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World Market, State, and Family Farm: Social Bases of Household Production in the Era of Wage Labor

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INTRODUCTION

Between 1873 and 1935 dramatic changes took place in the character of production in the industrial nations of the world. Longstanding and newly formed states in Europe and America engaged in vigorous campaigns of territorial expansion, so that virtually all the globe came to be incorporated within the sphere of world markets. During the same period, the expansion in industrial countries of new techniques of mass production coincided with growth and consolidation of organizations of people who worked for wages. The expansion of world markets, the development of mass production, and the new social importance of wage laborers, while certainly not the only features of the era, are often viewed as its central, interrelated, and dynamic basis.[1] In this context, the transformations of production which accompanied the rise of a world wheat market during these decades were quite unusual.

The rise of a world wheat market in itself, and two dramatic periods of price decline, were consistent with overall developments in the world economy. After 1873 separate prices in different areas of wheat production converged, on the basis of expanding quantities traded and technical

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[1] See the comprehensive statement, from the point of view of the development of the productive forces of European nations, by David S. Landes, *The Unbound Prometheus* (Cambridge: The University Press, 1972), pp. 231–49. Ernest Mandel, in *Late Capitalism* (London: New Left Books, 1975), Chs. 4 and 5, gives one of the possible Marxist accounts of the importance and relationships among these factors.

improvements in transport. Average annual world exports of wheat increased almost sixfold, from 130.5 million bushels in 1873–74 to a peak of 747.9 million bushels in 1924–29, after which they declined during the world crisis.[2] Total world production increased between the periods 1885–89 and 1929–34 from an annual average of 2.4 billion bushels to an annual average of 4.5 billion bushels. Of the 78 percent increase in world acreage which in part made this possible, almost 99 percent was in areas outside Western Europe, with the greatest expansions in North and South America, Australia, Eastern Europe and Asiatic Russia.[3] Simultaneous with the growth in the volume of trade, ocean transport costs plunged by 1900 to less than half their level of the early 1870s. Inland transport costs fell by as much in the United States, and somewhat less, though still considerably, in such important wheat export countries of the late nineteenth century as Russia and India.[4]

As a result of the convergence of regional prices, long-distance trade among separate price areas gave way to a world market, in which one price confronted producers everywhere. This world price then moved in a downward spiral; there were two sustained periods of falling prices, the first between 1882 and 1896, and the second between 1925 and 1935. In the first the American price fell by almost half, to 60 cents a bushel, while the British price, which already in the previous decade had fallen by more than 25 percent, fell even more after 1882 and finally converged with the American price at its trough in 1896. The world price recovered thereafter and then experienced a wartime and postwar boom. Then between 1925 and 1935, the world price for all producers fell by about two-thirds.[5]

Coincident with the rise of a world wheat market was the rise of specialized household production of wheat. To the extent that specialized commodity production supplanted the sale of a surplus by households also producing their own subsistence, this is consistent with theoretical understandings since Adam Smith. Wheat has almost always been a commercial crop even when produced as a surplus over subsistence requirements.[6] Most wheat produced for long-distance trade before the rise of a world wheat market was of this type: whatever the variety of their relationships to

[2] H.B. Friedmann, 'The Transformation of Wheat Production in the Era of the World Market, 1873–1935' (unpublished Ph.D. thesis, Harvard University, 1976), p. 99.

[3] Wilfred Malenbaum, *The World Wheat Economy 1885–1939* (Cambridge, Mass.: Harvard University Press, 1953), pp. 236–39.

[4] Helen C. Farnsworth, 'Decline and Recovery of Wheat Prices in the 'Nineties,' *Wheat Studies,* 10:8 and 9 (1934), 293–94. The development of the triple expansion steam engine was of particular importance on the 1890s. For the prior period see G. S. Graham, 'The Ascendancy of the Sailing Ship, 1850–85', *Economic History Review,* ser. 2, IX (1954), 74–88.

[5] For data and analysis of the rise of a world wheat market and the two price falls, see Friedmann, *op. cit.,* Ch.2.

[6] William Ashley, 'The Place of Rye in the History of English Food,' *The Economic Journal,* 31 (1921), 285–308.

the land, to each other, and to other classes, producers of wheat in the Baltic and Black Sea regions, the Danube River basin, India, the settled parts of North America, and most other wheat export regions, were partly producers of their own subsistence as well. As the scale of commerce expanded and a world market emerged, these producers were brought into direct competition with one another, and at the same time many new producers entered into competition in the commercial production of wheat. Not surprisingly, specialized producers replaced diversified producers.[7]

Yet specialized household production of wheat also displaced production based on the employment of laborers for wages. In some parts of the world, notably England and eastern Germany, wheat production at the time of the rise of the world wheat market was in this sense capitalist in form. The two price falls of the period subjected the owners of these enterprises to serious pressures, resulting in a contraction of production in one case, and a partly successful resort to political protection in the other. There were also interesting experiments in very large-scale wheat production with hired labor in the North American plains prior to settlement by households.

By 1935, however, the vast majority of commercial wheat producers throughout the world market were organized through household rather than wage labor. This shift from hired to family labor is usually treated as a geographical question, with, for example, production in America expanding at the expense of contraction in England. It is certainly true that production in areas where agriculture was characterized by wage labor declined as a proportion of world commercial wheat production. Of areas with significant capitalist production at the outset of the period, Hungarian wheat production declined from 5.5 percent to 1.8 percent of world production between the late 1880s and the early 1930s; British wheat production declined from 4.5 percent to 3.6 percent; and German wheat production from 3.2 percent to 1.1 percent. Only in Argentina did wheat production based on hired labor expand; total Argentine production rose from 0.8 percent to 5.1 percent of the world total in the same years; however, only the part peculiarly integrated with cattle production developed along capitalist lines, the rest developing through household production.[8] Meanwhile, all other areas of world production were characterized

[7] Some households producing wheat as a cash (or rent) crop at the outset of the period reverted to subsistence production during the period. This reversion is a separate question from the relation between capitalist and household commodity producers. See Friedmann, *op. cit.*, especially Chs. 1 and 6.

[8] Calculated from data in Malenbaum, *op. cit.*, pp. 238–39. An excellent history of Argentine wheat production is James R. Scobie, *Revolution on the Pampas, A Social History of Argentine Wheat, 1860–1910* (Austin: University of Texas Press, 1964). This combination of capitalist and household wheat production within the national economy also characterized Germany and Hungary.

by household labor; these included both the new specialized households in the expanding areas of the United States, Canada, and Australia, and the increasingly specialized households in relatively stable areas of wheat production, such as France.

Yet this geographical redistribution was also, and perhaps more fundamentally, a social transformation in the organization of production: enterprises producing wheat through capitalist relations were supplanted by enterprises producing wheat through kinship relations. *Capitalist production,* in the classical sense used here, involves two classes, one which owns the means of production and another which labors; the two are connected through the wage relation, in which an entrepreneur purchases labor power from others in order to set in motion his means of production. *Household production* involves only one class, which both owns the means of production and provides the labor power to set them in motion; relations of production within the enterprise are based not on the wage contract, but on kinship. When household production is specialized and competitive, and means of production and subsistence must be purchased, it is *simple commodity production.*

The contrast between enterprises in terms of their internal organization is fundamentally important. Social relations at the level of production are bound up with larger class relations and with the dynamics of production. This difference between enterprises based on hired or family labor remains important, whatever else they might have in common, such as tenancy, commodity production in itself, or mechanization.

Although rental of land by commercial agriculturalists is often regarded as the most important aspect of production, particularly in the literature on North America, it does not distinguish forms of production.[9] Where land is owned by a class not in any way related to the productive process, there results a more complex set of class relations and different demands on the distribution of the product, but these arise on the basis of existing relations

[9] The growth of tenancy has been an important theme in the historiography of American agriculture largely because of its incompatibility with the goals of much public land policy. The implied loss of independence is not to be underestimated, but it does not affect the fundamentally different relations to the means of production of households from that of people who sell their labor power on the market. The possibility of comparable advantages existing for simple commodity producers is suggested by Paul W. Gates, *Landlords and Tenants on the Prairie Frontier. Studies in American Land Policy* (Ithaca: Cornell University Press, 1973), pp. 255–58, 298–301. For the general question of tenancy in America, see Allan G. Bogue, *From Prairie to Cornbelt: Farming on the Illinois and Iowa Prairies in the Nineteenth Century* (Chicago: University of Chicago Press, 1963), Ch. III; Fred A. Shannon, *The Farmer's Last Frontier. Agriculture, 1860–1897* (New York and Toronto: Farrar & Rinehart, Inc., 1945), *passim,* esp. pp. 161, 418; Paul W. Gates, *Fifty Million Acres: Conflicts over Kansas Land Policy, 1854–1890* (Ithaca, N.Y.: Cornell University Press, 1954), pp. 230–94; Clarence H. Danhof, *Change in Agriculture: The Northern United States, 1820–1870* (Cambridge, Mass.: Harvard University Press, 1969), pp. 88–93.

of production.[10] Thus, English capitalists, Rumanian subsistence producers, and some American simple commodity producers all produced wheat on rented lands. By contrast, Prussian capitalists, some Indian subsistence producers,[11] and many American simple commodity producers owned their land as well as other means of production.

Similarly, commodity production by itself does not distinguish enterprises at the level of productive organization. The focus on commodity production, which figures so prominently in many parts of the literature, has collapsed the distinction between commercial household production and capitalist production.[12] Household producers were in many cases as specialized in their production of wheat as were the capitalist producers; they were thus equally dependent on the price movements of all commodities bought and sold, and equally subject to pressures to achieve levels of productivity determined through the market. But because of their different internal structures, specialized household producers had different cost categories from capitalist producers, different sources of labor and methods of providing its subsistence, and different bases for continued viability or failure of the enterprise.

The common identification of commercial households and capitalist enterprises has led to a curious dichotomy in the analysis of the family wheat farm. On one side is the analytical approach to agrarian social organization. Here the treatment of commercial households has suffered from a linguistic confusion stemming in part from the uncritical use of terms descriptive of the history of English agriculture: 'peasants' or 'small landowners'[13] were in general replaced by large landowners, landless laborers, and 'farmers'; the latter were in this case capitalists who employed

[10] These comments apply to commercial forms of production only. The relation to, for example, feudal rent, is beyond the scope of this essay.

[11] The important wheat exports from India in the late nineteenth century were from new settlers on government organized lands. Many of them gained title during the period of expanding exports. See Conrad P. Wright and J.S. Davis, 'India as a Producer and Exporter of Wheat,' *Wheat Studies*, III:8 (1927), 317–412.

[12] In addition to the examples mentioned in this paragraph, the most important instance is the dependency school, and its more comprehensive variant, the world-system approach. For the former, see Andre Gunder Frank, *Latin America, Underdevelopment or Revolution* (New York: Monthly Review Press, 1969), and for the latter see Immanuel Wallerstein, *The Modern World-System. Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century* (New York: Academic Press, 1974) and by the same author, 'The Rise and Demise of the World Capitalist System,' *Comparative Studies in Society and History*, 16:4 (1974), 387–415.

[13] Arthur H. Johnson, *The Disappearance of the Small Landowner* (1909), reprinted by Oxford University Press, 1963, a classic of English agricultural history, explains the decline of small landowners (usually called 'peasants') through the growth of commercial agriculture in the sixteenth century. Small holders, as I attempt to show here and elsewhere (Friedmann, *op. cit.*), are not survivors in any sense from the sixteenth century, but a new kind of household producer, a specialized commodity producer.

the landless laborers and rented from the large landowners. This conception of the farmer as capitalist (at least in motivation) has been implicit in many discussions of combined subsistence and commodity producers:[14] Wolf, for example, has distinguished between peasants who produce a cash crop with the *aim* of subsistence, and 'farmers' who *aim* at reinvestment;[15] Hill, in contrast, applies the term 'farmers' to combined subsistence and cash crop producers in order to emphasize their entrepreneurial *spirit*.[16] The linguistic implication of the correspondence of commodity and capitalist production in agriculture tends to lead away from structural distinctions in the analysis of production, such as that deriving from the organization of labor through kinship or the wage contract.[17]

On the other side of the dichotomy is the historical study of agriculture in industrial countries. In this literature the predominance of commercial households in many agricultural branches has been so widely recognized that it ceases to be a matter of theoretical interest. Despite the general decline of household production in most branches of industrial economies, the 'family farm' is treated as a more or less natural basis for agricultural production. Its privileged exemption from general tendencies toward capitalist production has been implicitly assumed instead of explicitly justified. This conception has been reinforced by the rise of collectivized agriculture, especially in the Soviet Union. The latter has replaced capitalist agriculture as the contrasting model to household production. In the context of comparisons between 'capitalist' and 'socialist' economies, therefore, household agricultural production has come implicitly to share the characteristics of the former.[18]

[14] Given the wide empirical variation, and the lack of agreed and consistent analytical definition of 'peasants', I shall avoid using the term except when used by others in specific instances. Some attempts to characterize peasantries generally are, e.g., Eric Wolf, *Peasants* (Englewood Cliffs, N.J.: Prentice-Hall, 1966) and Teodor Shanin, 'The Peasantry as a Political Factor,' reprinted in T. Shanin, *The Awkward Class, Political Sociology of Peasantry in a Developing Society, Russia 1910–25* (London: Oxford University Press, 1972). For a critique of the concept, see Judith Ennew, Paul Hirst, and Keith Tribe, '"Peasantry" as an Economic Category,' *The Journal of Peasant Studies*, 4:4 (1977), 295–322.

[15] Eric Wolf, 'Types of Latin American Peasantry: A Preliminary Discussion', *American Anthropologist*, 57:3 (1955), p. 454.

[16] Polly Hill, *Migrant Cocoa-Farmers of Southern Ghana* (Cambridge: The University Press, 1963).

[17] The linguistic identification of commodity and capitalist production is reinforced by neo-classical economics, which focuses on the motivations of producers and their responses to constraints of various sorts. Therefore, the importance of the internal structure of 'enterprises' lies primarily in mediating the quantitatively conceived responses of producers. Qualitative differences in the organization of production, such as family or hired labor, imply the necessity for structural categories in cases where different producers are equally subject to market pressures.

[18] See the leading historian of recent European agriculture, Folke Dovring, *Land and Labor in Europe 1900–1950* (The Hague: Martinus Nijhoff, 1965) and 'The Transformation of European Agriculture,' in H. J. Habakkuk and M. Postan, eds., *The Cambridge Economic History of Europe* (Cambridge: The University Press, 1965), Vol. VI, Pt. II.

Finally, the scale and technical level of production, although related to the organization of production, do not determine it. Mechanization of wheat planting and harvesting in the late nineteenth century made possible a drastic decline in the number of laborers per farm. As a result households could provide sufficient labor for competitive production on what were, by earlier standards, quite large farms: households in the American plains cultivated acreages about half the size of an average Prussian estate.[19] This was a necessary but not a sufficient condition for the displacement of capitalist by household production. In fact farm sizes generally changed to coincide with acreages appropriate to the use of contemporary techniques by a small number of laborers. Thus, in France, increased acreages allowed diversified, partial subsistence households to become more fully commercial, specializing in the production of various commodities.[20] In England, both large and small farms decreased in number, and there was an increase in the number of farms whose dimensions corresponded to the new world commercial standards of a medium-sized farm. Farms of between 50 and 300 acres increased from 25.6 percent of all farms to 33.9 percent (of a diminished total) between 1875 and 1935; the number of farms below 50 acres declined by 28.3 percent, and the number above 300 acres declined by 25.9 percent.[21] Since English wheat producers had yields per acre three times those of American producers in this period,[22] the acreage of this middle range in England corresponded roughly to that cultivated by households producing wheat in North America (generally between 160 and 640 acres, that is, between one-quarter and one whole "section" of land). And since these data include both more intensive farming, such as orchards, and less intensive farming, such as grazing, they understate the convergence of acreages for crops such as wheat. Thus from both directions farm size in England came increasingly to reflect the acreage which could through prevailing technology be cultivated by household labor. This did not, of course, mean that it *was* cultivated by household labor; that depended upon the relative costs of labor and various forms of investment to English farmers, who had historically been slower than American wheat producers to introduce machinery.[23] The correspondence between farm

[19] Max Weber, 'Capitalism and Rural Society in Germany,' in H. Gerth and C. W. Mills, eds., *From Max Weber* (New York: Oxford University Press, 1958), p. 382

[20] F. L. Sargent, 'From Feudalism to Family Farms in France', *Agricultural History*, XXV:4 (1961), 198–99.

[21] Calculated from data in 'A Century of Agricultural Statistics, Great Britain, 1866–1966,' (Her Majesty's Stationery Office, 1968), p. 19

[22] J. H. Shollenberger, *Wheat Requirements in Europe*, United States Department of Agriculture Technical Bulletin No. 535 (Washington, D.C.: Government Printing Office, 1935).

[23] Paul A. David, 'The Landscape and the Machine: Technical Interrelatedness, Land Tenure, and the Mechanization of the Corn Harvest in Victorian Britain,' in Donald N. McCloskey, ed., *Essays on a Mature Economy, Britain After 1840* (Princeton: Princeton University Press, 1971), p. 148.

size and technical conditions made possible, but not necessary, a transformation from capitalist to household production.

Production based on kinship relations and that based on the wage relation, whatever else they might have in common, involve different internal logics. To the neo-classical economist it is a matter of cost structures for different enterprises, each of which is a black box with measurable inputs and outputs. While these shall concern us, they do not exhaust the problem. Once the question of relations of production is posed historically as the supersession of capitalist by household production, however commercial in orientation or large in scale, a major tradition in sociological theory is brought into question. Durkheim wrote that the corporation 'burst from the old familial form' as production became more specialized and as commerce increased in scale.[24] Weber wrote that the separation of the management of the enterprise from the laborers stemmed from requirements of technical efficiency related to specialization of work processes and 'a progressive development of the market system, both extensively and intensively.'[25] Marxist assumptions, too, despite caveats,[26] lead generally to the expectation that when 'pre-capitalist' producers enter into direct competition with capitalist producers, the latter will triumph.[27]

This essay will seek to explain the unusual transformation of wheat production between 1873 and 1935 in terms of (1) the logic of reproduction, including relevant cost categories, of simple commodity and capitalist forms of production, and (2) the conjuncture of national conditions governing relevant costs for producers in different parts of the world wheat market, including the role of state interventions of various kinds in affecting those conditions.

REPRODUCTION AND TRANSFORMATION AT THE LEVEL OF PRODUCTION

The term *form of production* is used here to refer to the minimal unit of productive organization. For agriculture this is the farm. Since all sorts of plots of land are cultivated as supplemental sources of food or income by people whose main source of subsistence lies elsewhere, only those which

[24] 'The Solidarity of Occupational Groups,' in T. Parsons, E. Shils, K. D. Naegele, and J. R. Pitts, eds., *Theories of Society*, Vol. I (New York: The Free Press, 1961), p. 359.

[25] 'The Social Organization of Production,' in Parsons, *et al., op. cit.*, pp. 468–69.

[26] For example, in *Capital* (New York: International Publishers, 1967), Vol. III, p. 334, Marx observed that pre-capitalist production sometimes involves economies which allow it to 'put up a stubborn resistance to the products of the big industries.'

[27] While Marx himself was not entirely explicit or consistent on these questions, which were largely marginal to his central concerns, certain of his followers have addressed them directly. See V. I. Lenin, in *The Development of Capitalism in Russia* (Moscow: Institute of Marxism–Leninism, 1957) and *The Agrarian Question and the Critics of Marx* (Moscow: Progress Publishers, 1976); Karl Kautsky in J. Banaji, trans., 'Summary of Selected Parts of Kautsky's *The Agrarian Question*,' *Economy and Society*, 5:1 (1976), 2–49.

provide the main source of subsistence to their possessors should be considered forms of agricultural production in their own right.[28] Each form of production is characterized by specific social relations and a specific range of techniques; each must bear particular relations to larger units of social organization, both to the social formation[29] within which each is embedded, and, when these are larger or smaller than the social formation, to markets in commodities traded by each.

The form of production defined here is distinct from the mode of production. Although both terms derive from Marx, theoretical work since his time has led to a distinction between them. Mode of production in its broadest sense characterizes historically specific institutional complexes encompassing political and ideological, as well as strictly economic, aspects of social organization.[30] Marxists more commonly restrict the term to the economic sphere, but it still characterizes structures considerably more inclusive than the site of the labor process itself.[31] Form of production has come to apply, by contrast, to the actual unit of productive organization, for example, the 'capitalist enterprise' rather than 'capitalism'. It remains an undeveloped concept, but potentially a useful one.[32] The relation between form of production and mode of production can be established only on the basis of the adequate development of each concept. From the outset, however, the definition of actual forms of production must bear some relation to the conception of mode of production in order to avoid the

[28] This definition excludes subsistence plots which function as a supplement to a wage which in itself would not allow for the reproduction of a working class. The most widely known instance is South Africa, discussed by Michael Burawoy, 'The Functions and Reproduction of Migrant Labor: Comparative Material from Southern Africa and the United States,' *American Journal of Sociology*, 81:5 (1976), 1051–87, and by Harold Wolpe, 'Capitalism and Cheap Labour-Power in South Africa: From Segregation to Apartheid,' *Economy and Society*, 4:1 (1972), 425–56. It also characterizes the hacienda system in Latin America; see Eric R. Wolf, 'The Hacienda System and Agricultural Classes in San José, Puerto Rico,' in André Béteille, ed., *Social Inequality* (Harmonsworth, England: Penguin, 1969), 172–90.

[29] In the school of Marxism following Louis Althusser, 'social formation' is the term used for historical 'social wholes' (see N. Poulantzas, *Political Power and Social Classes* (London: New Left Books, 1973), p. 15) in contrast to analytical abstractions such as the mode of production. It is meant to identify what social scientists usually mean by a 'society.'

[30] The most direct, if not unproblematic, statement of this position is from Marx himself, in his preface to *A Contribution to the Critique of Political Economy* (New York: International Publishers, 1970). The term can be interpreted to refer to the 'economic foundations' only, but this reading leaves the 'superstructure' hanging in an analytical void. One need not have exact 'correspondence' between the 'levels' of a social formation, much less simple determination of one by the other, to appreciate the necessity of an analytical basis (beyond the supposedly 'concrete' categories of 'social structure' or 'social formation') for incorporating both and their mutual relations. See A. Foster-Carter, 'The Modes of Production Controversy, *New Left Review*, 107 (1978), 73:1. Cf. Louis Althusser and Etienne Balibar, *Reading Capital* (London: New Left Books, 1975), pp. 42, 216–24, and Barry Hindess and Paul Q. Hirst, *Pre-Capitalist Modes of Production* (London: Routledge and Kegan Paul, 1975), pp. 13–17.

[31] See Althusser and Balibar, *op. cit.*, and Hindess and Hirst, *op. cit.*

[32] A. Foster-Carter, *op. cit.*, p. 76.

infinite multiplicity of combinations thrown up by history.[33] Not every tool or activity, therefore, defines a form of production, but only those conditions of production which correspond to broad historical differences in social organization: in this case, markets, kinship, and the wage relation.

Relations of production thus loom large in the definition and historical identification of forms of production, but the two are not identical. Forms of production are characterized by a range of productive techniques as well as specific productive relations, in which each conditions the other. For instance, the degree of development of market relations conditions expenditures for means of production, and the requirements of different techniques condition the proportions and the manner in which land and labor are combined. But while they condition one another, they need not be equally important.

Without prejudging the general theoretical question of the linkage between forces and relations of production, in the specific case in which producers with different relations of production are in competition with one another for the sale of a single commodity, the range of techniques is enforced by the market itself. Survival of producers thus depends upon the intersection between this given technical range and their various internal structures. The historical problem posed here is of this kind, since fully commercial producers of the same commodity with different internal organizations were competing with one another on the world wheat market. Their success or failure depended upon their ability to produce at a cost less than or equal to the world price. Competition, in conjunction with variable costs of subsistence and means of production in each social formation, enforced the range of productivity of labor. The adoption of available techniques and the resulting effect on competitive survival thus depended upon the relations of production.[34]

The analysis of the survival and disappearance of different forms of production is facilitated by the concepts of reproduction and transformation. The first step in understanding the decomposition of one form of production and the establishment of another is to specify the bases of stability of each form. These are the conditions for the recreation from one round of production to another of the social group that produces wheat.

[33] As Foster-Carter, *ibid.*, p. 74, argues, to allow any empirical variation to define a new mode produces 'inevitable inflation and debasement of the coinage: each Andean valley has its own mode of production, and individuals may change them two or three times a week like underwear.'

[34] Commodity production is a relation in itself. Simple commodity production is like most subsistence production in its household basis of organization (though not in the extent of kin ties included within the household), but differs from it in being tied completely to other commodity producers through the market. In the latter set of social relations, simple commodity production is like capitalist production, and *for this reason,* they must share the range of productive techniques, which in conjunction with local conditions can generate production within the enforced range of labor productivity, if both are to survive.

The specific organization of producers does not necessarily outlive the act of production. *Reproduction* occurs when the act of production not only results in a product, such as wheat, but also recreates the original structure of social relations so that the act of production can be repeated in the same form.

Reproduction is both social and technical. Reproduction requires in all cases the creation and distribution of the social product in such a way that, first, the direct producers have sufficient articles of consumption to participate in a new round of production and, second, tools, land, animals, seed, fertilizers, machines, or other means of production are maintained or replaced for the new round of production. Finally, in those cases in which someone other than the direct laborers organizes production or has an enforceable claim on the product, reproduction also requires the meeting of those claims. The first I shall call *personal consumption*; the second *productive consumption*; and the third *surplus labor,* specifically surplus value, profit, rent, interest, etc., as applicable.[35]

If any of the technical or social bases of a particular form of production is endangered, either production ceases or its form changes. In either case, reproduction of that form of production is undermined, and the form decomposes. If production ceases, it is undermined completely and permanently. If a new form of production replaces the one which has been undermined, then *transformation* occurs. The new form, of course, has its own technical and social bases of reproduction.

The concepts of reproduction and transformation focus on the dynamic aspects of productive organization. Production is not static when it retains the same form over many rounds or over many generations. It may appear so in contrast to the sometimes violent convulsions accompanying decomposition. The sudden impoverishment and dislocation of people whose form of production has provided a stable life for many generations can be so dramatic as to make the prosaic reproduction of long-lived forms of production seem static. This apparent stasis has been codified in much of the literature as 'tradition.' Yet the very vulnerablilty under certain circumstances of 'traditional' forms of production points to the importance of processes through which those forms are reproduced from one round of production to another, and from one generation to another.

The specificity of processes of reproduction implies specificity of mechanisms for their undermining, and vice versa. When a particular form of production decomposes, it does so because a sufficient number of its technical and social bases are destroyed. Reproduction is the process

[35] This usage more or less follows Marx. The term personal consumption replaces the more usual individual consumption. These categories are, moreover, consistent with Wolf's distinction between 'replacement fund' (encompassing personal and productive consumption) and 'surplus.' See his *Peasants,* pp. 6–10.

through which a form of wheat production lasts more than a season. Transformation is the process through which one reproductive process, underlying one form of production, replaces another reproductive process underlying another form of production.

CONDITIONS FOR REPRODUCTION OF CAPITALIST AND SIMPLE COMMODITY FORMS OF PRODUCTION

Since both capitalist and simple commodity production are fully integrated into product markets, they share conditions of reproduction which derive from commerce itself. Both forms must meet the prevailing price for their product, and either their costs of production fall below this upper limit, or reproduction is undermined. Beyond these very general similarities, the specific conditions for reproduction depend entirely on relations of production. Enterprises organized through wage labor and those organized through household labor have structurally different kinds of costs. Each kind is determined in a specific way, and different sources of determination lend themselves in various degrees to manipulation by the enterprise. In addition to differences in the nature and flexibility of costs, capitalist and simple commodity production induce differences in the commitment of people to the survival of the enterprise. Reproduction of the wage relation and of the commercial household, then, depends upon quite different sets of structurally determined objective and subjective conditions.

Capitalist production. In the capitalist form of production, the owner of the enterprise and the people who labor constitute separate classes. The capitalist organizes production by buying labor power and putting it to use with his means of production. The wage serves to renew labor power by providing the subsistence of the laborers. The capitalist possesses the product of their labor, and its sale allows him to renew all elements of production. The most basic condition for capitalist reproduction, therefore, is the continual recreation of the buyer of labor power on one side of the wage relation, and the seller on the other.

There are two important structural consequences of the wage relation. First, since two separate classes have their bases in productive and personal consumption, a structural antagonism exists over the application of labor power to production and thus over the size and distribution of the product. The size of the total product in relation to the wage bill depends upon the amount of labor applied by each laborer within his contracted period of work. Thus the product owned by the capitalist at the end of one round of production varies directly with the drudgery of the laborer (applied to productive consumption) and inversely with the level of personal consumption of the laborer. The laborer, of course, is interested in decreasing his drudgery and increasing his personal consumption. This struggle, which takes place within the enterprise and within the labor market, sets special

conditions for capitalist reproduction. The laborer who creates the product is connected to the enterprise only through the wage contract; his services are offered for sale and are purchased by the owner of the farm for a specified duration. Since labor power is a commodity, the quantity mobilized is just as flexible as other inputs for production. The capitalist farmer purchases the services of a definite number of laborers according to his calculation of total costs relative to expected return, and can change that number relatively easily and quickly as market conditions require.

But the flexibility in the quantity of labor which derives from the market is matched by a corresponding inflexibility in its unit cost. The average price for labor power at different levels of skill in different tasks is the outcome of continuous bargaining among many buyers and sellers. Since market conditions govern the level of the wage, for the capitalist form of production labor is a monetary cost in strict proportion to the quantity consumed, just as all inputs for productive consumption are externally determined monetary costs. Thus competition governs every aspect of capitalist production, establishing all costs as external constraints on reproduction.

Capitalist reproduction, therefore, uniquely depends upon the existence of a market in labor power, and the way that wages determined in that market intersect with other prices. But labor markets, while sharing the basic features of markets generally, are also peculiar. Unlike other commodity sellers, the very life of the laborer depends upon the success of his sale. And unlike other commodities within a specialized economy, labor power can be applied to production in nonmarket ways, under the appropriate circumstances, to provide means of subsistence for its owner. In other words, given the existence of more desirable options for applying his labor and for obtaining articles of personal consumption, the laborer withdraws from the market and reduces the supply of labor power available as a commodity.[36]

[36] This assumption is justified by considerable research in industrial sociology, which shows that workers with any hope, however unrealistic, of independent household production (generally agricultural) see themselves and participate in the labor process differently from those without. More than 30 years ago, Orvis Collins, Melville Dalton, and Donald Roy, in 'Restriction of Output and Social Cleavage in Industry,' *Journal of Applied Anthropology,* 5:3 (1946), 1–14, argued that the worker identified with normal work practices hostile to management only when he came to believe 'that his "station" in life ha[d] become fixed' (p. 14). Workers who identified with management were often from farm backgrounds and retained a sense of property ownership even when it was no longer realistic. More recently Philippe Bernoux, in 'Les O.S. face à l'organisation industrielle,' *Sociologie du Travail,* 4 (1972), 410–36, characterized differences among workers in a factory as 'peasant culture' and 'worker culture.' In this case the former understood their lack of relation to the capitalist enterprise, but in the context of dreaming of a return to independent production, however futile the hope (414–16). Finally, in a most interesting recent article, Hartmut Neuendorff and Charles Sabel have argued that whatever their objective relation to peasant production, certain workers

Since sellers of labor power constitute one of the two classes definitionally involved in capitalist production, reproduction involves both the maintenance of an adequate level of subsistence through individual or organized wage bargaining, and the continued absence of more desirable means than participation in the labor market of obtaining articles of personal consumption. These two conditions are, of course, related: if alternatives to wage labor, such as household production, are available to large numbers of people, the supply on the labor market may be reduced, leading to a better bargaining position for the remaining sellers. High wages and good working conditions may tend to undermine capitalist reproduction, or by allowing adequate subsistence, may foster it.[37]

The second consequence of the wage relation is the unique category of *profit*. This is a surplus product, which, as in most forms of production, is a claim on the total product by nonproducers. But profit is the specifically capitalist form of surplus product. In forms of production in which the direct producers possess the means of production, surplus is appropriated by agents outside the production unit. The net product after deduction of surplus is available for personal as well as productive consumption by the direct producers. By contrast, in capitalist production personal consumption by the direct laborer is a deduction from the total product of the enterprise, that is, the wage bill. Thus personal consumption is both necessary to and in a special sort of tension with the capitalist form of production. Since labor and ownership are separate, personal consumption of the laborer cannot be the basis for organization of production by the owner, and confronts him instead as a cost. The income of the capitalist is the surplus product which remains over and above the renewal of productive and personal consumption. The capitalist's income is thus separate from personal consumption of the laborer, and the basis for re-creating his role in organizing production is profit.

Profit is a condition for the reproduction of the capitalist form of production both absolutely within the social formation, and relatively within each sector. It is an absolute condition in that positive profit must exist for the owner of the enterprise to hire laborers and establish capitalist production anew in each round. It is a relative condition in that its level in any one branch of production must bear a relation to the level of profits in other branches. Whatever branch may have provided the source of his capital in earlier rounds of production, the capitalist decides in which branch to invest for the current round according to differentials in the rate

have a specific 'interpretive model' for understanding their mode of life and labor which derives from their self-definition itself rooted 'in the world of the peasant.' In 'Modèles d'interprétation et catégories du marché du travail,' *Sociologie du travail* (1978:1), 61–62. I am grateful to Jonathan Zeitlin for suggesting this argument and providing the references.

[37] One instance of the latter situation is described by Marx in *Capital,* Vol. I, pp. 278–97.

of profit.[38] His ability to shift from one sector to another depends on the amount of fixed means of production which would have to be written off, relative to the profit differential among sectors. The reproduction of capitalist wheat production, therefore, depends upon realization by capitalist wheat farmers of at least the normal rate of profit within the economy.

Capitalist production, then, involves specific cost categories, determined through the market, which must be met for reproduction to occur. In addition to the purchase of means of production, which confronts all specialized commodity producers, and rent, which confronts producers under certain conditions of landholding regardless of form of production, capitalist production involves the cost categories of wages and profits.

Markets in labor power and capital structure not only the levels of wages and profits, but also the interests of laborers and capitalists in particular enterprises. Laborers enter the market in order to obtain the means of subsistence, and specific wage contracts are means to that end. Where laborers have special skills, their mobility may be restricted accordingly, but in contrast to production on their own account, their commitment to the enterprise is limited.[39] The market also has corrosive effects on the capitalist as a non-producer. Investment in fixed capital reduced the mobility of his capital, sometimes completely, but his commitment to the enterprise derives from his primary goal of maximizing profit.

Simple commodity production. In simple commodity production the ownership of the enterprise and the provision of labor are combined in the household. As a result there is only one class directly involved in production and in the distribution of the product. Production and consumption are organized through kinship instead of market relations. The household purchases means of production, puts them in motion with its own labor, and owns the final product. The latter is sold to renew all elements of the productive process, which consist exclusively of productive and personal consumption. The basic condition for simple commodity reproduction, therefore, is the continued re-creation of the integrity of the household as unit of productive and personal consumption.

Household specialized commodity production is different from capitalist production in its internal supply of labor and its lack of a structural requirement for a surplus product. These structural differences affect the

[38] See *ibid.*, Vol. III, pp. 142–99.

[39] See note 36. Specific conditions of skill, seniority, and so on, which affect the conditions of employment of individuals in modern enterprises, are the result of organizational struggles and technical developments over the past century and a half. Agriculture has not shared fully in these developments, though they have not, as we shall see below, been entirely absent. The remnants of capitalist relations in English wheat farming today show limitations on this instrumentalism, but these seem to derive from a combination of the legacy of extreme exploitation during the 1930s and the enforced personalism of those who remained behind in a small village. See Ronald Blythe, *Akenfield* (Penguin, 1972) for a vivid 'portrait of an English village' in the arable region of East Anglia.

meaning of capitalist income categories when applied to households. The analysis of household production depends upon understanding its relation to the usual income categories of wages and profits, which are, from the perspective of reproduction, also cost categories.

In a social context where most production is organized through capitalist relations, the categories of wages and profits exist as a way of understanding practical activities in general. But the terms derive from the wage relation specifically and refer to the incomes of separate classes. Capitalist and laborer are separate people, both required for production in that form. The need to share the total product is the source of their struggle over the intensity of labor and the wage. Where ownership and labor are combined in a single class, therefore, the concepts of wages and profits must be *imposed* on household production, whether by the producers themselves or by the analyst. If used, the terms must refer not to two separate groups, but to one group which carries on two 'roles.'

The uncritical use of analytical categories appropriate to capitalist production underlies much of the confusion in the debates on agricultural households. A large part of the current controversy about agrarian production centers around the analysis of the Russian peasantry by A. V. Chayanov in the 1920s.[40] Chayanov's work itself suffers from the use of both classical and neo-classical concepts that turn out, on close inspection, to be incompatible.[41] His central argument illegitimately draws neo-classical behavioral conclusions from classical structural premises. Because the family uses its own instead of hired labor, he argues, the category of wages becomes 'meaningless,' and 'it is impossible, without the category of wages, to impose on its structure net profit, rent and interest on capital as real economic categories in the capitalist meaning of the word. . . . Thus it is impossible to apply the capitalist profit calculation.'[42]

A consistent neo-classical interpretation of Chayanov's argument translates the classical concepts of wages, profits, and so on, into neo-classical cost categories. Thus, behavioral assumptions do not distinguish household from capitalist production since all producers maximize utility. Their differences lie in 'features stemming from the shape and behavior of their respective costs,' especially labor, which 'presents itself as an overhead rather than as a variable cost.'[43] This sort of translation allows for all the usual calculations of returns to labor and to 'capital' within the enterprise.

A consistent classical interpretation also shows Chayanov's argument to

[40] D. Thorner, B. Kerblay, R. E. F. Smith, eds., *On the Theory of Peasant Economy* (Homewood, Ill.: American Economic Association Translation Series, 1966).

[41] J. R. Millar, 'A Reformulation of A. V. Chayanov's Theory of the Peasant Economy,' *Economic Development and Cultural Change,* 18 (1970), 219–29.

[42] Cited in Basile Kerblay, 'Chayanov and the Theory of Peasantry as a Specific Type of Economy,' in T. Shanin, *Peasants and Peasant Societies* (Penguin, 1971), p. 152.

[43] Millar, *op. cit.,* p. 222.

be incorrect. As neo-classical analysis demonstrates, people can perform any calculations they wish by organizing facts into the relevant categories. The classical argument is that analysis based on the distribution of the product between owners of means of production and of labor power (neo-classical 'factors') can be successful only if these structural categories apply to real groups generated by the organization of production itself. Thus Marx argues that where the capitalist mode of production predominates, but 'not all productive relations have been subordinated to it,' the physical existence of means of production and their social character as property of non-laborers, become inseparable 'in the mode of thought of bourgeois society.' Consequently, the same 'categorical determinateness . . . is assumed even where the relation is in direct contradiction to it.'[44] His example of an application of capitalist categories to independent agriculturalists or handicraftsmen, which is neither impossible nor totally absurd, is the following:

> As owner of the means of production he is capitalist; as labourer he is his own wage-labourer. As capitalist he therefore pays himself his wages and draws his profit on his capital; that is to say, he exploits himself as wage-labourer, and pays himself, in the surplus-value, the tribute that labour owes to capital.[45]

Thus, simple commodity producers within the context of larger capitalist social relations may well 'calculate' as if production involved separate classes. The fact that production involves only one class determines a great deal, but it does not determine this aspect of the 'behavior' of owners of household and capitalist enterprises.

Although Chayanov's analysis was flawed, his conclusions were correct. In either neo-classical or classical terms, the structures of household and capitalist enterprises are different: for the one in terms of the form of costs impinging on the enterprise; and for the other in terms of the relations of production within the enterprise. In neither theory do these structural differences derive from 'behavioral' assumptions, or require different approaches to calculation. Despite its analytical problems, therefore, Chayanov's approach has retained its appeal because it addresses a crucial problem in the study of household production, namely, the intersection of demographic and economic aspects of enterprises based on family labor.

The supply of laborers from within the household creates an inflexibility in the quantity of labor available for production.[46] While commercial

[44] *Theories of Surplus Value* (Moscow: Progress Publishers, 1963), Part I, pp. 407–08.

[45] *Ibid.*, p. 408. Cf. Beverley Brown, 'Natural and Social Division of Labour—Engels and the Domestic Labour Debate,' *m/f*, 1 (1978), p. 42.

[46] Chayanov focuses on both the labor and consumption aspects of household demography, as reflected in the consumer/producer ratio. This is more important for partial subsistence households in which personal consumption (and sometimes demands of surplus product) is a much larger proportion of the total product than productive consumption. For specialized commodity production households, the reverse is true, so that variations in the

households adjust fertility in terms of generational reproduction,[47] there are clearly demographic limits to the supply of labor within the enterprise. There is, in addition, a demographic cycle, in which children spend their early years able to contribute nothing and later only a proportion of adult labor. For commercial as opposed to subsistence households, the latter is secondary; cyclical variation in labor supply, like seasonal variation in labor requirements, can be met through a combination of limited and temporary access to the labor market and cooperation among households.[48] The former, however, is crucial. Two of the great advantages of capitalist production are its potential for very large scale production and its flexiblity in combining labor power and means of production. One of the specific conditions for the reproduction of the commercial household, therefore, is the existence of technical conditions that allow competitive production by enterprises with the average number of laborers which are found within the demographic range of households. This condition bears no necessary relation to the *absolute* level of productive consumption; households may spend very little or very much indeed on renewal of means of production, so long as their combination with household labor allows for competitive production.

Household production lacks a structural requirement for a surplus product.[49] Personal consumption and the net product are structurally identical; the money that remains after renewal of means of production constitutes a single sum belonging to the household. Within the limits of competition, immediate consumption, deferred consumption, or expansion of the enterprise are subjective decisions. There are no separate groups to struggle over the division of the product into 'wages' for personal consumption and 'profit' for expansion. If competition requires expansion, then the money used is a subtraction from the single sum potentially available for personal consumption. This level must be sufficient to renew the household as a kin-related group of laborers.

The combination of labor and ownership in the household also involves

number of consumers in the household is of little importance, whereas the number of laborers required under conditions of competition is of fundamental importance.

[47] See, for example, Richard A. Easterlin, 'Population Change and Farm Settlement in the Northern United States,' *Journal of Economic History*, 36 (1976), 63–70, and Paul Hohenberg, 'Change in Rural France in the Period of Industrialization, 1830–1914,' *Journal of Economic History*, 30 (1972), 227.

[48] See Alan G. Bogue, *From Prairie to Cornbelt. Farming on the Illinois and Iowa Prairies in the Nineteenth Century* (Chicago: University of Chicago Press, 1963), p. 185, for the nineteenth century. Contemporary cooperation has been described by J. W. Bennett, 'Reciprocal Exchanges among North American Agricultural Operators,' *Southwestern Journal of Anthropology*, 24 (1968), and Seena Kohl, *Working Together* (Toronto: Holt, Rinehart and Winston, 1976), pp. 42–43.

[49] As argued above, a surplus product may be required in the form of rent, taxes, etc., depending upon conditions within the social formation, but it is not inherent in the form of household production itself.

different conditions governing the quantity of labor per person and the level of personal consumption. Whereas the capitalist seeks to increase the intensity of labor and decrease the level of wages, he is resisted in both attempts by the laborer. This antagonism is not completely absent within the household, but is transformed into a choice, within the limits set by market conditions, of increasing their own drudgery in order to increase the total product (the capitalist 'role'), or of increasing leisure at the expense of the total product (the laborer 'role'). The analogy is restricted, however, since for households the total product directly determines personal consumption. Under conditions of intense competition, this flexibility of personal consumption can permit an increase in what Chayanov calls 'self-exploitation,' that is, working harder and consuming less in order to preserve the enterprise.

Consistent with the above argument for the preference for independent production over wage labor, simple commodity producers seek to maintain their independent status, rather than fall into the ranks of propertyless laborers. Under pressure of relative prices and costs, households reduce personal consumption to a minimum. If this fails to secure reproduction, undermining takes both technical and social forms. On the one side productive consumption can be reduced as well, but this further reduces the competitive position and reinforces the tendencies towards decomposition. On the other side, the household may seek to preserve its integrity by having individual members work for wages to supplement the household income. Taken too far, this can be self-defeating, destroying the household as a unit of production in order to save it as a unit of consumption. What began as a supplement to the household income ends as the main source, reducing household production to a subsistence supplement to the wages of family members employed individually by others.[50]

The cost categories of household production, then, aside from productive consumption and in some cases rent, are different from those of capitalist production. There is no structural requirement for profit, absolute or relative. Personal consumption is flexible, within the prevailing standards of the social formation. All these are competitive advantages over capitalist production, but entail a very strict condition: that technical requirements allow combinations of means of production with the quantity of labor on average available within commercial households.

THE TRANSFORMATION OF WHEAT PRODUCTION

We have so far argued that the different forms of production competing within the world wheat market between 1873 and 1935 have different

[50] See note 36. That this is the real alternative to failure for commercial agricultural households is generally acknowledged. See, for example, Max J. Hedley, 'Independent Commodity Production and the Dynamics of Tradition,' *Canadian Review of Sociology and Anthropology*, 13:4 (1976), 413–21.

structural bases for reproduction (or decomposition), and that these are reflected in different cost categories and commitments to survival of the enterprise. It follows that each producer competing in the world market, and governed by the world price, must be understood in two terms: (1) each has a productive form with specific conditions for reproduction; and (2) each is located within a social formation with specific costs. Thus, even producers with the same form of production may have different actual costs in different social formations, because of differences in access to land, in prices of means of production, in prevailing standards of living, in wages, or in normal profits. These different costs are determined by the complex of conditions within each social formation. State interventions can have effects, intended or otherwise, which figure significantly in the determination of these complexes of local conditions.

The transformation of wheat production in this period, then, can be understood as the historical conjuncture at a world level of effects of existing *forms of production* and of relevant costs for each form within all *social formations*. The outcome of this conjuncture was that specialized household producers of wheat replaced both diversified household producers and specialized capitalist producers located in diverse social formations.

The remainder of this essay presents historical material related to the rise of simple commodity production and the decline of capitalist production of wheat for the world market. Given the geographical and conceptual scope of the analysis, the data presented here cannot be more than illustrative. The focus is on the two social formations that were most important in the wheat trade of the period, the United States and Great Britain. Other cases, especially Canada and Germany, will provide supplementary and comparative examples.

The rise of simple commodity production. The emergence and reproduction of simple commodity production of wheat in the last decades of the nineteenth century, and its survival even of the crisis of the 1930s, indicates its conjunctural superiority over capitalist production. This superiority derived from a combination of technical conditions governing the ratios of labor to land and of social conditions governing the costs of each form of production within the relevant social formations. The technical conditions made household production possible. The social conditions that made it competitively superior were in each case local, but competition on the world market made these conditions felt by commercial wheat producers everywhere.

The introduction of harvesting machinery in the United States during the second half of the nineteenth century greatly reduced the amount of labor required on commercial wheat farms. Hand-rake reapers widely adopted in the Midwest in the 1850s required only two men to operate, and

self-rake reapers adopted in the following decade required only a driver. The binding of the wheat was still a labor-intensive operation, however, so that the perfection of the self-binding reaper by 1880 was both necessary to allow for the cultivation of large acreages by household labor, and timely with respect to the emergence of a world market.[51] The steam thresher, developed in the 1830s, was in general use by the 1870s, further reducing labor requirements per farm whether through its direct purchase or through transactions with other specialized simple commodity producers, machine owners who sold their services from farm to farm.[52] The combined harvester–thresher, developed in the 1880s, but used by household producers on the plains only in the early twentieth century,[53] removed the necessity for binding altogether and made the threshing machine redundant.

At the same time, minimum acreage for a viable commercial wheat farm increased. On one side, after 1885 wheat production came increasingly to be concentrated in the plains, where climate and geography called for farming techniques requiring more or less double the acreage of an earlier period.[54] On the other side, the price of wheat fell by almost half, to 60 cents a bushel between 1882 and 1896,[55] while yields per acre remained relatively constant.[56] Ignoring for the moment prices of articles of personal and productive consumption, the maintenance of a constant return to the enterprise with falling prices and stable yields per acre was possible only through increased acreages. And if additional means of production and labor costs were not to absorb the product of the additional acreage, reproduction was possible only through increased productivity of labor.[57] In fact, the number of man-hours required to produce 100 bushels of wheat

[51] Shanon, *op.cit.*, pp. 134–35.

[52] Danhof, *op. cit.*, pp. 224–26.

[53] Arnold P. Yerkes and L. M. Church, 'Cost of Harvesting Wheat by Different Methods,' United States Department of Agriculture Bulletin No. 627 (Washington, D.C.: Government Printing Office, 1918), write: 'Of late years the smaller outfits [combines of 7 or 9 foot widths] have been increasing in number very rapidly' (p. 19) and '. . . it may be pertinent to state that the seven and nine-foot outfits are, for the most part, individually owned and are used only on the farm of the owner, while the larger rigs are in many cases used more or less for custom work' (p. 21).

[54] At least as this was reflected in the inadequacy of initial homestead allotments. See Walter Prescott Webb, *The Great Plains* (New York: Grossett and Dunlap, 1931).

[55] United States Department of Agriculture *Yearbook* (Washington, D.C.: Government Printing Office, 1935).

[56] United States Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1957* (Washington, D.C.: Government Printing Office, 1960), p. 281.

[57] For analysis of the relative importance of regional specialization and mechanization, see William N. Parker and Judith V. Klein, 'Productivity Growth in Grain Production in the United States, 1840–60 and 1900–10,' in National Bureau of Economic research, *Output, Employment, and Productivity in the United States after 1800,* Studies in Income and Wealth, Vol. 30 (New York: Columbia University Press, 1966); and Franklin M. Fisher and Peter Temin, 'Regional Specialization and the Supply of Wheat in the United States, 1867–1914,' *Review of Economics and Statistics,* 52 (1970), 134–49.

fell from 233 in 1840, to 152 in 1880, 108 in 1900, and 87 in 1920.[58] This technical progress, of course, in itself, implies nothing about the organization of production: its first major application was to the immense wheat farms of California, where on one enterprise described in the 1880 census increased productivity was realized on a capitalist farm, using many machines and animals, and employing 67 men at a cost in wages of 13.5 cents a bushel.[59] But the combine all the same made possible the cultivation of a competitive wheat farm by two laborers using one machine, and thus by a household.[60]

These labor-saving machines actually were adopted by wheat farmers during this period. The value in constant dollars (average1910–14) of implements, machinery, and horses and mules, per farm in the plains region almost quadrupled between 1870 and 1920, when it reached 1,650 dollars.[61] Serious pressure to adopt machinery came from the evolving relation between cost of production and price. The U.S. Department of Agriculture calculated in 1912 that the actual cost of harvesting by machine methods was 8 cents a bushel, or twice the cost by hand methods in 1850. Moreover, prices fell in the interim, so that the cost represented one-eleventh of the selling price in the early twentieth century, compared with one-thirtieth of the selling price half a century earlier. Of course, wages rose considerably over the period, too, so that the hand methods of 1850 used on the larger farms of 1912 would have raised production costs by about one-third.[62]

The adoption of machinery, moreover, was in household wheat farms. The importance of the machinery lay not in its absolute reduction of costs of production, but in its reduction in the amount of labor required per acre harvested.[63] The simultaneous increases in farm size and labor productivity kept wheat production well within the range of household labor. The average number of acres per farm in the plains increased from 154 in 1870, to 198 in 1890, to 297 in 1910, and stabilized at around 350 acres between 1920 and 1935.[64] In the same years, the average number of persons engaged in agriculture per farm declined from 2.15 in 1870, to 1.72 persons per farm in 1890, and stabilized at about 1.5 persons per farm between 1910 and 1930.[65] Since marriage was a virtual prerequisite to establishing or inherit-

[58] *Historical Statistics of the United States,* p. 281.

[59] See the volume on *Agriculture* of the 1880 Census, pp. 529–30.

[60] Shannon, *op cit.,* p. 144, writes: '. . . in the day of the sickle and flail, the farmer was limited to the amount of the grain he could reap, or about 7½ acres for each mower. But, in the 1890s, he might well grow 135 acres, if he wanted to specialize to that extent.'

[61] Calculated from data in Alvin S. Tostlebe, *Capital in Agriculture: Its Formation and Financing Since 1870,* National Bureau of Economic Research (Princeton: Princeton University Press, 1957), pp.51 and 68.

[62] Yerkes and Church, *op cit.,* p. 12.

[63] *Ibid.*

[64] Tostlebe, *op. cit.,* p. 87.

[65] Calculated from *Ibid.,* pp. 48 and 51.

ing a farm,[66] these one-and-a-half to two laborers may be thought of as a man and his son.[67] The increasing use of machinery by household wheat producers was reflected in the decreasing size of the harvesting equipment in terms of its width and the number of horses required to use it. Even those larger machines which continued to be used were purchased by 'custom workers,' that is, other simple commodity producers who owned harvesting machinery and contracted services to a series of farms.[68] Thus, while technology did not determine household production, it did provide the historical basis for it. It was the intersection of these technical conditions with the structural characteristics of household production that determined the rise of the latter.[69]

The rise of specialized household rather than capitalist production, given the technical basis for either, was conjunctural. The availability of land for settlement created a shortage of laborers offering to sell their labor power to potential buyers on the plains, and consequently high wages.[70] In contrast, the flexibility of personal consumption by household producers was competitively advantageous. During the price fall of 1882–96, unlike those of European agricultural households, whose reproduction was seriously threatened,[71] terms of trade between agricultural commodities and the articles of personal and productive consumption of American wheat

[66] In a rare case in which such detailed data were reported, 79.4 percent of the owners of family farms in Cass County, North Dakota, in 1920, were married, while most other occupations in this specialized wheat producing district were held by single men. The only other occupational category with any significant number of married men (17.1 percent) was the pool of permanent agricultural wage laborers, which provided only one quarter of all reported labor. C. J. Galpin and V. B. Larson, *Farm Population of Selected Counties,* United States Bureau of the Census (Washington, D.C.: Government Printing Office, 1924), p. 150. For an analysis of the role of wage labor, see H. Friedman, 'Simple Commodity Production and Wage Labour in the American Plains,' *The Journal of Peasant Studies,* in press.

[67] Respondents to agricultural censuses consistently report that women do not do agricultural labor. There exists scattered evidence to the contrary, but it remains impossible to fully penetrate the ideological conception of women's role. Any unreported participation of women, of course, reinforces the importance of household labor.

[68] Yerkes and Church, *op. cit.,* pp. 19–21.

[69] For the interaction among size of farms, labor costs, and machine method costs, in the adoption of mechanical threshers in an earlier period, see Paul A. David, 'The Mechanization of Reaping in the Ante-Bellum Midwest,' in his *Technical Choice, Innovation, and Economic Growth. Essays on American and British Experience in the Nineteenth Century* (Cambridge: The University Press, 1975).

[70] From the point of view of the capitalist, of course, not of the laborer. The latter has rightly been emphasized, since wages rarely allowed for mobility up the 'agricultural ladder' to ownership or even tenancy. See Gates, *Landlord and Tenants,* pp. 318–19. But from the point of view of capitalist reproduction, the wage bill looks quite different, especially when competition by simple commodity producers is technically possible and actually overwhelming.

[71] While the price of wheat in England fell 42 percent between 1882 and 1896, the prices of such articles of personal consumption as wool, cotton, and wood, fell by about 37 percent, 21 percent, and 34 percent, respectively. See William Page, *Commerce and Industry* (London: Constable and Co., 1919), pp. 219–23, and Michael Barratt Brown, *The Economics of Imperialism* (Penguin, 1974), pp. 246–47.

producers improved.[72] Thus the resort to hired labor to supplement household labor was possible; high wages represented a temporary and auxiliary cost, not a permanent and basic cost, as for capitalist producers.[73]

In the second price depression, of 1925–35, when the world wheat price fell by about two-thirds,[74] terms of trade declined for producers throughout the world, creating the chronic 'cost-price' pressure on the family farm.[75] Yet long after wage laborers and capitalists would have abandoned wheat production for better wages or profits elsewhere, household wheat producers remained. The absence of the need for profit permitted reproduction at lower prices than those for capitalists in the same region, faced with the same costs. And the absence of mobility in search of the highest wage within the labor market allowed for considerable lowering of the standard of living of the household in the interests of survival as a productive entity.[76]

The availability of land created a double competitive advantage for households over capitalists. Not only did it allow the establishment of household producers in large numbers, and drive up wages, but it also permitted an extended period of reduced productive consumption. Much of the early reproduction of household wheat producers in the United States and Canada was based on 'soil mining,' in which colonists brought forth crops from the fertile virgin soil without replenishing it, and then moved on to new homesteads.[77] While this was in principle possible for capitalists as well, the repeated establishment of large farms was more difficult.[78] Once capitalist production had been undermined by household competition,[79] reproduction of simple commodity producers through reduction of personal and productive consumption could proceed still further, resulting in the combined economic and ecological crisis of the Dustbowl in the 1930s.

[72] For citation of the major studies, see John D. Bowman and Richard H. Keehn, 'Agricultural Terms of Trade in Four Midwestern States,' *Journal of Economic History,* 34 (1974), 593, n. 4. See also Anne Mayhew, 'A Reappraisal of the Causes of Farm Protest in the United States, 1870–1900,' *Journal of Economic History,* 30 (1972), 464–68.

[73] See note 66.

[74] United States Department of Agriculture *Yearbook,* 1935.

[75] Hedley, *op. cit.*

[76] *Ibid.*; Shannon, *op.cit.*, p. 303. For a detailed account of standards of living of Saskatchewan farm households in the 1930s, see G. E. Britnell, *The Wheat Economy* (Toronto: University of Toronto Press, 1939), Ch. VII. See also Robert V. Hine, *The American West, An Interpretive History* (Little, Brown & Co., 1973), p. 166.

[77] Shannon, *op. cit.,* pp. 169–172. D. W. Brogan, 'The Rise and Decline of the American Agricultural Interest,' *Economic History Review,* V:2 (1935), 13–14. W. J. Waines, 'Problems of the Drought Area in Western Canada,' in H. A. Innes, ed., *Essays in Political Economy* (Toronto: University of Toronto Press, 1938), pp. 205–9. European households which survived as commercial wheat producers under government protection were forced by land scarcity to practice better, as well as more intensive methods. See Shollenberger, *op. cit.*

[78] Gates, *Landlords and Tenants,* pp. 253–59, 266–83.

[79] *Ibid.,* pp. 238–40. Shannon, *op. cit.,* p. 154.

In addition to driving up wages for prospective capitalists, and facilitating the expansion of households, the availability of land was peculiarly related to the supply of credit on the plains. Systematic data on farm debt are available only from 1910 onwards, when settlement of the American plains was quite advanced. With stable settlement, farm indebtedness on the great plains was almost exactly equivalent to the national average, which increased as a percentage of the value of physical assets from approximately 10 percent in 1910 to approximately 20 percent in 1930.[80] With stable settlement, moreover, wheat farmers could participate in a normal credit market, in which lenders were specialized institutions, such as banks and insurance companies, rather than individuals.[81] They supplied loans on the basis of general economic conditions and expected return, and were replaced to a large extent by the government, which during the depression of the 1930s began to supply farm credit despite its unprofitability to private lenders.[82] These more or less normal responses of the supply of credit, however, were typical only of the period of stable settlement.

During the extended process of settlement itself, the supply of credit for commercial households was a different matter. Large investments had been made in anticipation of settlement and commerce. In both the United States and Canada the transcontinental railways preceded settlement and could therefore offer no immediate returns through freight. Their construction was also exceedingly costly. Investment under these conditions was made appealing to international capital through huge government grants of cash and land to railway companies.[83] Once built, the railways' income from freight and from land depended upon settlement of the surrounding areas.[84] Despite the opportunities this system presented for individual graft, and for the displacement of would-be homesteaders onto privately held land, the interest of the companies remained to encourage colonization under difficult social and natural conditions.[85]

Similarly, land companies sprang up in the American West in the 1880s. Land companies were organized on a still larger scale with the support of

[80] Tostlebe, *op. cit.*, p. 169.

[81] *Ibid.*, p. 225. In 1910, almost two-thirds of farm mortgage debt was held by individuals, and less than one quarter by banks and insurance companies. By 1925, the respective proportions were 37.1 percent and 45.9 percent.

[82] *Ibid.* At its peak in 1934, government credit accounted for 82.3 percent of existing farm mortgages in the American plains.

[83] See Douglass C. North, 'International Capital Flows and the Development of the American West,' in Harry N. Scheiber, ed., *United States Economic History* (New York: Alfred A. Knopf, 1964).

[84] Gates, *Fifty Million Acres,* p. 253, points out the ambivalent position of railroads as carriers of freight and as land companies.

[85] Walter Prescott Webb, *The Great Plains,* pp. 295–374.

the Canadian government two decades later.[86] The latter were more successful than the former, which collapsed as borrowers abandoned temporarily worthless farms in the crisis of the 1890s. Both played a role in the development of commercial farming in the American and Canadian West. Despite their fixing of prices of articles of personal and productive consumption, and despite the typically hostile relation between debtors and creditors expressed in farmer agitation,[87] they made credit available to settlers on the basis of their own nonliquid capital requirements. Their lands could be made valuable only through settlement, and credit was granted for this, not according to the alternative sources of investment usually considered in a credit system.[88]

The historical conditions for the replacement of capitalist by household production thus existed between 1870 and the 1930s. Under prevailing technical conditions, and with land and credit available, household producers whose personal consumption could approach the minimum wage within the social formation, and who had no requirement for profit, were able to reproduce themselves at a lower world wheat price than could capitalist producers. This relation between specific conditions in the social formation and the structure of reproduction of different productive forms, is supported by other cases of simple commodity producers of wheat. In Argentina and Australia land and credit were available, but were restricted by competition for land use by livestock producers; consequently, household wheat production developed, but achieved limited importance relative to the United States and Canada.[89] In Europe, land was not available, and increased supplies on the world market put pressure on all producers

[86] Norman Macdonald, *Canada. Immigration and Colonization, 1941–1903* (Toronto: Macmillan, 1970).

[87] Mayhew, *op. cit.*

[88] Macdonald, *op. cit.*, pp. 235–37. Allan G. Bogue, 'The Land Mortgage Company in the Early Plains States,' *Agricultural History,* XXV: 1 (1951), 20–33; Roger V. Clements, 'British-Controlled Enterprise in the West between 1870 and 1900, and Some Agrarian Reactions,' *Agricultural History,* XXVII: 4 (1953), 132–141; William S. Greever, 'A Comparison of Railroad Land-Grant Policies,' *Agricultural History,* XXV: 2 (1951), 83–99. W. T. Easterbrook, *Farm Credit in Canada* (Toronto: University of Toronto Press, 1938), pp. 45–47.

[89] Australia and Argentina present interesting comparisons. Despite the existence of large unsettled land areas, the social organization of the land, and the related availability of credit, favored very large, capitalist cattle and sheep ranchers relative to household wheat producers, an important factor in the comparative lack of growth of Argentine and Australian wheat production. See Scobie, *op. cit.*; H. S. Ferns, *Britain and Argentina in the Nineteenth Century* (Oxford: The Clarendon Press, 1960), pp. 370–422; J. H. Clapham, *The Bank of England. A History, Vol. II, 1797–1914* (Cambridge: The University Press, 1958), pp. 326–28; Friedmann, *op. cit.*, pp. 177–210; Manning Clark, *A Short History of Australia* (New York: The New American Library, 1969), pp. 140–47; F. K. Crowley, *Australia's Western Third* (London: Macmillan, 1960), p. 104. In both countries capitalist livestock production and for the most part simple commodity wheat production grew up in complex mutual relationship, in which the former generally had the economic and political advantage. The important shift in Australia came with the development of government credit to wheat producers in the 1890s. See Malenbaum, *op.cit.*, p. 142.

through the falling world price. If any producers were to survive, however, technical determination of labor/land ratios gave households a structural advantage relative to capitalists. When the continental states of Europe erected tariff barriers in the last decades of the nineteenth century, household producers were able to organize cooperatives and to exert political pressure for state subsidies that allowed technical improvement and specialization.[90] Where commercial wheat production survived, it was based increasingly on specialized household production and decreasingly on the use of wage labor.

The undermining of capitalist reproduction. Capitalist wheat production declined absolutely under the onslaught of competition by household labor throughout the world market. The undermining of the reproduction of capitalist wheat production can be understood through the specific characteristics of the capitalist form. Reproduction of capitalist wheat production depends upon two conditions: first, the continual re-creation of the capitalist relation; and second, the maintenance in wheat production under prevailing conditions of land tenure, technology, and wages, of the normal rate of profit prevailing within the national economy. The corresponding conditions for the undermining of reproduction are: first, increasing wages and costs of productive consumption relative to the wheat price; and second, changes in the relative rates of profit among sectors, so that capital moves out of wheat production.

Great Britain is the most important case of the decline of capitalist wheat production. The general facts are well known: wheat acreage in England fell from just over 3 million in 1875 to under 1.5 million in 1895, and declined by an even greater proportion in Scotland and Wales during the same period.[91] The interpretation, however, is not generally formulated in social terms. The usual conception of the historical problem is that presumed lower costs, geographically determined, led to expansion of new areas at the expense of contraction in old areas of wheat production. The only respite for European wheat producers lay in state protection through tariffs in the nineteenth century,[92] and through more direct state intervention in production and distribution in the 1930s.[93] Without such protection and intervention, wheat production 'naturally' declined, and former producers either left agriculture altogether or specialized in other commodities.

[90] Dovring, *Land and Labor*, pp. 192–215; Michael Tracy, *Agriculture in Western Europe: Crisis and Adaptation Since 1880* (London: Jonathan Cape, 1964).

[91] C. S. Orwin and E. H. Whetham, *History of British Agriculture 1846–1914* (London: Archon Books, 1964), pp. 251–68, esp. p. 259.

[92] See especially the classic article by C. P. Kindleberger, 'Group Behavior and International Trade,' *Journal of Political Economy*, 59 (1951), pp. 30–46

[93] Tracy, *op. cit.*, pp. 117–221.

While the geographical facts are beyond dispute, equally important are the social facts through which the former were mediated. The contraction of wheat production in England was also a contraction of *capitalist* production. Competition from abroad was overwhelmingly by simple commodity producers. It was not the geographical regions themselves which were in competition, but producers located within them. To be sure, regional conditions, most especially land availability, conditioned the reproduction of all sorts of producers; but these regional conditions were as much social as geographical facts, and interpreted as such contribute to a richer understanding of political interventions in expanding as well as contracting regions. Meanwhile, competition among forms of production was at least as important an aspect of the contraction of English wheat production.

The importance of the capitalist form of wheat production in the English contraction is indicated by two comparisons. First, comparison with the contemporary United States indicates that under the same conditions of land availability, capitalist production could not compete with simple commodity production. Second, comparison with continental Europe indicates that the 'preservation' of wheat production through state intervention was not simply a matter of maintenance of existing forms of production; for diversified, partial subsistence households, protection enabled a shift to specialized simple commodity production; and for capitalists, protection was a politically and socially costly prolongation of the processes undermining reproduction.

The social character of production underlying regional specialization is underlined by the brief, dramatic history of capitalist wheat production in the United States plains in the 1880s. Here capitalist wheat production was less historically rooted and capital was more mobile than anywhere else in the world. Unfettered by the kinds of legal or informal restrictions on the use of land and labor which emerge from long agricultural practice, entrepreneurs on the American plains achieved new heights of rational organization of wheat production in pursuit of profit. The rise and fall of American capitalist wheat production, therefore, shows in stark outline the processes by which competition by household producers contributed to the undermining of capitalist reproduction generally.

The great 'bonanza' farms of the plains were the extension on a grand scale of an earlier pattern of American frontier settlement. Prior to stable settlement, entrepreneurs gathered together great areas of land and hired laborers to cultivate them. But stable settlement always brought the triumph of household production, and the capitalist farms of the frontier were subdivided into plots for sale or rent. Thus capitalist agriculture prospered in the Illinois frontier of the 1860s and 1870s, but gave way in the 1880s to more intensive farming on plots which could be worked by

household labor.[94] In fact, for all the problems of the census categories,[95] official data suggest that 1870 was the year in which the proportion of laborers to the total number of persons engaged in agriculture reached a peak.[96] Yet the bonanza farms of the Dakotas and Minnesota in the 1880s were unprecedented in size, mobilizing vast tracts of temporarily unprofitable railway land, applying machinery on a new scale, and employing professional managers and armies of migrant laborers to work them.

These huge capitalist farms were a product of the frontier. They allowed experimentation on a new scale by railway companies and other capital in the forefront of organized settlement. Since colonization by independent households became increasingly costly on the dry, treeless plains, competition for the use of land and the application of labor was not immediately present. The wood for tools, fencing, and housing, which had been available for appropriation from nature in earlier pioneer regions, was absent from the plains, and lack of water created further difficulties. Households had to be fully commercial from the outset, and specialize in wheat production, to be able to purchase articles of productive and personal consumption for reproduction. The initial investment in monetary terms was correspondingly high, estimates ranging from 500 dollars to triple that amount.[97] Before successful settlement by simple commodity producers intensified problems of labor supply and profitability, capitalist enterprises, based on large-scale capital usually related to the railways, had a temporary advantage gained through special access to means of production and transportation.[98]

In these circumstances, initial breaking of the prairie could be done by capitalist farms. The absence of prior settlement meant the absence of pre-existing labor market, but wages were not as high from absolute scarcity as they would later become when increased density of settlement allowed laborers to start their own farms and compete directly with their former employers.[99] With the temporary bankruptcy of the Northern Pacific in 1873, its construction of the railway and its colonization projects[100] were interrupted. Two of its directors took the lead in establishing the bonanza farms of the Red River Valley, employing Oliver Dalrymple to organize the famous farm of that name. Dalrymple then began operations in his own right as well, and during the high prices of the late 1870s did

[94] Gates, *Landlords and Tenants,* pp. 249–66. Shannon, *op.cit.*, p. 156

[95] Since the main concern of the census was to determine patterns of tenancy and ownership, paid employment was not given rigorous attention. Tenant and laborer status were often confused, and until the 1920 Census, nominal wages to inheriting children, and actual wages for farms sons temporarily employed elsewhere, were not distinguished from wages paid to fully proletarian laborers. See Gates' discussion in *Landlords and Tenants,* p. 305.

[96] *Ibid.*, p. 304. [97] *Ibid.*, pp. 311–12. [98] Shannon, *op.cit.*, pp. 156–58.

[99] *Ibid.*, p. 159. Gates, *Landlords and Tenants,* pp. 318–19.

[100] James B. Hedges, 'The Colonization Work of the Northern Pacific Railroad,' *Mississippi Valley Historical Review,* XIII:3 (1926).

fabulously well.[101] Capital flowed in, and by 1885 the entire region was dominated by farms of 7,000 to 60,000 acres owned by absentee investors.[102]

But the capitalist bonanza was shortlived. Like the lesser capitalist experiments in the earlier frontiers, the lands were broken up into farms which could be cultivated through household labor on a smaller scale. Where Dalrymple had used 200 pairs of harrows and 125 broadcast seeders and, for the harvest operations alone, had employed 25 men to use 20 horses, 155 binders, and 26 steam threshers, after 1885 households farming more intensively used correspondingly fewer machines. When prices tumbled after 1885, the great capitalist farms found competition with their simple commodity production neighbors increasingly difficult, and by 1896 many of them, including the Dalrymple farm, had disintegrated. The opening of the region by capitalist farms had speeded colonization, although its monopoly of the best lands restricted the first settlers to more marginal areas and often resulted in tenancies when the large farms were broken into household units.[103]

In continental Europe, despite the strikingly different political and social contexts, other forms of production also gave way to simple commodity production of wheat. In France households underwent a transition from partial subsistence, diversified production to specialized production of a variety of commodities. The main mechanism for this shift, in addition to the reduction of the total number of households in agriculture, was the increase in the size of the holding of those remaining. Thus the census of 1862 showed that over half of all landowning households were not able to provide their own personal consumption through agriculture, but by 1882, 80 percent of French agricultural households owned sufficient land to reproduce themselves.[104] Under tariff protection for wheat introduced in the 1880s, production became intensified. While acreage devoted to wheat declined slightly from 17 to 16 million acres before 1914, production increased somewhat erratically from 302.9 to 317.6 million bushels.[105]

The situation in Germany is more relevant to the decline of English wheat production. There most of the wheat, especially for the historic export trade, was produced by an important class of capitalist agriculturalists through the purchase of labor power on landed estates east of the Elbe River. Declining grain prices and labor supplies squeezed the incomes of the Prussian Junkers from the late 1870s onwards. The fall of the world

[101] This was prior to the convergence which marked the emergence of a world market in the mid-1880s. Although British prices were falling, the American wheat price, with the exception of one year, showed a 'steady advance' from 1875 to 1882. Thorsten Veblen, 'The Price of Wheat Since 1867,' *Journal of Political Economy*, I (1892–93), 78.

[102] Shannon, *op. cit.*, pp. 156–58.

[103] *Ibid.*, pp. 159–61. [104] Sargent, *op. cit.*, pp. 198–99.

[105] Malenbaum, *op. cit.*, pp. 236–39.

price occurred at the same time that Germany became a net importer of wheat, which had been an established export crop of the eastern region, even during the quarter century since 1852 when the country as a whole had been a net importer of rye.[106] Thus, the decade marked a shift in Germany's historic position in wheat production and commerce. The country became clearly marked as an area of high cost wheat production and an importer. Protective tariffs provided some measure of relief from the world price, but this extended rather than resolved the chronic crisis of the Junker landowners.[107]

Capitalist wheat production in Germany faced a crisis with both technical and social aspects. As relatively backward producers in a technical sense, they found the additional cost categories of wages and profits even more burdensome than the pioneer capitalists of the American plains. As traditional landowners, moreover, they were faced with two special problems relative to American and English producers: first, the size of the holdings on which they attempted to carry on capitalist agriculture was of the same order of magnitude as those cultivated by commercial households in America; and second, they were landowners and capitalists at once, so that much of their capital was nonliquid, and its value depended upon the income it could generate.

The history of the eastern German estates from the late 1870s centers around the attempt to maintain capitalist relations of production on land sizes appropriate to household wheat production under available technical conditions. The conception of a large estate was determined by local and historical conditions rather than by contemporary standards of world competition. Thus the 'large estates' of the Junkers were characterized even in the 1940s as holdings of more than 100 acres, and Weber in the early 1920s had referred to the inability of an 'average knightly holding of 400–500 acres' to 'support a lordly aristocratic existence.'[108] These 'large estates' were not attacked by the Nazi state despite the proclaimed ideological preference for 'small-to-medium holdings,'[109] and their historically diminished grandeur may have underlay the surprisingly consistent failure of left-wing parties to attach importance to their expropriation.[110]

The ownership of land presented further difficulties. Capital has two responses to falling prices: it can move into another branch of production,

[106] Alexander Gerschenkron, *Bread and Democracy in Germany* (Berkeley and Los Angeles: University of California Press, 1943), p. 43.

[107] See *ibid., passim* for a brilliant analysis of the effects on German politics of the agrarian structures and policies of the Junker class.

[108] Gerschenkron uses 100 acres as a lower limit. *Ibid.*, p. 22 He gives the quotation from Weber on p. 45. J. H. Clapham refers to Junker holdings as 'perhaps 2,000' acres. *The Economic History of France and Germany 1815–1914* (Cambridge: The University Press, 1955), p. 200.

[109] Tracy, *op. cit.*, p. 202.

[110] Gerschenkron, *op. cit.*, pp. 91–104.

or it can seek to lower costs through substituting techniques, decreasing wages, and reducing costs of productive consumption. The capitalist production of the Junkers had evolved out of the decomposition of feudal relations of production during the period of high foreign demand for wheat from 1815 to the crisis of the 1870s.[111] The result, quite apart from the social and political privileges attached to land ownership, was that their economic position was based in land.[112] As absolute profits were squeezed by falling world prices and emigration of rural laborers,[113] the price of the land fell as well. Unable to abandon the land for more profitable investments, the Junkers increased their mortgage indebtedness to accommodate rising costs, while prices continued to fall.[114] Since capital in wheat production was not mobile, Prussian agricultural capitalists were faced with a crisis beyond that in North America, where land was a considerably smaller proportion of capital invested, and beyond that in England, where capitalist farmers did not own the land at all, but rented it from another class which had to bear the brunt of the fall in land prices.[115]

Prussian farmers attempted to maintain capitalist reproduction in the face of competition from mechanized simple commodity production abroad. Reproduction required the lowering of costs of both labor and means of production. However, rural emigration was reducing the supply of labor, and the liquidity crisis inhibited modernization. Capitalist agriculture was maintained through a combination of political and economic strategies to reduce wages and productive consumption, a combination which restructured Prussian agriculture on a more backward technical and social basis. The response to wage pressure was to increase labor supply and to force wages down directly. The reorganization of production in the 1860s and 1870s from the old three-field system to intensive crop rotations made labor requirements more seasonal and increased the mobility of laborers among enterprises; this encouraged emigration and high seasonal labor costs.[116] During the ensuing crisis, Prussian capitalist farmers employed migrant laborers from Poland. At the same time, the state adopted a 'settlement' policy whose combined aims were to stop the

[111] For a brief account of this process, see Knut Borchardt, 'The Industrial Revolution in Germany, 1700–1914', in Carlo M. Cipolla, ed., *The Emergence of Industrial Societies,* 1 (London: Collins/Fontana, 1973), pp. 95–99.

[112] Karl Erich Born, 'Structural Changes in German Social and Economic Development at the End of the Nineteenth Century,' in James J. Sheehan, ed., *Imperial Germany* (New York and London: Franklin Watts, 1976), p. 34.

[113] Mack Walker, *Germany and the Emigration 1816–1885* (Cambridge: Harvard University Press, 1964), pp. 184–90.

[114] Hans Rosenberg, 'The Economic Impact of Imperial Germany, Agricultural Policy,' *Journal of Economic History,* 23 (1943), p. 102.

[115] Richard Perren, 'The Landlord and Agricultural Transformation, 1870–1900,' *Agricultural History Review,* 18:1 (1970), 36–51. Also Orwin and Whetham, *op. cit.,* p. 287.

[116] Born, *op. cit.,* p. 22.

existing colonization of East Elbian land by independent Polish peasants, and to increase the labor supply of the Junker economy by providing 'settlers' with land inadequate for subsistence unless supplemented by wages.[117]

In the years after the First World War, the Junkers resorted to more direct coercion to reduce wages. They maintained vigilante armies composed of former soldiers, whose activites in the absence of external attack were directed towards the suppression of farm labor organization.[118] After the rise to power of the Nazi Party, labor controls were more systematic. Agriculture was the first sector to be supplied with conscript labor.[119] Wages reflected this coercion; while total farm receipts between 1932–33 and 1937–38 increased by 48.1 percent, and receipts from crop products as opposed to livestock increased by 36.5 percent, wages increased by only 30.5 percent.[120]

The reduction of productive consumption was achieved by a politically buttressed shift from wheat to rye, despite movements of relative demand. Rye production increased from 5,955 thousand hectares in 1900 to 6,414 thousand in 1913, while wheat decreased from 2,049 thousand to 1,974 thousand hectares in the same period.[121] Certain aspects of this shift were technically progressive: after 1896, under Junker auspices, the ratio of cultivated to total agricultural land increased, and cultivation was intensified through the improvement of rotations and fertilizers.[122] Yields per acre of rye rose by a third and of wheat by a quarter between 1900 and 1913.[123] But in general the adoption of rye was a retrogressive movement toward lower quality, lower cost production of a bread grain whose demand depended on low incomes or artificial maintenance by the tariff structure.[124] Prior to the crisis of the 1870s, East Elbian wheat had been produced for export even when low domestic incomes maintained a high demand for rye, which consequently had to be imported.[125] German consumers, as elsewhere in Europe, increased their demand for wheat with rising incomes, and the tariff combination which favored rye relative to wheat production moved against this trend.[126] But rye production required less labor and lower costs of productive consumption, so that the political enforcement of its domestic consumption was a partly effective tactic of capitalist agriculture.[127] The complex interactions of the pre-war tariff structure gave way to explicit pressure for reduced standards of living, including consumption of grains instead of livestock products, and of rye instead of wheat, under the constraint of reparation payments. And

[117] Gerschenkron, *op. cit.*, pp. 101–3.
[118] *Ibid.*, p.105
[119] Landes, *op. cit.*, pp. 408–09.
[120] Tracy, *op. cit.*, p.209.
[121] Gerschenkron, *op. cit.*, p. 79
[122] Rosenberg, *op. cit.*, p.105.
[123] Gerschenkron, *loc. cit.*
[124] *Ibid.*, pp. 71–80.
[125] *Ibid.*, p.43.
[126] *Ibid.*, pp. 81–88. See also Ashley, *op. cit.*
[127] Gerschenkron, *op. cit.*, p. 71.

when Germany was again allowed to establish tariffs after 1925, it reestablished the differential between rye and wheat.[128] In addition to its retrograde effects on consumption and on productivity on Junker estates, the special support of rye also hindered the trend towards specialization by household producers.[129]

The attempt to maintain capitalist agriculture on farms of a few hundred acres was bound up with a kind of commercial retrogression, and with the political support of a small group at the expense of others in the social formation. The Junkers fought for their economic life with available political weapons, and for a long time sustained production in the face of world competition. Yet it was a losing battle. Under direct state intervention of the 1930s, yields per acre of wheat became the highest in the world,[130] and 'medium-sized' farms adopted the most advanced machinery and techniques.[131] Post-war land redistribution in East Germany involved about a quarter of the total, and mostly from large estates.[132] The problem of labor shortage was finally resolved with the abolition of capitalist agriculture by political means just as it had been sustained by political means.[133]

How should changes in British wheat production be interpreted in the light of the contrasting American and Prussian examples? Where American capitalist farmers were frontier pioneers, unfettered by historical relations of land and labor, English agriculture had a long history involving at least three classes, declining rural crafts and village life, and growing urban, industrial employment. Where Prussian landowners were so tied to precapitalist patterns of economic and political organization that crisis in the former was met by resort to the latter, English farming was firmly established on a capitalist basis by a nonlandowning class.

Capitalist wheat production in England responded to the pressures of competition from household producers abroad by moving into more profitable branches of production, but within serious limits to agricultural transformation set by existing social relations. Only with direct state intervention did agriculture generally, and wheat production in particular, begin to expand again, briefly during the First World War, and then permanently from the mid-1930s. When it did so, it finally adapted to the modern conditions of wheat production, which involved a high level of mechanization, and an increase in the importance of household relative to hired labor.

Capitalist wheat production had thrived in the period of High Farming

[128] *Ibid.*, pp.109, 117. [129] *Ibid.*, p. 124. [130] Shollenberger, *op. cit.*, p. 83.
[131] Borchardt, *op. cit.*, p. 125. [132] Dovring, *Land and Labor*, p. 248.
[133] E. Germany, like Eastern Europe generally, but unlike Western Europe, including W. Germany, showed a decrease in the number of hectares per male active in agriculture in 1950. *Ibid.*, p. 66. This probably reflects increased intensity attendant upon the dismemberment of the large, unproductive estates of an anachronistic aristocracy.

which preceded the crisis of 1873. Prior to the emergence of a world market, European prices were generally high.[134] At the same time, intensification of techniques of production, and growing opportunities for urban employment, induced a 'partial, but structural shortage of labor' from the 1850s onwards.[135] The shortage of agricultural labor was most pronounced at peak seasons of planting and harvesting. Since these were the tasks most susceptible to mechanization, it encouraged the adoption of machinery to spread labor requirements more evenly through the year. Through better organization and new methods, the greatly increased production of the period was provided by 22 percent fewer laborers in 1871 than there had been in 1851.[136]

And the reduction in the labor supply encouraged workers' organization, which though sporadic and impermanent, reduced the patriarchal character of relations in agriculture by seeking to substitute many payments in kind and restrictions on mobility with higher wages and better employment conditions.[137] A particular improvement was the limitation of child labor through the Gangs Act in 1869. Yet the shortage was only relative to the preceding glut, and wages remained low and conditions poor. The dramatic outburst of agricultural unionism of the early 1870s was defeated within a year by an employers' lockout, though not without some gains by the workers.[138]

With cheap labor and high prices, the capitalist farmers of mid-Victorian England had prospered under conditions that put them into immediate jeopardy with the rise of a world market. The large farms which were the main targets and fighters of union organization in the 1870s were from 100 to 1,000 acres in size, and their work force numbered some ten to fifteen men.[139] The levels of wages and prices before 1873, moreover, discouraged the adoption of the most advanced labor-saving machinery of the sort used in America. Instead, much of the increased productivity of labor was achieved through improved hand methods.[140] In this respect like the Junkers, the wheat farmers of England were thrown into competition with household producers using advanced machinery on the same size acreages. Even with higher yields per acre, capitalists faced with a combination of

[134] Susan Fairlie, 'The Corn Laws and British Wheat Production, 1829–76,' *Economic History Review,* 2nd ser., 22 (1969), 88–116.

[135] E. L. Jones, 'The Agricultural Labour Market in England, 1793–1872,' *Economic History Review,* 2nd ser., 17 (1964), 322.

[136] *Ibid.*, p. 337.

[137] *Ibid.*, pp. 330–38.

[138] Orwin and Whetham, *op. cit.*, pp. 203–39.

[139] J. P. D. Dunbabbin, 'The Incidence and Organization of Agricultural Trades Unionism in the 1870s,' *Agricultural History Review,* 16 (1968), 124–25.

[140] E. J. T. Collins, 'Harvest Technology and Labour Supply in Britain, 1790–1870,' *Economic History Review,* ser. 2, 22 (1969), 453–73. See also David, 'Landscape and Machine.'

rent payments, an inflexible wage bill, and the requirement for profit, found their reproduction undermined.

The result was a drastic reduction in wheat acreage, in both arable and pasture regions, and growth of specialization in livestock products and in other crops, such as fruit and vegetables. Much of this specialization was itself related to the growth of household production.[141] By 1908 a third of the nearly million men and boys employed in British farms were relatives rather than hired employees.[142]

This 'progressive' adaptation under the pressure of competition, however, was limited by social relationships on the land. Tenant farmers and landowners shared the burdens of the crisis, but while farmers were sometimes able to salvage some of their capital and invest it elsewhere, landlords were more closely tied to a devalued asset.[143] Their restrictions on the improvement of farm methods were gradually eroded by economic forces limiting their power over tenants, and by legislation.[144] Meanwhile, the frequent insistence on familiar patterns of crop rotation and mixed farming inhibited the shift away from wheat production.[145] The result of limitations on the mobility of capital was decreased productive consumption by both farmers and landlords. Much land fell into disuse or use requiring less attention for less yield; buildings and equipment deteriorated; and emphasis was placed on internal sufficiency in contrast to commercial specialization.[146] Wheat production which survived the price fall, therefore, was not generally based on greater specialization and improved methods, though these were in a few cases tried,[147] but on reversion to older and less commercial methods.

Wheat production expanded briefly during the First World War and permanently during the 1930s. Under state protection, and sometimes direct intervention, land was reclaimed from the waste and pasture which had increased during the Great Depression. The most advanced machinery

[141] T. W. Fletcher, 'The Great Depression of English Agriculture, 1873–1896,' *Economic History Review,* ser. 2, 13 (1960), 430–31. Also see P. J. Perry, *British Farming During the Great Depression 1870–1914, An Historical Geography* (Newton Abbot, Devon: David & Charles, 1974), pp. 102–07

[142] Orwin and Whetham, *op. cit.*, p. 345. This includes partial subsistence farms in all parts of Great Britain as well as fully commercial farms and thus somewhat overstates the case.

[143] They managed some shift in the basis of their wealth, however. See F. M. L. Thompson, *English Landed Society in the Nineteenth Century* (London: Routledge & Kegan Paul, 1963), pp. 302–03.

[144] J. R. Fisher, 'The Farmers' Alliance: An Agricultural Protest Movement of the 1880s,' *Agricultural History Review,* 26:1 (1978), 15–25. Also Orwin and Whetham, *op. cit.*, pp. 298–302.

[145] Orwin and Whetham, *op. cit.*, p. 248.

[146] *Ibid.*, pp. 264–66, 309–10.

[147] An impressive innovator was George Baylis of Berkshire. After losing money on a farm of 240 acres with the traditional rotations, Baylis decided in 1866 to apply the findings of the Rothamsted experiments, using artificial fertilizers and adjusting his rotations to corn, fallow, and clover. His success generally was ignored. Orwin and Whetham, *op. cit.*, p. 277.

was introduced, labor requirements were reduced, and productivity of land and labor improved.

When farmers showed only a temporary response to high grain prices at the outset of the war, the state intervened, first through advisory county committees, and then in 1917 through establishing a Food Production Department within the Board of Agriculture with compulsory powers to intervene in land tenure, production methods, and labor. Through large-scale drainage, pest control, and other improvements, through the commandeering of machinery and the direct seizure of land when necessary, through the deployment of '400,000 soldiers, women, and prisoners-of-war' as auxiliary labor, and through the guarantee of prices for six years, the Board extended wheat acreage from 1,912,000 acres in 1916 to 2,557,000 acres in 1918.[148] After the war the Board was reorganized and its powers of direct intervention abolished. But it retained some powers, and the experience provided an important basis for the permanent protection which was to follow.[149]

With the crisis of the 1930s, Great Britain officially revised its commitment to free trade in agriculture. In conjunction with Imperial Preference agreements, in 1933 the price of wheat was guaranteed and implemented through deficiency payments. Meanwhile, the National Farmers' Union grew in membership and political strength.[150] Protection encouraged increases in acreage and productivity,[151] even though full mechanization was not to occur until the wide adoption of the combine-harvester after the Second World War.[152] When wheat production was brought up to world technical standards, it reduced the labor/land ratio from one man to every 50 acres to one man to every 130–140 acres.[153] At the same time, the historically large farms of England, which facilitated mechanization,[154] had come to approximate the size of household farms, which also over the decades increased their yields per acre. And as laborers were able to demand higher wages and shorter hours, farmers were encouraged to adopt machinery to reduce their dependence on the labor market.[155] While capitalism did not disappear from English wheat production, the wage relation lost its central place.

[148] John Sheail, 'Land Improvement and Reclamation: The Experiences of the First World War in England and Wales,' *Agricultural History Review*, 24:2 (1976), pp. 110–12.

[149] *Ibid.*, pp. 124–25.

[150] M. A. Tracy, 'Fifty Years of Agricultural Policy,' *Journal of Agricultural Economics*, 27:3 (1976), pp. 336–37

[151] The number of tractors, for example, increased from very few in 1930 to over a hundred thousand in 1942. See 'A Century of Agricultural Statistics,' pp. 60, 71.

[152] W. Harwood Long, 'The Development of Mechanization in English Farming,' *Agricultural History Review*, 11 (1963), 21; Edith H. Whetham, 'The Mechanisation of British Farming 1910–1945,' *Journal of Agricultural Economics*, 21:3 (1970), 324–25.

[153] Whetham, *op. cit.*, pp. 322–23.

[154] Long, *op. cit.*, p.26 [155] Ibid.

THE ROLE OF THE STATE

The general shift from capitalist to simple commodity production was the result of technical and social conditions of production enforced through competition. But the numbers of producers, the rate of formation of new enterprises and decline of existing ones, and the distribution of producers among social formations, depended upon factors within each social formation. While the form of production determined the cost categories central to reproduction, complex local conditions determined the level of costs for each producer. And central to the determination of local conditions were state policies of expansion and protection.

The availability of land and credit in the United States, Canada, and other countries, allowed the establishment of simple commodity production of wheat on a technical level equivalent to capitalist production. Since prevailing techniques set labor requirements suitable to either form, the two forms of production came into direct competition. Under such circumstances, the absence of profit and the flexibility of personal consumption gave households a competitive advantage.

But the availability of land was not a 'natural' fact. The newly settled lands of North America, Argentina, and Australia were wrested from the indigenous populations. They were often in extreme climates which required technical innovations to make them susceptible to agriculture. And they were in distant regions which presupposed the establishment of transportation and other bases for settled social life and commodity production. The actual availability of land for colonization was a social consequence of territorial expansion organized by national states.

The national states in the new areas arose under different geopolitical circumstances from those in Europe. An extended period of quiescence had followed the rise of strong national states in France and England, but in the late nineteenth century the unification of Germany and Italy marked the emergence of a new period of nation-building in Europe. These new nations, whatever their claims to greater territory, grew up in an already settled and politically organized area, with the exception of Asian Russia. The new national states in America and Oceania were different. The United States emerged from the Civil War with a strong national state whose policies of territorial expansion into the plains enjoyed popular support and whose military and administrative apparatuses were newly enlarged to pursue them successfully. The provinces of British North America were unified into the national state of Canada shortly thereafter. The federal state in Argentina finally succeeded around 1880 in subduing the provincial armies resisting national unification, and established the political and military conditions for expansion of the nation into territories still held by

indigenous peoples. Finally, after the turn of the twentieth century, Australia was born through the confederation of its separate states.

In all these cases, the new or newly unified national states existed in a territorial vacuum. The inhabitants of the regions neighboring their vaguely defined borders were militarily incapable of successfully resisting national expansion. The new states sought to define the boundaries of their territories as broadly as possible. The limits to expansion were largely geographical in the cases of Argentina and Australia, and the economic and political organization of the new territories was consequently slow and sporadic compared with those of the United States and Canada. In the latter countries, the potential territory of each nation overlapped, and expansion was competitive. Economic and political integration of territory became the crucial determinant of its national identity. The building of infrastructure for settlement and commerce and the establishment of local government were correspondingly rapid and thorough in the United States and Canada, in contrast to Argentina and Australia.

The most efficient method of territorial expansion was the encouragement of settlement by commercial agricultural households. *Agricultural* production, particularly the extensive cultivation possible on virgin soil, provided the greatest ratio of territory to colonist of any conceivable method of settlement. *Household* production was the form most able to establish and reproduce itself in advance of other forms of production. The family was mobile and potentially self-sufficient in labor supply, unlike the capitalist farm, which required a pool of sellers of labor power. The household was, moreover, capable in conjunction with other households of reproducing the newly settled population, unlike, for example, the cowboys who shared with the Indians the open range of the American plains in the 1860s and 1870s prior to the arrival of the 'sod-busters.' Finally, *specialized commodity* production was crucial to the integration of the colonists and their territory into the nation. For example, self-sufficient producers in the Red River Valley rebelled against attempts by the Canadian state to redirect their commerce from Minnesota to Ontario.[156] The ties of colonists to other economic institutions and producers within the national economy were prerequisite to successful colonization from the point of view of the state. In North America geographic conditions made self-sufficiency virtually impossible, but the question of which national economy would incorporate new settlements had to be determined politically.

The United States and Canada, and to a limited extent Argentina and Australia, through military conquest, subsidies and technical supports, and active recruitment of colonists, both directly and through encouraging the activities of railway, steamship, and land companies, organized within fifty

[156] George F. G. Stanley, *The Birth of Western Canada. A History of the Riel Rebellions* (Toronto: University of Toronto Press, 1960), pp. 49, 107–25, 189.

years an increase in world wheat acreage of almost 75 million acres. This increased the world acreage devoted to commercial wheat in 1885 by almost half by 1934. Including the huge expansion of wheat acreage in Asian Russia, also through state sponsored colonization,[157] and the more modest expansions elsewhere during the same period, world acreage of wheat increased by almost 80 percent between 1885 and 1934.[158] Moreover, regional specialization of wheat production within these countries increased the extent to which world exports were produced by colonists who simultaneously served to incorporate new territories into the orbits of expanding states.

The spectacular rise of wheat-producing households was the unintended consequence of state expansion in two related ways. First, the state made the land available in a real sense by providing basic infrastructure. Second, the means by which territories were socially organized facilitated the availability of credit.

The relative success of the state in establishing efficient infrastructure, moreover, affected the competitive positions of producers within the world wheat market. Given the flexibility of personal consumption and, especially on virgin land, of productive consumption, relative marketing services, and comparative grading, storage, and transport facilities were important factors in the demand for wheat of particular national origins. While it would be difficult to question the ultimate competitive superiority of technically advanced, specialized household producers in the United States and Canada over diversified, technically primitive households in Russia and India, producers at the time did not share this confidence. 'Self-exploitation' can be quite effective in world competition, and there is a good case for the importance of the advanced marketing, inspection, and grading systems of the new states in hastening the triumph of North American wheat producers.[159] Even within the new states, the relative efficiency of, for example, the Canadian marketing and grading system over the Argentine, was important in their relative export development.[160]

Once established, world competition made the existence of simple commodity producers of wheat felt everywhere. The importance of land and credit in some regions of the world market created competitive difficulties for producers in all regions. These pressures were mitigated to the degree that states in importing countries protected domestic markets.

[157] D. W. Treadgold, *The Great Siberian Migration* (Princeton: Princeton University Press, 1957).

[158] Malenbaum, *op. cit.*, pp. 236–37.

[159] Morton Rothstein, 'America in the International Rivalry for the British Wheat Market, 1860–1914,' reprinted in Harry N. Scheiber, ed., *United States Economic History* (New York: Alfred A. Knopf, 1964), p. 302.

[160] Marc-A. Blain, 'Le Role de la dépendence externe et des structures sociales dans l'économie frumentaire du Canada et de l'Argentine (1880–1930),' *Revue d'Histoire de l'Amérique Francaise*, 26:2 (1972), 239–69.

The political intervention in European wheat production was no less important for being reactive. The failure of German policies indicates that no state policy could prevent the contraction of capitalist production. But tariff protection, and even direct state intervention in production and distribution, did promote the development of simple commodity production of wheat in France and Germany. In England similar policies adopted later provided conditions for the expansion of wheat production on the basis of few workers and many machines, and thus potentially for simple commodity production. Whatever strictly economic reasons underlay protection, the importance of geopolitics was overwhelming. The need for self-sufficiency in food in case of war was a principal ideological justification for protection and intervention, and indeed proved important in the course of both world wars. Its impact on world wheat production has been to increase it, and thus to redirect international trade away from Europe and towards new importing countries. Given existing technology and the flexibility of household production, protection has allowed for expansion up to the limits of personal consumption, and beyond the limits of capitalist production.

CONCLUSION

To summarize the argument, commercial production of wheat during the period of the emergence of a world market came to be dominated by households through a combination of technical and social conditions of production. Improvements in machinery kept pace with increased scale so that an enterprise could compete on the world market and reproduce itself with only two laborers. At the same time, the conjuncture of local conditions governing costs in all relevant social formations favored simple commodity producers over capitalist producers. With flexible levels of personal consumption and of labor per worker, and with no profit requirement, simple commodity producers could reproduce themselves at a world wheat price sufficiently low to undermine the reproduction of capitalist producers. The latter had to meet wage bills determined on the market, return a normal profit, and in some cases provide for rent claims as well. And in the most important countries of capitalist wheat production, traditionally large farms became progressively overtaken by changing world standards governed by simple commodity production.

These local conditions, in turn, were governed directly and indirectly by state policies. A largely unintended consequence of geopolitical strategies of territorial expansion was to increase the numbers of wheat producers in areas of new settlement. Through world competition these new household producers put pressure on the reproduction of capitalist wheat producers in Europe. Protective and interventionist policies by European states enhanced national wheat supplies, but did not succeed in reviving capitalist

production; they allowed for the growth of simple commodity production in some cases, and prolonged the crisis of capitalist reproduction in others.

Several conclusions follow from this analysis. First, it is possible to reformulate the geographical questions of world commerce in social terms. A social explanation for changing patterns of international production and trade, based on structural categories and historical conjunctures, seems generally promising. Second, it is possible to incorporate geopolitical factors into analyses of world commerce without abandoning useful economic and social theory. The impact of state policies on commerce can be best understood through the mediation of structural categories appropriate to forms of production . And finally, it is time to recognize the persistence of large numbers of simple commodity producers in modern social formations. Their existence in contemporary class structures and their political activities have been important not simply in agrarian matters, but in wider questions of politics and social life.