Chinese Socialism's Record on Food and Agriculture

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NICHOLAS R. LARDY.
Agriculture in China's Modern Economic Development.
Cambridge, Cambridge University Press, 1983

KENNETH R. WALKER.
Food Grain Procurement and Consumption in China.
Cambridge, Cambridge University Press, 1984

FEW ECONOMIC TOPICS have invited as much curiosity, enamorment, skepticism, hostility, and continued controversy as the efforts of the Chinese Communist Party (CCP) and its associated government to wrestle with China's immense problems of social welfare and economic development. Popular opinions have been especially divergent over the record of China's often described rural-based revolution and the policy performance of its successive post-1949 leaderships in the areas related to agriculture, rural life, and basic needs of the population at large.

Two recent books, one by Nicholas Lardy, the other by Kenneth Walker, are arguably the best that Western economists have produced on the political economy of China's food and agricultural sectors in at least two decades and possibly longer. Both works are based on a meticulous and thoughtful examination of primary source materials, and both are exceedingly well presented. The statements of problems to be addressed and the analytic frameworks postulated are clear and concise, the argumentation and development of themes are unambiguous, persuasive, and succinct. These attributes are especially noteworthy in Walker's study but this is partially a function of the substantial difference in scope of the two books, despite the complementarity of their central topics.

WALKER'S BOOK focuses intensively on the dynamic path of interprovincial transfers of grain and its geographically and materially shifting end uses. With the patience of a careful anatomist, Walker microscopically scrutinizes each detail of a confusing, poorly illuminated, and heterogeneous collection of historical materials to formulate a skeleton of quantification with which to position and comprehend further lacunae. Walker's decade of research in this style is a thoroughly warping experience in the positive sense; as a result, he sees many of the larger issues of political economy and rural policy through the prism of the struggle to procure, transfer, and redistribute grain. His conclusions then flow naturally from this understanding and from the organized body of material supported by his statistical framework.

Lardy, by contrast, seems to take on the broad questions right from the start: (1) Why was agricultural growth in China so slow despite ample evidence of technical progress, and why did it appear to *decelerate* and per unit of output costs *accelerate* with the acceleration of technical change? (2) What explains the persistence of widespread malnutrition in a socialist society whose per capita income had doubled from the 1950's to the 1970's? (3) And how can we differentiate the real Mao Zedong from the rhetoric on two fundamental issues of political economy?

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Was he bureaucratist or anti-bureaucratist, centralizer or decentralizer? Did he promote rural prosperity and emphasize agriculture, or can he be broadly grouped in the more familiar category of urban- and industrially-oriented central planner?

Although Lardy tantalizes the reader with these questions in his preface, and continues to refer to them thematically as the chapters unfold, one has the distinct impression that his research effort was organized along rather different lines, emanating from a basis in Western economic theory and political thought: (1) There must be considerable costs associated with control of product, labor, and financial markets and the geographic and sectoral restriction of trade under Chinese socialism. What are they? Who bears them? Can they be quantified? (2) How can a quantitative basis be established for refuting the principal myths of success about Chinese socialism: that it is socially pro-rural and oriented toward rural development in terms of economic dynamism; that it embodies a strategy of economic development that focuses on the development of the agricultural sector; that it has succeeded in providing basic needs for China's poor.

THESE DIFFERING *modi operandi* lead to two distinctly different types of products, although a relatively similar overall message may be discerned in each: Chinese socialism has been no panacea for the problems of farm production development and the food economy of this largest of peasant societies. At best, it has traded for modest advantages in solving one set of problems by accepting serious disadvantages of a more intractable and far-reaching nature; at worst, it has stultified development and exacerbated rural poverty and rural catastrophe.

Walker's task is more straightforward if not easier: to quantify provincial production, transfer, and distribution of foodgrains and to track the policy shifts and underlying issues and crises that engendered them. His creative effort is predominantly engaged in finding plausible explanations for the numerous patterns he uncovers. The resultant tone is essentially nonpolemical. Lardy's creative effort, on the other hand, often appears primarily addressed to the issue of formulating methodology and quantification to present the academic case against socialist development. Though both scholars are unmistakably economists, Walker appears to be part historian by temperament, while Lardy could pass for barrister reincarnated as economist.

The reader is well-advised in both cases to work through the entire books and not rely on summaries or concluding sections. This is first and foremost because the works are richly textured and filled with thoughtful observations from two of the very best Western minds specializing in the subject area. But it is also because in each case, though for quite different reasons, the relationship between the individual sections and the work as a whole leaves something to be desired.

In Walker's case, the value of his effort can be gleaned only by following the tortuous historical path he lays out, thereby culling both his periodic reflections on the emerging quantification and his occasional conclusions, which are relatively original and owe little to a brief list of antecedents.[1] There are no handy concluding paragraphs at the end of each chapter, and only a few pages in the 33-page final chapter can be described as summary or conclusion, the remainder being a kind of epilogue on the 1970's. One is tempted to coax Walker to venture a perspective on a variety of larger issues, most notably the relationship between China's struggle with procurement and distribution of grains and the direction and scope of CCP policies in general during the period.

By contrast, Lardy's conclusions are numerous and clear, relate to the specific as well as larger issues, and are easily located in a separate section at the end of each chapter. But few are original, and several are poorly supported by the nevertheless engaging analysis and quantitative presentation in the text.

IN HIS FIRST chapter, Lardy provides a thin sketch of agricultural development in pre-1949 China. This gives readers an impression of where he comes out in the debate over why China, which was at the pinnacle of the world's civilizations in technological and economic terms during the Ming Dynasty (1368-1643), was so late entering modern economic growth and the industrial revolution. Lardy rejects the view that by the end of the 19th or early 20th century, population pressure had eliminated sufficient investible surplus above rural subsistence to provide investment necessary for technical and industrial transformation.[2] He emphasizes

[1] See, e.g., Ronald Hsia, "Government Acquisition of Agricultural Output in Mainland China, 1953-56," ASTIA Document No. AD-211940, Santa Monica, CA, Rand Corporation, Sept. 3, 1958; Audrey Donnithorne, "China's Grain: Output, Procurement, Transfers and Trade," Economic Research Centre Monograph, Hong Kong, Chinese University, 1970; David I. Denny, "Rural Policies and the Distribution of Agricultural Products in China 1950-1959," Ph.D. diss., Ann Arbor, University of Michigan, 1971, and Elizabeth Croll, *The Family Rice Bowl: Food and Domestic Economy in China*, Geneva, United Nations Research Institute for Social Development, 1983.

[2] This argument is most closely associated with Mark Elvin, but also with Robert Dernberger and to a lesser extent Dwight Perkins and Anthony Tang. See Mark Elvin, "The High-Level Equilibrium Trap: The Causes of the Decline of Invention in the Traditional Chinese Textile Industries," in William E. Wilmott, Ed., *Economic Organization in Chinese Society*,

that while there appeared to be little advancement in mechanical technology after the 14th century, "increased complexity was evident in patterns of cropping and marketing and in the introduction of new fertilizer that allowed greater intensity of cultivation" (p. 7). Although he accepts Dwight Perkins's analysis[3] that "the long-run trend of farm consumption and income was unchanged," Lardy stresses that "peasants responded positively to opportunities created by the availability of improved seed varieties, new crops, new fertilizers, improved transport, and rising urban demand." Noting Carl Riskin's calculations of substantial investible surplus available in China's 1930's economy,[4] Lardy concludes that deficiencies in the country's "modern economic growth prior to 1949 are not easily attributable to a stagnant agriculture producing at or just above subsistence. The explanation must address the issue of why the large pool of resources was not mobilized for investment purposes" (pp. 11–12).[5]

There is nothing new in this treatment, nor is it particularly complete or current, but it does provide readers with some sense of historical process rather than the usual snapshot of a static "traditional China." It also furnishes a modest feel for one of the central debates over Chinese development before 1949, without bogging the reader down in the intricacies of competing arguments.

MOST BOOKS on agricultural development in the People's Republic of China (PRC) are confined exclusively to China, incorporating neither reference to mainstream development theory nor an appreciable international comparative perspective. Lardy's work is an improvement in this regard. In his first chapter, for example, he attempts to embed agriculture's perceived role in Chinese development strategy within the international literature on economic development theory. Lardy further provides a brief theoretical discussion at the beginning of several of the later chapters. But here his concessions to space limitations and readability for a general audience prove costly. The author's theoretical treatment of agriculture in the development process relies heavily on (1) the "contributions to growth" notions of Kuznets and Myint,[6] which provide a relatively static picture of agriculture's role as a supplier of labor, food, and financial savings to nonagricultural development; and (2) the early "balanced growth" models,[7] which, though precise in their specification of balance, miss some critical dynamic interactions between the overall growth of an industrializing economy and agriculture under the special conditions of technical transformation. The elements of an agriculture-based strategy of economic development are now well-articulated and are complemented by an impressive comparative literature. W. Arthur Lewis defined the critical role of food as a wages good. Bruce Johnston and John Mellor delineated the need for productivity increase in agriculture and the role of technology. The path of resource transfers from agriculture that have facilitated nonagricultural growth were tracked for Japan by Bruce Johnston, Ohkawa Kazushi, and Teranishi Juro; for Taiwan by T.H. Lee; and for India, Japan, Taiwan, and China by Ishikawa Shigeru. The critical role of agriculture in stimulating growth in the nonagricultural sector was explored via consumption goods by John Mellor and Uma Lele and via producer goods by Bruce Johnston and Peter Kilby.[8]

Stanford, Stanford University Press, 1972, pp. 137–72; idem, *Pattern of the Chinese Past: A Social and Economic Interpretation*, Stanford, Stanford University Press, 1973. Robert F. Dernberger, "The Role of the Foreigner in China's Economic Development," in Dwight H. Perkins, Ed., *China's Modern Economy in Historical Perspective*, Stanford, Stanford University Press, 1975, pp. 19–47. Dwight H. Perkins, "Growth and Changing Structure of China's Twentieth Century Economy," in Perkins, *China's Modern Economy in Historical Perspective*, pp. 115–65, and Anthony M. Tang, *An Analytical and Empirical Investigation of Agriculture in Mainland China, 1952–1980*, Taipei, Chung-Hua Institution for Economic Research, December 1984.

[3]Dwight H. Perkins, *Agricultural Development in China, 1368–1968*, Chicago, Aldine, 1969.

[4]Carl Riskin, "Surplus or Stagnation in Modern China," in Perkins, *China's Modern Economy in Historical Perspective*, pp. 49–84.

[5]This position is essentially the same as that published by Riskin in 1975 (ibid.). Ramon Myers is also associated with refutation of the "technologists" view that agriculture was stagnant and rural economic mobility had ground to a halt in the 19th and 20th centuries (e.g. *The Chinese Peasant Economy: Agricultural Development in Hopei and Shantung, 1800–1949*, Cambridge, Harvard University Press, 1970). Riskin, however, also finds fault with the opposing "distributionist" view—the view that there was sufficient surplus during the period but that it was expropriated and squandered by landlords, warlords, and corrupt officials.

[6]See, e.g., Simon Kuznets, "Economic Growth and the Contribution of Agriculture: Notes on Measurements," *International Journal of Agrarian Affairs* (London), Vol. 3, No. 2, 1961, and Hla Myint, "Agriculture and Economic Development in the Open Economy," in Lloyd G. Reynolds, Ed., *Agriculture in Development Theory*, New Haven, Yale University Press, 1975.

[7]See, e.g., John C.H. Fei and Gustav Ranis, *Development of the Labor Surplus Economy: Theory and Policy*, Homewood, IL, Richard D. Irwin, 1964.

[8]See, e.g., W. Arthur Lewis, "Economic Development with Unlimited Supplies," *The Manchester School* (UK), May 1954; Bruce F. Johnston and John W. Mellor, "The Role of Agriculture in Economic Development," *American Economic Review* (Nashville, TN), September 1961, pp. 566–93; John W. Mellor, *The Economics of Agricultural Development*, Ithaca, NY, Cornell University Press, 1966; Bruce F. Johnston, "Agricultural Productivity and Economic Development in Japan," *Journal of Political Economy* (Chicago), December 1951, pp. 498–513; Ohkawa Kazushi, *Differential Structure and Agriculture: Essays on Dualistic Growth*, Tokyo, Institute of Economic Growth, Hitotsubashi University, 1972. Teranishi Juro, *Nihon no Keizai Hatten to Kinyuu* (Japan's Economic Development and Finance), Tokyo, Iwanami Shoten, 1982; Lee Teng-hui, *Intersectoral Capital Flows in the Economic*
(cont. p. 66)

By glossing over this sophistication, the book falls short of its potential in a number of important ways. The remainder of the work leaves the impression of providing piecemeal criticisms of specific Chinese administrative tendencies (to restrict interregional trade and, consequently, gains from specialization; to engage in quantitative and command planning rather than operating through factor and product markets; to overemphasize investment in heavy industry) without a strong theory linking and prioritizing them relative to other strengths and deficiencies. Second, some explanatory potential for illuminating why such practices evolved in China is lost. Finally, important possibilities of comparison of China's development effort with performance elsewhere remain underexploited.

One of Lardy's principal criticisms, for example, is that of China's sectoral investment imbalance, and he struggles throughout a good share of the book with the difficult task of demonstrating quantitatively that heavy industry received too much emphasis. While several consequences of this imbalance are noted, little space is devoted to showing why such a policy was adopted and how it resulted in jeopardizing the very goals it was supposed to serve. As an illustration, perhaps some supplementary comments are in order.

The idea that a sectoral investment overemphasis on heavy industry for predominantly peasant-based economies consequently embodies a slow-growth strategy in terms of both employment and overall economic development, with implications for rural immiserization, is associated with a number of earlier economists commenting critically on India's Second Five-Year Plan (1956–61).[9] The theoretical basis for that plan (developed by P.C. Mahalanobis), as well as for the Soviet long-range plan of the late 1920's (developed by Evsey Domar) and the First Five-Year Plan (1953–57) of the People's Republic of China, was clearly the works of the Soviet economist G.A. Fel'dman. Although Fel'dman's original conceptualizations were refined by others over time, a common theme even among subsequent writers was an implicit equation of industrialization with modernization. Industry was seen to exhibit scale and external economies, while agriculture was subject to diminishing returns. Industries' "externalities" included promotion of new modes of economic behavior and social organization. Capital and labor were thus seen to be more productive in industry than in agriculture. As shown in the better-known works of Roy Harrod and Domar, increase in the capital stock was the source of growth. It followed from these authors' reasoning that the capital stock should be directly allocated to the capital goods sector to the extent possible, and not to consumer goods, including agricultural production.[10]

In practice, although employed by many capital-poor countries, this development is exceedingly capital intensive, leaving little room for growth in employment. The inevitable result of applying the largest share of capital resources to a limited labor force and little to the majority of workers is low productivity of both capital and labor. Moreover, with frequent work stoppages (in these relatively complex capital-intensive industries) related to typically poor infrastructural capacity in developing countries, scarce physical capital resources are often underutilized, thereby limiting even further the net increase in economic value provided by these resources. And because capital-intensive industries are so costly, remaining financial capital available to the government is insufficient for the necessary infrastructural development effort, most notably for roads, railroads, electric power, telecommunications, and so forth.

No understanding is incorporated into this industry-oriented strategy of the potential for technical change in crop production which could grant periodic reprieve from agriculture's assumed fate of diminishing returns, nor of the magnitude of investment requirements needed to achieve this technical change. The consequence of underinvestment in agriculture has been described by Ishikawa[11] in terms of a

Development of Taiwan, 1890–1960, Ithaca, NY, Cornell University Press, 1971; Ishikawa Shigeru, *Conditions for Agricultural Development in Developing Asian Countries*, Tokyo, Committee for Translation of Economic Studies, 1964; Ishikawa Shigeru, *Economic Development in Asian Perspective*, Tokyo, Kinokuniya Book Store, Ltd., 1967; John W. Mellor and Uma Lele, "Growth Linkages of the New Foodgrain Technologies," *Indian Journal of Agricultural Economics* (Bombay), January-March 1973, pp. 35–55; and Bruce F. Johnston and Peter Kilby, *Agriculture and Structural Transformation: Economic Strategies in Late Developing Countries*, New York, Oxford University Press, 1975. Among these, Lardy's principal reference is to Johnston and Kilby's *Agriculture and Structural Transformation* and to some extent Ishikawa's work on China.

[9]Notable among these efforts has been the continuing work by John Mellor. See, e.g., John W. Mellor, "Models of Economic Growth and Land Augmenting Technological Change in Foodgrain Production" (hereafter cited as "Models of Economic Growth"), in Nurul Islam, Ed., *Agricultural Policy in Developing Countries*, London, MacMillan, 1974, pp. 3–30; idem, *The New Economics of Growth*, Ithaca, NY, Cornell University Press, 1976; and idem, "Agriculture on the Road to Industrialization," in John P. Lewis and Valeriana Kallab, Eds., *Development Strategies Reconsidered*, New Brunswick, NJ, Transaction Books, 1986, pp. 67–89.

[10]For some discussion of this theoretical development, see P.C. Mahalanobis, "Some Observations on the Process of Growth of National Income," *Sankhya* (Calcutta), September 1953, pp. 307–12; Ishikawa, *Economic Development in Asian Perspective*, and Mellor, "Models of Economic Growth", and idem "Agriculture on the Road to Industrialization."

[11]Ishikawa Shigeru, "Medium and Long-Term Prospects for the Chinese Economy—

Ricardian Growth Trap Model in which any emerging dynamism in industrialization is constrained by slower progress in agriculture subject to diminishing returns in the absence of sufficient technical change. This happens in market economies because high prices for scarce food and agricultural inputs for industry imply high wage bills and material costs that choke off savings in industry. When food and farm prices are kept artificially low as in China, productivity, farm investment, and incentives are further constrained and procurement becomes increasingly difficult. In Ishikawa's view,[12] inevitable official response to these crises explains China's tendency toward net resource inflow into the agricultural sector over time, confounding planners' aspirations for agriculture as a source of funds to finance industrial development. Despite its long-term inconsistencies, this ultimately slow-growth low-employment strategy embodied in the early plans of the Soviet Union, India, and China have spawned a whole generation of closed-economy growth models focusing on the capital-goods sector that have been applied especially to socialist countries, but also to a wide variety of developing nations.

That China's First Five-Year Plan and succeeding plans have been extreme examples of this sectoral imbalance was emphasized by several economists specializing on economic development in China since the 1950's,[13] particularly by those focusing on the agricultural sector.[14] Anthony Tang and I found that although underinvestment in agriculture has been chronic throughout the history of the PRC, agricultural growth accelerated during periods in which, relative to other periods, there was a concentration on agriculture in terms of both sectoral allocations and supporting policies.[15] Lardy ascribes these accelerations to the relative importance accorded price planning in such periods (versus the heavier reliance at other times on quantitative output targets and quotas), to intermittent increases in typically insufficient agricultural investments, and to concurrent loosening of restrictions on trade.

Lardy's treatment of trading restrictions and price versus quantity planning in the Chinese context are logical extensions of earlier work by Dwight Perkins,[16] although he clearly deals more comprehensively with those subjects than any work covering the 1950's through the 1970's. But Lardy's work does not show the relative contribution of these individual policy shifts to accelerations in farm productivity. Were each important? Were particular categories of policy especially influential in stifling or releasing and encouraging the dynamic forces of growth? Or were there other considerations collinear with the shifts mentioned above that were even more important? Tang and I have suggested several other factors, in addition to those discussed by Lardy, contributing to China's agricultural growth cycles, including: the influence of input growth cycles; policies affecting resource allocation *within* (as well as among) localities; periodic concentration on construction project *completions* and realizing associated *returns* rather than on construction starts; and technological considerations related to constraining factors in yield growth.[17] Unfortunately, we also fail to assess rigorously the *relative* importance of these factors.

IN HIS second chapter, Lardy focuses on demonstrating the efficiency costs of various production and marketing controls typical of Chinese central planning. It is here that he postulates the theoretical superiority of price planning over quantity planning. While his model provides a handy simplification of this dichotomy for *long-term* evaluative purposes, he does not attempt to demonstrate either the theoretical advantages or superiority in effectiveness over time of administrative price adjustments as policy tools for influencing *short-term* output in the Chinese context, relative to a wide variety of other instruments used throughout the PRC period, including preferential allocation of fertilizers and credit, guaranteed and advance purchase agreements during periods of market uncertainty or (usually chronic) credit scarcity, and so forth.

Much of the chapter focuses on the 1965–77 period and empha-

Preliminary Explorations," *Tyuugoku Keizai no Tyuuchō Tembo* (Medium and Long-Term Prospects for the Chinese Economy). Tokyo, Nityuu Keizai Kyokai (Sino-Japanese Economic Association), 1984

[12]Ishikawa Shigeru, "Patterns and Processes of Intersectoral Resource Flows Comparison of Cases in Asia," a paper prepared for the Symposium Celebrating the 25th Anniversary of the Economic Growth Center, Yale University, on the Current State of Development Economics: Progress and Perspectives, New Haven, April 1986

[13]See, e.g., Liu Ta-chung and Yeh Kung-chia, *The Economy of the Chinese Mainland: National Income and Economic Development 1933–1959*, Princeton, Princeton University Press, 1965, Chen Nai-Ruenn and Walter Galenson, *The Chinese Economy Under Communism*, Chicago, Aldine, 1969, Ishikawa, *Economic Development in Asian Perspective*, Chao Kang, *Capital Formation in Mainland China, 1952–65*, Berkeley, University of California Press, 1974

[14]Chao Kang, *Agricultural Production in Communist China, 1949–65*, Madison, University of Wisconsin Press, 1970, Anthony M. Tang and Bruce Stone, *Food Production in the People's Republic of China*, IFPRI Research Report No. 15, Washington, DC, International Food Policy Research Institute, 1980, and Tang, *An Analytical and Empirical Investigation*.

[15]Tang and Stone, op. cit., pp. 13, 117–45, and 166–70, see also Tang, *An Analytical and Empirical Investigation*.

[16]Dwight H. Perkins, *Market Control and Planning in Communist China*, Cambridge, Harvard University Press, 1966

[17]Tang and Stone, op. cit., pp. 117–62 and 166–70

sizes the economic and human costs of the government's policy of local self-sufficiency in grain production. The central proposition is quite simple: there *are* gains to be had from specialization and interprovincial trade; so retreat to local autarchy involves losses. The theory of comparative advantage[18] is one of the oldest and most widely recognized concepts in Western economics, yet Lardy shows that it was not fully appreciated by many Chinese leaders, and actually rejected by Mao. Mao's promotion of local self-sufficiency may have arisen, as Lardy suggests, as a theoretical outgrowth of his views on *national* self-sufficiency. On the other hand, it may have reflected instead a failure to adjust emotionally and conceptually from the successful military/economic strategy of self-reliance that had evolved over several decades of civil and anti-colonial war and been nurtured during the subsequent period of almost continual uncertainty in the international political arena. In any event, Walker's work implies that Mao's views *prevailed* during the 1960's primarily because the administrative burden and geographic political tensions of interprovincial grain transfers had proven increasingly unmanageable during the 1950's.

The most dramatic cases of productivity loss and personal suffering engendered by Mao's grain self-sufficiency campaign are inevitably to be found in areas that (1) were relatively unsuitable for grain cultivation and (2) had enjoyed higher living standards by specializing in other commodities for which their environments or locations were more hospitable. Lardy reviews a number of the more dramatic instances: sugar cane areas of Fujian, rubber plantations on Hainan Island, herding areas of Inner Mongolia and Xinjiang, cotton areas of northwest Shandong, vegetable communes within major municipal areas, the soybean region of the northeast, and various prefectures throughout China specializing in other oilseeds. The overemphasis on grain production in the years 1965-77 also led to China's triple-cropping experiment which not only reduced incomes and returns to labor in the lower Yangzi Valley but even reduced the annual production of rice in parts of Sichuan because of losses on mid-season rice crops sustained with adjusted planting dates. Although a number of writers have previously discussed the net economic losses involved in the government's policy of the period,[19] Lardy usefully strings together a large variety of cases, segregated by theme, and fills in the story with additional information from primary references from appropriate periods.

At the end of the chapter, Lardy offers a sketchy review of rural policy reform since 1977 emphasizing the revival of price adjustments, including price increases for most farm output; the relaxation of regional self-sufficiency for areas specializing in economic (cash) crops backed up by guaranteed delivery of foodgrains; and some progress in the development of private markets. He seems to ascribe the rapid increase in production in all agricultural categories during the 1978–81 period to these measures (p. 92). In my view, they are unquestionably important for several of the nongrain crops, but do little to explain the rapid growth in foodgrain production. For the latter, I would stress the importance of the rapid progress in quality and quantity of manufactured fertilizer supply, dearth of which had previously constrained the approximation of yield potential available with existing seed technology.[20] A shift in fertilizer allocations was even highly contributory to the yield increases in economic crops. The most popular explanation for yield growth both inside and outside China, however, emphasizes labor incentives that owed their existence to the initiation of the production responsibility system.[21]

[18]The theory can be summarized in brief as follows: a society's welfare and that of each region is maximized when regions specialize in producing commodities for which they are most suited—in terms of natural conditions and the relative availability of factors of production—trading with other regions for what they do not produce, rather than attempting to produce everything they plan to consume.

[19]Chao, *Agricultural Production in Communist China*; Ishikawa Shigeru, "China's Food and Agriculture: A Turning Point," *Food Policy* (Guildford, Surrey, UK), May 1977, pp. 90–100, 102; Thomas B. Wiens, "The Evolution of Policy and Capabilities in China's Agricultural Technology," in US Congress Joint Economic Committee, *Chinese Economy Post-Mao*, Washington, DC, US Government Printing Office, 1978, pp. 671–703; Tang and Stone, op. cit.; Thomas B. Wiens, "The Limits to Agricultural Intensification: The Suzhou Experience," in US Congress Joint Economic Committee, *China Under the Four Modernizations*, Washington, DC, US Government Printing Office, 1982, pp. 462–74.

[20]See Tang and Stone, op. cit., pp. 120–45 and 166–70; Bruce Stone, "The Basis for Chinese Agricultural Growth in the 1980's and 1990's: A Comment on Document No. 1, 1984," *The China Quarterly* (London), March 1985, pp. 114–21, and idem, "Chinese Fertilizer Application in the 1980's and 1990's: Issues of Growth, Balance, Allocation, Efficiency and Response," in US Congress Joint Economic Committee, *China's Economy Looks Toward the Year 2000, Volume 1 The Four Modernizations*, Washington, DC, US Government Printing Office, 1986, pp. 453–96.

[21]See, e.g., Justin Lin, "Supervision, Incentives, and the Optimal Scale of a Farm in a Socialist Economy," Agricultural Economics Paper No. 85.16, Chicago, University of Chicago, 1985; idem, "The Household Responsibility System in China's Agricultural Reform: A Theoretical and Empirical Study," a paper presented at the International Food Policy Research Institute, Washington, DC, August 1986; Economic Research Center, State Council of the People's Republic of China, *Zhongguo Jingji Nianjian 1982* (Almanac of China's Economy 1982), Beijing, Jingji Guanli Zazhi Shechuban, 1982, pp. iii–4; Chen Yizi, "Why Rich Communes Also Adopt the Household Responsibility System," in Rural Development Research Center, *Nongcun Jingji Shehui* (Rural Areas, Economics, and Society), Beijing, Rural Development Research Center, 1981; see also Tang and Stone, op. cit., and Stone, "The Basis for Chinese Agricultural Growth."

On intersectoral transfers (Chapter 3), Lardy's contention that agriculture was successfully squeezed (albeit at great cost) to finance industrial development persuades some analysts, but not others.[22] Unfortunately, few of us base our position on comprehensive quantification of resource flows among sectors, each relying instead on partial quantitative indicators. The most authoritative efforts along these lines have been those conducted by Ishikawa Shigeru, one for the 1950's focusing on flows of physical goods among sectors,[23] and one for the entire 1953–82 period focusing on savings and investment flows.[24] Ishikawa's work suggests that net resource transfers out of agriculture were small and declining during the 1950's, ending in a minor net inflow by 1957. After that period, his quantification shows a continuous and increasing net inflow, a finding that conflicts with Lardy's position.

Most Western and Japanese economists researching the issue seem to agree, however, that the effort to limit these net resource flows into agriculture (or to achieve an outflow) led the Chinese leadership to undertake a wide variety of measures, many of which were detrimental to economic development broadly defined, as well as to agricultural growth and the welfare of the poorest and most vulnerable rural groups.[25] Where Walker's book makes its contribution to the discussion is to detail the excruciating difficulties faced by the Chinese leadership in managing food supplies in the context of under-investment in agriculture *even in the 1950's*. This led to successive crises and increasing capitulation in the direction of larger net flows of resources into agriculture documented by Ishikawa. Many would also probably agree that this piecemeal capitulation has embodied a significantly slower overall rate of agricultural and economic growth than a strategy that would have matched Mao's rhetoric of "agriculture first" and "agriculture as the basis of economic development."

LIVING STANDARDS in the Chinese countryside decreased during the 1965–77 period (Lardy, Chapter 4), and per capita food consumption and incomes in many areas were no higher in 1977 than they had been in 1957. Although 1957 was an average weather year and 1977 was one of the worst since 1960–61,[26] and although Lardy's micro-level support draws heavily on worst-case material, his above-mentioned conclusions are essentially similar to those expressed in a large number of previous studies by other economists specializing on China, whether based on food balance sheet approaches or micro-surveys and case studies.[27] Of course, the most authoritative development of this comparison is Walker's book, which shows that average per capita grain consumption in 1978–79 (average and excellent weather years subsequent to the initiation of several reforms and reduced procurement pressure) was only slightly higher than the 1953–57 mean, and lower than the peak years of the 1950's (p. 182). With most nongrain food intake at lower per capita levels, the likelihood of a positive long-term trend in per capita caloric consumption is slight.

Other recent studies have been more charitable to the PRC's performance on food consumption, notably work by Elizabeth Croll and by Alan Piazza.[28] But Croll's work is heavily influenced by her detailed examination of *urban* consumption and distribution. The "rural" catego-

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[22]James E. Nickum, for example, seems to accept Lardy's view in his review of *Agriculture in China's Modern Economic Development*, in the *Journal of Asian Studies* (Berkeley), August 1985, pp. 813–15. For different interpretations emphasizing lack of governmental success in squeezing agriculture in the long run, see Bruce Stone, "Long-term Intersectoral Resource Flows Among Countries Undergoing Technical Transformation of Agriculture: With Special Reference to the People's Republic of China," a paper presented for the 31st International Congress of Human Sciences in Asia and North Africa, Tokyo, Sept. 1–3, 1983 [abstract appears in *Proceedings* volume edited by Tatsuro Yamamoto, Tokyo, Toho Gakkai (Institute of Eastern Culture)], 1984; Stone, "Relative Foodgrain Prices in the People's Republic of China: Rural Taxation Through Public Monopoly," paper prepared for IFPRI Workshop on Food and Agricultural Price Policy, April 29–May 2, Elkridge, MD (will be published in *Food and Agricultural Price Policy-Development Context* edited by John W. Mellor and Raisuddin Ahmed, Baltimore, Johns Hopkins University Press); and Nakagane Katsuji, Review of *Agriculture in China's Modern Economic Development* by Nicholas Lardy, *The Developing Economies* (Tokyo), No. 1, 1986, pp. 86–88.

[23]Ishikawa, *Economic Development in Asian Perspective*, and idem, "Resource Flows Between Agriculture and Industry—The Chinese Experience," *The Developing Economies*, March 1967, pp. 3–49.

[24]Ishikawa, "Patterns and Processes of Intersectoral Resource Flows."

[25]The most explicit statement of this position is Stone, "Relative Foodgrain Prices in the PRC."

[26]Y. Y. Kueh, "A Weather Index for Analyzing Grain Yield Instability in China, 1952–81," *The China Quarterly*, March 1984, pp. 68–83; see also Stone, "China's 1985 Foodgrain Production Target: Issues and Prospects," in Tang and Stone, op. cit., p. 88.

[27]For example, Ishikawa, "China's Food and Agriculture: A Turning Point"; Tang and Stone, op. cit.; Thomas B. Wiens, "Agricultural Statistics in the People's Republic of China," in Alexander Eckstein, Ed., *Quantitative Measures of China's Economic Output*, Ann Arbor, University of Michigan Press, 1980, pp. 44–107 and 275–339; Vaclav Smil, "Food Energy in PRC," *Current Scene* (Hong Kong), Nos. 6 and 7, 1980, pp. 1–11; Smil, "China's Food Availability, Requirements, Composition, Prospects," *Food Policy*, May 1981, pp. 67–77; James A. Kilpatrick, "China: The Drive for Dietary Improvement," in US Congress Joint Economic Committee, *China Under the Four Modernizations*, pp. 449–61.

[28]Croll, op. cit.; Alan Piazza, *Food Consumption and Nutritional Status in the PRC*, Boulder, CO, Westview, 1986; Alan L. Piazza, "Trends in Food and Nutrient Availability in China, 1950–81," *World Bank Staff Working Paper* No. 607, Washington, DC, 1983; see also Stone, Review of *The Family Rice Bowl* by Elizabeth Croll, *The China Quarterly*, December 1984, pp. 876–78.

ries for both Croll's and Piazza's studies are actually suburban, and thus are atypical of the countryside further from major municipalities. Upon close scrutiny, Piazza's work, which incorporates anthropometric data as well as food consumption survey results and calculations of age-based requirements, supports the no-growth contentions of Walker and Lardy on the two-decade period. He estimates that as a percentage of caloric requirements, energy availability during the 1959–77 period reached the average for 1952–58 in only one year; in terms of protein availability relative to requirements, the 1952–58 average was reached only in 1979 and in each year since 1981. All per capita figures fall in the range of 74.6 to 103.9 percent of requirements for the 1959–77 period, suggesting bottom quintiles of seriously malnourished citizens.[29] Piazza's anthropometric data document clear progress in urban and suburban areas, however, and he emphasizes progress even in rural areas, including chronically impoverished ones, since 1977.

Although a glance at trends in the average wage of state employees and in rural collectively distributed income would suggest some narrowing of the rural-urban income gap during the two decades, Lardy shows this differential actually increased, owing to climbing labor-force participation rates. In another work, Lardy also documents the growing host of subsidies for urban residents unavailable for most inhabitants in the countryside.[30] Dwight Perkins and Shahid Yusuf go a step further to compare total per capita food and nonfood consumption levels in rural and urban areas in constant 1979 prices. Their results show a 1.9 to 1 urban-rural ratio in 1957 growing to 3.2 to 1 in 1975, slipping only to 3.1 to 1 in 1979.[31]

In addition, Lardy makes it clear that many elements of Chinese government policy have actually exacerbated poverty in the very poorest of Chinese rural areas. He points to the localized foodgrain self-sufficiency drive and restrictions on trade, and restrictions on migration, as well as tax and procurement policies. Again, this is consistent with my own view and that of a few other specialists,[32] although unlike the long-term absence of growth in per capita consumption (1957-77), it cannot be considered a mainstream position even among economists. Lardy and especially Walker also detail how government activities accentuated the 1959–61 famine.[33] In fact, Walker's material suggests that an agricultural depression in the 1960's was more or less inevitable and followed upon conditions and policies of pre-1958 China. Bad weather and the administrative mistakes of the Great Leap Forward (1958–59) merely served to bring it on sooner and with thoroughly catastrophic severity.

Going further than Lardy, it has been noted that restrictions on factor and input markets have also operated regressively within rural areas in many instances,[34] although the record is somewhat more mixed on the whole. But restrictions on economic activities in poor areas coupled with migration controls have been the most harmful to the very poorest rural areas, which require substantial diversification from dependence on especially risky and impoverished farming.

IT IS INTERESTING to note that Peter Timmer, a knowledgeable and able development economist familiar with China, though not a Sinologist, finds Lardy's conclusions on rural poverty in "conflict with much of the standard literature."[35] Yet, as demonstrated throughout this essay, much of Lardy's criticism of government policy can be considered mainstream among the most respected Western and Japanese economists specializing on Chinese agriculture, and little of the remainder can be considered revolutionary. Timmer's reaction may be partly because Lardy's book is so unrelentingly critical, and this may be viewed as a major weakness.

[29]Piazza, *Food Consumption*, pp. 92.

[30]Nicholas Lardy, "Agricultural Prices in China," *World Bank Staff Working Paper* No. 606, Washington, DC, 1984.

[31]Dwight Perkins and Shahid Yusuf, *Rural Development in China*, Baltimore, Johns Hopkins University Press, 1984.

[32]Stone, "China's 1985 Foodgrain Production Target", Perkins and Yusuf, op. cit.

[33]During the Great Leap Forward, party pressure on statistical units to report production successes resulted in grossly inflated 1958 output statistics, including those for grain. This misinformation caused the government to reallocate acreage to nongrain crops in 1959, while simultaneously intensifying procurement from rural areas. The year 1958 had been a good crop year though not a magnificent one, and in 1959 weather was poor. By the time the mistakes were realized, it was too late to adjust 1959 spring planting, and stock depletion in 1959 became inevitable. When the worst farming weather in 20th-century China struck in 1960 and 1961, the disaster took on truly catastrophic proportions resulting in massive famine and a gross population decline of 13.5 million. In addition, technical mismanagement on the part of overzealous and poorly qualified cadres and officials brought about serious damage to farmlands from deep plowing, close planting, and water control construction errors. Various elements of this catastrophe have been discussed in a variety of earlier work, including Chao, *Agricultural Production in Communist China*; Li Choh-ming, *The Statistical System of Communist China*, Berkeley, University of California Press, 1962; E. B. Vermeer, *Water Conservancy and Irrigation in China*, Leiden, Leiden University Press, 1977. Lardy and Walker, however, have treated this period most comprehensively.

[34]Stone, "China's 1985 Foodgrain Production Target"; idem, "Chinese Fertilizer Application in the 1980's and 1990's"; idem, "Fertilizer Marketing and Allocation in China," a paper prepared for the World Bank, Washington, DC, June 1984; and idem, "Systemic and Policy Change in the Administration of Chinese Fertilizer Sector Development," a paper prepared for the World Bank, Washington, DC, June 1986.

[35]C. Peter Timmer, Review of *Agriculture in China's Modern Economic Development* by Nicholas Lardy, *Journal of Economic Literature* (Nashville, TN), December 1984, p. 1675.

The Chinese government, despite all of the above arguments, and even during the 1965–77 period, enjoyed some successes and strengths when viewed in the context of other developing countries.[36] Timmer regards the book's principal flaw to be its "failure to draw several important *comparative* policy lessons from Chinese experience for a wide range of other developing countries."[37] Yet, Lardy's book embodies *some* effort to do so—more, in fact, than have those of most economists specializing on China, with the principal exception of Ishikawa (and to some extent Tang) whose works are less accessible and less available to the average Western reader.

Herein lies the key to the paradox of Timmer's reaction: economists specializing on China have failed to get their message across to the non-specialist public, even including development economists. Timmer is right when he suggests that Lardy's work conflicts with the standard view in the West (among non-Sinologists), where perceptions have been influenced far more by publications, proliferating during the 1970's, extolling the virtues of Chinese socialism relative to the regimes of other developing countries, although such works are not regarded for the most part as serious analyses by most economists specializing on China.

Many works relating to the Chinese economy published in the 1950's and 1960's were critical. To some extent, they were subsequently dismissed in the general view as products of the strong anti-communist stance of much Western writing of the period, or even of anti-communist Chinese emigrants, although several such as Liu Ta-chung were exceedingly competent economists. By the late 1960's and 1970's, with criticism of the United States's position in Vietnam reaching a crescendo in America and Europe, there was impetus to arrive at a more balanced and updated view. Yet, young economists specializing in China could not easily find jobs in their field or gain the respect of their departments owing to the particular unavailability of hard data allowing cross-country comparison and sophisticated analyses. Those that persevered were often personally attracted to China or to the Chinese, or were interested in socialism; many of the more senior scholars were historians or political scientists writing on economic topics, and many of the economists were young and tended to be less critical than their older colleagues who were no longer active in the field. Among the writings of these academicians, it was not surprising at the time to find a lack of theoretical or quantitative rigor, and an effort to present a more sympathetic view. This tendency was furthered by the necessity to rely for research material on especially biased propaganda and very selective release of statistics among Chinese internal and international publications.

Among nonacademic material produced on the Chinese economy, a large share was put out by the US Department of Agriculture (USDA), the US Central Intelligence Agency, or by the United Nations or other international organizations. Although the USDA seems to have been guilty of publishing consistently pessimistic estimates of future Chinese production for certain periods, some of the best work was done by the two American organizations, despite the limitations of time and publication style placed upon civil servants. The UN organizations, on the other hand, were careful not to be critical of China, and some leaned over backwards to court the exotic contact with the PRC. As other professional delegations began to receive permission to visit China, the courtliness continued, especially by would-be China specialists: it was still easy to be designated *persona non grata*. The delegations typically visited showcase locations and were treated well; few were composed of economists.

Change from this situation accelerated considerably during the decade from 1977 to 1986 with proliferation of delegations and exchanges, business activities, tourism, and even the potential for informal contact with Chinese citizens. Among Japanese and Western scholars of Chinese agriculture, in addition to Ishikawa, Perkins, Tang, Walker, and a few other still active but more senior researchers who continued to strive for quantitative rigor throughout the statistical blackout, a host of younger Chinese and non-Chinese economists have potential to upgrade the level of scholarship on the subject. This effort is aided immeasurably by the reestablishment of the State Statistical Bureau in China, the publication of statistical material by the Bureau and hundreds of other organizations, the recent Chinese eagerness to collaborate (though not unattended by difficulties) on joint research projects, the climate of criticism, reflected in Chinese published articles, of policies associated with previous periods, and even some degree of acceptance of debate and criticism of existing policies.

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[36]For example, the state effort to sponsor technical change in agriculture, though grossly undercapitalized and not without flaws, was managed with a relatively high degree of efficiency for a developing country: resources were expended in the right categories. Urban areas, at least, were substantially insulated against year-to-year foodgrain production variability, and its distribution within cities was handled on a reasonably equitable basis. The commune organization and workpoint system provided a limited safety net for each locality's poorest inhabitants, albeit dependent on that locality's aggregate performance, and not without costs to efficiency and incentives.

[37]See Timmer's review, loc. cit., p. 1674.

Among the younger group, those that began producing at the end of the previous era have a lead on the field, including Lardy and Thomas Wiens. They may well retain it, since the number of permanent job opportunities for doing long-term analytic research on the Chinese economy have increased surprisingly little in the West, unlike short-term or temporary posts or those emphasizing descriptive work. But the World Bank has emerged as a major serious institutional contributor to the analysis of Chinese agriculture. This is in some part through the outstanding efforts of Wiens and a few others at the Bank and in part because the Bank has financial leverage to bargain for studies and research materials to do important analytical work in areas where inertia and conservatism would otherwise still withhold data. Other less financially imposing research institutions are even meeting with a certain degree of success in organizing useful studies within China.

So the future is promising for progressing beyond Lardy's and Walker's recent efforts. Even now, statistical material made available since the publication of their books allows for more intensive study. As admirable as the accomplishments of these two authors are, their books are remarkable in part because of the massive detective job required to produce and substantiate rudimentary research results for China during the pre-1979 period—results that would be less impressive among the scholarship on more open societies. In my view, Lardy's initial questions about the causes of acceleration in agricultural growth as they apply to food grain production still lack satisfactory answers. But even more important than the pre-1977 period (although such work is indispensable to understanding the present), rigorous analysis of the determinants of China's impressive post-1977 progress and attendant difficulties remains to be done. Myths about the causes of this recent spurt of growth are already proliferating.