

MARX, MALTHUS, AND THE CONCEPT OF NATURAL RESOURCE SCARCITY

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Economics is the study of how men and society choose ... to employ scarce resources...

Paul A. Samuelson
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Scarcity: An Introduction

Nothing seems more obvious than the category of resource scarcity. Specifically, it is presented as a measure of the availability of the materials with which we fashion our lives. Like physiography or climate, it appears to be a reflection of the nature-given conditions of production. Consequently, it is presumed to be devoid of any social content (see, e.g., Smith, 1978, p. 284-89). In fact, the meaning and emphasis of scarcity has changed dramatically over the years in response to altered social conditions. This essay attempts to chart the changes that occurred between the publication of Malthus's Essay on Population and Marx's Capital in order that we can begin to make the social content of scarcity more explicit.

Although the two books we will be using as benchmarks are probably the two most influential works in political economy--with all due respect to Adam Smith--no two books could be more unlike. Capital was the product of decades of methodical study. Marx wanted to read what everybody else wrote. (2) Malthus, intentionally or not, wrote what everybody else wanted to hear--at least those who could afford books. His pamphlet was hastily composed in response to a family conversation and with only three or four books on hand. Yet Malthus was immediately recognized as a leading authority in economics. Marx, on the other hand, had to call upon Engels to write reviews to rouse interest in his work. (3) Most important of all, Marx worked tirelessly to hasten social revolution; Malthus did all he could to stem its tide.

In Malthus' age, the concept of scarcity was painfully simple; it was synonymous with a shortage of food (see, e.g., Burke 1795). Malthus proposed that food increases according to an arithmetical progression, while population increases geometrically. The empirical basis of his theory was slim indeed, consisting mainly, as Wesley Mitchell has noted, of a "rapid increase of population in several countries" (Mitchell, 1967, p. 243n). Although he tried to shore up his argument with more data in subsequent editions, his main interest was not factual but ideological.

Malthus was writing when almost all of well-to-do England live in constant horror of the egalitarian principles of the French Revolution. One of the solitary exceptions was William Godwin. (4) Malthus' father, a close friend of both Hume and Rousseau, was one of the few who supported Godwin's belief in the perfectibility of individuals as well as societies. Malthus's response to his father was the pamphlet on populations, published in 1798. Its intellectual content was not novel, however. For example, thirty-seven years earlier, Adam Smith's friend the Reverend Robert Wallace published Various Prospects of Mankind, Nature and Providence, in which he asked whether communism might not benefit society; he concluded that such a society would create a rate of population growth excessive enough that all would be dragged down into grinding poverty. Godwin subsequently answered the arguments of Wallace with a description of the vast expanses of scarcely populated lands and predictions of a more developed rationality which could guide society in regulating its numbers. (5)

The success of Malthus' pamphlet was enormous. Even Godwin himself had to admit that it converted his supporters--who were few enough to begin with--by the hundreds (Mitchell, 1967, p. 253). Only two years be-

fore the pamphlet appeared, the Prime Minister of England, William Pitt, had proposed making welfare payments proportional to family size in order to stimulate population growth (Mitchell, 1967, p. 253). Such ideas often appear during wars when large families promise more soldiers in the future. (6) Yet once Malthus' work became known, Pitt withdrew his scheme in deference to him. Others drew more extreme conclusions. For example, an anonymous pamphleteer, writing under the name Marcus, called for the painless killing of all working class children born to families that had already burdened the world with two offspring (Engels, 1844, pp. 218-219). Malthus' pious disciple, Reverend Thomas Chalmers, proposed that all funds currently intended for relief of the poor be redirected to the building of churches.

In reality, Malthus' ideas prevailed neither by virtue of their merit nor of their originality, but rather by their timeliness. The revolutionary changes in English agriculture and industry were eliminating traditional forms of employment faster than new industries could create alternative employment, producing an apparent "population surplus" and attendant poverty (see, for example, Cowherd, 1977, p. xi). At the same time, the relative surplus population created a huge burden of poor relief. Because relief only seemed an unnecessary expense to the bourgeoisie and also appeared to reduce the necessity to accept employment in the "dark satanic mills" of the industrial revolution, the Poor Laws came in for considerable criticism. In the process, "...the Malthusian controversy, which had begun as an abstract discussion as to the possibility of a successful communism, more and more degenerated into a wrangle about Poor Law administration" (Buer, 1927, p. 148).

The concept of scarcity as it appeared in the ideological struggle about the poor laws was very crude, so Malthus' simplistic formulation served admirably as a political weapon. Malthus proved to the satisfaction of the ruling classes that they had no responsibility for the existing state of affairs. They were not about to raise questions about subjects such as the effect of private property on the availability of resources; it was enough for them that Malthus showed that "...the real cause of the continued depression and poverty of the lower classes of society was the growth of population" (Malthus, 1800, p. 25). Who among the ruling classes would question the doctrine that the road to salvation lay not in furthering the struggle between classes but in eliminating the lust between sexes? The Reverend Malthus conveniently absolved all members of the parish of capital. The poor are, Malthus told his contemporaries, "the arbiters of their own destiny; and what others can do for them is like dust in the balance compared to what they can do for themselves" (Malthus, 1820, p. 262). Subsequent to Malthus, all plans for improving

the status of the poor were judged according to their likely effect on population growth. (7)

Malthus actually never went quite as far as others in his fanaticism. In fact, his work had an air of cynical practicality about it. Unlike his contemporary disciples, Malthus never accepted the limitations of population as an end in itself. The actual position Malthus settled upon in his successive writings was that an appropriate rate of population growth was one consistent with the needs of capital. As early as the first edition of the Essay Malthus showed doubts in strict population control by his implicit opposition to contraception in his comments on Condorcet. By the fifth edition, he had become much more straightforward. He condemned "artificial and unnatural modes of checking population," not only on the grounds of their "immorality," but also on "their tendency to remove a necessary stimulus to industry" (Malthus, 1817, iii, p. 393). By the sixth edition, the good parson was so emphatic on this point that he even seemed to prefer prostitution to birth control (Malthus, 1826, p. 294; see also Winch, 1965, p. 59).

In other words, Malthus recognized that poverty made the working class more willing to submit to wage labor (see Glass, 1953). Abstract principles allowed him to adopt a cover of scientific objectivity while his actual policy recommendations were tailored to the more immediate needs of capital. Later, in his Principles of Political Economy, Malthus was quite clear on the economic impact of population control: "prudential habits, among the labouring classes of a country mainly depending upon manufactures and commerce, might ruin it" (Malthus, 1820, p. 221). Only the purist J.B. Say seemed to notice the anomaly between this and the principle of population as originally enunciated (Say, 1821, p. 30).

Malthus's cynicism may have gone even deeper. According to Robert Owen, Malthus gave indications in private conversation of a lack of faith in the population doctrine altogether (Owen, 1857, p. 104). (8)

Malthus's downfall came with his attempt to move beyond revising the Essay to formulate a more comprehensive theory of economics. In this project, the objects of study had changed considerably. He set out to explain gluts and the falling rate of profit; Corn Laws were given as much emphasis as Poor Laws. His explanations had also changed: underconsumption was given a prominence equal to overpopulation and work discipline. The changing concerns of Malthus mirrored the altered circumstances of the post-Napoleonic period of economic stagnation. Consequently, he turned his attention from the problem of scarcity to the problem of abundance. (9) In so doing, Malthus hoped to avoid much of the conflict developing between the ruling classes by merging the interests of capital and

the landed gentry. In Marx's words, "Malthus wants bourgeois production as long as it is not revolutionary, constitutes no historical factor of development, but merely creates a broader and more comfortable basis for the old society" (Marx, 1971, Part 3, p. 52).⁽¹⁰⁾ This goal, however, was both theoretically and politically untenable.

To his scholarly contemporaries, Malthus's new work appeared to have lost all sense and internal coherence. Raw theory seemed mixed up with eclectic empiricism. In the eyes of one of the more perceptive critics, Robert Torrens, Malthus "possesses in a very eminent degree the faculty of observing particular phenomena, but is somewhat deficient in that power of analysis which distinguished between coincidence and necessary connexion, and enables us to trace cause and effects" (Torrens, 1821, p. iv).

Contrary to critical opinion, however, the economic analysis underlying the seemingly contradictory Malthusian doctrines of overproduction and overpopulation can be reconciled. According to Malthus, the main source of new production was to be a decrease in the indolence of the working class.⁽¹¹⁾ Consequently, scarcity was not seen by him as a constraint to accumulation. Rather, the cause of stagnation was considered to be underconsumption.

The theory of population was then called upon to explain why the working class could not be utilized in the fight against abundance. High wages cannot provide a permanent increase in demand for manufactured goods because their impact would be translated into a higher birthrate, which would only lead to a greater demand for food. The only hope for the capitalist class, therefore, lay in the existence of a class of unproductive consumers -- namely, the aristocracy -- who would not dissipate their potential demand in the creation of more children.⁽¹²⁾

What particularly irked the cognoscenti of political economy was Malthus' adoption of the Sismondian heresy of overproduction.⁽¹³⁾ His association with a theory which called the rationality of the market as well as capital into question severely diminished Malthus' authority. As a result, the only British periodical which took any note of his economics text was the obscure British Critic, which became an exclusively theological journal within a few years. The second edition drew even less attention (see Paglin, 1968, p. i).

Ricardo

Subsequently, capital turned from the heretical Malthus to David Ricardo, an economist with the "scientific ruthlessness" necessary to promote its interests vigorously (Marx, 1971, Part III, p. 52; see also Harvey, 1974, and Mitchell, 1967, i, p. 363). Here was a theorist who promised to be more

Malthusian than Malthus.⁽¹⁴⁾ Overproduction was rejected as a problem and scarcity was once again pushed to the forefront. In this endeavor, Ricardo gave economic content to the category of scarcity by focusing his attention on its impact on the rate of profit.

In spite of his stern image of ideological purity, however, Ricardo was no more above practical concerns than Malthus. On the one hand, he stridently denounced the Poor Laws in terms of their encouragement of overpopulation. On the other hand, his equally energetic attack on the Corn Laws was motivated by his concern that the resulting high price of food choked off a rate of reproduction adequate to capital's increasing demand for labor power (see Ricardo, 1951, I, pp. 108-109, and Hollander, 1977, p. 12). Nonetheless, Ricardo displayed a remarkable degree of intellectual honesty, especially in his private correspondence. For example, in a letter to Place, he remarked that it is

inferred that under a system of equality, population would press with more force against the means of subsistence than it now does. This I believe is not true. I believe that under such a system, mankind would increase faster than it now does, but so would food also... On this are raised all Mr. Owen's speculations (Ricardo, 1951, IX, pp. 49-50).

Ricardo's reign was short-lived, however. His analysis of capital was insufficiently flexible to deal with the day-to-day needs of economic administration (Gordon, 1977). Furthermore, the depth of his penetrating analysis of capital aided representatives of the working class in their efforts to understand the prevailing mode of production. The conclusions they drew as a consequence of Ricardo's analysis made capital uncomfortable. By 1830, less than a decade after the Principles established Ricardo's authority, economics had been purged of its unsettling Ricardian elements (Marx, 1977, Afterword; and Meek, 1967 and 1976).

The economic theory which appeared thereafter was a sanitized derivative from Ricardo and Malthus. The mechanistic tendencies of Ricardo were combined with a Malthusian utility-based value theory cleansed of its Sismondianism.⁽¹⁵⁾ At the same time, the Ricardian emphasis on classes gave way to theory of individual transactions; concern with distribution gave way to allocation; production gave way to consumption; questions of growth to those of status. One element common to both Malthus and Ricardo did remain intact, however: scarcity was represented as a natural condition of society.⁽¹⁶⁾

The new economics, or neoclassical economics as it came to be known, owed much to Malthus's little pamphlet. Its tone as well as its scope was distinctly Malthusian. For

example, within the lifetime of Marx, Jevons defined "the problem of economics" thus: "Given a certain population with various needs and various powers of production, in possession of certain lands and other sources of material. Required the mode of employing labor which will maximize the utility of the produce" (Jevons, 1970, p. 254, emphasis in original). Not surprisingly, these words are found in his section on "The Doctrine of Population." Samuelson's interpretation of the function of economics, quoted at the beginning of this paper, illustrates how little economics has changed over the intervening one hundred years.

Marx and Malthus

Considering Marx's usual practice of providing an exhaustive critique of the fallacious doctrines of political economy, his analysis of Malthus' theory of population was remarkably brief. Except for the references to its ahistorical nature (Marx, 1977, Chapter 25, Section 3, and Marx, 1974, p. 608), he did little to confront it directly. Nevertheless, the specter of Malthusian scarcity haunted Marx. Of Malthus' "libel on the human race," he said, "if this theory is correct ... socialism cannot abolish poverty, which has its base in nature, but can only make it general, distribute it simultaneously over the whole of society" (Marx, 1875, p. 23). (17) Marx, then, apparently put more weight on the subject than the extent of his critique might suggest. In the "Afterword" to his second edition of Capital, for example, he took the trouble to mention that a favorable reviewer praised his stance on the question of population (Marx, 1977, pp. 101-102).

Marx knew that the problems of population and scarcity, as well as environmental abuse, could best be solved by socialism (Perelman, 1975; see also Marx and Engels, 1975, p. 315), yet any detailed examination of the particulars of socialist society was consistently avoided by both Marx and Engels; it would only have opened them up to endless nitpicking by their opponents, both within and without the socialist movement. Engels described his attitude on the subject in a letter to Kautsky:

Even though the Katheder-Socialists persistently call upon us proletarian socialists to tell them how we can prevent overpopulation and the consequent threat to the existence of the new social order, I see no reason at all why I should do them the favor. I consider it a sheer waste of time to dispel all the scruples and doubts of those people which arise from their muddled superwisdom, or even to refute, for instance, the awful twaddle which Shaffle alone has compiled in his numerous big volume (Marx and Engels, 1975, p. 315).

Among German socialists the question of population was especially touchy, since Lasalle had incorporated Malthusianism as a dogma of the General Association of German Workers. Lasalle reinforced the hold of Malthusianism by his invention of the term "the Iron Law of Wages" (see Marx and Engels, 1975, p. 161, and Marx, 1875). (18) These political considerations undoubtedly contributed to Marx's reticence to launch an all-out attack on the law of population. (19)

Marx and Population

The stance Marx adopted toward the law of population can be briefly summarized. In the first place, Marx emphasized that "[a]n abstract law of population exists only for plants and animals and even then only in the absence of any historical intervention by man" (Marx, 1977, p. 784). Nevertheless, population does exert a large influence in those societies in which the powers consciously to affect the environment were largely underdeveloped (see, for example, Marx, 1974). As society develops the means to manage its environment more effectively, however, the growth of population and its impact comes to be determined more and more by social relations.

Under the capitalist mode of production, an historically specific "law of population" comes into play, one which is bound up with the prevailing social relations of production. In the process of capitalist development, a "relative surplus of population," or "industrial reserve army," is produced and reproduced through destruction of traditional methods of production, mechanization, and industrial crisis (Marx, 1977, Chapter 25). The apparent "overpopulation" which then arises is relative not to natural conditions or food supply, but to the needs of capital accumulation. That is, capital requires a reserve army of labor power on which it can draw quickly and easily, and which acts to hold the pretensions of the working class in check. Scarcity in this context is scarcity of employment owing to the concentration of the means of production under a small class of capitalists operating according to the logic of profit and competition.

Marx also discussed at some length the sorry history of Ireland, the prime case of the populationists for a Malthusian crisis of overpopulation. The latter prescribed depopulation as the only solution to Irish difficulties. Marx, on the other hand, showed that the massive exodus of people following the potato famine not only did not improve conditions but actually paralleled a substantial decline in the standard of living below that which prevailed before 1846 (Marx, 1977, p. 864). The depopulation of Ireland, he argued, was neither natural nor in the interests of the Irish, but rather an intentional process by which the (largely absentee) landlord class transformed the island back

from a wheat-producing area, protected by the Corn Laws from foreign competition, to a land of sheep-walks now that the era of Free Trade had dawned in England (Marx, 1977, Chapter 25, Section IV).

Marx and Natural Resource Scarcity

Marx does not treat scarcity as an independent category, but in relation to the mode of production, i.e., to the historically specific set of relations and forces of production, distribution, consumption, and so forth. The role of natural resources must be seen within this context. In this respect, classical political economy proved itself to be vacuous. Thus, for example, Marx chided Ricardo, who penetrated the veil of the bourgeois world in many ways, but "took refuge in organic chemistry" when he came to the issue of scarcity.(20)

We should not be surprised that in the topsy-turvy world of ideological distortion Marx has been singled out for his lack of recognition of the importance of resources. In a widely circulated article on Marx by Paul Samuelson, we find Marx charged with ignoring "the patent fact that natural resources, too, are productive" (Samuelson, 1957, p. 894). Such nonsense is based upon a naive confusion of value and use-value. This distinction is made quite clearly in the very first chapter of Capital. There and elsewhere Marx insisted: "Labour is not the source of all wealth," arguing that "[n]ature is just as much the source of use values" (Marx, 1970a, p. 13). Marx unambiguously defined the labor process as the transformation of nature ('natural resources' in contemporary parlance into objects of utility for human beings (Marx, 1977, Chapter 7).

Marx was well aware of the importance of natural resources and of the conditions under which they were secured. At the time Capital was written, he observed that raw materials, especially cotton, made up "the most important element in all branches" other than wages. (Marx, 1967, 3, p. 117). He continually stressed the fact that the production process depends upon the continued flow of raw products and raw materials (Marx, 1974, p. 728). The social importance of primary materials, however, depends upon the development of the mode of production. In the early stages of society, primary products cost little effort because "...nature...assists as a machine" (Marx, 1968, Part 2, p. 109; see also Marx, 1967:3, pp. 360-61 and 745 as well as Marx 1974, p. 588). Eventually, both more labor and more means of production must be applied to the production of primary products. As Marx observed:

(When) in the course of development, a larger output is demanded than that which can be supplied with the help of natural powers, i.e. ... this addition-

al output must be created without the help of this natural power, then a new additional element enters into capital. A relatively larger investment in capital is thus required in order to secure the same outputs (Marx, 1967:3, p. 745).

That is, an increasing proportion of social labor must be applied to the production of primary materials. This is caused, in part, by improved technology which diminishes the portion of social labor used in the production of machinery (Marx, 1967:3, p. 109) and, in part, by the expanding labor requirements of the raw materials sector.

The rapid growth in demand for raw materials generated by capitalist growth could, however, lead to problems of scarcity, owing to an inability to develop labor productivity as rapidly in the primary sector as in the rest of industry. As Marx observed, this imbalance would show up in prices:

It is therefore quite possible, and under a developed system of capitalist production even inevitable, that the production and increase of that portion of constant capital consisting of fixed capital machinery, etc. [measured in physical terms, M.P.] should considerably outstrip the portion consisting of organic raw materials so that the demand for the latter grows faster than the supply, causing their price to rise" (Marx, 1967:3, p. 118).(21)

Ernest Mandel adds that in the 1860s, while Capital was being written, the prices of important raw materials reached their highest point since the Napoleonic wars (Mandel, 1975, p. 58 n.).

Such increasing natural resource costs are frequently cited as proof of the operation of the law of diminishing returns. But Marx interpreted the same phenomena rather differently; he saw it as evidence of the barrier posed by capitalist social relations which prevent society from taking full advantage of its natural resource base. He emphasized that:

Capitalist production has not yet succeeded and never will succeed in mastering these (organic) processes in the same way as it has mastered purely mechanical or inorganic chemical processes. Raw materials such as skins, etc., and other animal products become dearer partly because the insipid law of rent increases the value of these products as civilizations advances. As far as coal and metal (wood) are concerned, they become more difficult as mines are exhausted (Marx, 1971, Part 3, p. 368).

Scarcity shows up, therefore, not simply because of natural shortages but because of the inability of capitalism to utilize nature effectively. This is particularly true with respect to the biological processes involved in agriculture. (22)

Marx and Agricultural Progress

Much of Marx's attention was focused upon agriculture. Indeed, he chided Ricardo for ignoring the importance of agriculture as a supplier of raw materials (Marx, 1974, p. 640). Marx's general position was that, although land can be improved and, more generally, human potential is unlimited (Marx, 1968, Part 2, pp. 144-45, p. 595), the social relations of capital stood in the way of agricultural progress. (23) He made the sweeping observation that:

The moral of history...concerning agriculture...is that the capitalist system works against a rational agriculture, or that a national agriculture is incompatible with the capitalist system (although the latter promotes technical improvements in agriculture), and needs either the hand of the small farmer living by his own labour or the control of associated producers (Marx, 1967:3, p. 121).

Marx did not come by this conclusion casually. He was extremely well read in organic chemistry. He had taken copious notes on Liebig, Johnston and others who detailed the problems of soil exhaustion (see Marx, 1974, p. 754 n.). His verdict was that capitalist agriculture "leaves deserts behind it" (Marx and Engels, 1942, p. 237). His section on "Modern Industry and Agriculture" in the first volume of Capital reads like some of the best literature from the modern environmental movement. The destruction of the land by mindless profit-seeking bourgeoisie represented, for Marx, "another hidden socialist tendency" (Marx and Engels, 1942, p. 237).

Thus, while the accumulation of capital facilitates society's mastery of the forces of nature, the social relations of capital create tendencies which make for an irrational treatment of resources. As early as The German Ideology, Marx and Engels recognized environmental abuse and pollution to be reflections of contradictions in capitalist society (Marx and Engels, 1970:1, pp. 46-47). For instance, the capitalist, with his fear of making long-term investments, avoids sinking money in long-term improvements in forestry (Marx, 1967:2, p. 235) and soil conservation (Marx, 1967:3, p. 617). Furthermore, the capitalist's sole interest in producing profit for the account of the individual firm blinds him to the totality of natural processes. As Engels warned:

Let us not, however, flatter ourselves overmuch on account of our human vic-

tories over nature. For each such victory nature takes its revenge on us... (Engels, 1876, pp. 74-75).

Marx commented particularly that English agriculture was considerably less successful than it appeared to be. Outlining the history of English agriculture, he noted:

The old English industry -- the main branch of which was the woolen industry ... was wholly subordinated to agriculture. Its chief raw material was the product of English agriculture. As a matter of course, therefore, this industry promoted agriculture. Later, when the factory system proper developed, already in a short space of time the necessity for custom duties on corn began to be felt. But they remained nominal. The rapid growth of the population, the abundance of fertile land which had yet to be made cultivable, the inventions, at first, of course raised also the level of agriculture. It especially profited from the war against Napoleon, which established a regular system of prohibition for it. But 1815 revealed how little the "productive force" of agriculture had really increased (Marx, 1975, p. 289).

Later, in Capital, Marx maintained that the rate of surplus value was unaffected by the increasing difficulty in producing foodstuffs during the period 1799 to 1815 only because real wages fell while labor was forced to work longer hours at a more intense pace (Marx, 1906, p. 579; and 1968, Part 3, p. 408). (24) Until the last years of his life, Marx continued to stress that an agricultural crisis threatened the "'apparently' solid English society" (Marx and Engels, 1975, p. 298). And, more than a half-century before the events of 1917, he wrote to Engels:

The more I get into this crap, the more I am convinced that agriculture reform ... will be the alpha and omega of the coming revolution. Otherwise Parson Malthus would be correct (Marx and Engels, 1976, p. 314).

Cotton and Scarcity

Many of Marx's references to the increasing difficulty of raw material production referred to cotton. (25) In fact, many of his discussions of the rising organic composition of capital relied on the example of cotton (see, for example, Marx, 1971, Part 3, Chapter 23; and Marx, 1974, pp. 771ff.). The importance of cotton for Marx's own political environment was also enormous. According to Riazanov, the First International resulted from the crisis precipitated by the curtailment of cotton exports from the United States during the Civil War (Riazanov, 1973, pp. 140-141; see

devoted only one section of the third volume of Capital to the cotton scarcity (Marx, 1967:3, Chapter VI, Section 3), he earlier referred to "the key industrial raw material, cotton" (Marx and Engels, 1850, p. 282) and the period in which he wrote as "the cotton age" (Marx and Engels, 1858, p. 292; cf. Hobsbawm, 1968). Not only were cotton fabrics the major product of English capitalism of Marx's time, but the cotton industry took the lead in introducing the giant factories which characterized modern technology for Marx.

Marx did not see any major improvements in cotton production. Supply increased because of an "expansion of production in one place and in another importation from remote and previously less resorted to, or entirely ignored, production areas" (Marx, 1967:3, p. 119). For Marx, the example of cotton clearly illustrated the manner in which a particular mode of production may inhibit technical progress (see, for example, Marx, 1977, pp. 303-4 and Genovese, 1967, esp. Chapter 2). Reference to cotton thus reinforces Marx's general case about the limits of capitalist agriculture and the way in which industrial demand outstripped raw materials supply under this mode of production. (26)

Resource Scarcity and Capital

The social relations of natural resource scarcity were uppermost in Marx's analysis, and the principle relation which he sought to elucidate was that to capital. So far we have discussed the way in which capital generates natural resource scarcity. But equally important is the impact of resource availability on capital and the accumulation process. On the one hand, cheap raw materials present themselves as a natural fertility of capital. On the other hand, high raw materials prices threaten to hinder accumulation. In fact, Marx had originally intended his critique of Malthusian rent theory to show "how the price of raw materials influences the rate of profit (Marx and Engels, 1942, p. 242). Under the unplanned capitalist economy, a decline in the profit rate may follow short-run increases in raw material prices, with serious consequences for accumulation:

If the price of raw materials rises, it may be impossible to make it good fully out of the price of commodities after wages are deducted. Violent price fluctuations, therefore, cause interruptions, great collisions, even catastrophies, in the process of reproduction (Marx, 1967:3, p. 117).

In other words, the scarcities of certain natural resources which periodically appear and often persist--for reasons such as those noted by Marx--must be seen in terms of their effects or profits, accumulation

Conclusion

Observations of raw materials shortages, soil erosion, rising food prices, or apparent overpopulation elicited a consistent political and methodological response from Marx. What appears as a "Malthusian problem," is, in reality, a reflection of a contradiction within capitalist society. Unemployment or poverty cannot be reduced to natural laws. Furthermore, such phenomena must not be merely interpreted in terms of human suffering or devastation of nature or even irrationality; they reveal fundamental weaknesses in capitalist society. For example, a rise in raw material prices was one of the preconditions of Louis Napoleon's coup in France (Marx, 1970b, p. 287). Marx attempted to teach that the "ever growing wants of the people on one side" and "the ever increasing price of agricultural produce on the other" offered an excellent opportunity to organize for the nationalization of the land (Marx, 1970c, p. 289). Marx attempted to seize upon such contradictions in order to further social progress. (27)

To carry on with this project is no mean task. It is made no easier by the methodological tools with which we have saddled ourselves. Terms such as scarcity, shortage or depletion conjure up images of technical needs. They suggest that if only we had more oil or better methods for handling resources, then problems would disappear. This perspective leads us in circles. Each new technique is followed by new problems and new techniques.

Marx attempted to forge a new set of categories so that we could learn to use these 'Malthusian problems' for the betterment of human society (cf. Harvey, 1974). In place of overpopulation, he taught us to see the reserve army of the unemployed. Instead of allowing us to become bogged down in concepts of resource scarcity, he demanded of us that we grasp the social content of each situation. Marx's distinction between "historically developed" and "naturally conditioned productive forces" illustrates the manner in which 'natural' and organizational phenomena are bound together (Marx, 1977, p. 651). The frequency with which he used examples of natural resource scarcity when explaining the organic composition of capital suggests another methodological alternative to the concept of scarcity he may have had in mind. His work was never completed. It is left to us to carry on.

FOOTNOTES

*Dick Walker merits much credit for his extensive editorial assistance.

(1) Samuelson's definition is a paraphrase

- of that of Lionel Robbins, (1966) for whom economics is "that science which studies human behavior as a relationship between ends and scarce means which have alternative uses."
- (2) Engels chastized Marx on this account (see Engels, 1851 and 1860).
- (3) On this literature see Avineri (1967) and Urena (1977) although Fay (1978) proves that both of these authors were incorrect in their assumption that Marx wished to dedicate Capital to Darwin.
- (4) Godwin's remarkable family included Mary Wollstonecraft (his wife), Mary Shelly (his daughter and author of Frankenstein), and the poet, Shelly (his son-in-law).
- (5) This paragraph very closely follows the argument of Wesley Mitchell, 1967, pp. 239-41. See also Glacken, 1967.
- (6) Indeed, the Whigs were busy censuring the Tories for daring to engage in war with a country as populous as France (Cowherd, 1977, p. 19).
- (7) The Law of Population had the additional merit of proving that Poor Relief only compounded the problem of overpopulation and should be safely restricted for this reason.
- (8) Perhaps more interestingly, his wife, who bore him numerous children in spite of his vows of celibacy (Keynes, 1963) (perhaps to lend empirical support to her spouse's theories) consistently argued against him in discussions concerning those theories (Owen, 1857, p. 104).
- (9) The category of abundance must be treated as carefully as that of scarcity. We are not dealing with an abundance of goods but only the glutting of markets. No such category can be divorced from social relations.
- (10) Malthus's analysis anticipated the essential features of the popular two-sector development models which were used during the 1960's to recommend harmonious development in the less developed countries (see, for example, Jorgenson, 1961).
- (11) Thus lending support to the thesis of Marglin, 1974.
- (12) In effect, Malthus proposed two laws of population, one for the rich and the other for the poor (Harvey, 1974).
- (13) "Adoption" may be too polite, according to Marx, who judged that Malthus plagiarized his theory of population from other sources. (See, for example, Marx, 1968, Part II, p. 155,
- and 1977, pp. 639 and 766.) Sismondi graciously wrote of "the principles espoused by Malthus and myself" (Sismondi, 1971, p. 345).
- (14) Ricardo's adoption of a strict subsistence-wage theory, regulated by the law of population, was so mechanical even Malthus was moved to complain. (Harvey, 1974, p. 263).
- (15) For Malthus, value was measured in terms of the amount of labor for which a commodity would exchange. This quantity depended upon the effective demand for the commodity. Strictly speaking, utility-based value theory came later; however, the distance between Malthus's theory and what followed was insignificant.
- (16) In the works of both Ricardo and Malthus, the impact of scarcity could be reduced by technical improvements. The social conditions which make resources effectively scarce to people is all but absent in Ricardo although a generous reading of his critique of the Corn Laws and occasional remarks such as are found in the letter to Place cited above can reveal some traces of the effects of social organization of scarcity.
- (17) Alfred Marshall noted that Aristotle made a similar objection to Plato's communistic utopia.
- (18) In England, socialists were less inclined to accept Malthus's doctrines (D'Arcy, 1977). In general, however, socialist objections to populationism have not excluded their willingness to accept that regulation of numbers may be beneficial under certain circumstances. Engels, for example, observed that once socialism were established, the rational control of human population would be significantly eased (Marx and Engels, 1975, p. 315). China's experience appears to bear out Engels's suggestion.
- (19) Marx considered even his most theoretical work to be political acts. He wrote to Weydemeyer about "the political reasons" which dictated the organization of Capital (Marx and Engels, 1975, p. 106. Emphasis in original). In addition, letters written to close friends after the completion of his Critique of Political Economy and Capital describe his works as "a victory for our Party" (Marx and Engels, 1975, p. 106) and attempt "to raise the Party as high as possible" (Marx, 1934, p. 50).
- (20) Malthus made a similar charge. He attacked Ricardo for not analyzing "the moral as well as physical qualities of the agents" of production. Ricardo re-

plied, "Whoever did draw any conclusions from the physical quality of the soil, without any consideration of its productiveness, in proportion to the labour employed upon it?" (Ricardo, 1951, II: p. 336).

- (21) The context of this statement suggests a medium term of undefined length.
- (22) Habakkuk also notes an historical differential between levels of understanding of organic and chemical processes, but assumes that this phenomenon merely reflects an historical delay in the acceleration of our comprehension of biological processes (Habakkuk, 1967, p. 160). Although great strides have been taken in these fields, Marx's position seems to be the correct one, especially when we recall his use of the term "mastering."
- (23) Marx did allow that the rate of productivity in agriculture would rise faster than in industry (see Marx, 1964, Part 2, pp. 109-110). However, this increase might not be rapid enough to compensate for natural resource exhaustion (see Perelman, 1975).
- (24) Elsewhere Marx adds cheap colonial imports and new technology to this list of causes (Marx, 1968, p. 460). With respect to the longer hours of work, Marx generously praises Malthus as the only classical political economist to recognize this feature of agricultural development. "All honour to Malthus, that he lays stress on the lengthening of the hours of labour" (Marx, 1977, p. 666n).
- (25) Unstable cotton prices were not an unknown phenomenon. In the brief period between 1830 and 1837, as industry outstripped agricultural production, cotton prices doubled (Temin, 1969, p. 92).
- (26) Nevertheless, in spite of the many similarities between the plantation owner and the capitalist (see Mintz, 1977), capitalism is distinctly different from slavery. In this sense, the example of cotton diverts attention from the relationship between the capitalist mode of production and scarcity.
- (27) Lenin stood firmly in this tradition. He observed that "the more capital is developed, the more strongly the shortage of raw materials is felt, the more intense the competition and hunt for sources of raw materials throughout the world, the more desperate the struggle for the acquisition of colonies" (V.I. Lenin, 1964, p. 260). He added that "to try to belittle the importance of facts of

this kind by arguing that...the supply of raw materials 'could be' increased enormously by 'simply' improving the conditions of agriculture" would be to repeat the mistakes of bourgeois reformists such as Kautsky (ibid., p. 261).

REFERENCES

- Avineri, Shlomo. 1967. "From Hoax to Dogma, A Footnote on Marx and Darwin," Encounter, Volume 28 (March): pp. 30-32.
- Buer, Mabel C. 1927. "The Historical Setting of the Malthusian Controversy," T.E. Gregory and Hugh Dalton, eds. London Essays in Economics: In Honor of Edwin Cannan (London: George Rutledge and Sons): pp. 136-56.
- Burke, Edmund. 1795. "Thoughts and Details on Scarcity," in John R. McCulloch, A Select Collection of Scarce and Valuable Economical Tracts (New York: Kelly Reprints, 1966).
- Cowherd, Raymond. 1977. Political Economists and the English Poor Laws (Athens: Ohio University Press).
- D'Arcy, F. 1977. "The Malthusian League and the Resistance to Birth Control in Late Victorian Britain," Population Studies, Volume 31, No. 3 (November): pp. 429-48.
- Engels, Frederick. 1844. "Outlines of a Critique of Political Economy," in K. Marx, Economic and Philosophic Manuscripts of 1844 (New York: International Publishers, 1964).
- _____. 1851. "Letter to Karl Marx, 3 April 1851," in Karl Marx and Frederick Engels, Werke. Volume 27. Briefe, Februar 1842 bis Dezember 1851 (Berlin: Dietz Verlag).
- _____. 1860. "Letter to Karl Marx, 31 January 1860," Karl Marx and Frederick Engels, Werke. Volume 30. Briefe, Januar 1860 bis September 1864 (Berlin: Dietz Verlag).
- _____. 1876. "The Part Played by Labour in the Transition from Ape to Man," in Karl Marx and Frederick Engels, Selected Works in Three Volumes (Moscow: Progress Publishers, 1970): pp. 66-77.
- Fay, Margaret. 1978. "Did Marx Offer to Dedicate Capital to Darwin?" Journal of the History of Ideas, Volume 39, No. 1 (January-March): pp. 133-36.
- Genovese, Eugene D. The Political Economy of Slavery. Studies in the Economy and Society of the Slave South (New York: Vintage).

- Glacken, Clarence J. 1967. Traces on the Rhodian Shore (Berkeley: University of California Press).
- Glass, D.V. 1953. "Malthus and the Limitation of Population Growth," in D.V. Glass, Introduction to Malthus (London: Watt & Co.): pp. 25-54.
- Gordon, Barry. 1977. Political Economy in Parliament: 1819-1823 (New York: Barnes & Noble).
- Habakkuk, H.J. 1967. American and British Technology in the Nineteenth Century: The Search for Labour-Savings Inventions (Cambridge, Eng.: Cambridge University Press).
- Harvey, David. 1974. "Population, Resources, and the Ideology of Science," Economic Geography, Volume 50, No. 3 (July), pp. 256-277. Reprinted in Richard Peet, ed., Radical Geography (Chicago: Maaroufa, 1977).
- Hobsbawn, Eric J. 1968. Industry and Empire: The Making of Modern English Society, Volume 2, 1750 to the Present Day (New York: Pantheon).
- Hollander, Samuel. 1977. "Ricardo and the Corn Laws: A Revision," History of Political Economy, Volume 9, No. 1: pp. 1-47.
- Jevons, William Stanley. 1970. The Theory of Political Economy (Baltimore: Penguin). (original published 1871)
- Jorgenson, D.W. 1961. "The Development of a Dual Economy," Economic Journal, Volume 17 (June): pp. 309-334.
- Keynes, John Maynard. 1963. "Robert Malthus," Essays in Biography (New York: W.W. Norton).
- Lenin, V.I. 1964. "Imperialism, the Highest Stage of Capitalism: A Popular Outline," Collected Works, Volume 2 (Moscow: Progress Publishers): pp. 185-304.
- Malthus, Thomas Robert. 1800. "The Present High Price of Provision," reprinted in The Pamphlets of Thomas Malthus (New York: Kelly, 1961).
- _____. 1817. Essay on Population, 5th edition (London: Johnson).
- _____. 1820. Principles of Political Economy, Considered with a View to their Practical Application (London: John Murray), reprinted in part in David Ricardo, Notes on Malthus Volume 2. The Works and Correspondence of David Ricardo, ed. Piero Sraffa (Cambridge, Eng.: Cambridge University Press, 1951).
- _____. 1826. Essay on Population, 6th edition (London: John Murray).
- Mandel, Ernest. 1975. Late Capitalism (Atlantic Highlands, NJ: Humanities Press).
- Marglin, Stephen. 1974. "What Do Bosses Do? The Origins and Functions of Hierarchy in Capitalist Production," The Review of Radical Political Economy, Volume 6, No. 2 (Summer): pp. 1-59.
- Marshall, Alfred. 1927. Principles of Economics, 8th edition (London: Macmillan).
- Marx, Karl. 1934. Letters to Dr. Kugelmann (New York: International Publishers).
- _____. 1967. Capital, Volumes 2 and 3 (New York: International Publishers).
- _____. 1970a. "Critique of the Gotha Program," Karl Marx and Frederick Engels, Selected Works in Three Volumes (Moscow: Progress Publishers): 3, pp. 9-30.
- _____. 1970b. "Class Struggles in France," Karl Marx and Frederick Engels, Selected Works in Three Volumes (Moscow: Progress Publishers): 2, pp. 186-299.
- _____. 1970c. "The Nationalization of the Land," Karl Marx and Frederick Engels, Selected Works in Three Volumes (Moscow: Progress Publishers): 2, pp. 288-90.
- _____. 1970d. A Contribution to the Critique of Political Economy (New York: International Publishers).
- _____. 1970e. "The Future Results of British Rule in India," in Karl Marx and Frederick Engels, Selected Works in Three Volumes (Moscow: Progress Publishers).
- _____. 1963, 1968, 1971. Theories of Surplus Value, 3 parts (Moscow: Progress Publishers).
- _____. 1974. Grundrisse (New York: Vintage Books).
- _____. 1975. "On Friedrich List's Book Das Nationale System der Politischen Oekonomie," Karl Marx and Frederick Engels, Collected Works (New York: International Publishers): pp. 265-93.
- _____. 1977. Capital, Volume 1 (New York: Vintage).
- Marx, Karl and Frederick Engels. 1858. "Review: March-April 1850," Karl Marx, Political Writings, Volume 1, The Revolu-

- lutions of 1848, David Fernbach, ed. (New York: Vintage Press, 1974).
- _____. 1942. Selected Correspondence (New York: International Publishers).
- _____. 1970. "Feuerbach. Opposition to the Materialist and Idealistic Outlook (Chapter 1 of The German Ideology)," in Karl Marx and Frederick Engels, Selected Works in Three Volumes (Moscow: Progress Publishers): pp. 16-80.
- _____. 1975. Selected Correspondence (Moscow: Progress Publishers).
- _____. 1976. Marx-Engels Werke (Berlin: Dietz Verlag).
- Meek, Ronald. 1967. "The Decline of Ricardian Economics in England," in his Economics and Ideology and Other Essays, Studies in the Development of Economic Thought (London: Chapman and Hall): pp. 51-74.
- _____. 1976. Studies in the Labour Theory of Value (New York: Monthly Review Press).
- Mill, John Stuart. 1965. Principles of Political Economy with Some of Their Applications to Social Philosophy, J.M. Robson, ed. (Toronto: University of Toronto Press).
- Mintz, Sidney. 1977. "The So-Called World-System: Local Initiative and Local Responses," Dialectical Anthropology, Volume 2, No. 4 (November): pp. 253-70.
- Mitchell, Wesley Clair. 1967. Types of Economic Theory, 2 volumes (New York: Augustus M. Kelly).
- Owen, Robert. 1857. The Life of Robert Owen, Written by Himself (London: Effingham, Wilson).
- Paglin, Morton. 1968. "Introduction" to Malthus's Principles of Political Economy, (New York: Augustus M. Kelly).
- Perelman, Michael. 1974. "An Application of Marxian Economics to Environmental Economics," Review of Radical Political Economy, Volume 6, No. 3 (Fall): pp. 75-77.
- _____. 1975. "Natural Resources and Agriculture: Karl Marx's Economic Model," American Journal of Agricultural Economics, Volume 57, No. 4 (November).
- _____. 1977. Farming for Profit in a Hungry World: Capital and the Crisis in Agriculture (Montclair, NJ: Allanheld, Osmun & Co.).
- Ravenstone, Piercy. 1821. A Few Doubts on the Subject of Population and Political Economy (New York: Augustus Kelly, 1966).
- _____. 1824. Thoughts on the Funding System and Its Effects (New York: Augustus Kelly, 1966).
- Riazanov, David. 1973. Karl Marx and Frederick Engels, and Introduction to Their Lives and Work, tr. Joshua Kunitz (New York: Monthly Review Press).
- Ricardo, David. 1951. The Works and Correspondence of David Ricardo, Piero Sraffa, ed. (Cambridge, Eng.: Cambridge University Press). Volumes I-XI
- Robbins, Lionel. 1966. Essay on the Nature and Significance of Economic Science (New York: St. Martins Press).
- Sameulson, Paul A. 1957. "Wages and Interest -- A Modern Dissection of Marxian Economic Models," American Economic Review, Volume 67, No. 6 (December): pp. 884-912.
- _____. 1967. Economics, 7th edition (New York: McGraw-Hill).
- Say, J.B. 1821. Letters to Malthus on Several Subjects of Political Economy and on the Cause of Stagnation of Commerce, tr. John Richter (New York: Kelly Reprints, 1967).
- Sismondi, J.C.L. 1971. Nouveaux principes d'economie politique (Paris: Calman-Levy).
- Smith, V. Kerry. 1978. "Scarcity and Growth Reconsidered," American Journal of Agricultural Economics, Volume 60, No. 2 (May): pp. 269-289.
- Spengler, Joseph. 1965. "Today's Circumstances and Yesterday's Theories; Malthus on Services," Kyklos, Volume 18, pp. 601-13.
- Temin, Peter. 1969. The Jacksonian Economy (New York: W.W. Norton).
- Torrens, Robert. 1821. An Essay on the Production of Wealth (London: Longman, Hurst, Rees, Orme and Brown).
- Urena, Enrique M. 1977. "Marx and Darwin," History of Political Economy, Volume 9, No. 4 (Winter): pp. 548-59.
- Winch, Donald. 1965. Classical Political Economy and Colonies (Cambridge, MA: Harvard University Press).

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