’s high rates of agricultural productivity spread with people of European descent as they migrated to other temperate areas of the world. Lower rates of agricultural productivity spread to the tropics through the migration of Indians and Chinese. W. Arthur Lewis, The Evolution of the International Economic Order (Princeton, 1977).

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<sup>85</sup> Jagdish Bhagwati, “W. Arthur Lewis: An Appreciation,” in Gersovitz, Alejandro, Ranis, and Rosenzweig, eds., The Theory and Experience of Economic Development, p. 15.