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# Adam Smith and David Ricardo on Economic Growth

*by*

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THE CLASSICAL ECONOMISTS were concerned primarily with the problems of economic growth. But their writings have been grossly and systematically misinterpreted, their characters maligned. They have always had great influence and a bad press—modern times are no exception. Their works and personalities are still being distorted and caricatured, a practice which adds tinder to the massive walls of misunderstanding and distrust between peoples of more, and less, developed economies. I shall endeavour in this paper to present and appraise the salient views on growth of Adam Smith and David Ricardo.

## I. Adam Smith

Adam Smith implicitly made an important contribution to the analysis of economic growth by discussing it in terms of general economic principles, rather than in terms of a theory of economic growth. It is conditions, he wrote, that bring about systems of political economy, although he doubtless believed that advance in political economy could also bring about changes in conditions.[1] His well-known

1. "The different progress of opulence in different ages and nations," observed Smith, "has given occasion to two different systems of political economy, with regard to enriching the people. The one may be called the system of commerce, the other that of agriculture." Adam Smith, *The Wealth of Nations*, Cannan ed., New York, 1937, p. 397. Cf. also p. lix. The two different systems to which Smith referred were Mercantilism, although he never used the term, and Physiocracy.

presentation of hunting deer and beaver is a landmark in interpretative, as compared with predictive, economic analysis. First, he drew attention to the limits of what is possible and impossible, for a country to produce in a certain period of time with *given* technology and resources. By introducing the restraint of given tastes, he then formulated in simple terms the nature of all problems of economic maximisation.

Furthermore, in his discussion on the division of labour, digression on silver, accumulation of capital, and different progress of opulence in various nations, he dealt with *changes* in wants, resources and technology. Such problems Smith considered with a sense of the uniqueness of human experience. They belong to the high theme of "historical" or "evolutionary" economics.[1] Emphasising the importance of specialisation to an extent that nobody had ever done before, Smith imputes to it not only the improvement of skill, dexterity and judgment, as well as the saving of time, but virtually all technological progress and even the expansion of new investment. It will be recalled that he attributed division of labour to a certain propensity in human nature "to truck, barter, and exchange one thing for another," and its development to the gradual expansion of markets.[2] The nature of agricultural production —primarily because of its geographical dispersion. seasonality and perishability of products—he considered to be less conducive to division of labour than the production of manufactures. However, for economic development to occur at all, Smith believed that the production of an agricultural surplus to support the non-farm population was a primary requisite. He conjectured that the process of economic development must have been somewhat as follows.[3]

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1. Smith appreciated the fact that economic growth deals with qualitative and quantitative changes in wants, resources, and technology. It is in no way analogous to the problems dealt with in theoretical mechanics, from which the terms economic "statics" and "dynamics" were derived. Dynamics in the field of theoretical mechanics deals with motion, rather than organic change. The term "economic dynamics" is, therefore, misleading when applied to the phenomenon of economic growth. Cf. Frank H. Knight, *On the History and Method of Economics*, Chicago, 1956, p. 55, note 21.

2. Smith, p. 13; Chs. 1 and 2 passim. Cf. also G. A. Elliot, "The Impersonal Market," *Canadian Journal of Economics and Political Science*, xxiv (November 1958), pp. 453-457.

3. Smith, esp. pp. 65, 126-164, 192-250, 356-359. Smith spoke in parables when he referred to an earlier golden age when land rent and interest could

Given an extremely favourable labour-resource ratio, clothing and housing were at first free goods. As population grew they became scarce and yielded a "rent." This induced technical improvements, and they were applied to agriculture. A smaller proportion of the labour force was thus required to produce food. Consequently, workers were freed for other occupations.

> . . . . When by the improvement and cultivation of land the labour of one family can provide food for two, the labour of half the society becomes sufficient to provide food for the whole. The other half, therefore, or at least the greater part of them, can be employed in providing other things, or in satisfying the other wants and fancies of mankind.[1]

It was the creation of an agricultural surplus that produced the demand for other goods and services which could be purchased with the excess supply of agricultural products. Manufacturing industries developed to supply this growing demand. Interdependently, the rising urban population required more food and had to produce an increased supply of manufactures to pay for it.

> Those, therefore, who have the command of more food than they themselves can consume are always willing to exchange the surplus. . . . for gratifications of this other kind [manufactures]. What is over and above satisfying the limited desire is given for the amusement of those desires which cannot be satisfied, but seem to be altogether endless. The poor, in order to obtain food, exert themselves to gratify those fancies of the rich, and to obtain it more certainly, they vie with one another in the cheapness and perfection of their work.[2]

Smith observed that the richest nations generally excelled all their neighbours in agriculture as well as in manufacturing; but

be neglected. History records no such golden age. Both Smith and Ricardo used this device as an ancient form of the method of successive approximations, assuming first very simple models and then introducing various complications into them. Cf. Paul A. Samuelson, "A Modern Treatment of the Ricardian Economy: Capital and Interest Aspects of the Pricing Process," *Quarterly Journal of Economics*, lxxiii (May 1959), p. 217. The method also utilises the process of stages in economic growth. See Bert F. Hoselitz, "Theories of Stages of Economic Growth."

1. Smith, p. 163.
2. Ibid., p. 164.

they were ordinarily more distinguished by their superiority in manufacturing. Their lands, he noted, were in general better cultivated. This superiority, however, was seldom much more than in proportion to the superiority of the labour and the greater expense incurred on these lands. It was the impossibility of so complete specialisation in agriculture that explained this phenomenon; in effect, the productivity of labour in agriculture rose more slowly than in industry.

The number of workmen, he wrote, increased with the growing improvement and cultivation of the lands. As the nature of manufacturing business "admits of the utmost subdivisions of labour," the quantity of materials which they could work up increased in a much greater proportion than their numbers. Hence arose a demand for every sort of material which human invention could employ, either usefully or ornamentally, "in building, dress, equipage, or household furniture; for the fossils and minerals contained in the bowels of the earth, the precious metals, and the precious stones."[1]

Foreshadowing the nineteenth-century belief of decreasing returns in agriculture and increasing returns in industry, Smith reached the Ricardian conclusions that as a result of economic progress, landowners would benefit directly for two reasons: the real value of agricultural products would rise and the landowners would receive a larger share of them. Landowners would also benefit indirectly because of the fall in the real price of manufactures. Labour would benefit because their wages would rise and the price of part of the commodities they buy would fall. Merchants and master manufacturers would suffer, however, because increasing competition between increasing capital would have a tendency to lower the rate of profit (interest?) and thereby check capital formation—a tendency which would have to be averted if continued economic growth were to be achieved.[2]

Smith writes as though he actually believed that if only the obstacles to economic progress were removed, the propensity to "truck,

1. Smith, op. cit., pp. 6, 164. Cf. also his *Lectures on Justice, Police, Revenue and Arms*, delivered in the University of Glasgow, reported by a student in 1763 and edited with an Introduction and Notes by Edwin Cannan, 1896, New York, 1956, pp. 157-161. Smith came very close to saying that in England technological changes were working to make nationally profitable a relative increase in urban population, a fact which almost everywhere has come true. Cf. on this point Jacob Viner, *Canada and Its Giant Neighbour*, Alan B. Plaunt Momorial Lectures, Ottawa, 1958, pp. 39-42.

2. Ibid., pp. 247-250, 314, 332.

and barter" would be sufficiently powerful to engender ever-increasing specialisation, improvement in technology, and expansion of markets. These forces of economic progress would then counteract the tendency toward reduced capital formation and economic decline.

But it was extremely important that the obstacles to progress be removed; for although Smith emphasised the role of impersonal forces of the market in achieving economic growth, he stressed the role of personal drives as well, and devoted attention to programmes of reform, the adoption of which was indispensable for the successful operation of both sets of forces. He deemed ambition of the rising merchant class in the eighteenth century to be a potent catalyst in the economic development of England. It may have played no less significant a role than that of the innovator during the Industrial Revolution and thereafter. Many new operators of shops and of shipping, entrepreneurs in manufacturing, brokers, and traders became engulfed in ambition to acquire wealth, prestige and power. They sacrificed much in order to save and to invest in pursuit of the ends. With comprehensive brevity, Smith writes:

> The poor man's son, whom heaven in its anger has visited with ambition when he begins to look around him, admires the condition of the rich. He finds the cottage of his father too small for his accommodation and fancies he should be lodged more at his ease in a palace . . . It appears in his fancy like the life of some superior rank of beings, and, in order to arrive at it, he devotes himself forever to the pursuit of wealth and greatness. To obtain the conveniences which these afford, he submits in the first year, nay, in the first month of his application, to more fatigue of body and more uneasiness of mind, than he could have suffered through the whole of his life from the want of them.[1]

This drive of ambition continues.

> He studies to distinguish himself in some laborious profession. With the most unrelenting industry he labours night and day to acquire talents superior to all his competitors. He endeavours next to bring those talents into public view, and with equal assiduity solicits every opportunity of employment.

1. Adam Smith, *The Theory of Moral Sentiments*, London, 1880 [first published in 1759], pp. 259-260.

> For this purpose he makes his court to all mankind; he serves those whom he hates, and is obsequious to those whom he despises.[1]

Once great riches and power are achieved, however, Smith notes that they carry with them superstructures which are ready every moment to burst into pieces, and to crush their possessor. They keep off minor adversities, not greater ones. Their possessor remains as much, and sometimes more, exposed than before to anxiety, fear, sorrow, disease, danger and death. But rarely do people regard these matters in philosophical light. The external pleasures of wealth and greatness, he observed, strike the imagination as something grand, and beautiful and noble. For their attainment, most people are willing to undergo all the labour and anxiety which are apt to be expended on them. Nevertheless, it is fortunate, he says, that nature deludes us in this way.

> It is this deception which rouses and keeps in continual motion the industry of mankind. It is this which first prompted them to cultivate the ground, to build houses, to found cities and commonwealths, and to invent and improve all the sciences and arts, which ennoble and embellish human life; which have entirely changed the whole face of the globe, have turned the nude forests of nature into agreeable and fertile plains, and made the trackless and barren ocean a new fund of subsistence, and the great high road of communication to the different nations of the earth.[2]

Smith's low view of the advantages of great personal riches, as expressed in his *Theory of Moral Sentiments*, is therefore not inconsistent with his analysis of the nature and causes of national opulence and the best methods of attaining it, as expounded in his *Wealth of Nations*. He regarded the advantages of great personal riches as largely illusory. But because men have persisted in thinking otherwise, they have worked to make the earth "redouble her natural fertility, and to maintain a greater multitude of inhabitants."[3] Accordingly, Smith

1. Adam Smith, *The Theory of Moral sentiments*, p. 260. With a touch of humour, Smith refers to the inscription on the tombstone of the man who had endeavoured mend a tolerable constitution by taking "physic." It may generally be applied, he says, with great justice to the distress of disappointed avarice and ambition. "I was well, I wished to be better; here I am" p. 211.

2. Ibid., pp. 263-264.
3. Ibid., p. 264.

devoted attention to the enduring problem of discovering those social arrangements under which the free pursuit of self-interest would promote the general interest of mankind. He demonstrated that under certain conditions it is possible to reconcile personal liberty and economic growth with peaceful social co-existence in a large area of man's life. Avarice and ambition could thus be channeled within a system of free social organisation for the achievement of wealth and power of great nations. This principle he applied to economics and politics in his *Theory of Moral Sentiments*. Its refinement and elaboration in *The Wealth of Nations* constitute Smith's major claim to fame: he endeavoured to show that the detailed application to the economic world of the concept of a unified natural order—operating according to natural law and left to its own course under freely competitive conditions—would produce results beneficial to mankind.

But for the achievement of such results, the development of an environment conducive to economic progress was indispensable. Smith was not a doctrinnaire advocate of *laissez faire*. He recommended at least four major programms of reform: the removal of impediments to free choice of occupations; to free trade in land; to internal free trade; and to free trade in foreign commerce. Moreover, he recognised the need for government activity in such fields as public education and hygiene, public works, regulation of currency and coinage, progressive taxation, (in effect, proportional) patents, copyrights, and even moderate export and import taxes for the purposes of revenue and development.[1]

The government of Smith's day was corrupt and incompetent; it often peddled monopoly privilege. Probably as a consequence, he was convinced that in general there was a strong presumption against government activity beyond its fundamental duty of justice and security. On grounds of *a-priori* reasoning and experience, he maintained that individual initiative applied in competitive ways to promote individual ends would best serve the general interests. He was fully aware that the economic interests of different occupational groups were bound to

1. *Wealth of Nations*, pp. 101-102, 120-123, 134, 361-372, 420-439, 472-490, 595-596, 844. Cf. also Jacob Viner, "Adam Smith and Laissez Faire," republished in *The Long View and the Short*, Glencoe, 1958, pp. 213-245; and Lionel Robbins, *The Theory of Economic Policy*, London, 1953, Chs. 1 and 2. Robbins rightly maintained, I believe, that Smith regarded national advantage as the criterion of policy, though it was conceived in a cosmopolitan setting. He used the terminology of *Naturrecht*, but his arguments were consistently utilitarian in character.

conflict with one another and with the interests of society as a whole. But he thought they could be restrained and partially reconciled by the operation of impersonal, competitive markets and, wherever necessary, by the activity of government under law. In effect, Smith laid the foundation of political reform for all classical economists in stressing the need for a stable responsible government and an impartial system of laws protecting property. His approach to government was functional: government activity is natural and good when it promotes the general welfare; it is unnatural and bad when it injures the general interests of society. He had strong prejudices in favour of *laissez faire*; but he also had strong prejudices against the powerful and the grasping. Whenever he spoke of the labouring classes it was in approbative terms, championing their cause. He was among the earliest economists to deal sympathetically with the general human welfare problem of the masses. Although he did not foresee the Industrial Revolution and the hardships incident to it, his *Theory of Moral Sentiments* and *The Wealth of Nations* were imbued with understanding tolerance in a world of great intolerance.

The economic progress of Britain up to the 1770's does not appear to have been inconsistent with Smith's eclectic explanation of it. Clearly *The Wealth of Nations* contained much that was relevant to Britain's further economic growth, as well as to that of other developing nations. By 1800 it had run nine English editions; appeared in the United States, Ireland and Switzerland; had been translated into Danish, Dutch, French, German, Italian, Spanish, and Russian (1802-06). Since then it has been translated into Japanese (1884-88), Chinese (1902), Polish (1927), Czechoslovakian (1928), Finnish (1933), and probably other languages.[1]

The reforms which Smith had recommended were slowly achieved in Britain, and as far as such things can be traced to their source, *The Wealth of Nations* was important in influencing policy both at home and abroad. We shall have occasion to observe that it still has relevance to some problems facing developed and undeveloped countries; but it must be borne in mind that Smith lived in an age when Britain was already undergoing economic progress. He was not analysing nascent con-

1. See *The Vanderblue Memorial Collection of Smithiana*, Cambridge, Mass., 1939, pp. 1-31. This excellent collection is housed in the Kress Room of Baker Library at Harvard.

ditions prior to, or prerequisite for, economic development. As he pointed out, wages had "indeed" risen in Britain during the course of the eighteenth century. This seems to have been the effect not so much of inflation in the European market as of an increase in the demand for labour in Britain, "arising from the great and almost universal prosperity of the country."[1] In short, real wages of labour had increased considerably; and this was both the necessary result, and the natural symptom of *increasing* national wealth."[2]

Smith was not without vision. In dealing with Britain's future economic growth, and its relations with newly developing countries, he presented fresh analysis and radical recommendations. In theory and practice it struck a strong frontal attack against colonialism.

The exclusive trade of mother countries, with their colonies, he wrote, tended to reduce the aggregate level of world real income or, at least, to diminish its rate of growth—and especially that of the American colonies. Their agricultural output was kept down, the price of their imports increased, their industrial output held in check. The total amount of investment of all countries in the colonies was curtailed. Although British merchants made great profits, the mother country generally suffered. Primarily, the trade monopoly brought about a *diversion* of British trade away from Europe toward the colonies, rather than a *creation* of new trade. Specialisation for the colonial market became so great that this industry and commerce became over-extended. It was bound to suffer from lack of product and geographic diversification. High profits in the mercantile trade led to profligate spending. Savings and efficiency were reduced. Incentives to invest in improvements on British agriculture declined. Expenditures on colonial defence and administration drained British resources.[3]

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1. *Wealth of Nations*, p. 200.

2. Ibid., p. 69: "It is not the actual greatness of national wealth, but its continual increase which occasions a rise in the wages." And again, p. 81: "The liberal reward of labour, therefore, as it is the effect of increasing wealth, so it is the cause of increasing population." Cf. also *Lectures*, p. 256 ff. The available evidence suggests that per capita national income of England and Wales more than doubled between 1688-95 and 1770; it rose from approximately £8.7 to £18.5. See Phyllis Deane, "The Implications of Early National Income Estimates for the Measurement of Economic Growth in the United Kingdom," *Economic Development and Cultural Change*, Vol. iv, No. 1 (November 1955), Table 8, p. 36.

3. *Wealth of Nations*, pp. 557-565.

Smith considered the discovery of America and of a passage to the East Indies as the most important events recorded in the history of mankind. They opened immeasurable opportunities for complementary trade with Europe, as well as advance in human progress. But, the superiority of force happened to be so great on the Europeans that they committed grave injustice. The government of India, he wrote, was composed of a council of foreign merchants; "The plunderers of India," he called them in one place, "military and despotical," in another.[1]

Regarding the American colonies, Smith observed that British trade policy was comparatively libertarian even in the mercantilist period. Those newly developing countries which had plenty of good land, and liberty to manage their own affairs in their own way, showed the most rapid progress. Wherever the trade monopoly of the mother country was least oppressive, the new lands prospered most. Fortunately this was the case with the American colonies. The trade *monopoly* did much mutual harm, but the beneficial effects of the trade itself more than counter balanced the ill effects of the monopoly. Nonetheless:

> To prohibit a great people, however, from making all that they can of every part of their own produce, or from employing their stock and industry in the way that they judge most advantageous to themselves, is a manifest violation of the most sacred rights of mankind. Unjust, however, as such prohibitions may be, they have not hitherto been very hurtful to the colonies. Land is still so cheap, and, consequently, labour so dear among them, that they can import from the mother country almost all the more refined or more advanced manufactures cheaper than they could make them for themselves. Though they had not, therefore, been prohibited from establishing such manufactures, yet in their present state of improvement, a regard to their own interest would, probably, have prevented them from doing so. In their present state of improvement, those prohibitions, perhaps, without cramping their industry, or restraining it from any employment to which it would have gone of its own accord, are only impertinent badges of slavery imposed upon them, without any sufficient reason, by the

1. *Wealth of Nations*, pp. 603, 605.

groundless jealousy of the merchants and manufacturers of the mother country. In a more advanced state they might be really oppressive and insupportable.[1]

In what way then, asked Smith, had the policy of Europe contributed to the establishment, the form of internal government, and the subsequent prosperity of the American colonies? Above all, he answered, it produced the men who were capable of laying the foundations of a great republic. They benefited from the equal and impartial administration of justice which, by securing to every man the fruits of his own industry, gave the greatest and most effective encouragement to every sort of development.[2] The colonies owed to the policy of Europe the education and views of their enterprising founders; but some of the most important ideas of their internal government were natively developed.[3]

Smith warned his readers they were wrong in flattering themselves that the colonies would be easily conquered by force. He recommended that independence be granted by voluntary separation. If it were adopted, Britain would not only be freed from the expense of providing security for the colonies, but might also sign with them a treaty of commerce which would secure to her complete free trade. This would be more advantageous to the vast majority of the people, though less so

1. *Wealth of Nations*, p. 549.

2. Ibid., p. 576. Furthermore, Smith drew attention to the need of establishing a system of general principles which "ought to run through, and be the foundation of, the laws of all nations" *Theory of Moral Sentiments*, p. 503. He concludes this book with a bid for further work on the principles of law and government with respect to conditions of peace, as well as war. But he knew that the preservation of international peace would depend on the balance of power more than on legal principles and moral concepts. Hence, he warned: "the inhabitants of all the different quarters of the world may arrive at that equality of courage and force which, *by inspiring mutual fear*, can alone overawe the injustice of independent nations into some sort of respect for the rights of one another" *Wealth of Nations*, p. 591 [italics added].

3. Ibid., p. 556. For his time, Smith attached considerable importance to the role of public education in promoting economic, and non-economic, growth. Even in a civilised society, he pointed out, ignorance and stupidity benumb the understanding of the common people: "The more they are instructed, the less liable they are to the delusions of enthusiasm and superstition, which among ignorant nations frequently occasion the most dreadful disorders: . . They are more disposed to examine, and more capable of seeing through, the interested complaints of faction and sedition." p. 740.

to the merchants, than the monopoly which she currently held. By thus parting good friends, he hoped the affection of the colonies to the mother country would be revived. Not only might they respect for centuries to come this treaty of commerce, but even become Britain's most faithful and generous allies.[1] Realising, however, that such granting of independence would be unacceptable to the pride of Britain— and to the private interests of those who wielded power and delegated positions of trust, distinction and profit—he suggested a more practicable solution. Certainly it was still radical for the times. He proposed the formation of a federated Empire, granting the colonies representation in the British Parliament in proportion to their contribution to the public revenue. In compensation they would be granted the same freedom of trade as all fellow subjects. The number of their representatives to Parliament would be increased through time in proportion to the rise in their contributions.[2]

Drawing on his analysis of *The Theory of Moral Sentiments*, Smith observed that a new method of acquiring importance, a new and more dazzling object of ambition would be presented to the leading men of each colony.[1] With humorous sarcasm, he pointed out that, instead of piddling for little prizes which were to be found in the "paltry raffle of colony faction," they would hope from the presumption which men naturally have in their own ability and good fortune, to draw some of the great prizes which come from the "wheel of the great state lottery of British politics."[3] On the other hand, he reminded his countrymen that the unjust oppression of the industry of colonies usually falls back upon the heads of the oppressors, and crushes their industry more than it does that of the newly developing countries. As to the prospects of American development, he said:

> The persons who now govern the resolutions of what they call their continental congress feel in themselves at this moment a degree of importance which perhaps the greatest

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1. *Wealth of Nations*, p. 588.
2. Ibid., p. 587. One authority refers to this vision of a federated Empire in poetic terms: "A conception of grandeur is worked out in its representative, fiscal and social aspects with the careful minuteness of the Dutch genre painter." W. R. Scott, *Adam Smith as Student and Professor*, Glasgow, 1937, p. 99. Cf. also the careful study by Klaus E. Knorr, *British Colonial Theories 1570-1850*, Toronto, 1944, p. 190 ff.
3. *Wealth of Nations*, p. 587.

> subjects in Europe scarce feel. From the shopkeepers, tradesmen, and attornies, they are become statesmen and legislators, and are employed in contriving a new form of government for an extensive empire, which, they flatter themselves, will become, and which, indeed, seems very likely to become, one of the greatest and most formidable that ever was in the world.[1]

Smith attached paramount importance to the future of Anglo-American relations. Trade policy, he realised, was the crux of British economic foreign policy. Hence, in modern terms, his views on mutual economic assistance between more and less developed economies can best be expressed as aid through free trade.

## II. David Ricardo

One must turn to David Ricardo for the first reasonably rigorous classical theory of economic growth. In effect, a synthesis of classical dynamics characteristically purports to represent his views.[2] Basically, the argument rests on the Malthusian population principle and the law of historically diminishing returns. It runs briefly as follows: In an early stage of the classical economy, the population is small compared to natural resources and consequently profits, the rate of accumulation, and wages are all relatively high. The high level of accumulation serves to increase production, but it also serves to keep up the demand for labour. Hence, wages are high. This leads to a rising population. Since land is assumed to be fixed in quantity, there are diminishing average returns to additional units of labour in production. Therefore, as population increases wages will tend to eat up more and more of the total product after rent payment and thereby reduce the amount left over for profits. The inducement to invest will decline and the demand for labour will be reduced. Wages will be forced toward "subsistence level" and profits again will tend to rise. As long as total product after rent is greater than the total wage bill, there will be profits. Capital accumulation will further be induced, driving up wages, increasing

1. *Wealth of Nations*, pp. 587-588. Cf. also G. H. Guttridge, "Adam Smith on the American Revolution: An Unpublished Memorial," *American Historical Review*, xxxviii (July 1933), pp. 714-720; the original essay was entitled, "Smith's Thoughts on the State of the Contest with America," February 1778.

2. See e.g. William J. Baumol, *Economic Dynamics*, New York, 1951, Ch. 2. Following our survey of the so-called Ricardian model, we shall have occasion to show that it does not satisfactorily represent Ricardo's position.

population, and so leading to a new round in the process of growth. Once the working population rises to the point where total wages equal total product minus rent, there will be no more profits even with wages at "subsistance level." Accumulation will cease and the stationary state will have been reached. An increase in productivity brought about by inventions and discoveries, so the argument concludes, can only postpone the day of judgment.

This generally accepted model of "Ricardian economics" is not inconsistent with many passages to be found in Ricardo's writings. I think, however, that the most interesting aspects of Ricardo's discussion on growth are not to be found in the model *per se*, but in the way in which he uses his general analysis.

The really important problems facing Britain in the long run, according to Ricardo, were those of organisation and efficiency: how to reorganise a growing economy with a rising population in which the key industries—manufacturing and agriculture—were developing at drastically different rates of productivity growth. The timeless question he poses is : What rate of economic development is compatible with the resources, technology, and institutions of a country at a given time in its history ? He endeavours to show that if the British economy will be organised efficiently, if adaptations to potentialities will be made—including essential reforms—its progress will be satisfactory ; if not, it will suffer decline. The widely received view that Ricardo was a "pessimist" either is irrelevant or wrong. If anything, he was overoptmistic as to the long-run prospects for English labour, *provided certain conditions were met.*[1]

To be sure, over and again, Ricardo reverts to his main theme. Economic growth is contingent upon capital formation. This depends primarily upon the productive powers of labour. Such productive powers are generally greater when there is an abundance of fertile land. If an increase in capital occurs, it raises the demand for labour and wages, and lowers profits. But permanency of the rise in wages depends upon what happens to produce prices, and this depends upon

1. See *Works and Correspondence of David Ricardo*, Piero Sraffa and M. Dobb, eds., Cambridge 1951, Vol. i, pp. 98-99, 391-392 ; Vol. v, p. 180 ; Vol. x, p. 197. Cf. also Jacob Viner's review of *Works and Correspondence of David Ricardo*, republished in *The Long View and the Short*, pp. 434-436.

the relation between the growth in numbers and the fertility of the land.[1]

Ricardo suggests that in younger countries with an abundance of fertile land, the so-called excess population is the result, rather than the cause, of backwardness and poverty. For if ignorance and indolence were reduced, productivity in agriculture would be raised and, as Smith had shown, economic progress would have the effect of decreasing the population in agriculture and increasing it in industry. In older countries, on the other hand, where diminishing return in agriculture is pronounced, excess population may be the *cause* of backwardness and poverty. For under such conditions the population may suffer from a lack of more productive occupations.

In the case of the younger countries:

> .... The evil proceeds from bad government, from the insecurity of property, and from a want of education in all ranks of the people. To be made happier they require only to be better governed and instructed, as the augmentation of capital, beyond the augmentation of people, would be the inevitable result. No increase in the population can be too great, as the powers of production are still greater.[2]

1. See *Works and Correspondence of David Ricardo*, Vol. i, esp. Chs. 5 and 6, and Vol. iv, pp. 10-44; George Stigler, "The Ricardian Theory of Value and Distribution," *Journal of Political Economy*, Vol. lx (June 1952), pp. 187-207; and Mark Blaug, *Ricardian Economics*, New Haven, 1958, esp. Chs. 2, 9, 10, and 12.

2. *Works and Correspondence of David Ricardo*, Vol. i, p. 99, [italics added]. This formulation is from the third edition of the *Principles*, a position which had been "watered down" to meet the criticism of Mr. Ensor. See Ricardo's letter to James Mill, November 23, 1818, ibid., Vol. vii, p. 334. In the first edition Ricardo had written at this point that "the misery proceeds from the inactivity of the people. To be made happier, they need only to be stimulated to exertion; with such exertion, no increase . . . ." Vol. i, p. 99. He also applied this reasoning to the conditions of Poland and Ireland, which he thought similar to those of the South Seas: "Give to the Irish labourer a taste for the comforts and enjoyments which habit has made essential to the English labourer, and he would be then content to devote a further portion of his time to industry that he might be enabled to obtain them." ~~Vol. i, p.~~ 100, note. Otherwise, states Ricardo, a mere reduction in population would increase the evil, for wages would rise, and effort be reduced (i.e. a backward-sloping supply curve of labour). Cf. also Ricardo's incisive letter to Hutches Trower, January 25, 1822, ibid., Vol ix, p. 153.

In the case of the older countries, however:

> .... the population increases faster than the funds required for its support. Every exertion of industry, unless accompanied by a diminished rate of increase in the population, will add to the evil, for production cannot keep pace with it.[1]

Since Britain was not an extensive country with an abundance of fertile land, Ricardo assumed that more and more land of inferior quality would have to be taken up and, *cet. par.*, the real price of agrarian products would rise, whereas the real price of manufactures would fall. Rent per unit of labour and capital on comparatively fertile land would rise, and so would money wages. Profits consequently would fall. England would hence be unable to feed itself and, at the same time, to generate a sufficiently large volume of profits to sustain sufficient capital formation for economic growth.

There could be no accumulation, writes Ricardo, without a motive. The farmer and the manufacturer could no more live without profit than the labourer without wages. Their motive for accumulation would diminish with every diminution of profit, and would cease altogether when their profits were so low as to afford them an adequate compensation for their "trouble" and "risk," which they must encounter in using their capital productively.[2]

Ricardo emphasises that the effects of accumulation would be different in different countries:

> However extensive a country may be, where the land is of a poor quality, and where the importation of food is prohibited, the most moderate accumulations of capital will be attended with great reductions in the rate of profit and a rapid rise in rent; and on the contrary a small but fertile country, particularly if it freely permits the importation of food, may accumulate a large stock of capital without any great diminution in the rate of profits, or any great increase in the rent of land.[3]

These propositions, I believe, were fundamental in Ricardo's deliberations on Britain's future economic growth; they underlie virtually all his theoretical constructs and policy formulations. It was

1. *Works and Correspondence of David Ricardo*, Vol. i, p. 99.
2. Ibid., p. 122.
3. Ibin., i, p. 126.

critically important to reorganise the British economy so that rent per unit of labour and capital would not rise, and profits not fall. The law of comparative advantage provided the principle whereby these objectives might be achieved. For it showed how an economy could most efficiently allocate its resources among industries developing at differential rates of productivity growth.

Following the tenets of comparative advantage, the adoption of free trade would lower agricultural prices, money wages and rents; it would raise real wages and profits, and thereby bring about greater investments in the progressive manufacturing industries. Improvements in agricultural production might also occur. A country such as England would thus be able to experience a gradual increase in capital larger than the gradual increase in population and enjoy a lasting growth in real income. But this could only be achieved, said Ricardo, if the distribution of income among landlords, labourers and capitalists moved in favour of capital, for only thereby would an expansion in profits generate sufficient savings that would be invested in capital equipment for the production of manufactured goods.

Consequently, Ricardo opposed taxes on capital, wages, raw materials, and necessities; he also opposed the poor laws.[1] All these levies, he believed, would raise money wages and lower profits. This would bring about a distribution of income in favour of consumption at the expense of capital accumulation. Hence they would lower the rate of economic growth and deteriorate the condition of the poor as well as the rich.

Confident, on the other hand, that in the long run the opportunity to invest in English manufacturing was unlimited, he argued that there could be no limit to the amount of capital employed in producing commodities needed at home, except that which "bound" England's power to maintain the workmen who were required to produce them. He even disagreed with Smith that foreign trade might be necessary to provide sufficient outlets for investment.[2] Assuming no hoarding, he wrote:

> "... there is no limit to demand—no limit to the employment of capital while it yields any profit, and that, however abundant capital may become, there is no other adequate reason for a fall of profit but a rise of wages."[3]

1. *Works and Surrespondence of David Ricardo*, Vol. i, pp. 105-109, 150-155, 159-172, 205-214, 243-256, 257-260.
2. Ibid., pp. 294-295.
3. Ibid., Vol. i, p. 296.

He apparently believed that continual improvement in technique would prevent a decline in the long-term productivity of capital as its supply increased. Nonetheless, Ricardo became ever more concerned that investment in capital would be labour-saving and as a consequence bring about short-term unemployment. However, he did not believe in the probability of long-term technological unemployment. I therefore interpret him to mean that, in the long run, the expanding demand for capital would so increase the *total* demand for labour—the amount required to build the capital plus the amount required to use it—that the combined effect of these forces would counteract the tendency toward long-term technological unemployment.[1]

Few men have appreciated more than Ricardo that the problems of importance confronting a nation continually change their character. He knew that if the British economy was to take advantage of its potentialities, fundamental reforms and readjustments were reaquired: free trade, resource mobility, free competition, monetary stability. Not only did he realise that a high level of capital formation was essential for economic growth, but he warned that if its gains were permanently to improve the condition of the poor, the expansion in their number would have to be kept in strict control. He was at pains to point out that the labouring classes, or their legislature, would have to make strong efforts if this were to be achieved.[2] In so far as the intellectual decencies of the time would permit, he expressed himself in favour of birth control.[3]

## III. Appraisal

Ricardo's vision of Britian's early economic development was in the main correct, although the Malthusian principle and to some extent the law of *historical* diminishing returns upon which his *alleged model* rests were not. His prediction in *The Principles* of the form in which diminishing returns in agriculture would manifest themselves was partially incorrect, as were his predictions concerning the demand for goods and capital, the relationship between wages, profits, and probably the course of rents.

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1. *Works and Correspondence of David Ricardo*, Vol. i, pp. 386-397.
2. Ibid., pp. 106-107.
3. Bentham appears to have been the first person to propose birth control

Clearly England's comparative advantage in manufacturing became overwhelmingly strong. The tremendous decline in British export prices from 1798 to 1850 can be attributed primarily to the rapid application of cost-reducing machine methods in textiles, the major export field. In no export industry did prices fall more rapidly than in cottons, where the new techniques were most extensively applied. The decline in export prices resulted also from extensive development in the growth of raw cotton in the United States during the 1820's and 1830's. Cotton costs, however, were only about twenty per cent of the total cost of finished fabrics. Since the price of finished fabrics fell by much more that twenty per cent, the decline in Britain's textile prices must be accounted for principally by the technological revolution.[1]

Thus Ricardo had rightly predicted that England's comparative advantage in manufacturing would be brought about "by the improvements in machinery, by the better division and distribution of labour, and by the increasing skill, both in science and art, of the producers."[2] He had correctly anticipated that for England, at the margin, the gain from international specialisation would exceed the possible gain from more "balanced" domestic growth which might be brought about

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as a measure of economic reform. See J. Bentham, "Situation and Relief of the Poor," *Annals of Agriculture*, Vol. xxix (1797), pp. 442-43. Speaking in Parliament on Wages and Machinery, Ricardo said : "But the people had the remedy in their own hands. A little forethought, a little prudence. . . a little of that caution which the better educated felt it necessary to use, would enable them to improve their situation." *Works and Correspondence of David Ricardo*, Vol. v, p. 303. Cf. also Vol. vii, p. 219, and Vol. ix, p. 18. Among other classical writers, J. S. Mill went further, mentioning the possibility of a comparatively large, discontinuous rise in real income, changing the saving and size of family patterns of the population, and hence inducing a higher rate of economic growth. Cf. John Stuart Mill, *Principles of Political Economy*, W. J. Ashley, ed., London, 1909, pp. 710-724. "...The permanent remuneration of the labourers," he wrote, "essentially depends on what we have called their habitual standard; the extent of the requirements which, as a class, they insist on satisfying before they choose to have children. If their tastes and requirements receive a *durable* impress from the sudden improvement in their condition, the benefit to the class will be permanent." Ibid., p. 719. Cf. also Abraham L. Harris, *Economics and Social Reform*, New York, 1958, Ch. ii, and Joseph J. Spengler, Ch. 000 in this volume.

1. Cf. E. Baines, *History of the Cotton Manufacture*, London, 1835, p. 353, and W.W. Rostow, "The Historical Analysis of the Terms of Trade," *Economic History Review*, 2nd Series, Vol. iv, No. 1 (1951), pp. 59-62.

2. *Works and Correspondence of David Ricardo*, Vol. i, p. 94.

through tariff protection. He espoused more balanced international economic growth even though it meant more "unbalanced" domestic growth. He believed that in a setting of reasonable international equilibrium, free trade would bring about a more efficient use of *both* domestic and international resources, and a more rapid rate of progress of *both* more and less developed economies.

As regards the "law" of historically diminishing returns, the real cost of producing wheat in England (in terms of inputs per unit of output) does not seem to have risen much, if at all, between Waterloo and the adoption of free trade. The price of wheat actually fell during this period, but not as much as that of other commodities.

Diminishing returns in the production of grains appear to have manifested themselves in two ways. First, there was a tendency toward reduced output per unit of input as production expanded and natural resources of lower quality were brought into use. This, however, was not of major significance. Technological advance apparently offset somewhat the deterioration in the quality of marginal agricultural resources as rising output pressed on available land. Much more important was the second impact of diminishing returns: it had the effect of restricting the expansion of crops whose output could be increased only at sharply rising costs. The tendency towards historical diminishing returns revealed itself not so much in absolute lower efficiency but in relatively lower expansion of output. For Britain, in other words, the relative mechanisation of industry had made further expansion of agriculture less profitable than that of manufacturing.

After the repeal of the corn laws, wheat imports increased substantially, but for many reasons there was no sharp drop in wheat prices. The *tendency* for the real cost of producing wheat to rise was checked by the gradual substitution of external for domestic grain supplies. British agriculture was compelled to reorganise and in the process its productivity greatly increased. The contraction of tillage to best soils, technical improvements, increase in the proportion of capital to other inputs, expansion of livestock, dairy and fruit production—all helped to raise productivity.[1] The period between 1846 and the 1870's is known, in fact, as the golden age of British agri-

1. See E. M. Ojala, *Agriculture and Economic Progress*, 1952, pp. 129-153, and Colin Clark, *Conditions of Economic Progress*, 2nd Ed., London, 1951, pp. 225-226.

culture. Throughout these years real wages rose both in agriculture and industry. But the prices of agricultural imports continued to fall relative to money wages, and productivity and real wages in non-agricultural production rose more rapidly than those in agriculture. Consequently, the pressure to economise on labour in agriculture became more powerful. The *efficient* contraction of British agriculture as a proportion of national income freed a comparatively larger proportion of savings for capital formation and thereby contributed to Britain's long-term economic growth.

Developments in agriculture were therefore not entirely in accord with Ricardo's long-term analysis. It must be borne in mind, however, that he was not unaware of the possibility of important qualifications to his general discussion in *The Principles*. Because of fixed capital in agriculture, he observed, output might remain the same—rather than decline—after tariff reductions; and agricultural prices might decline for some time after a war, owing to over-expansion.[1]

With respect to capital, its demand for home use in Britain did

1. *Works and Correspondence of David Ricardo*, Vol. i, pp. 270-272. In the *Essay on Profits* (1815) and *The Principles*, 1st ed. (1817), Ricardo strongly emphasised the fact that England would be obliged "to cultivate at disadvantage our poor lands, if the importation of corn is restricted or prohibited," and that freer trade would bring about lower agricultural prices and rents. See e.g. ibid., Vol. iv, p. 266. In this period Ricardo appears to have been stressing the unfortunate consequences that would result from a failure to abolish gradually the corn laws. However, on October 4, 1821, he wrote to Hutches Trower that if trade were left perfectly free, English growers would be able to compete with those abroad and imports of corn would be only "a few weeks consumption." Ibid., Vol. ix, p. 86. Similarly, in his essay *On Protection to Agriculture* (April 1822), he wrote that freer trade would bring about more steady agricultural prices and this would be to the landowner's interest, although he insisted that rents would be lower as compared to protection. Ibid., Vol. iv, p. 266. Speaking in Parliament on May 9, 1822, Ricardo said: "Nations grew old, as well as individuals: and in proportion as they grew old, populous, and wealthy, must they become manufacturers. If things were allowed to take their own course, we should undoubtedly become a great manufacturing country, but we should remain a great agricultural country also...There would always be a limit to our greatness, while we were growing our own supply of food; but we should always be increasing in wealth and power, whilst we obtained part of it from foreign countries, and devoted our own manufactures to the payment of it." Ibid., Vol. v, p. 180. In this period Ricardo appears to have been stressing that British agriculture would not be gravely affected by the gradual adoption of free trade.

not rise rapidly after the mid-1870's. Domestic net capital formation amounted to approximately 9 per cent of net national product in the 1870's, and declined to approximately 7·5 per cent in the 1880's and 8 per cent in the 1890's.[1] It was indeed a fortuitous historical circumstance that Britain was able to invest much of her excess savings abroad whenever plans to invest at home declined relative to the level of total savings. For, around 1870, an important interrelated phenomenon occurred in Britain: a turning point from a high to a lower rate of capital formation and from a high to a relatively low rate of increase of industrial output. From 1865 to 1875 physical industrial capital per head rose by as much as 35 cent, but the rate of growth of industrial output had already begun to decline. It seems that a disparity developed between the growth in physical capacity to produce of some major industries and the growth of the current output of their mines and factories. Industries had expanded productive capacity beyond the need of current operations. Profits as a *percentage of national income* were lower in 1872, and nearly so in 1873, than in any other year during the period 1871 to 1913. Savings as a percentage of national income reached a major peak between 1872 and 1874, a peak which was not surpassed in the pre-World War I era.

As the rate of growth of industrial output declined in the early 1870's relative to the rate of growth of productive capacity, the net export of capital greatly increased. An examination of the data for the period 1870 to 1895 reveals that in practically every year when the volume of domestic investment fell or remained the same, the volume of foreign investment rose. Both in absolute terms and as a percentage of net national product, Britain's foreign investment and home investment moved in opposite directions over the long period. Recurring declines (and probably reduced elasticity) in the marginal efficiency of capital schedule at home impelled investors to seek better opportunities for the supply of their savings abroad.

Fortunately, as regards the demand for savings, throughout the period 1870 to 1913 foreign investment offered higher returns than most home investment, and the differences in returns were more than sufficient to compensate for extra risk.

One can infer from the evidence that, *inter alia*, the growth of

1. See J. M. Letiche, *Balance of Payments and Economic Growth*, New York, 1959, pp. 253-254 and sources cited therein.

domestic investment as a percentage of net national product periodically generated a rate of growth in income which, in turn, generated a rate of growth in savings (as a percentage of net national product) larger than that of planned investment ; and, at the going or anticipated rates of return, these excess savings could be invested more profitably overseas.

So far as Britain was concerned, it was the same set of domestic forces that often, on the one hand, brought about a reduction in the volume of domestic investment and, on the other, provided the incentives for an expansion in the volume of foreign investment, migration, and exports. The growth in Britain's capital stock would lower the marginal efficiency of capital schedule, as insufficient innovations were introduced to raise it. The returns on capital and expected returns on new investment would thus decline, the growth process be interrupted, full capacity supply be in excess of the total demand for the net national product, output be reduced, and labour become unemployed. Concurrently, with higher levels of return on investment abroad, the decline in the marginal efficiency of capital schedule at home would bring on spasms of foreign lending.

Clearly these developments do not correspond with Ricardo's vision of Britain's long-term economic growth. Although he foresaw the impact of differential rates of productivity growth on the British economy during the first half of the nineteenth century, understandably he could not foresee the way in which continued technological improvements and changing demands would keep altering the relation between its economic development, fixed domestic investments, and resource base, on the one hand, and the composition and direction of its foreign trade and investments, on the other. He consequently could not foresee the emerging importance of rapid flexible adjustments to "wrong" investments resulting from changing demands at home and abroad. In effect, from the middle of the nineteenth centry to the outbreak of World War I, Britain's export of manufactured goods showed a considerable decline as a proportion of her total exports. Britain's most important manufactures -- textiles—began to face increased tariffs abroad at the very time when they were becoming less competitive in world markets. Furthermore, a process of fundamental change took place in the nature of her imports. The proportion of imported raw materials to be used in the manufacture of producer goods increased in comparison with the proportion to be used in the manufacture of consumer goods. Many of the raw materials required to produce new goods which were increasing in world demand either were not produced in Britain or were produced in inadequate amounts, whereas other emerging industrial countries were better supplied domestically with them.[1]

Considering the role of the Malthusian principle in Ricardo's thought, it is not surprising to find that his *customary* analysis of the relationship between agricultural prices and money wages (and hence profits) was incorrect. To wit: between 1815 and 1850 (i.e. including the period before the repeal of the corn laws) the price of grain fell, but contrary to Ricardo's *customary* views money wages remained comparatively stable, and real wages rose.[2] Similarly, in the second half of the nineteenth century, the causal relationships between British agricultural prices, money wages, and real wages were not those predicted by Ricardo. It was the rise in productivity of labour and capital in industry as well as in agriculture—usually, but not always, associated with capital accumulation and fluctuations in terms of trade—that was chiefly responsible for the rise in wages and profits. Ricardo's basic vision of Britain's economic growth, say until about 1870, was

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1. After returning from a tour on the Continent in 1822, Ricardo wrote to Hutches Trower that he had previously held an exaggerated view of the wealth and greatness of England, "which is slowly subsiding to a more sober and just estimate." *Works and Correspondence of David Ricardo*, Vol. x, p. 197. He did not foresee, however, that possible difficulties of adjustment might arise as a result of the industrialisation of western Europe, believing that the process of economic growth would be a comparatively smooth phenomenon. Ibid., Vol. ix, p. 246. As to his views on the role of capital exports in Britain's economic growth, he wrote: "It can never be allowed that the emigration of capital can be beneficial to a state." Ibid., Vol. iii, p. 269; see also Vol. iv, p. 16, note.

2. Although Ricardo believed that the price of food "regulates" the rate of wages, he did not believe that a decline in the price of food would necessarily bring about an *equivalent* decline in money wages. As we have had occasion to observe, with a healthy agriculture and/or the free importation of corn, he maintained that real wages could rise permanently as long as the accumulation of capital increased more rapidly than the supply of labour. See e g. Ibid., Vol. ii, p. 98, note. However, Ricardo's basic theoretical explanation of the determinants of wages was, of course, erroneous. For some evidence on the actual trend of prices and wages, see T. S. Ashton, "The Standard of Life of the Workers in England, 1790-1830," *Journal of Economic History*, Supplement ix, 1949, pp. 19-38; A.D. Gayer, W. W. Rostow, A. J. Schwartz, and I. Frank, *The Growth and Fluctuation of the British Economy*, Oxford, 1953, Vol. ii. pp. 625-626, 950; and W.W. Rostow, *British Economy of the Nineteenth Century*, New York, 1948, Chs. I-IV.

substantially validated, but to some extent at least by way of different *modus operandi*.

Rent per acre generally did not fall in England after the repeal of the corn laws. But this may not have been inconsistent with Ricardo's analysis, for his formulation ran in terms of rent per unit of labour and capital, not per acre. As to the Malthusian principle *per se*, comment here is probably unnecessary,[1] except to notice that Ricardo did not lay stress on the decline in death rates associated with industrialisation a decline which historically has been of primary importance in the transitional stages of economic development and manifestly is a critical factor today in many newly developing countries. Improved measures in health have rendered it important even in backward areas which have as yet undergone virtually no economic progress.

In discussing economic growth, both Adam Smith and David Ricardo laid great stress on the importance of knowledge, responsible government, protection of private property, social capital, healthy agriculture, entrepreneurial ability, specialisation of labour, technological improvements, capital accumulation, and free trade: in short, on the efficient organisation of the economy through the "correct" allocation of resources by the operation of the pricing mechanism in competitive markets. It is in this way that they primarily analysed problems of growth; as an application of economic principles demonstrating what may, or may not, be done to achieve stated or recognised objectives. Their policy considerations were consistent with their general liberal outlook, and were in tune with the political, social, and business institutions of the time.

Not having an adequate theory of growth, employment, or fluctuations, they did not realise, however, that free trade would not necessarily engender much economic development in some backward economies that were associated with them. But they did realise that economic growth is a unique historical process, usually "unbalanced" and bringing about different problems which required different analysis and solution both in time and space.

Smith, in particular, appreciated the fact that any theory of growth which places great reliance on a few simple relationships does

1. Cf. the provocative discussion by J. A. Schumpeter, *History of Economic Analysis*, New York, 1952, pp. 250-276.

not deserve serious consideration as an explanation of so vastly interdependent a phenomenon. He further recognised that economic development requires not only certain catalysts of growth, but a satisfactory "balance" between egocentered and community-centered incentives for the effective utilisation of economic potentialities.

Among Smith's improtant contributions was his recognition that a new situation had developed as a result of the social and technical advance of his time, in consequence of which a new form of economic organisation was required for its implementation. The restrictions arising from mercantilist discrimination and monopolisation had to be swept away if private enterprise and representative institutions were to help generate economic growth. It was for these reasons that he devoted particular attention to specialisation and technological change, realising that this was the most effective available means of "freeing" resources for further advance.

Ricardo wrote in Smith's tradition, despite the fact that between the appearance of their major works the world had undergone the American, French, and Industrial Revolutions, as well as the Napoleonic wars. It would be surprising indeed, if even when they used similar terminology, the similarity were not more apparent than real. When Smith wrote on "specialisation of labour," he stressed literally the importance of labour. In his celebrated illustration of the manufacture of pins, the focus of attention was on the craftsman ; and in the development of agriculture, on the "improving landlord" and the efficient farmer. Ricardo, on the other hand, dealt to an increasing extent with the problems of capital, for the character of manufacturing had undergone radical change. He discussed specialisation in more general and in somewhat more modern terms ; one of his chapters was in fact entitled, "On Machinery." As the importance of England's foreign trade had greatly increased, and its structure changed, he developed the law of comparative advantage to explain the new emergent form of Britain's *international* specialisation.

Herein, I belive, lies the major contribution of Smith and Ricardo to the analysis of economic growth : a keen perception that new facts and/or new objectives call for a reconsideration of obsolete premises and outworn institutions. But even in the hands of so great a man as David Ricardo, when propositions whose validity merely depended upon certain institutional conditions were assumed to be "selfevident truths," they soon seriously distorted reality. The analytical power and policy implications of "Ricardian economics" so chloroformed a substantial part of the profession that it failed to adjust its thinking to the conditions that were developing in England in the later half of the nineteenth century. If the character of the problems of economic growth had undergone such rapid change during that period, one would expect them to be scarcely recognisable between the age of Smith or Ricardo and that of the present. Nevertheless, most of the issues which they raised are not without contemporary relevance—though nearly always in a different form.

Thus with respect to an impartial system of laws protecting property, newly developing countries are now able to attract considerable public and private investments from abroad to supplement their domestic savings. Regardless of the political complexion of their institutions, failure to protect such "property" from unreasonable discrimination cannot help but adversely affect their credit for foreign capital and, hence, the rate of economic growth.

Concerning the importance of foreign *versus* domestic trade, Smith and Ricardo had occasion to caution that unless there is evidence to the contrary—and research on this problem is long overdue—foreign trade is neither superior nor inferior to domestic trade, as long as each is permitted the dimensions determined by free market forces. Regrettably, some developed countries have displayed a perverse tendency to press their exports artificially, while some under-developed countries have been disposed to exaggerate the importance of certain branches of domestic trade.

Much of the current literature on economic development notwithstanding, there is no fundamental conflict between the tenets of comparative advantage and more "balanced" economic growth.[1] It is true that under-developed countries may at times be caught in a vicious circle. The size of the market depends, *inter alia*, upon productivity, productivity depends primarily upon the amount of capital equipment used in production ; the amount of investment in capital equipment

1. Interesting facets of this problem are analysed by Ragnar Nurkse, *Problems of Capital Formation in Under-developed Countries*, New York, 1953, Chs. 1 and 2 ; Albert O. Hirschman, *The Strategy of Economic Development*, New Haven, 1958, Chs. 1, 3, and 4; and Tibor Scitovsky, "Growth—Balanced or Unbalanced," in *The Allocation of Economic Resources*, Essays in Honor of Bernard F. Haley, Moses Abramovitz, ed., Stanford, 1959, pp. 207-217.

depends upon the size of the market and its expected growth. Consequently, a limited market, an insufficient inducement to invest, and low productivity may be inextricably linked to one another. In such cases, only by moving forward on a broad front can the market be enlarged, risk reduced, incentives to invest in training and equipment at home increased, and higher productivity stimulated. This approach, however, is not inconsistent with a dynamic conception of the law of "comparative cost" or "comparative income," given the economic horizon relevant to the decisions of private firms or planning agencies.

Smith and Ricardo discussed economic growth in terms of historical evolution, viz. as a complementary process of interdependent development which was assumed to have long been under way. It occurred primarily under the aegis of private initiative, though with much government prodding of the mercantilist variety. For England and many other Western countries—especially the United States—this outlook on economic growth has not been misleading, for they have been well supplied with private industrial and financial leadership capable of, and motivated toward, economic progress. Many newly developing countries have not been so fortunate; hence they require much more initiative on the part of governments to induce economic development. For this very reason the emphasis of the classical economists upon the need for a stable, responsible government has become markedly more relevant to the under-developed economies of the present time than it was to England and of France 150-175 year ago.

But are there any legitimate misgivings to which classical traditions and democratic institutions give rise? The answer is an emphatic affirmative. Under-developed countries will be greatly influenced by the respective performances of representative and authoritarian institutions. The strong emphasis placed by classical economists on free economic and political procedures created in the Anglo-American literature an ideological bias against understanding the nature of authoritarian, especially Communist, regimes. For an amazingly long period distinguished economists believed that such regimes would be unable to organise their economies efficiently. We now face a danger which stems from the persistence of the same tradition, viz. failure to appreciate the sufficiently overriding importance that these regimes give to releasing the forces of technological advance, a drive which has virtually nothing to do with their ideological dogma. These regimes are in fact better geared than are the democracies to make the necessary capital outlays for research in pure science, technical training, educational and "cultural" activities.

This poses a challenge for our age that strikes at the very roots of classical fundamentals. Smith and Ricardo painstakingly stressed that capital accumulation, viewed at present as investment in the human agent, natural resources, and reproducible capital, is a key factor in economic growth. It is an open question, however, whether the democracies will be able to increase adequately their rate of capital formation and economic growth. To be sure, the classical writers never considered economic growth as an end itself, and repeatedly used the terms "economic growth" and "progress" interchangeably. Growth in per capita levels of well-being was considered to be indispensable to growth in human dignity. Economic growth was never confused with growth in national power or aggrandisement, to say nothing of the individuals' right to question and challenge the objectives and policies of government. By usually analysing economic growth in terms of long-run equilibrating mechanisms—assuming an ultimate approach toward the stationary state—the classical economists believed in general that with increased population mass poverty was inevitable. The essence of the process of growth is now considered to be cumulative expansion—assuming that all parameters become variables—and in practice mass poverty is considered intolerable.

The problem is whether we shall be able to adjust anew the discrepancies which have arisen between the social aspirations and technical advances of our time, and obsolete premises and institutions that require change. There is no need to belabour the issues as stake or the uncertainty of the out come ; but if we succeed, the achievement will surely be in the philosophical spirit of Adam Smith and David Ricardo.

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