

Surplus and Stagnation in Modern China

DID CHINA'S failure to parallel the Japanese industrial revolution of the late nineteenth and early twentieth centuries stem from the absence of an economic surplus comparable to that which had slowly accumulated during the Tokugawa era, or is it attributable instead to the misuse of a substantial surplus? Different answers to this question underlie divergent schools of thought regarding the reasons for China's continuing economic backwardness in the modern, pre-Communist era. Where the existence of a substantial surplus above subsistence is assumed, inquiry is naturally focused on the patterns of its expropriation and use; politics, social structure, and cultural values become legitimate and even necessary subjects of analysis. Where the absence or inadequacy of such a surplus is deemed the critical factor, technological considerations come to the fore to explain this circumstance, and sociopolitical considerations correspondingly fade into the background.

Despite the deliberately oversimplified nature of this formulation, I believe it is the crux of a major issue that has emerged in the study of the modern economic history of China. Moreover, there has been a clear shift in recent years from a "distributive" to a "technological" point of view in the literature, raising new kinds of problems that deserve atten-

I am indebted to Robert Dernberger, Alexander Eckstein, Michael Edelstein, and Dwight Perkins for valuable comments that led to substantial improvements in this essay. John Gurley has my special gratitude for his detailed criticisms of an earlier draft. He suggested to me much of the algebraic formulation of the potential surplus used here, but must not be held responsible for any errors in my statement and development of it. I owe to the work of Victor Lippit the idea of attempting to estimate the potential surplus, as well as some of the estimates themselves. Other participants in the conference from which this volume derives also provided me with helpful discussion. Research for this paper was assisted by a grant from the Subcommittee on Research on the Chinese Economy of the Joint Committee on Contemporary China, SSRC-ACLS. Responsibility for errors and interpretations is mine alone.

tion. In particular, if an essentially technological paradigm is to be accepted, how do we explain the rapid attainment of very high levels of investment by the Chinese Communists immediately after their victory in 1949?

1. *The Potential Economic Surplus*

The concept of surplus here refers basically to the excess product a country either does or can produce above some specified measure of the subsistence needs of its population.* Paul Baran, whose work gave currency to the use of the concept, identifies several variants of surplus, stressing particularly the *potential* economic surplus, which consists of four components:

One is society's excess consumption . . . , the *second* is the output lost to society through the existence of unproductive workers, the *third* is the output lost because of the irrational and wasteful organization of the existing productive apparatus, and the *fourth* is the output forgone owing to the existence of unemployment caused primarily by the anarchy of capitalist production and the deficiency of effective demand.¹

Although the potential economic surplus is defined nominally as the difference between potential total output and "what might be regarded as essential consumption," Baran excludes from it also investment, "essential outlays on government administration and the like," and the output of scientists, artists, and teachers. It is thus meant to encompass a quantity of resources that would be available for redistribution toward development-oriented ends under a differently ordered—specifically, socialist—society.² The measurement of such a quantity thus requires specifying not only the dividing line between essential and nonessential personal consumption, but also that between desirable and objectionable government activities, professional activities, scientific activities, and so on. Consistency requires, in addition, that the values that guide the separation of essential from nonessential be those of the (proposed or actually impending) new government. With respect to China, this suggests that a useful way of viewing the potential surplus in the Republican period is from the perspective of what the Chinese Communists regarded as available for mobilization. A rough attempt will be made

* This use of the concept must be clearly distinguished from the "economic surplus" in traditional microeconomic theory, which refers to the gain in total utility achieved by a buyer ("consumer's surplus") or a seller ("producer's surplus") by means of a transaction. For a review of the literature on the traditional concept of surplus, see John Martin Currie, John A. Murphy, and Andrew Schmitz, "The Concept of Economic Surplus and Its Use in Economic Analysis," *The Economic Journal*, 324: 741-89 (Dec. 1971).

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in Section 3 of this paper to gauge the general magnitude of the poten-
 tial surplus in the 1930's from this perspective.

But much of Section 3 will be devoted to estimating the size of a
 rather different sort of "potential economic surplus." This I refer to as
 the "potential surplus above mass consumption," and define as the dif-
 ference between total potential current output and the *actual* level of
 labor and peasant income, assuming that those whose entire incomes
 take the form of returns to property (i.e., pure rentiers) are limited to
 the same consumption as wage and salary recipients (or peasants) in
 their sectors of the economy. This concept of potential surplus does not
 require the injection of values regarding what is essential and non-
 essential. If Baran's conception tells us what part of current potential
 output a new and reorganized society would regard as available to try
 to mobilize on behalf of development, the potential surplus above mass
 consumption tells us simply what proportion of the currently produced
 (or producible) national income lies above the current consumption of
 the laboring population and consumption at the same level for the non-
 laboring population under existing social conditions. How that society
 actually uses its surplus above mass consumption is of course an impor-
 tant subject of analysis. The degree to which the components of poten-
 tial surplus above mass consumption currently contribute to develop-
 ment or other worthwhile goals is discussed once the surplus itself has
 been estimated. The estimate and discussion of its interpretation occupy
 most of Section 3 of this essay.

Both concepts of potential surplus are of historical interest. The Ba-
 ranian surplus throws light on development policy after 1949 with re-
 spect to the size of consumption and investment and the loci of capital
 accumulation efforts. Surplus above mass consumption tells us some-
 thing about the technological potential of the pre-Communist modern
 Chinese economy to "afford" a development program, and forces atten-
 tion to the values, institutions, and conditions that affected the realiza-
 tion of that potential.

It is therefore useful to define the two concepts more precisely and
 to clarify the relationship between them. The variables are denoted as
 follows:

C_a = actual consumption

C_e = essential consumption

C_m = mass consumption

N = total labor force = employed workers (N_e) + unemployed work-
 ers (N_u)

R = total number of pure rentiers

- S_e = potential surplus above essential consumption
 S_m = potential surplus above mass consumption
 w = average level of mass consumption per worker = average of wage and salary incomes in nonagricultural sectors and returns to labor and imputed returns to self-cultivated land in agriculture
 Y_a = actual net domestic product (NDP)
 Y_p = potential NDP = Y_a + potential output of unemployed factors

The potential surplus above mass consumption is defined as

$$(1) \quad S_m = Y_a - C_m + Y_p - Y_a,$$

i.e., the difference between actual output and mass consumption, plus the potential additional output producible by unemployed factors (including rentiers; see Section 3). Mass consumption is given as

$$(2) \quad C_m = w(N + R).$$

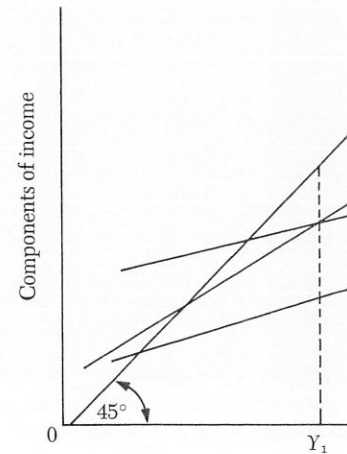
The potential surplus above *essential* consumption (the Baran surplus) is defined as

$$(3) \quad S_e = Y_a - C_e + Y_p - Y_a.$$

Clearly, if the socially determined *essential* consumption (C_e) is greater than the actual level of *mass* consumption [$C_m = w(N + R)$], then S_e will be smaller than S_m . For China in the decades before 1949, such a relation would mean that not all of the potential or actual income identified as surplus above mass consumption would have been treated by the Communist contenders as a valid target of mobilization for investment under a new revolutionary government. Only if C_m and C_e coincide exactly would the two concepts of surplus also coincide.

The relation between the two concepts is illustrated in the accompanying figure, in which total income is measured horizontally and its components are measured vertically.³ Line C_a is a standard consumption function, showing actual total consumption as a function of total income. Line C_e illustrates a hypothetical relation between essential consumption and income. At very low levels of income (below Y_1 in the diagram), social standards of minimum decent livelihood may dictate an essential consumption higher than the actual level of total consumption, and C_e will exceed C_a . At higher incomes, however, actual consumption pulls above essential consumption as luxury consumption at the higher levels of the income distribution begins to outweigh sub-par consumption of the very poor. Line C_m indicates actual mass consumption, i.e., $w(N + R)$. It lies below the other two consumption schedules

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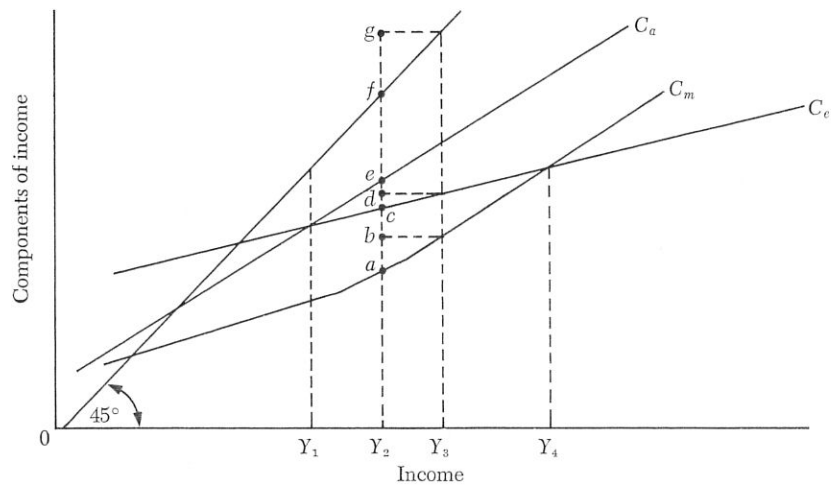


Relationship 1

for low and medium levels of essential consumption indefinitely acceptable consumption rise for salaries. Or, at some fairly high income level might exceed essential consumption.

From the perspective of the several decades prior to financial crisis, the range of incomes between essential consumption was less than actual total consumption: $C_a > C_e > C_m$. That C_e exceeded C_a at low income levels, the new government rapidly reduced the investment rate in the first three years and temporarily have thereby reduced the investment rate. That C_e fell below C_a at high income levels, the government's action in permitting consumption to remain with the bourgeoisie to beef up the investment rate and to reduce consumption levels up to middle income levels.

* Since C_m is defined as total consumption excluding the consumption of rentiers at the average levels of the



Relationship Between Two Kinds of Surplus

for low and medium levels of income. It may continue to fall short of essential consumption indefinitely, if social standards of minimum acceptable consumption rise faster than the average level of wages and salaries. Or, at some fairly high income (e.g., Y_4), mass consumption might exceed essential consumption, as drawn here.

From the perspective of the Chinese Communist Party, China in the several decades prior to final victory undoubtedly was situated in the range of incomes between Y_1 and Y_4 . That is, essential consumption was less than actual total consumption but greater than mass consumption: $C_a > C_e > C_m$. That C_a exceeded C_e is implied by the fact that the new government rapidly and sharply raised the aggregate investment rate in the first three years of its existence, and must at least temporarily have thereby reduced *average* per capita consumption; it would have done this only if it believed essential consumption was lower than total consumption. That C_e exceeded C_m is implied not only by many statements of leading officials to the effect that land reform and the development of mutual aid practices were expected to make life a little easier for the masses of poor and middle peasants, but also by the government's action in permitting some of the benefits of land redistribution to remain with the beneficiaries, rather than extracting them all to beef up the investment rate; this suggests an effort to bring mass consumption levels up to minimum standards.*

* Since C_m is defined as total wage and salary incomes extended even to pure rentiers at the average levels of their sectors, plus the imputed returns to land farmed

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If it is true that the CCP perspective put pre-Revolution China at a position such as that of Y_2 on the diagram, then the potential surplus above mass consumption, shown as ag (where fg represents output not produced because of factor unemployment), would overstate the potential surplus above *essential* consumption, cg , by the amount ac . However, since both C_e and C_m are taken to be rising functions of income, we must take account of the fact that if the unemployed factors were put to work and the extra output fg produced, higher levels of both types of consumption would result (Y_2d and Y_2b , respectively, on the diagram). The surpluses potentially available for nonconsumption uses should in principle, therefore, be measured above these new, higher consumption levels:

$$\begin{aligned} S_e &= dg \\ S_m &= bg \end{aligned}$$

Composition of S_m and S_e . The surplus above mass consumption contains all income (consumed or invested) above mass consumption as calculated for the different sectors of the economy. The surplus above essential consumption contains all "nonessential consumption" as well as investment and government purchases. Both concepts of surplus also include the potential output of unutilized factors of production. The output of "unproductive workers," in Baran's terminology, must be included in these components of S_e . It cannot be significantly present in the value of essential consumption, C_e , because we estimate essential consumption on the basis of standards adopted in the early 1950's, when presumably such unproductive work had already been eliminated or at least vastly reduced (see Section 3). However, the value of mass consumption, C_m , as calculated on the basis of actual mass incomes in the 1930's, may contain an element of cost imparted by such unproductive activities as advertising and rent collecting. Thus, the actual level of mass consumption expenditures may overstate the minimum necessary expenditures that would be required in a different institutional framework to support the same physical level of livelihood. The same consid-

by its owners, it is possible that as the incomes of poor and lower-middle peasants rose, the imputed rents of better-off peasants and some extremely high managerial salaries in nonagricultural sectors fell more than correspondingly, so that C_m on balance fell. Since most of the gains of poorer peasants probably came out of what previously had been explicit property incomes (rents and interest actually paid and profits earned on land farmed by full-time hired laborers), I think this extremely unlikely. But even if C_m did fall, it would have done so only because of the peculiarity of its definition as including *all* incomes (even high ones) not explicitly paid to property. See Victor Lippit, "Land Reform in China: The Contribution of Institutional Change to Financing Economic Development" (unpublished manuscript, 1972).

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erations apply to Baran's cost of the existing productive apparatus in the form of potential output above the existing level of capacity, monopoly rent should be included in the estimate, and S_e is accordingly

Since essential income above mass consumption include not only essential personal consumption, "essential outlays on consumption of scientists, and the output of scientists, distinguish between the essential consumption in physical and human expenditures. Because an effort beyond the scope of this essay, degree to which the relevant activities have represented activities that are useful and not subject to replacement, S_e is made in Section 3.

Although S_m , unlike S_e , is a relative surplus and so is a relative surplus entirely free of such norms. the potential output of unutilized factors in a developed country with high great underemployment in the principle to measure the extent of choice between leisure and different degrees of absorptive degrees of institutional characteristics credit facilities to the organization. Since the essence of of income present or potential arrangements, it should not only under radically different a very conservative approach conjectural in any case and the components of S_m .

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erations apply to Baran's costs of "irrational and wasteful organization of the existing productive apparatus." Some of these costs, however, take the form of potential output not produced (on account of underutilization of capacity, monopoly restrictions on output, and so on). This component should be included in $Y_p - Y_a$, but no attempt is made here to estimate it, and S_e is accordingly somewhat understated.

Since essential income above which S_e is defined should in theory include not only essential personal consumption, but also essential investment, "essential outlays on government administration and the like," and the output of scientists, artists, and teachers, we should ideally distinguish between the essential and nonessential with respect to investment in physical and human capital, and to government consumption expenditures. Because an effort at quantifying such distinctions is beyond the scope of this essay, I limit myself to a brief discussion of the degree to which the relevant components of S_e as estimated here might have represented activities that the new, post-1949 values regarded as useful and not subject to redirection. This is done after the estimate of S_e is made in Section 3.

Although S_m , unlike S_e , is not based on social norms of adequate consumption and so is a relatively objective concept, its specification is not entirely free of such norms. Like S_e , it includes the element $Y_p - Y_a$, the potential output of unutilized factors. In an economically underdeveloped country with high population density on cultivable land and great underemployment in the countryside, it is difficult even in principle to measure the extent of unemployment of labor.⁴ The problem of choice between leisure and income is inevitably involved. Moreover, different degrees of absorption of surplus labor might require different degrees of institutional change—from the provision of more adequate credit facilities to the organization of collectives under a socialist government. Since the essence of the concept of S_m is the idea of a quantity of income present or potentially present under existing institutional arrangements, it should not contain an element that could be realized only under radically different social conditions. For this reason, I adopt a very conservative approach to estimating $Y_p - Y_a$, but the results are conjectural in any case and therefore carefully separated from the other components of S_m .

Finally, neither concept of surplus implies that income inequalities do not provide incentives to private investment and entrepreneurship. Where the evidence shows such incentives to be effective and substantial, relatively large proportions of both surplus measures will be devoted to investment in human and physical capital, and the likelihood of still better performance by an institutionally reorganized society will

be correspondingly small. On the other hand, if only negligible portions of the surpluses associated with income inequality are being devoted to entrepreneurial pursuits, it would be a fair guess that such incentives are minimal in importance, and the opportunity costs of institutional change are correspondingly slight. Similarly, neither concept of surplus ignores the possible work incentives associated with income inequality. S_m is defined net of actual (unequal) labor and peasant incomes. S_e is defined net of socially determined essential expenditures, and the social standard is perfectly capable of encompassing inequalities necessary to maintain work incentives.⁵

2. Two Schools of Thought

The two alternative approaches to explaining the relative weakness of China's economic modernization in the modern period were labeled distributional and technological, respectively, in the introduction to this paper. Despite the oversimplification involved in these terms, I shall retain them for convenience.

The distributional school encompasses a large number of writers with different interests and viewpoints. Many are conversant with the severe technological constraints placed upon the rural economy by population growth, limited cultivable land, and a stagnant technology. What justifies their being grouped together as distributionists here is their common reliance on social and political factors to explain the inability of the Chinese economy to break through these barriers and to bring modern science to the countryside. Thus, for example, Marion Levy argues that "differences in 'non-social' factors, such as raw material resources, do not account for" the contrast between Japan's rapid modernization and China's relative stagnation, and he attributes this contrast instead to elements in the social structures of the two countries.⁶ Similarly, John K. Fairbank, Alexander Eckstein, and L. S. Yang suggest only two possible explanations for China's "record of retarded development," the first centered in the integration and vitality of Chinese culture, and the second in the peculiarities of China's political institutions. Although they treat population pressure as a serious problem and refer more than once to a "scarcity of capital," they do not ascribe China's "retarded development" simply to a "vicious circle of poverty"; on the contrary, they supply much evidence that would tend to refute such a thesis.⁷ In arguing that only a "massive effort . . . involving large outlays on capital-intensive projects" by the state could have overcome the stagnation of nineteenth-century China, and that such efforts must have failed "because of the very nature of the state and its officialdom," they implicitly acknowledge that the surpluses required for such an effort were at least potentially avail-

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The views of some of the earlier distributionists, such as Chen Han-
 seng, L. Magyar, and Fei Hsiao-t'ung, are conveniently summarized by
 Ramon Myers.⁸ In the paragraphs that follow, I shall try to describe—
 with reference to our concern with surplus and its use—a composite
 distributionist view, drawing on the works of these and other writers.

According to such a view, a major cause of continuing rural stagna-
 tion in the first third of the twentieth century was the siphoning off of
 income from the tiller of the soil and its unproductive expenditure by
 a variety of parasitic elements who lived on, but contributed nothing
 to, the rural surplus. Surplus extraction took several forms, of which
 the most important were rent, interest, taxation, and theft by bandits
 or warlord armies. In addition, certain outlays in the rural society that
 would appear to be costs were in fact part of the potential surplus in
 our terminology. Protection payment to local gangsters organized into
 "crop-watching associations" is one not very subtle example of surplus
 masquerading as cost. Another, more significant example is ceremonial
 expenses, which claimed a sizable share of rural family expenditures.
 Fei estimated that perhaps one-seventh of the average annual expendi-
 tures in Kai-hsien-kung was devoted to birthdays, weddings, and funerals,
 and John Lossing Buck found such expenditures to be not only sub-
 stantial but responsible in large degree for rural indebtedness. In addi-
 tion to major life-cycle ceremonies, there were several other observances
 (e.g., festivals at the New Year, Ch'ing Ming) that claimed considerable
 resources.*

Unemployment and underemployment were still another source of
 potential surplus in that they signified a potential for increased output

* Fei Hsiao-t'ung, *Peasant Life in China* (London, 1939), p. 132; John Lossing
 Buck, *Land Utilization in China* (Shanghai, 1937), pp. 467-68. This treatment
 regards such ceremonies not as involving direct expenditures for social security
 purposes (which would be essential consumption rather than surplus expenditures),
 but as a means of strengthening family bonds so that family help could be called
 on when needed. From the viewpoint of a set of institutions that would provide
 directly for social security needs, such as that which evolved in the 1950's, these
 ceremonies are legitimately part of the potential surplus. This treatment is clouded
 by the fact that some degree of reliance on family support has continued to exist
 in China. Also, it can be argued that direct means of providing for health, educa-
 tion, and welfare (i.e., via state or collective institutions) involve costs of their own
 that must be taken into account in estimating the potential surplus above *essential*
 consumption. Finally, Myron Cohen in his Introduction to Arthur H. Smith, *Village*
Life in China (Boston, 1970), p. xx, has argued that ceremonies played an impor-
 tant role in providing meat protein and other nutrients not otherwise available to
 some of the celebrants. To the extent that this was true, expenditures on ceremonies
 were part of subsistence rather than of potential surplus.

from given factor supplies.⁹ Bandits, warlord armies, and other such elements can be counted among the unemployed in this respect, and thus represented not only a means of siphoning income away from its producers,* but also a latent source of expanded production.

Labor was not the only underutilized resource. Rural institutions imposed various inefficiencies on the use of land and capital as well. Land used for graves or for boundaries between parcels was lost to production; and parcelling made farm management, labor use, and irrigation unduly difficult. To this we may add output lost because of differences between large farms and small farms as measured by capital and labor per mou and the degree of crop specialization.†

The distributionist position seeks not only to identify and describe ways in which substantial amounts of income were extracted from the primary producers; it also investigates the uses to which the extracted income was put. Insofar as this income constituted potential surplus, its use is relevant to the question of the effectiveness with which this surplus was employed in the service of development, and in particular, for investment purposes. The distributionists specify a number of ways in which rent, interest, and profit income were used other than for investment in agriculture or industry. First, of course, was luxury consumption. Increasingly in modern times, those with sufficient wealth took up residence in towns and cities, which became "the center of landlord power," and lived as lavishly as they could manage off the rural surplus. "The markets for modern manufactured goods are among city and town dwellers, and the purchasing power of these people depends largely on income derived from the countryside in the form of rent and interest."¹⁰ This was true not only of modern manufactured consumer goods but of traditional luxury crafts as well:

The greater the concentration of landowners as well as of wealth, the greater the development of craftsmen and the more skilled and varied the types of things produced.

Economic activity in these fortified centers of administration, then, was based not on an exchange of goods between producers but on the purchasing power

* But that part extracted from property incomes in the countryside constitutes a transfer from one form of surplus to another, not a net addition to total surplus.

† To the extent that this last phenomenon is due to the desire of better-off farmers to keep down the risk of reliance on an unpredictable market by devoting a greater share of their land to subsistence crop production (a luxury poorer peasants could not afford), it constitutes underspecialization that greater market stability would remedy. See Dwight H. Perkins, *Agricultural Development in China, 1368-1968* (Chicago, 1969), p. 107; and Ramon H. Myers, "The Commercialization of Agriculture in Modern China," in W. E. Willmott, ed., *Economic Organization in Chinese Society* (Stanford, Calif., 1972), p. 174.

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of consumers who gained their wealth with the country.¹¹

In the same category as luxury consumption is "productive investment" as through the purchase of magnificent residences and ancestral

Certain other direct methods of investment are less straightforward in their nature. Rent, interest, and profit income were used either for estate, though not constituted by either financed dissaving or investment in the purchase of rural land sales and at the expense of the contribution of wealth and income to the transfer of surplus of which the study is concerned. The effect of gold purchases by the suppliers of these means of investment was the opportunity cost was the cost of the purchase of domestic stock and the proceeds.* A net increase in hoarding purposes will tend to reduce the availability of such items, both of which would be available for expanding consumption by collectors, runners, personal retainers, though a portion of the income, are from a Baranian perspective recipients are maintained via luxury consumption goods.

Taxes (which, to the extent that they constitute additions to surplus, and expenditures were beneficial to the facilities and essential administrative services in some areas, "a large proportion of the value from the farmers goes to the private armies."¹⁴ In the 19th century, the piling up of requisitions and taxes, the proceeds of which

* From 1943 on, the Nationalist government's decrease reliance upon the printing press would engage in hoarding— in other words to divert their supply of goods available in the economy. See *Inflation, 1937-1945*

ord armies, and other such
 ployed in this respect, and
 ning income away from its
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ource. Rural institutions im-
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ricultural Development in China,
 H. Myers, "The Commercializa-
 Willmott, ed., *Economic Organi-*
 , p. 174.

of consumers who gained their wealth largely from exploitative relationships
 with the country.¹¹

In the same category as luxury consumption might be placed such "non-
 productive investment" as the construction and maintenance of extrava-
 gant residences and ancestral halls.¹²

Certain other direct methods of disposition of property incomes are
 less straightforward in their economic significance. The investment of
 rent, interest, and profit incomes in agricultural land and urban real
 estate, though not constituting "investment" in the economist's sense,
 either financed dissaving on the part of the seller (typical in the case
 of rural land sales and at least partly occasioned by the unequal distri-
 bution of wealth and income in the first place) or represented a trans-
 fer of surplus of which the disposition by the recipient must then be
 studied. The effect of gold and silver hoarding depended on the nature
 of the suppliers of these metals. Where the assets were imported, their
 opportunity cost was the capital goods imports forgone.¹³ Where pur-
 chased from domestic stocks, the effect depended on the sellers' use of
 the proceeds.* A net increase in the demand for precious metals for
 hoarding purposes will tend to stimulate increased imports and produc-
 tion of such items, both of which claim resources that otherwise might
 be available for expanding consumption or investment. Payments to rent
 collectors, runners, personal servants, personal armies, and other unpro-
 ductive retainers, though appearing in form to be wage and salary in-
 come, are from a Baranian viewpoint payments out of surplus. Their
 recipients are maintained without contributing to the output of essen-
 tial consumption goods.

Taxes (which, to the extent that they were paid out of rent, did not
 constitute additions to surplus) were spent in a variety of ways. Some
 expenditures were beneficial to society, e.g., those for social overhead
 facilities and essential administrative services, but many were not. In
 some areas, "a large proportion of the tax collected by the Hsien Gov-
 ernments from the farmers is not used for purposes which are of any
 value to the farmers, but goes for the support of the local politicians and
 private armies."¹⁴ In the 1930's the rural tax situation was notable for
 the piling up of requisitions and surtaxes by various competing authori-
 ties, the proceeds of which "satisfy the rapacity of the local gentry, but

* From 1943 on, the Nationalist government sold gold in order to raise revenue,
 decrease reliance upon the printing press, and "attract the funds of those who other-
 wise would engage in hoarding rice or other important goods and speculate in them
 —in other words to divert them from that harmful activity, and thus add to the
 supply of goods available in the market" (Arthur N. Young, *China's Wartime Fi-
 nance and Inflation, 1937-1945*, Cambridge, Mass., 1965, p. 190).

hardly at all contribute toward the cost of public works."¹⁵ A large and probably major portion of central government expenditures (the revenue for which did not come from rural areas) for the years 1928–35 was allocated to military uses, and approximately half of the nonmilitary portion paid for tax collection. "Expenditures for public works were small and welfare expenditures almost nonexistent."¹⁶ Although this is not the place for an extended discussion of the role of government in the economy of the 1930's, it is evident that a very large proportion of resources claimed by government was not used in a manner conducive to promoting economic development.

In sum, then, the distributionist position sees the peasant as a "helpless prey to the evil gentry, the tax collector, and any man with a gun—soldier or bandit," as the victim of a "rural triple alliance between the gentry, village usurers . . . and local government underlings"¹⁷ that milked the surplus of the rural economy and used it for personal aggrandizement and familial fortune.

It should be recognized that the distributionist school does not deny the severe constraints to development posed by population pressure on arable land and by technological stagnation. On the contrary, the position of many writers who emphasize distributional constraints is rather that nothing could be done about the technical problems until social and political reforms were undertaken. Thus R. H. Tawney, in his introduction to the profoundly distributionist collection *Agrarian China*, explains: "The need for the modernization of agricultural methods is recognized; but the extensive introduction of technical improvements is regarded as improbable, until the social fabric within which they must function has been drastically modified."¹⁸ In this respect the distributionists are eclectic, though they assign orders of priority to their variables.

The distributionist position has been subject to criticism on two counts that concern us here.* First, it is argued that the image of pre-Communist modern China as a landlord-dominated society characterized by gross inequalities of wealth is false. The Chinese countryside on the eve of the Communist conquest was "not a landlord society" but a "relatively egalitarian, competitive and fragmented" one.¹⁹ For China as a whole, "the importance of land concentration and tenancy as the fundamental problem in the rural economy has been vastly overestimated by Chinese writers."²⁰ The fundamental empirical basis for this refu-

* An additional criticism relates to the distributionist view of the role of the treaty ports in contributing to rural decline. This subject will be touched on briefly in the conclusion to this paper.

Surplus and Stagnation in Mo

tation is the work of Buck and Muramatsu Yuji.²¹

Although conditions differ for China as a whole, a third quarter rented part of their owners of their holdings. On he found that some 71 percent and 29 percent rented.²² The interpretations: witness one of the peasantry were involve the contrary perception of an farming landlords was insufficient class.²³

The second focus of critic exploitative rural socioeconomic cultural development. On the cc tenant relations were not a s relative unimportance of ten preserved incentives for lanancy was widespread. More large accumulations of weal As for the moneylender, he to survive until the next ha farm animals, tools, and con

If, as the technologists holploitative socioeconomic rel: what alternative explanation eral scholars, the outlines of ceived which, because of its nating techniques, I have ca the position of this school i: and early twentieth centuri nomic surplus above subsist rural component of the Chi tribution in that part of the surpluses were produced w claves, mainly the treaty po land to some degree by sti employment opportunities f the otherwise inevitable dec population pressure would

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tation is the work of Buck and, for those to whom it is accessible, of
Muramatsu Yuji.²¹

Although conditions differed markedly by region, Buck found that
for China as a whole, a third of all farmers were full tenants, almost a
quarter rented part of their land, and the rest (44 percent) were full
owners of their holdings. On the basis of land rather than population,
he found that some 71 percent of farm area was cultivated by the owner,
and 29 percent rented.²² These figures are of course subject to different
interpretations: witness one writer's observation that "about 50 percent
of the peasantry were involved in the landlord-tenant relationship," and
the contrary perception of another that the amount of land held by non-
farming landlords was insufficient to make them a socially dominant
class.²³

The second focus of criticism concerns the distributionist stress on
exploitative rural socioeconomic relations as impediments to agricul-
tural development. On the contrary, according to the critique, landlord-
tenant relations were not a significant obstacle, not only because of the
relative unimportance of tenancy, but also because conditions of tenure
preserved incentives for land improvement by the peasant where ten-
ancy was widespread. Moreover, for those landlords who did possess
large accumulations of wealth, land was generally not a major source.
As for the moneylender, he played a role in enabling poor households
to survive until the next harvest, as well as in financing purchases of
farm animals, tools, and commodities for weddings and funerals.²⁴

If, as the technologists hold, rural stagnation cannot be ascribed to ex-
ploitative socioeconomic relations and the institutions supporting them,
what alternative explanations suggest themselves? In the work of sev-
eral scholars, the outlines of an alternative causal hypothesis can be per-
ceived which, because of its emphasis on the man-land ratio and stag-
nating techniques, I have called here the technological view. Central to
the position of this school is the argument that by the late nineteenth
and early twentieth centuries there was no longer any significant eco-
nomic surplus above subsistence being produced by the overwhelming
rural component of the Chinese economy. Therefore, questions of dis-
tribution in that part of the economy are largely irrelevant. Whatever
surpluses were produced were located rather in the small modern en-
claves, mainly the treaty ports. These aided the economy of the hinter-
land to some degree by stimulating commercialization and providing
employment opportunities for surplus agricultural labor, thus stemming
the otherwise inevitable decline in rural living standards that increasing
population pressure would have caused. But because of the ultimate

insignificance of the treaty-port economy when measured against that of the vast rural interior, these effects were sadly inadequate to the need of the rural economy for technological modernization. Thus, the suggested cause of rural stagnation is that "agriculture could not develop more rapidly than it did because the treaty-port economy failed to industrialize rapidly and introduce technological change to the peasant economy."^{*}

The "high-level equilibrium trap." The basic model of surplus reduction behind this paradigm has been described both by Dwight Perkins and by Mark Elvin (who has dubbed it the "high-level equilibrium trap"). It is basically an application to China of the model of traditional agriculture suggested by Theodore Schultz.²⁵

In this view, the relative stagnation of Chinese agriculture—and by extension, of the rest of the economy as well—was due to the exhaustion of opportunities for increasing farm productivity within the framework of the traditional technology. As population migrated over the centuries into the relatively underpopulated parts of the country and the land filled up with people, the most productive, labor-intensive techniques diffused throughout China. By the early nineteenth century, Chinese agriculture had already entered the phase of severe diminishing returns to additional labor inputs. Only the turmoil of the great rebellions of the mid-century and migration to Manchuria from the beginning of the twentieth century afforded temporary relief, by eliminating population in the one case, and by increasing the supply of land in the other. As Perkins sees it, the situation became critical by the middle of the twentieth century, when Manchuria had been substantially populated and the rate of population growth increased to well above the long-term growth potential of traditional agriculture. Elvin focuses on an earlier period, arguing that improvements in traditional agricultural technology, increases in investment, and the use of new resources "had all reached a point of sharply diminishing returns by the later eighteenth century,"²⁶ but his explanatory framework is essentially the same as that of Perkins.

* Ramon H. Myers, *The Chinese Peasant Economy: Agricultural Development in Hopei and Shantung, 1890-1949* (Cambridge, Mass., 1970), p. 293. Although Myers uses this argument to rebut as "simply false" the converse statement that the rural economy was a drag on development of the treaty ports, he almost immediately contradicts this position by arguing that "the growth of agriculture determined the rate and character of urban growth and the size of the nonfarm population that could be supported." It would seem that the way out of this apparent contradiction is to assert the mutual interaction between the treaty-port and peasant economies. Similarly, it could be argued that lagging agricultural growth in the 1950's was a drag on industrialization, and that inadequate industrial investment in agriculture in turn hindered agricultural growth.

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Elvin, moreover, provides the behavior of the nonagricultural economy to explain why agriculture failed to undergo a logical revolution of its own. It reached a point of discontinuity at a fairly advanced stage of an industrial revolution, which saved it from sharply diminishing returns. Extra inputs and new technologies would have had to be introduced for the industrial revolution to have been successful. The surplus of agricultural goods in turn, since this gave rise to a demand for goods other than the traditional ones. In other words, although capital was abundant,^{*} the constellation of economic forces developed traditional technology, making it increasingly difficult for those surplus-generating innovations.

A comprehensive and sophisticated set of supplementary explanations for the "high-level equilibrium trap" hypothesis is nevertheless provided. Like other writers of a technical nature, Elvin offers a gamut of sociopolitical explanations for the economic stagnation.²⁹ His conclusion is that "the basic difficulty in rural development was that too many people were trying to live on a primitive technology."³⁰

Yet, whatever the validity of the argument, China's economic history before the arrival of the West,[†] such contacts offered

* Elvin makes these arguments in *The High-Level Equilibrium Trap* (Stanford, Calif., 1973); and one which again suggests a sizable surplus but a rising one is a pre-condition for a nonagricultural economy. In an earlier formulation, he does appear to explain that its smallness by 1800 explains Elvin, "The High-Level Equilibrium Trap in the Traditional Chinese Textile Industry" (*Organization in Chinese Society*).

† Perkins's study indicates that the economy grew over the long period from the founding of the treaty ports. Such a finding is not necessarily inconsistent (for example, if constant returns

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Elvin, moreover, provides a link between agricultural stagnation and
the behavior of the nonagricultural economy, as well as a hypothesis to
explain why agriculture failed to break out of its "trap" with a techno-
logical revolution of its own. He argues that Chinese agriculture had
reached a point of discontinuity at which "only inputs created by a
fairly advanced stage of an industrial-scientific revolution . . . could have
saved it from sharply diminishing returns to new methods, new invest-
ment, extra inputs and new use of resources."²⁷ Hence, an industrial
revolution would have had to *precede* an agricultural revolution. But an
industrial revolution was itself inhibited by the falling per capita sur-
plus of agricultural goods imposed by the situation of diminishing re-
turns, since this gave rise to "a reduction in effective demand per per-
son for goods other than those needed for bare survival."²⁸ In other
words, although capital was not inadequate and the surplus was sub-
stantial,* the constellation of falling surpluses over time and highly de-
veloped traditional technology in late-traditional China made it increas-
ingly difficult for those surpluses to be used for productivity-enhancing
innovations.

A comprehensive and sophisticated argument, with adumbrations of
supplementary explanations brought to bear from a wide-ranging ex-
amination of traditional Chinese culture, the "high-level equilibrium
trap" hypothesis is nevertheless explicitly technological in its emphasis.
Like other writers of a technological bent, Elvin specifically rejects the
gamut of sociopolitical explanations for late-traditional Chinese eco-
nomic stagnation.²⁹ His conclusions are fully consistent with the dictum
that "the basic difficulty in rural China during the past century was that
too many people were trying to make a living off too little land using
a primitive technology."³⁰

Yet, whatever the validity of this formulation for the analysis of Chi-
na's economic history before the advent of substantial contacts with the
West,† such contacts offered China the possibility of skipping historical

* Elvin makes these arguments on pp. 286–89 of *The Pattern of the Chinese Past* (Stanford, Calif., 1973); and on p. 314 he refers to "huge but static markets," which again suggests a sizable surplus. He thus implies that not only a substantial surplus but a rising one is a prerequisite for stimulating technical progress in the nonagricultural economy. In an earlier version of the "high-level equilibrium trap" formulation, he does appear to emphasize the absolute size of the surplus, arguing that its smallness by 1800 explains the lack of impetus to innovation. See Mark Elvin, "The High-Level Equilibrium Trap: The Causes of the Decline of Invention in the Traditional Chinese Textile Industries," in W. E. Willmott, ed., *Economic Organization in Chinese Society* (Stanford, Calif., 1972), pp. 171–72.

† Perkins's study indicates that agricultural output per capita remained constant over the long period from the fourteenth to the early twentieth centuries. Although such a finding is not necessarily inconsistent with the diminishing returns hypothe-
sis (for example, if constant returns resulted only from frequent famines, plagues

stages in the technological revolution and created an essentially new situation. It was no longer technologically impossible for existing surpluses to be used innovatively once the spectrum of technical possibilities was broadened to include equipment, methods, and ideas available in the advanced countries. Such internationally inspired innovation did indeed occur on a very modest scale from the late nineteenth century on, and it gathered great momentum in the years after 1949. It is of course still possible to argue that diminishing per capita surpluses created poor incentives for modernizing innovation under existing institutional conditions, even given the technical possibilities for such innovation to occur. But then it is necessary to direct attention as much to the characteristics of the institutional setting as to the technological features, since both cooperated to inhibit the desired incentives. In short, for the period after the Opium Wars, a purely technological position seems to require demonstrating not only that diminishing returns put long-term pressures on the surplus, but that the absolute size of the surplus was so small as to render the question of its distribution and use inconsequential. It is for this reason that we turn our attention next to trying to gauge in a broad and general way the size of the potential economic surplus in China's pre-Communist economy.

3. *Estimating the Surplus, 1933*

The underlying meaning adopted here of economic surplus as the use of available resources for nonessential purposes (including undesired idleness) indicates that the criterion for identifying surplus is how income is spent rather than who receives it. A millionaire who lives frugally and spends most of his income to build machinery or improve farm productivity contributes little or nothing to surplus. But the same millionaire, spending his income on luxury articles, imported automobiles, and domestic servants, generates substantial surplus.*

Nevertheless, the method adopted here for estimating S_m —the economic surplus above mass consumption—is based on who receives the income, not how it is used. That is, S_m is treated as consisting of rent, interest, and profit incomes, estimated with varying degrees of crudeness and approximation for different sectors of the economy. Peasant

and wars, which relieved population pressure periodically), it nevertheless raises problems for a hypothesis that puts great weight on the existence of diminishing surplus per capita.

* This is true even though the servants and luxury goods producers are supported by him, because their activities generate nonessential goods and services. They do not themselves consume these goods and services, but subsist on the necessities (essential goods and services) produced elsewhere in the economy.

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incomes, including the impute used by the independent pro comes in nonagricultural secto (skills acquired from educatio

The reason for doing it this mit a breakdown of national I separate activities supporting surplus. On the other hand, s est, and profits in the country and occupational distribution illustrative breakdown of nat labor (plus implicit property bulk of surplus product was u groups whose earnings large there is bound to be a fairly lated our way and surplus ca

Insofar as property income ever, such incomes clearly ov of such overstatement is brief Property incomes used to subs sons is part of surplus if such p ment. Some property income firm relatives and retainers, an poses is not properly part of s portion, however. On the oth personnel and technical worl surplus in that they are partly is ignored here as well.

Although we are interested potential economic surplus i ideally like to have a substai to eliminate the influence of ditions, such series do not exi detailed national income stati K. C. Yeh, though some wage are also used. For agriculture, pit, whose estimates also pert

Let us recall the definition sumption, combining equatio

$$(4) \quad S_m = Y_a - w(N + F)$$

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incomes, including the imputed returns to land and capital owned and used by the independent proprietor, are excluded from S_m . Labor incomes in nonagricultural sectors, including the returns to human capital (skills acquired from education or experience), are also excluded.

The reason for doing it this way is that the available data do not permit a breakdown of national product by sector of origin with which to separate activities supporting mass livelihoods from those constituting surplus. On the other hand, sufficient data do exist about rents, interest, and profits in the countryside, wages in nonagricultural activities, and occupational distribution of the labor force to permit a crude and illustrative breakdown of national income by (explicit) property and labor (plus implicit property) shares. Furthermore, since the great bulk of surplus product was undoubtedly associated with upper-income groups whose earnings largely took the form of returns to property, there is bound to be a fairly close relationship between surplus calculated our way and surplus calculated the ideal way.

Insofar as property incomes were used to finance investment, however, such incomes clearly overstate surplus as meant here. The extent of such overstatement is briefly investigated at the end of this section. Property incomes used to subsidize the consumption of unemployed persons is part of surplus if such persons are capable of productive employment. Some property income was no doubt used to support old and infirm relatives and retainers, and such income transferred to welfare purposes is not properly part of surplus. I know of no way to estimate this portion, however. On the other hand, the high salaries of managerial personnel and technical workers undoubtedly contain an element of surplus in that they are partly used to acquire luxuries, but this element is ignored here as well.

Although we are interested in the general order of magnitude of the potential economic surplus in pre-1949 China, and would therefore ideally like to have a substantial time series of data so as to be able to eliminate the influence of short-term fluctuations in economic conditions, such series do not exist. The estimates are based chiefly on the detailed national income statistics compiled for 1933 by T. C. Liu and K. C. Yeh, though some wage data from the late 1920's and early 1930's are also used. For agriculture, I rely heavily on the work of Victor Lip-pit, whose estimates also pertain to 1933.

Let us recall the definition of the potential surplus above mass consumption, combining equations (1) and (2) of Section I:

$$(4) \quad S_m = Y_a - w(N + R) + Y_p - Y_a.$$

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The component $Y_a - w(N + R)$ is the potential surplus in actually produced output. It is estimated sector by sector, either directly (as in agriculture, following Lippit) or by subtracting estimates of sectoral wage bills from Liu-Yeh estimates of sectoral values-added. The second component of equation (4), $Y_p - Y_a$, is the potential output of unemployed workers and possibly of pure rentiers (those persons capable of working but who live entirely on the returns to their property) as well.

The potential output of unemployed workers can be written as

$$(5) \quad Y_u = \frac{Y_a}{N_e} k (N - N_e),$$

where

Y_u = the potential output of unemployed workers,

N_e = the number of employed workers, and

k = the ratio of the potential productivity of unemployed workers to the productivity of employed workers, or

$$\frac{Y_p - Y_a}{N - N_e} \bigg/ \frac{Y_a}{N_e}.$$

Equation (5), which expresses the potential productivity of unemployed workers as the product of their number ($N - N_e$), the ratio of their productivity to that of employed workers (k), and the productivity of employed workers (Y_a/N_e), can also be written somewhat differently:

$$(6) \quad Y_u = \frac{N}{N_e} Y_a k u,$$

where $u = 1 - \frac{N_e}{N}$, the rate of unemployment.

The ratio of potential output of unemployed workers to current NDP is, therefore,

$$(7) \quad \frac{Y_u}{Y_a} = \frac{N}{N_e} k u.$$

This is the form in which the potential contribution of unemployed workers is estimated below.

Neither the potential contribution to output of pure rentiers nor their consumption is initially taken into account because of the difficulty of estimating their numbers. Consumption at the mass consumption level for pure rentiers is wR , and we may express their potential productivity as Y_r . Substituting the second term in the definition of S_m (equation (4) as amended by equation (6)), we get

$$(8) \quad S_m = Y_a - wN - wR + \frac{N}{N_e} k u + Y_r.$$

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Clearly, if the omissions of output are to compensate $e = Y_r/R$. In other words, the to rentiers, w , must exactly If rentiers are capable of pro the surplus will be underesti be overestimated. Since as a far more education per cap peasants, it is probable that capable of working will exce tains some elderly and disabl is nil or negligible.

The assumption that renti income might legitimately b it not require radical institut is therefore rejected, rentie sumption of peasants and l: In the absence of direct in the best expedient would se calculated above.*

Because of the very differ essential consumption, S_c , t

In the estimate of $Y_p - Y_a$ labor is taken into account, b cultivation. As equation (8) unutilized land does not ent fluences the surplus indirec which expresses the degree c the employment of unemplo is indicated below.

Agriculture. Lippit finds domestic product (Y_a/Y) a

* The standard Chinese Com in the countryside puts the num percent of the rural population. (Lin Tse-li, *The Socialist Transfor* 1960, p. 2.) Well under half of t a substantial proportion must h rural population, 3 percent woul of the total population that live nonagricultural sectors, the num played no production or manag percent of the labor force.

Clearly, if the omissions of rentier consumption and rentier potential output are to compensate each other, then wR must $= Y_r$, or w must $= Y_r/R$. In other words, the average mass consumption level allowed to rentiers, w , must exactly equal their average potential productivity. If rentiers are capable of producing more than their mass consumption, the surplus will be underestimated, whereas if they produce less, it will be overestimated. Since as a group the pure rentiers probably average far more education per capita than the labor income recipients and peasants, it is probable that the potential productivity of those rentiers capable of working will exceed w . However, the rentier group also contains some elderly and disabled individuals whose potential productivity is nil or negligible.

The assumption that rentiers will begin to work and produce a labor income might legitimately be thought to violate the property of S_m that it not require radical institutional change to produce. If that assumption is therefore rejected, rentier consumption must be added to the consumption of peasants and labor income recipients in calculating C_m . In the absence of direct information on the number of pure rentiers, the best expedient would seem to be to add some 3 percent to C_m as calculated above.*

Because of the very different method of estimating the surplus above essential consumption, S_c , the problem of rentiers does not arise.

In the estimate of $Y_p - Y_a$, not only unemployed and underemployed labor is taken into account, but also unutilized land capable of profitable cultivation. As equation (8) indicates, however, the potential output of unutilized land does not enter explicitly into the estimate. Rather, it influences the surplus indirectly through its effect on the parameter k , which expresses the degree of diminishing returns to be encountered by the employment of unemployed labor. The manner in which this is done is indicated below.

Agriculture. Lippit finds the share of rural property income in net domestic product (Y_a/Y) as the sum of three component shares: rent

* The standard Chinese Communist analysis of pre-Communist class structure in the countryside puts the number of landlords and rich peasants at less than 10 percent of the rural population. (See, for example, Hsüeh Mu-ch'iao, Su Hsing, and Lin Tse-li, *The Socialist Transformation of the National Economy in China*, Peking, 1960, p. 2.) Well under half of this group must have been landlords, and of these, a substantial proportion must have farmed some land themselves. Thus, for the rural population, 3 percent would seem to be a generous estimate of the proportion of the total population that lived by returns to property alone. Similarly, in the nonagricultural sectors, the number of those who received property income but played no production or managerial role could hardly have been greater than 3 percent of the labor force.

(ρ/Y), profits on farming done by full-time hired labor (σ/Y),* and interest (i/Y). With considerable resourcefulness, he develops the following estimates:

$$\frac{\rho}{Y} + \frac{\sigma}{Y} + \frac{i}{Y} = \frac{Y_a}{Y}$$

$$.107 + .034 + .028 = .169$$

Thus, Lippit finds that about 17 percent of NDP in 1933 was accounted for by rural property incomes. In addition, he estimates that another 2.1 percent of NDP was absorbed by land taxes paid by owner-cultivators and net of those paid by landlords and already included in ρ/Y . It should be realized that the land tax figures do not include "miscellaneous sales, transit, animal slaughter and other local taxes of every variety and description which proliferated during this period,"³¹ and that furthermore, a large portion of the payments concerned never reached government coffers but were siphoned off by tax farmers and into the pockets of officials. Adding estimated taxes net of property income payment to property incomes yields a total rural surplus from these sources equal to 19 percent of NDP.

Ideally, any transfers from the surplus to shore up mass consumption should be subtracted from S_m , and transfers to the surplus from peasant incomes should be added to S_m . An example of the first would be a net surplus of new consumption loans over payments or of land purchases by landlords from peasants over land sales to peasants (i.e., dissaving by peasants). On the other hand, a surplus of repayments over new consumption loans and of peasant land purchases over sales would be examples of transfers to S_m . I know of no way to estimate the quantitative significance, or even the direction, of such possible transfers with any degree of confidence.†

* While σ includes imputed managerial wages of owners, and is thus more than property income, Lippit deliberately chooses a low value of σ/Y to compensate for this. (Victor Lippit, "Land Reform in China: The Contribution of Institutional Change to Financing Economic Development," unpublished manuscript, 1972, pp. 72-73.) However, ρ includes only rent explicitly paid to landlords. The imputed returns to land cultivated by its owners are not included in ρ and hence in surplus. To avoid confusion with other variables discussed in this essay, I have changed Lippit's symbols.

† Rural instability and peasant agitation in the 1920's and 1930's "reduced the demand for land and encouraged landlords to sell their property" (John Lossing Buck, *Land Utilization in China*, Shanghai, 1937, p. 333). However, the severe price deflation of 1931-33 hurt the peasantry and may have forced numbers of them to sell their land and become tenant farmers (Ramon H. Myers, "The Commercialization of Agriculture in Modern China," in W. E. Willmott, ed., *Economic Organization in China*, Stanford, Calif., 1972, p. 191). Deflation may also have

Surplus and Stagnation in Modern China

Of the various components by Lippit, the most important deprivations of bandits and military surtaxes, insofar as these did not come from property incomes; (c) government; and (d) output lost through elements (c) and (d) can be estimated of size.

Buck found that rural idleness averaged 1.7 months per able-bodied man. He advised making use of such idleness in fruit growing, animal husbandry, and other activities like.³² He also found a significant increase to some 9 percent of the total rural surplus be unutilized because of certain factors.

Having obtained estimates of rural surplus we must next estimate the rural surplus potential output. One way to make a production function for the rural surplus increase in output associated with a 9 percent increase in land; but rural conditions highly restrictive and rural labor markets and underlying technological change unemployed labor would be 10 percent though such unemployment would last 10 months. Therefore, I instead estimate the actual results of increased rural surplus.

Cultivated land in 1956 was 10 percent greater than the 1933 base. Yeh. This is almost exactly equivalent to the equation of land in the early 1930's. Peter Schran's calculations, that rural agriculture increased by some 24 percent production increased by 24 percent

forced a net increase in peasant income, however, that most borrowing was collateral and credit ratings to market have declined substantially during the period (monial) must have been postponed.

* T. C. Liu and K. C. Yeh, *The Rural Economy of China* (New York, N.J., 1965), pp. 128-29; Peter Schran, *The Rural Economy of China, 1950-1959* (Urbana, Ill., 1969), p. 1

the hired labor (σ/Y),* and idleness, he develops the fol-

$$= \frac{Y_a}{Y}$$

= .169

NDP in 1933 was accounted for, he estimates that another 1.7 percent of taxes paid by owner-cultivators and already included in ρ/Y . These taxes do not include "miscellaneous other local taxes of every kind during this period,"³¹ and payments concerned never deducted off by tax farmers and other taxes net of property incomes as a total rural surplus from

to shore up mass consumption and to the surplus from peasant production. The role of the first would be a net transfer of land purchases to peasants (i.e., dissaving by peasants) and repayments over new mortgages over sales would be expected to estimate the quantitative impact of possible transfers with any

of owners, and is thus more than twice the value of σ/Y to compensate for the contribution of institutional taxes paid to landlords. The imputed value included in ρ and hence in surplus. As noted in this essay, I have changed

in the 1920's and 1930's "reduced the value of their property" (John Lossing Johnson, p. 333). However, the severe deflation and may have forced numbers of farmers (Ramon H. Myers, "The Communist Revolution in China," in W. E. Willmott, ed., *Economic History of China*, p. 191). Deflation may also have

Of the various components of rural potential surplus not estimated by Lippit, the most important were probably (a) income claimed by deprivations of bandits and military units; (b) income claimed by local surtaxes, insofar as these did not come out of surplus already accounted for by property incomes; (c) output lost through rural underemployment; and (d) output lost through underutilization of land. Only for elements (c) and (d) can an attempt be made here to arrive at rough estimates of size.

Buck found that rural idleness, almost entirely seasonal in nature, averaged 1.7 months per able-bodied man, or 14 percent of the year. He advised making use of such idle labor to expand subsidiary production in fruit growing, animal raising, handicraft production, and the like.³² He also found a significant amount of cultivable land, amounting to some 9 percent of the total cultivated area of 252.6 million acres, to be unutilized because of certain tenure conditions and social practices.³³

Having obtained estimates of the underutilization of land and labor, we must next estimate the resulting shortfall of actual output below potential output. One way to make such an estimate would be to construct a production function for the agricultural sector and then calculate the increase in output associated with a 14 percent increase in labor and a 9 percent increase in land; but the only practical way of doing this embodies highly restrictive and unrealistic assumptions about factor markets and underlying technology,³⁴ and also improperly assumes that the unemployed labor would be put to work on the unutilized land even though such unemployment occurred almost entirely in the winter months. Therefore, I instead adopt the expedient of applying to 1933 the actual results of increased utilization of labor and land in the 1950's.

Cultivated land in 1956 was given as 1.677 billion mou, some 9.3 percent greater than the 1.533 billion mou estimated for 1933 by Liu and Yeh. This is almost exactly equal to Buck's estimate of the underutilization of land in the early 1930's. Between 1952 and 1956, according to Peter Schran's calculations, the total annual number of labor days in agriculture increased by some 40 percent, and the net value of peasant production increased by 24 percent,* or by 60 percent of the increase in

forced a net increase in peasant indebtedness in 1933. It should be remembered, however, that most borrowing was by middle-income or wealthy farmers with the collateral and credit ratings to make them good risks. The ability to borrow must have declined substantially during the deflation, and many activities (e.g., ceremonial) must have been postponed to avoid the need to incur new debt.

* T. C. Liu and K. C. Yeh, *The Economy of the Chinese Mainland* (Princeton, N.J., 1965), pp. 128-29; Peter Schran, *The Development of Chinese Agriculture, 1950-1959* (Urbana, Ill., 1969), pp. 75, 119. The year 1952 is taken as the starting

labor inputs. Assuming that the same discount must be applied to the 14 percent potential increase in labor in 1933 to account for diminishing returns, we come out with an estimate of output forgone in that year of $.6 \times 14 = 8.4$ percent of agricultural output, or 5.5 percent of net domestic product.*

In summary, the shares in NDP of potential surplus originating or latent in the agricultural sector are 16.9 percent (luxury consumption, other unproductive expenditures, and some investment out of explicit property incomes) plus 2.1 percent (land tax) plus 5.5 percent (underutilized land and labor), or a total of 24.5 percent. This excludes local surtaxes, extractions by military units and bandits, potential output of unutilized land outside of Buck's 22 provinces, net above-par consumption out of implicit property incomes of owner-cultivators, and, possibly, output lost on account of inefficiencies due to uneconomic land division and differences in factor ratios between farms of different sizes.

The nonagricultural sector. For factories, mining and utilities, construction, and modern transportation and communications, surplus was calculated by subtracting estimated labor income from sectoral value-added. The wage data and sources are given in Table 1, and the calculations and their results are shown in Table 2. The estimates for the other nonagricultural sectors are given, along with all the other sectoral estimates, in Table 4. It is evident that, all together, surplus above mass consumption for income actually produced outside of agriculture came to over 8 percent of NDP.

To estimate the potential surplus represented by output lost because of unemployment in nonagricultural sectors, we must multiply the amount of unemployment by an estimate of potential value-added per unemployed worker. Liu and Yeh state that of 53 million males (aged 12 to 65, excluding students) in the labor force in 1933, 12 million (or more than 20 percent) were unemployed.³⁵ Adopting the procedure of allocating this unemployment to the various nonagricultural sectors according to their share of total nonagricultural employment, and then calculating the potential addition to output in each sector by multiply-

point because the average number of annual labor days per employed person seems to have been about the same as in 1933 (Schran, pp. 67-69). The year 1956 is taken as the endpoint in order to avoid including the extreme intensification of labor inputs during the winter of 1957-58, when the Great Leap Forward began.

* Given the same (9 percent) increase in cultivated land, it is plausible to assume that a 14 percent increase in labor would encounter a lower rate of diminishing returns than a 40 percent increase. However, some increase in capital and current inputs occurred in the 1953-56 period, without which diminishing returns would have been even greater. By ignoring both factors, I implicitly assume that they balance out.

*Wages for Samples of Jobs
and Co*

Sector and type of job
Factories, mining, and utilities
Textiles
Chungking cotton textile wor
Kwangtung weavers (machine
Hopei cotton spinners ^c
Wuhsing silk weavers (machin
Other
Chemical industry workers ^e
3,156 factory workers ^f
3,317 Ningpo factory worker
Boiler room workers ^h
Machine industry workers ^e
Printing workers ^e
Engine room workers ^h
Average Annual Wage
Construction
Carpenters ⁱ
Masons ⁱ
Masons and carpenters ^j
Average Annual Wage

Sources:

^aP'eng Tse-i, *Chung-kuo chin-tai shou-kung-y* handicraft industry in modern China, 1840-1949 for iron loom workers, 1934 or 1935.

^b*Ibid.*, p. 572. Assumes 26 workdays per mon

^c*Ibid.*, p. 571. Assumes 26 workdays per mon

^d*Ibid.*, p. 574. Data are for 1932.

^e*Ibid.*, p. 566. Data are for Peiping, 1933 calculated the average.

^fL. K. Tao, "The Standard of Living Among a weighted average of the wages for factory wor different sub-samples in the total sample of facti assumed (a) 1.5 wage earners per family (see Sit York, 1933, pp. 29-30), and (b) that all wages ar

^gP'eng Tse-i, p. 570. Assumes 26 workdays 1 day are given, from which I have calculated the n

^hGamble, p. 317. An average of the range giv

ⁱ*Ibid.* Average taken for range of 12-16 yuan

^jL. K. Tao, pp. 31-33. Refers to 1927-28, and

Note: The obvious likelihood of bias in the Gamble, pp. 30-31, observes that in Peiping the at 12 yuan per month, and that some men edu per month. The average wage for factory work That for construction work, 14 yuan, is equal to err in being too small, causing the resulting surpl

TABLE 1
*Wages for Samples of Jobs in Factories, Mining, and Utilities,
 and Construction, 1933*

Sector and type of job	Wage per month (Yuan)	
Factories, mining, and utilities		
Textiles		
Chungking cotton textile workers ^a	8	
Kwangtung weavers (machine) ^b	11	
Hópei cotton spinners ^c	12	
Wuhsing silk weavers (machine) ^d	31	
Other		
Chemical industry workers ^e	11	
3,156 factory workers ^f	19	
3,317 Ningpo factory workers ^g	22	
Boiler room workers ^h	20-60	
Machine industry workers ^e	32	
Printing workers ^e	36	
Engine room workers ^h	45-100	
<i>Average Annual Wage</i>		324
Construction		
Carpenters ⁱ	14	
Masons ^j	14	
Masons and carpenters ^j	15	
<i>Average Annual Wage</i>		168

Sources:

^aP'eng Tse-i, *Chung-kuo chin-tai shou-kung-yeh shih tzu-liao, 1840-1949* (Materials on the history of the handicraft industry in modern China, 1840-1949), vol. 3 (Peking, 1957), p. 572. Data refer to average wage for iron loom workers, 1934 or 1935.

^b*Ibid.*, p. 572. Assumes 26 workdays per month. Data are for 1934 or 1935.

^c*Ibid.*, p. 571. Assumes 26 workdays per month. Data are for women factory spinners, 1932.

^d*Ibid.*, p. 574. Data are for 1932.

^e*Ibid.*, p. 566. Data are for Peiping, 1933. Highest and lowest wages are given, from which I have calculated the average.

^fL. K. Tao, "The Standard of Living Among Chinese Workers" (Shanghai, 1931), pp. 31-34. I have taken a weighted average of the wages for factory workers in Tao's sample. The weights are the proportions of the different sub-samples in the total sample of factory workers. Tao's figures are for family expenditures. I have assumed (a) 1.5 wage earners per family (see Sidney D. Gamble, *How Chinese Families Live in Peiping*, New York, 1933, pp. 29-30), and (b) that all wages are spent.

^gP'eng Tse-i, p. 570. Assumes 26 workdays per month. Data are for 1932. Highest and lowest wages per day are given, from which I have calculated the monthly average.

^hGamble, p. 317. An average of the range given is used in computing the overall average for this sector.

ⁱ*Ibid.* Average taken for range of 12-16 yuan for masons.

^jL. K. Tao, pp. 31-33. Refers to 1927-28, and assumes 1.5 wage earners per family (see note f above).

Note: The obvious likelihood of bias in the use of such small samples should be kept in mind. However, Gamble, pp. 30-31, observes that in Peiping the wages of most unskilled and some semi-skilled workers began at 12 yuan per month, and that some men educated enough to teach or do clerical work were paid 14 yuan per month. The average wage for factory work that I am using, 27 yuan, is considerably above these figures. That for construction work, 14 yuan, is equal to the higher figure. It is thus not very likely that our estimates err in being too small, causing the resulting surplus to be too large.

TABLE 2
*Estimates of the Potential Surplus in Factories, Mining, and Utilities,
 Construction, and Modern Transportation and Communications, 1933*

Category	Factories, mining, and utilities	Construction	Modern trans- portation and communications	Total
Net value-added (Million yuan)	980	340	430	
Employment (Millions)	1.94	1.55	44	
Net value-added per worker (Yuan)	505	219	977	
Average annual wage (Yuan)	324	168	486	
Surplus per worker (Yuan)	181	51	491	
Total surplus (Million yuan)	351	79	216	646
Total surplus as pct. of NDP				2.2%

Sources:

Net value-added. T. C. Liu and K. C. Yeh, *The Economy of the Chinese Mainland* (Princeton, N.J., 1965), p. 66.

Employment. *Ibid.*, p. 69.

Average annual wage. Factories, mining, and utilities, and construction: see Table 1. Modern transportation and communications: Insufficient wage data were available to provide a reasonable sample; I have therefore assumed the average wage in this sector to be 1.5 times that in factories, mining, and utilities.

ing its unemployment by 60 percent of its average labor productivity,* we derive a total income forgone of 1.206 billion yuan, or 4.1 percent of NDP (Table 3).†

These estimates, which are conservative and incomplete, indicate that the economy of 1933 produced or was capable of producing a total surplus above mass consumption equal to almost 37 percent of NDP (Table 4). If pure rentier consumption must be subtracted from this surplus (see above), the surplus above mass consumption is reduced slightly, to 35 percent.‡ If output forgone because of underutilization of available resources is excluded, the surplus actually produced comes to over one-quarter (27.2 percent) of NDP.

* This last procedure is to make maximum possible allowance for possible diminishing returns to additional labor inputs. The rate of diminishing returns used is the same as for agricultural labor, and therefore constitutes a most generous allowance for diminishing returns in the nonagricultural sectors.

† This procedure makes no allowance for unemployed female workers, and so seriously understates the potential gains from full employment.

‡ Assuming pure rentiers to constitute 3 percent of the population (see p. 67), C_m , which is equal to 63.2 percent (100 - 36.8) of NDP, must be increased by 3.1 percent, which is equivalent to reducing S_m by 5.4 percent.

TABLE 3
Potential Output of Unemployed Workers, Nonagricultural Sectors, 1933

Sector	(1) Net value-added (Million yuan)	(2) Employment (Millions)	(3) Pct. of nonagricultural employment (2) ÷ 54.3 million × 100	(4) Labor productivity (Yuan) (1) ÷ (2)	(5) Unemployment (Millions) (3) × 1.2 million	(6) Potential output of unemployed workers (Million yuan) .6 × (4) × (5)
Factories, mining, and utilities	980	1.94	3.6%	505	.432	131

ries, Mining, and Utilities,
and Communications, 1933

Construction	Modern transportation and communications	Total
340	430	
55	44	
219	977	
168	486	
51	491	
79	216	646
		2.2%

the Chinese Mainland (Princeton, N.J., 1965),

and construction: see Table 1. Modern
is available to provide a reasonable sample; 1
times that in factories, mining, and utilities.

average labor productivity,*
billion yuan, or 4.1 percent

and incomplete, indicate that
able of producing a total sur-
plus 37 percent of NDP (Table
subtracted from this surplus
sumption is reduced slightly,
of underutilization of avail-
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TABLE 3
Potential Output of Unemployed Workers, Nonagricultural Sectors, 1933

Sector	(1) Net value-added (Million yuan)	(2) Employment (Millions)	(3) Pct. of nonagricultural employment (2) ÷ 54.3 million × 100	(4) Labor productivity (Yuan) (1) ÷ (2)	(5) Unemployment (Millions) (3) × 12 million	(6) Potential output of unemployed workers (Million yuan) .6 × (4) × (5)
Factories, mining, and utilities	980	1.94	3.6%	505	.432	131
Handicrafts	2,040	15.74	29.0	130	3.480	271
Construction	340	1.55	2.9	219	.348	46
Modern transportation and communications	430	0.44	0.8	977	.096	56
Traditional transportation and communications	1,200	10.86	20.0	110	2.400	158
Trade	2,710	14.88	27.4	182	3.288	359
Government	820	5.12	9.4	160	1.128	108
Finance	210	0.14	0.3	1,500	.036	32
Personal Services	340	3.63	6.7	94	.804	45
Total		54.30	100.1%		12.012	1,206

Source: T. C. Liu and K. C. Yeh, *The Economy of the Chinese Mainland* (Princeton, N.J., 1965), pp. 66, 69.

TABLE 5
Distribution of Actually Produced Surplus Between
Modern and Traditional Sectors, 1933

Sector	Net value-added as pct. of NDP	Surplus as pct. of NDP	Surplus net value-added
Traditional	84.4	22.6	.27
Agriculture	65.0	19.0	
Handicrafts	7.1	1.8	
Transportation and communications	4.2	0.5	
Peddlers	3.3	0.4 ^a	
Personal services	1.2	—	
Residential rents	3.6	0.9	
Modern	12.9	4.6	.36
Factories, mining, and utilities	3.4	1.2	
Trading stores and restaurants	6.1	2.2 ^a	
Finance	0.7	0.5	
Transportation and communications	1.5	0.7	
Construction	1.2	— ^b	

Note: The modern and traditional sectors are differentiated according to the practice of Liu and Yeh.

^aSee Table 4, source note on trade.

^bNegligible

Of the total potential surplus, some two-thirds (or a quarter of NDP) originated or was latent in the agricultural sector, and one-third (or 12.3 percent of NDP) originated or was latent in the nonagricultural sectors. Of the actually produced potential surplus (excluding potential output not produced), about 70 percent (or 19 percent of NDP) originated in agriculture and 30 percent (8 percent of NDP) in the nonagricultural sectors. Table 5 shows the distribution of the actually produced surplus (totaling 27.2 percent of NDP) between the modern and traditional sectors. It indicates that the traditional sectors were responsible for 83 percent and the modern sectors only 17 percent of this total. However, the ratio of surplus to value-added was higher in the modern than in the traditional sector, reflecting the much higher labor productivity of the former.

The surplus above essential consumption. I have interpreted this concept of surplus, it will be recalled, as measuring the nonessential components of the national income from the Chinese Communists' view of what is and what is not essential. S_e thus identifies the portion of the national income that would have been available for redistribution toward different uses, including the promotion of economic develop-

Net Domestic Product, 1933

Pct. in NDP
24.5
10.7
2.8
3.4
2.1
5.5
12.3
1.2
1.8
— ^a
0.7
0.5
2.6
0.5
0.9
4.1
36.8
9.6
27.2

portation and communications. See Tables 1

estimate of net value added by handicrafts (see f explicit rent, interest, and profit income in ives an implied consumption per worker 40 yuan). A gap of this nature is to be expected ere much handicraft production occurred, (b) her on the average than that of peasants, and ion.

s calculated as the difference between value or force (Table 3) and the implied per capita ire yields a much smaller ratio of surplus to

i modern transportation and communications u and Yeh, p. 69) to derive sectoral "mass ed from net value added by finance (Liu and

u and Yeh (p. 600) at 629 million yuan, some st of this sector consists of peddlers. I have et value-added as in traditional transportation. residential rent paid by the nonagricultural is here assumed to have been paid explicitly

rs. See Table 3 and text.

sector consists of the wages and salaries of ilitary. It thus excludes surplus by definition, e by factor payments rather than by end use. rely of labor incomes, it excludes surplus for ding to domestic expenditure by end use, both xclusion is thus definitional and should not be

ment, in a revolutionized China led by the Chinese Communist Party. In practice, however, as in the estimate of S_m , S_e is calculated above essential personal consumption only, and no attempt is made here to separate "essential" from "nonessential" government purchases or private net investment. This important question is reserved for discussion at the end of this section.

To estimate S_e it is necessary to adopt a standard for "essential consumption." For the purpose of analyzing how the Chinese Communists used the income flows in the economy they inherited to stimulate economic development, their standard of essential consumption is the relevant one. National product per capita was very similar in 1933 and the early 1950's, so that we can treat Chinese Communist standards for the latter period as applying to the earlier one as well. I have adopted two alternative procedures to derive such a standard. One is to peg it to estimates of actual average peasant consumption in the post-Land Reform period, the other is to relate it to estimates of "new middle peasant" consumption for the same period.³⁶ In both cases, the standard for essential consumption for the nonagricultural population is assumed to vary by sector in relation to labor productivity—an assumption that accords with the principle followed in China of payment "according to work."

The results are shown for three alternative estimates of peasant consumption in Table 6.³⁷ It is important to note that, because of uncertainty about the exact meaning and coverage of the underlying data as well as the great sensitivity of the estimates to small changes in estimated peasant consumption, these figures should be taken as illustrative only of broad orders of magnitude. Ranging from 12.5 percent to 17 percent of NDP, all three estimates of actually produced surplus above essential consumption fall considerably short of our estimate of S_m (27 percent). This result is consistent with the argument presented in Section 1—that C_m probably lay below C_e in the pre-1949 decades. However, it is also evident that the S_e ratios all imply considerable leeway for expanding investment beyond the limits actually reached in the 1920's and 1930's, an observation that is reinforced if surplus in the form of output forgone because of underutilized factors is added to the surplus out of actually produced income.*

* In Section 1, I pointed out that since both C_m and C_e are assumed to be rising functions of income, S_m and S_e should in principle be estimated with reference to the higher consumption levels associated with Y_p rather than the lower ones associated with Y_a . To do so requires estimating the functional relations between income on the one hand and C_m and C_e on the other—a refinement well beyond the crude objectives of this discussion. It should be pointed out, however, that our

Alternative Rates of Surpl

Sample
All peasant classes, 1954 ^b
Middle peasants, 1954 ^c
All peasant classes, 1955 ^d

^aEstimates are pegged to those of peasant to 1933 yuan and multiplied by the Liu-Y consumption of the agricultural population multiplying the per capita figure in agriculture nonagricultural sectors to that in agricultural population. (T. C. Liu and K. C. Yeh, *The Ec* C_e in agriculture and C_e in nonagriculture are the actually produced surplus, whose ratio to Column 3, is calculated simply by adding resources given in Table 4) to the Column 2 es

^bTung-chi kung-tso Data Office, "1954 materials on an investigation of the incomes 10: 31-32 (1957). The figure for average ex divided by the given average household size (

^cIbid. The figure for average expenditure (yuan) is divided by average household size of

^dTung-chi kung-tso Data Office, "Kuan-? standard of living of workers and peasants), yuan. Figure used is for average per capita p retail prices.

Uses of the surplus. The pe to economic development be policy. According to the inte latent force that the CCP mig economic growth. However, tl from it certain nonconsumpt might have regarded as esse surplus. Some private investr this category. Moreover, the sumption (S_m) by definition i income and government reve Communists, or any other de found potentially available fc potential output and actual r

It is therefore instructive t of our estimates of China's p

method of basing the estimate of part of the gap between Y_a and) ciple in question. But by the same actually produced income.

TABLE 6
Alternative Rates of Surplus Above Essential Consumption, 1933

Sample	Peasant essential consumption per capita (Yuan)	Ratio of produced S_e to NDP ^a	Ratio of potential S_e to NDP ^a
All peasant classes, 1954 ^b	94.6	.17	.27
Middle peasants, 1954 ^c	99.9	.13	.23
All peasant classes, 1955 ^d	97.0	.15	.25

^aEstimates are pegged to those of peasant consumption in the mid-1950's (Col. 1). The latter are reduced to 1933 yuan and multiplied by the Liu-Yeh estimate of 1933 agricultural population, to get essential consumption of the agricultural population. That of the nonagricultural population is estimated by multiplying the per capita figure in agriculture by the ratio of net value-added per head of population in nonagricultural sectors, to that in agriculture, and then multiplying the product by the nonagricultural population. (T. C. Liu and K. C. Yeh, *The Economy of the Chinese Mainland*, Princeton, N.J., 1965, p. 102.) C_e in agriculture and C_e in nonagriculture are then added together and subtracted from NDP in 1933 to get the actually produced surplus, whose ratio to NDP is provided in Column 2. The rate of potential S_e , given in Column 3, is calculated simply by adding .096 (the rate of surplus due to unemployed and unutilized resources given in Table 4) to the Column 2 estimates.

^b*Tung-chi kung-tso* Data Office, "1954 nien nung-chia shou-chih tiao-ch'a chien-yao tzu-liao" (Highlight materials on an investigation of the incomes and expenditures of farm families in 1954), *Tung-chi kung-tso*, 10: 31-32 (1957). The figure for average expenditure on means of livelihood per household (454 yuan) is divided by the given average household size (4.8) to get the per capita figure used. Data given in 1954 prices.

^c*Ibid.* The figure for average expenditure on means of livelihood of middle peasant households (499.6 yuan) is divided by average household size of middle peasants (5.0).

^d*Tung-chi kung-tso* Data Office, "Kuan-yü kung-nung sheng-huo shui-p'ing wen-t'i" (On the question of standard of living of workers and peasants), *Tung-chi kung-tso*, 13: 4-5 (1957). Data are for 1955 in current yuan. Figure used is for average per capita peasant expenditures, including subsistence income calculated at retail prices.

Uses of the surplus. The potential surplus is of interest with respect to economic development because its use is potentially an object of policy. According to the interpretation adopted here, S_e is entirely a latent force that the CCP might have harnessed to the job of generating economic growth. However, the method of estimating S_e did not exclude from it certain nonconsumption items that the Chinese Communists might have regarded as essential nevertheless, and excluded from the surplus. Some private investment and government expenditures are in this category. Moreover, the concept of the surplus above mass consumption (S_m) by definition includes such expenditures out of property income and government revenue. S_m thus overstates what the Chinese Communists, or any other development-oriented authority, might have found potentially available for redistribution in the difference between potential output and actual mass consumption.

It is therefore instructive to investigate in a general way how much of our estimates of China's pre-Communist surplus was already mort-

method of basing the estimate of C_e on peasant income at a time when at least part of the gap between Y_a and Y_p had been realized partly implements the principle in question. But by the same token, it overstates C_e (and understates S_e) for actually produced income.

Chinese Communist Party. S_m , S_e is calculated above no attempt is made here to government purchases or prior is reserved for discussion

standard for "essential consumption" the Chinese Communists inherited to stimulate economic consumption is the relevantly similar in 1933 and the Communist standards for one as well. I have adopted a standard. One is to peg consumption in the post-Land estimates of "new middle class."³⁶ In both cases, the nonagricultural population is for productivity—an assumption in China of payment "ac-

ive estimates of peasant consumption that, because of uncertainty of the underlying data as to small changes in estimates should be taken as illustrating from 12.5 percent to of actually produced surplus, probably short of our estimate of with the argument presented C_e in the pre-1949 decades. All imply considerable limits actually reached in the reinforced if surplus in the utilized factors is added to the

S_m and C_e are assumed to be rising to be estimated with reference to Y_p rather than the lower ones associated functional relations between them—a refinement well beyond the pointed out, however, that our

TABLE 7
Selected Indicators of Modern Industrial Growth, 1920's and 1930's

Year	Average railroad mileage constructed per year (/km)	Tonnage shipped by railroad (1917 = 100)			Machinery imports (Million tons)	Annual growth rates, net value-added indexes of selected producer goods			
		Manufactured goods	Mining products	Agricultural goods		Coal	Iron metals	Mining products	Electric power
1921	228 ^d	152.5	132.6	97.0	57.3	.016	.167	-.115	.142
1925									
1926									
1927	339	200.9	192.4	94.6	19.7	.049	.098	-.029	.153
1928									
1929									
1930	1,359	268.3	282.6	132.9	53.9	.055	.068	.004	.094
1931									
1932									
1933	1,359	268.3	282.6	132.9	53.9	.057	-.038	.109	.157
1934									
1935									
1936	1,359	268.3	282.6	132.9	53.9	-.042	.134	-.205	.392
1937									

Sources: Railroad mileage: John K. Chang, *Industrial Development in Pre-Communist China* (Chicago, 1969), p. 110; I have calculated the annual averages from Chang's figures on mileage constructed over the periods listed. Tonnage shipped: *ibid.*, p. 111. Machinery imports: *ibid.*, p. 108; no figure is provided for 1933. Growth rates: *ibid.*, pp. 78-79, gives the indexes, from which I have calculated year-to-year changes (where y is the year) according to the formula $(\text{Index}_y / \text{Index}_{y-1}) - 1$.

^d Average for the years 1912-27

gaged and thus not available already employed in modernizing net additions to such role. The first striking fact, in this leaving less than 6 percent to services" (public health, education, Net domestic investment expenditures. It can of course height of the world depression, and that the surplus inductively in other years. * Although 1931-36 (for which estimates 3 percent of total product, possibly unrepresentative. Available data from the 1920's economic conditions were generally poor, and only important conclusion. For example, utilities, construction, modern stores, restaurants, and more than 13 percent of NDP in Chang's estimate) it was growth capital-output ratios would be between 1 percent and 3 percent production by modern industry average rate for the 1920's, more workers was over one-third shipped by railroad, and industries for various years in relevant to the growth of the they seem consistent with a than in the 1920's. Similarly, there is no evidence heavier investments in the 1920's. Against this, though, one might abnormally small in the depression

from 1911 through 1957.⁴³ Buck, in his 1921–25 study of Chinese agriculture, found that average capital per farm in the form of farm equipment, supplies, and livestock came to 145 yuan, or 0.61 times average farm earnings of 239.6 yuan.⁴⁴ Let us assume that farm output in the 1920's was growing by 1.5 percent per year (50 percent faster than the 1911–57 average), and that the incremental capital-output ratio was 1.2 (double the above 0.61 figure to allow for capital in the form of land improvements and buildings related to production). Such figures would imply an investment rate of 1.8 percent out of agricultural income, or 1.2 percent of NDP.

Other observations of Buck support the picture of a very low investment rate in agriculture. Since our estimate of S_m in this sector consists largely of explicitly paid rent and interest, the investment behavior of landlords has a major bearing on the degree to which S_m was used for investment purposes. Buck found that the landlord's capital on tenant farms was "chiefly confined to investment in land and buildings, which constitute 98 percent of his total,"⁴⁵ and that livestock, supplies, and farm equipment together came to only 1.6 percent of total landlord capital. For landlords of part-owner-cultivators, the average percentage of total capital taking the form of "land owned" was no less than 99.5 percent.⁴⁶ Thus, it seems highly unlikely that much of the 10.7 percent of NDP extracted from the countryside in the form of rent, and of that portion which landlords earned of the additional 2.8 percent extracted as interest, was reinvested in agriculture.

Data on the overall performance of handicrafts in the 1920's are extremely rare, but one study estimates that the total value of exports of 67 handicraft products grew by an average rate of 1.1 percent per year from 1912 to 1931.⁴⁷ If this rate is at all reflective of the growth of output, the implied contribution to the national investment rate, at any reasonable incremental capital-output ratio, is less than 1 percent of NDP.

Although such arguments certainly do not prove the case, they do make it seem very unlikely that the rate of net investment in the Chinese economy of the 1920's was substantially higher than in 1933. If this conclusion is valid, it implies that in a pre-World War II economy with a potential surplus above mass consumption of more than one-third of total product there was bound to be much room for expanding the investment rate.

Part of the surplus as estimated here went to the government in the form of taxes out of property incomes and peasant incomes. Government administration is of course a necessary activity under any circumstances;

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and indeed, in size and proportion increased after 1949.⁴⁸ But it can be argued that the surplus captured by this sector in 1933 was not a net surplus, since the resources at the government's disposal were largely dissipated in maintaining a large military force during the financing of continual civil war, and domestic debt.⁴⁹

In sum, even under the most optimistic assumptions, the potential surplus was actually inescapably small. It is inescapable that the diversion of resources to military and other growth-related activities represented a large opportunity cost, aside from the loss of resources on the part of a relatively small

4.

Any simple argument tying the experience of agricultural modernization to the agricultural stagnation experience would seem to be inadequate. The relative magnitude of the agricultural surplus in the midst of world depression and civil war, governmental decline, and the agricultural surplus occupied a share of national income. The low investment rates in the panoply of modernization, the acute shortage of wherewithal for agricultural modernization is a special problem. Yet if China, in any sense, could afford to save a substantial surplus, it would be obliged to look for a poverty explanation for the economic stagnation. No matter how poor, given motivation, the Chinese could find within itself the capacity for economic development? Such a conclusion is reminiscent of the historian like Mary Wright, who wrote of China:

Money poured in for reform and modernization, but for a member of an organization living on one quarter and to contribute to the pockets of Westerners in far corners of the vast Chinese houseboys were sending most

Comparison of nineteenth-century Meiji Japan's indicates that agricultural product, and possibly even

and indeed, in size and proportion of national income, this sector increased after 1949.⁴⁸ But it can be fairly argued that the value added by this sector in 1933 was not growth-inducing. Even the limited resources at the government's disposal during this period were "largely dissipated in maintaining a hypertrophic military establishment and financing continual civil war, or hypothecated to service the foreign and domestic debt."⁴⁹

In sum, even under the most charitable of interpretations of how the potential surplus was actually used in the 1930's, the conclusion seems inescapable that the diversion of much of that surplus to investment and other growth-related activities would have involved very little opportunity cost, aside from the sacrifice of privileged consumption habits on the part of a relatively small portion of the population.

4. Conclusion

Any simple argument tying China's abortive pre-Communist modernization experience to the alleged insufficiency of the surplus above subsistence would seem to be contradicted by the results of our inquiry into the relative magnitude of the surplus. If it is plausible that even in the midst of world depression and toward the end of a century of war, civil war, governmental decline, and recurrent famine, the potential surplus occupied a share of national product that dwarfed the highest investment rates in the panoply of now-industrialized countries, absolute shortage of wherewithal for savings could hardly have been a crucial problem. Yet if China, an indubitably poor country, could in this sense afford to save a substantial portion of its national income, it seems that we are obliged to look with some skepticism on a vicious-circle-of-poverty explanation for the economic backwardness of any country. No matter how poor, given motivation and opportunity, cannot any nation find within itself the capacity to save and invest in the service of economic development? Such a conclusion would not have surprised a historian like Mary Wright, who wrote this about early twentieth-century China:

Money poured in for reform and revolutionary groups. It was not uncommon for a member of an organization whose salary might be \$25 per month, to live on one quarter and to contribute the other three quarters to the cause. Westerners in far corners of the world could hardly believe it, but their Chinese houseboys were sending most of their salaries to patriotic organizations.⁵⁰

Comparison of nineteenth-century China's economic situation with Meiji Japan's indicates that at least with respect to per capita agricultural product, and possibly even total income per capita, the Chinese

were not worse off. The Japanese peasant was perhaps even closer to the margin of subsistence, yet through taxation and voluntary saving he contributed appreciably to economic growth.⁵¹ In fact, James Nakamura has concluded that a "substantial surplus above subsistence" already existed in agriculture at the beginning of the Meiji era, and that institutional changes at that time made possible a "radical redistribution of income," which in turn led to a sharp rise in savings and investment.⁵² The similarity between Nakamura's view and the argument of this essay is obvious.

The picture of a substantial surplus is also consistent with evidence reported by Ping-ti Ho and others of thriving domestic trade, the rise of merchant guilds, expanded agricultural commercialization, and "numerous accounts of a rising standard of living and of unprecedented levels of affluence and conspicuous consumption among the elite"⁵³ in the eighteenth and early nineteenth centuries. And it squares with Chung-li Chang's estimate of a gentry class constituting some 2 percent of the population and enjoying a per capita income 16 times that of commoners at the end of the nineteenth century.⁵⁴ In short, this is not as surprising and unexpected a result as it might at first appear. And it would seem to underscore the validity of the fundamental questions—if not of all the detailed answers—supplied by the "distributionists": why was the surplus not used for developmental purposes, and how in fact was it used?

Yet it is precisely in addressing such questions that the undeniably significant evidence of the "technologists" must be considered. For if the Chinese economy was characterized by technological stagnation, high and ever-increasing population pressure on cultivable land, and the consequent slow but inexorable operation of the law of diminishing returns, it is quite likely that by the early twentieth century the surplus itself was under pressure. Ping-ti Ho has said, of the nineteenth century: "At the point where the margin above bare subsistence became much smaller than the traditional or customary living standard, the effect of irrational land tenure on the marginal segments of the population presumably became disproportionately greater."⁵⁵ However large the surplus that survived into the 1930's might have been relative to national income, it could not have supported a standard of living among the privileged that was high by contemporary international lights, except for a very small number of people. Attempts to defend that standard by shifting the burden imposed by diminishing returns onto "the marginal segments of the population" were bound to be quickly resisted, and the ensuing strife to bring into sharp relief the "effect of irrational

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land tenure." Here we have the paradox that so many countries believed the socioeconomic conditions even more exploitative and even more available direct evidence of increasing concentration.

The obvious place to look for technological change capabilities, where virtually all physical barriers preventing the hinterland; indeed, where conditions permitted, the Rhoads Murphey points out that they were technologically and economically . . . extraneous to foreign to China and made to the resiliency of the treaty ports to compete successfully with the conditions of the treaty ports and security of long-term production conditions of the early associated with a continuation 1902-31; to the denial of Feuerwerker calls "the impact was the most profound consequence.

In the late-Tokugawa era profitable owing to urban commercial organization, Japanese ownership.⁵⁸ Such an effort rapidly increasing demand occur generally in response to trialization in China, as itself is evidence of the rural economy in "us still more.

Although the potential have been large in rapidly growing countries, the comparison with their *surplus and investment* countries is not a subject

was perhaps even closer to voluntary saving than to voluntary saving he .⁵¹ In fact, James Nakamura "above subsistence" already in the Meiji era, and that institution a "radical redistribution of savings and investment."⁵² The argument of this essay

is so consistent with evidence on domestic trade, the rise of commercialization, and "narrowing and of unprecedented concentration among the elite"⁵³ in the late nineteenth century. And it squares with the fact that the income of the top 2 percent constituted some 16 times that of the rest of the population.⁵⁴ In short, this is not a surprising result. And it raises the fundamental questions—asked by the "distributionists": why? for what purposes, and how in

the late nineteenth century. Questions that the undeniably true must be considered. For if, by technological stagnation, there was a decline in the return on cultivable land, and if, in the face of the law of diminishing returns, in the late nineteenth century the surplus was small, as has been said, of the nineteenth century, when the standard of living above bare subsistence became the dominant living standard, the potential surplus of the population segments of the population was likely to be much greater.⁵⁵ However large the surplus might have been relative to the standard of living among the population, it is hard to see how it could have been a standard of living among the population. In the face of the law of diminishing returns, attempts to defend that stagnation in the late nineteenth century are bound to be quickly resisted, and the "effect of irrational

land tenure." Here we have a plausible explanation for the apparent paradox that so many competent and informed observers in the 1930's believed the socioeconomic institutions in the countryside were growing even more exploitative and burdensome to the peasants when by all available direct evidence there was in fact no consistent trend toward increasing concentration of landownership or levels of land rent.

The obvious place to look for the source of investment embodying the technological change capable of transforming this situation is the treaty ports, where virtually all modern industry developed. There was no physical barrier preventing economic interaction between port city and hinterland; indeed, where economic conditions warranted and political conditions permitted, the two were closely linked. Yet on the whole, as Rhoads Murphey points out, the ports did not play the modernizing role they were technologically equipped to play. Rather, they were "economically . . . extraneous and tiny outposts of a system which remained foreign to China and made little impact on it."⁵⁶ In part, this was due to the resiliency of the traditional economy and its continuing ability to compete successfully with the modern enterprise outside of the special conditions of the treaty ports themselves. But it was also due to the insecurity of long-term productive investment in the unstable and war-torn conditions of the early twentieth century; to the drain of resources associated with a continuing net outflow of capital over the period 1902-31; to the denial of tariff autonomy until 1930; and to what Albert Feuerwerker calls "the ideological and political disequilibrium which was the most profound consequence of the impact of the West."⁵⁷

In the late-Tokugawa era, as investment in land became increasingly profitable owing to urbanization and improved transportation and commercial organization, Japan witnessed a steady concentration of landownership.⁵⁸ Such an effect would seem to be normal in the face of rapidly increasing demand for food and raw materials. If it did not occur generally in response to commercialization and treaty-port industrialization in China, as the "technological" position holds, then this in itself is evidence of the limited impact that these phenomena had on the rural economy in "using up" the potential surplus and demanding still more.

Although the potential surplus in early twentieth-century China may have been large in comparison with historical investment rates of rapidly growing countries, this is not at all to say that it was also large in comparison with their *surplus* rates. The relationship between potential surplus and investment in the development experiences of advanced countries is not a subject that has been explicitly investigated. It can

be surmised, however, that the process of corraling and concentrating the available potential surplus in the hands of those willing to invest it productively in risky and path-breaking enterprises was a clumsy and inefficient one at best. In the absence of a powerful state, possessing either formidable coercive means or an overwhelming aura of legitimacy, the generation of a given rate of productive investment may have required a surplus rate many times as large. Owing in part to the sharpening class antagonism noted above, in part to the corrosive effects of imperialist incursions, and in part to the historical juxtaposition of all this with the cyclical occurrence of dynastic decline, early-twentieth-century China was particularly notable for its lack of either of these characteristics. Only with the victory of Chinese communism were they established, thus making possible a closer alignment of investment and surplus.

Mark Elvin

Skills and Resources in Late Traditional China

By the later Middle Ages both Europe and China had mechanized manufacture. By this I mean they had machines that could be substituted for a complex operation by the human hand and perform many such operations simultaneously, using inanimate power if appropriate. In both areas these machines were approximately identical. They were devices with multiple spindles for twisting and doubling silk and other thread. The European version is the *filatorium* or *torcitorium* of Luca invented in the thirteenth century.¹ Its Chinese contemporaries were the water-powered machines for twisting hemp and silk described Wang Chen's *Treatise on Agriculture* of 1313.²

They were destined for very different careers. The *filatorium* was the direct ancestor of Arkwright's spinning-frame and the textile machine of the first Industrial Revolution. The Chinese machines were without direct progeny, except perhaps the hand-operated silk-doubling and twisting machines of a somewhat different design that were used in the nineteenth century and are discussed below.

These contrasting fates are the key to the central concern of this paper. In Europe there was a period of several centuries of increasingly active technical experimentation and innovation, such that the advances embodied in the characteristic triumphs of the first Industrial Revolution were, in purely technical terms, relatively slight. This was even true of the railway and the steam engine.³ It was the economic aspects that were revolutionary. In their impact on supply, and indirectly on demand, these advances brought the new technology across some sort of qualitative threshold.

My warmest thanks are due to E-tu Zen Sun of Pennsylvania State University, William Jenner of the University of Leeds, Andrew Watson and Nicholas Fisher of the University of Glasgow, and the participants in the Bermuda Conference for helpful comments on this paper and, in many cases, for bibliographical material and references.