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FINANCING OF MODERN ECONOMIC GROWTH — THE HISTORICAL ROLE OF AGRICULTURAL RESOURCES

Ashoka Mody

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The importance of an 'agricultural surplus' for the structural transformation accompanying economic growth is often stressed in development literature. 'Agricultural surplus', defined as the physical marketed surplus of food and raw materials, has an evident role in the expansion of non-farm employment.

In addition, there has been the view that the agricultural sector should transfer to the non-agricultural sectors the 'surplus' of 'investible resources' generated in agriculture. A clear statement of this idea has been made by Kuznets (1961, p.115):

> "One of the crucial problems of modern economic growth is how to extract from the product of agriculture a surplus for the financing of capital formation necessary for industrial growth without at the same time blighting the growth of agriculture, under conditions where no easy quid pro quo for the surplus is available in the country"1/

Our purpose in this paper is to examine the basis of this view point.

There appears no immediately obvious a priori reason to expect that during the process of development agriculture will possess the capacity to loan or surrender resources. Kuznets (1965, pp.120-2) has argued that rapid productivity increases in agricultural production reduce agriculture's capital requirements; besides, the share of agriculture in the capital stock of the economy declines over time because of its shrinking share in the national product. These clearly do not constitute sufficient conditions to ensure a resource outflow from agriculture. In a technical sense, the transfer of resources depends on the relative sectoral rates of output growth, the sectoral capital-output ratios and the savings distribution between the two sectors. These parameters need not be such as to permit a resource transfer from agriculture.

More recently, on the assumptions that (a) the sectors of the economy generate additional factor supplies in proportion to their current weights in the economy; (b) factor productivities among sectors are equal; and (c) these productivities remain unchanged over time, Kuznets (1979, pp.64,65) has concluded: '... given the conditions under which structural shifts must occur, shifts of resources out of the more slowly to the more rapidly growing sectors are an economic necessity.' (p.65). This could be interpreted as the basis for expecting a resource outflow from a slow growing agricultural sector to the faster growing non-agricultural sectors. The conclusion, however, depends upon the assumptions. Specifically, the assumption that the sectors generate capital in proportion to their current economic weights in the economy seems unreasonable. The more rapidly growing sectors are likely to have not only a higher average propensity to save, but also a higher marginal propensity to save, so that the difference between the average propensities is likely to widen over time.

The moment, however, we contest assumptions, we are on empirical grounds. Moreover, resource flows are a function not just of the technical requirements of structural shifts but are also influenced by institutional peculiarities. For these reasons, the possibilities of a resource outflow from agriculture and the importance of the transferred resources in furthering non-agricultural development have both been deduced not so much on an a priori basis but from the historical experience of the now developed countries.

The experience of the presently developed countries in the early phase of their development has formed the basis for much theorising on development. The conceptualisation of the role of agriculture in overall economic development has, in particular, been derived from history. On the question of intersectoral resource flows it has traditionally been believed that during the initial phase of industrialisation, agriculture has made an important resource contribution to the growth of industry and social overhead capital. This undersfanding has resulted in the attribution to agricultural resources a critical role in industrial development. On this basis, it is suggested (implicitly or explicitly) that developing countries must extract resources from agriculture for successful industrial development. For a sampling on the above line of reasoning, see Ohkawa and Rosovsky (1960, pp.60-62), Mellor (1973, pp.5-6 and 15), Johnston (1966, pp.63-64), Johnston and Kilby (1975, pp.256, 284) and Kuznets (1966, p.122).

A major dissenting voice has been that of Ishikawa (1967). He has questioned the evidence on the historical experience. More than that, he has questioned the relevance of the historical experience, arguing that at least in the contemporary Asian developing countries, significant resource flows into agriculture are likely to be necessary to finance capital intensive investments needed to introduce technical change in agriculture and hence increase agricultural productivity and output (Ishikawa, 1967, ch.4).

The primary purpose of this paper is to reexamine the historical evidence. We, however, also touch upon the relevance of past experience for contemporary developing countries. After Ishikawa wrote on the

subject, considerable statistical material on intersectoral resource flows has been generated. One is in a position therefore to comment not only on the direction of aggregate net flows, but also on the pattern of and relationship between component flows.

We consider briefly first England and Germany, and then in greater detail Japan, and the U.S.S.R.

In line with Ishikawa, our examination seems to indicate that the role of agricultural resources in modern economic growth has been greatly exaggerated. Our conclusion has, quite obviously, important implications for the perception of the role of intersectoral resource flows in the currently developing countries.

1. The relevant periods

We require to examine the evidence on the direction of resource transfer during the initial stages of industrialisation. Resource transfers have been discussed primarily in the context of a structural change in the industrial distribution of the national product. The appropriate indicator of the phase of development would therefore be the share of agriculture in the national product. Kuznets (1966, p.121) has suggested that during the early phase of modern economic growth the share of agriculture in the national product is around 50%. According to this criterion, Britain in the second half of the 18th century, Germany in the first half of the 19th century, Russia in the first few decades of the 20th century, Japan in the last few decades of the 20th century and the early decades of the 20th century and Taiwan in the first half of the 20th century may be considered to have been in the initial stages of industrialisation.[2/]

2. England and Germany

We do not have quantitative estimates for Western Europe, and therefore our discussion below is based on the qualitative judgements of historians.

The limited evidence that exists suggests that in the Western European nations, during the early decades of their industrial development, there was no net resource outflow from the agricultural sector. Landes (1965) suggests that this was particularly so in the case of Britain and Germany.[3] He says: "It is likely that in the years of Britain's industrial revolution agriculture was taking as much capital as giving." (Landes, 1965, p.167). He also quotes F.M.L. Thompson as saying: '... the biggest land improvers among great landowners were subsidising agriculture, contributing directly to its overcapitalisation, and encouraging further overcapitalisation by the tenant who farmed the improved farms.' (Landes, 1965, p.168).

In Germany, there was a net flow of credit to agriculture between 1810 and 1839. (Landes, 1965, p.166). This resource flow into agriculture became necessary because the changes in land tenure and improvement in technique that made agricultural growth possible required substantial outlays of capital. Thus, capital was required for land clearing, drainage, costs of enclosure and conslidation, fencing, building, equipment, roads etc. (Landes, 1965, p.164).

Further, Landes (1965, p.164) points out not only did land 'compete for funds with the modern sector on purely rational grounds,

but it drew more than its share of capital resources'. (emphasis added).

This he attributes to the fact that

> '... land in Europe was more than a factor of production; it was a social good. To the peasant it was the goal of his efforts ---. To the bourgeoisie, land meant status and political influences as well as income. To the aritocrat, land was the foundation of dynastic continuity and prestige — the only solid and right form of wealth.'

The resources for industrial development in Western Europe came therefore not from agriculture, but from the savings of the industrial sector, the commercial and professional bourgeosie and urban households (Landes, 1965, p.166), from foreign capital (Landes, 1965, p.95) and from the credit created by the banking system (Gerschenkron, 1966, p.45).

Of course, Western Europe has not been considered an appropriate reference point for contemporary developing countries. The Western European countries were the earliest to industrialise, but did not experience very rapid rates of growth and hence very rapid rates of structural shifts during the early phase of their industrialisation. In contrast, countries that industrialised later, like Japan, Russia, and Taiwan, experienced much faster growth rates and structural shifts. The latter group of countries have therefore greater relevance for developing countries attempting a rapid structural transformation of their economies. We therefore consider below in some detail Japan, Taiwan and Russia.

3. Japan

There was a spurt in Japanese industrial growth after the Meiji restoration in 1868. It is widely accepted that agricultural resources provided the financial basis for the industrial development, as well as for the government's overall modernisation programme. We shall examine

in this section the basis for this understanding of the role of agricultural resources.

The transfer of resources between sectors can take place: (a) through the transfer of private voluntary savings; (b) on government account (taxes, subsidies, government investment); and (c) via changes in the intersectoral terms of trade.

Teranishi (1976, p.165, Table 1) has shown that there was no consistent net outflow of savings from the farm sector.[4] Moreover, he has further shown that even during the years in which there was a net outflow from the farm sector, this outflow formed a very small proportion of capital formation in the non-farm sector. Ranis (1959) comes to a similar conclusion: 'The lion's share of voluntary savings was of the 'retained' type rather than the transferred type' (Ranis, 1959, p.52). Ranis, in fact, goes a step further when he says that total voluntary savings by farm and non-farm households were 'small compared with the reinvestment of business surpluses, and the use of tax-financed public funds.' (Ranis, 1959, p.53).

Though savings transfers were unimportant, there was a transfer of farm resources through the instrument of agricultural taxation. Direct agricultural tax (land tax) formed between 50% and 70% of government revenue in the last few decades of the 19th century, and continued to form a significant portion of the revenue till about the 1st World War. (Ranis, 1959, p.43, Table 3). On the other hand, government subsidies to agriculture and government investment in agriculture were an insignificant fraction of the land tax, at least till World War I (Ranis, 1959, p.40, Table 2, and Ohkawa et al., 1978, p.397). As a consequence, there was a net transfer of resources from agriculture on government account.

This transfer is believed to have been of significance to Japanese economic development because of the important role the government played as an investor (Okhawa and Rosovsky, 1960, and Rosovsky, 1959).[5]

The heavy land tax has therefore been the basis for asserting that agricultural finance was important for industrial development.

This conventional interpretation of the role of the land tax is misleading on at least two counts. First, it implicitly assumes that agriculture and non-agriculture were, in themselves, homogenous sectors, and therefore blurs important dimensions of the resource flow pattern. Second, it assumes that a substantial fraction of the resources extracted from the agriculturists were used productively in the non-farm sector.

To take the first point first. Lippit (1978, p.62) has pointed out that '... the Meiji resotration of 1868 was led by an alliance between middle-level samurai and a class of rich peasant enterpreneurs in the countryside ...' The Meiji government could, in such circumstances, hardly have extracted resources from the rich peasant -- landlord class. As may be expected therefore: 'Throughout the Meiji period the Japanese tax structure remained highly regressive.--- the burden in the agricultural sector fell mainly on the poor and middle peasants---. (Lippit, 1978, p.70). Moreover, by concentrating on the land tax the role of the intersectoral terms of trade is usually missed out. As may be seen from Table 1, there was a fairly consistent movement of the terms of trade in favour of agriculture during the relevant period. This movement would have benefited primarily the landlord-rich peasant class.[6] Juxtaposing then the regressive land tax structure with the terms of trade movement in favour of agriculture, it may readily be seen that the resource extraction from the land-lord-rich

It should further be noted that the regressive tax structure was not confined to the agricultural sector, but was a more general feature. Increasing reliance on the indirect taxation of mass consumer goods ensured that the urban consumer was also squeezed. (Ranis, 1959, pp.47,49).

From this it may be construed that the transfer of resources was not so much from agriculture to non-agriculture, but rather from the small peasant and the urban consumer to the government and possibly also to the rural elite.[7]

There is, moreover, another significant dimension to the land tax. Throughout the period under consideration, the farm-sector had a balance of trade deficit vis-a-vis the non-farm sector (Ohkawa et.al. 1978, p.403, Table 4). Given that the net savings flow was small, and that there was a substantial outflow from the farm sector on government account, it follows that the farm sector received considerable factor income payments from the non-farm sector. This has two implications. First, the small farmers (on whom the major burden of the land tax fell) did not have the capacity to transfer taxes to the non-farm sector unless their incomes were supplemented by incomes from off-farm jobs. In other words, the land tax was a tax not just on agricultural incomes, but on a combination of farm and non-farm incomes. Second, land taxation was the instrument through which cheap labour was forced into industrial employment. There is considerable corrobarative evidence on this point. Extremely reluctant number of farm households (primarily women) were under compulsion to offer their services to the factory sector. (See specially Lippit, 1978, pp.68 and 70). In this sense it may be argued that the land tax made a 'contribution' to industrial development by providing industry cheap and plentiful labour.

This brings us to the second point raised above, besides the indirect 'contribution' of the land tax through forcing labour out of farm households, what was its more direct contribution? How far did the government use its resources productively (i.e. for industrial development or modernisation in general)? For this we need to examine the pattern of government expenditure. Oshima (1965) has classified the Japanese government expenditure functionally (See Table 2). On the basis of this classification, he argues that much of the net resource transfer was wasted from the point of view of development, largely on state services and particularly on military expenditures. Thus, he says:

> "A persistent drag is found in heavy expenditures made for state administrative purposes, especially military. The Meiji government could have cut military expenditure perhaps by one-half by staying out of the Sino-Japanese and Russo-Japanese wars, and yet possessed a defence adequate for national independence. Further cuts in state expenditure would also have been possible e.g. by extending the maturity dates of pension bonds beyond world war I. Such reductions would have permitted a considerable decrease in land taxes and an increase in expenditure for economic purposes, especially for agriculture". (Oshima, 1965, p.381).

The government's unproductive use of a large part of its revenue was compounded by the fact that the heavy burden of the land tax had a deleterious effect on agricultural growth. Oshima suggests that greater encouragement of agriculture (via a reduced land tax) would have increased its growth rate. More than that, 'it would have reduced the rural unrest and tension which contributed in a real way to the militarism of the Taizho and pre-war Showa eras'. (Oshima, 1965, p.381).

The contribution of the land tax to overall output growth in the long run is therefore not very clear.

Finally, in order to assess the relevance of the Japanese experience, it is necessary to consider the economic conditions inherited by Meiji Japan. That a certain production potential existed in agriculture at the time of the restoration has been widely recognised. A strong and explicit statement on Meiji initial conditions has been made by Bird (1977, p.168):

> "While public expenditures on agriculture were apparently very small in the early Meiji era, a substantial infrastructure of land development, market access and knowledge had been built up over the previous centuries and was on hand when the opportunity came to utilise it."

Consequently, in assessing the potential of transfers from agriculture in developing nations, these initial conditions in Meiji Japan must be borne in mind.

4. Taiwan

Taiwan is also often cited as an example of successful industrialisation and modernisation on the basis of agricultural resources. On Taiwan we have T.H. Lee's study, which has been described by Thorbecke (1979, p.203, fn.111) as 'the classic treatment of intersectoral resource flows in the process of economic development.' In part, the frequent reference to Taiwan is due to the fact that Lee (1971) has made available detailed statistics on Taiwanese transfers.

Lee (1971) has shown that between 1895 and 1960 there was a continuous outflow of resources (measured as the balance of trade) from agriculture. There is, however, in Lee's study no systematic evaluation of the contribution of the transferred resources to the development of the non-agricultural sectors in Taiwan. We attempt here to form a perspective on the role of agricultural resources in the economic development of Taiwan.

Between 1895 and 1945, Taiwan was a Japanese colony. The pattern of Taiwanese economic development was consequently determined by Japanese priorities. We therefore, discuss below the colonial and post-colonial period separately.

Shown in Table 3 is a component-wise break-up of resource flows from agriculture. (Lee's estimates for the colonial period extend only upto 1940, since the data for the 1940s is considered unreliable (Lee, 1971, p.13)). For most part of the colonial period, capital on private account moved into agriculture. This was probably related to Japanese capital investments in agriculture (Kuznets, 1979, p.17). There were, however, major continuous outflows of factor incomes from agriculture; and sustained, though less significant, outflows on government account.

The impact of factor incomes outflow must be assessed in relation to the rate and pattern of industrial development. According to Kuznets (1979, p.18), during the colonial period 'Taiwan remained a largely agricultural country, with relatively high agricultural productivity, but with industrialisation and modernisation impulses and agents lying as it were, outside its mainstream'. The main source of industrial growth in the colonial period was the growth of the factory enclave, which consisted essentially of food processing, especially sugar refining (Ho, 1978, ch.V). The factory enclave consisted of a modern sector, dominated by Japanese capitalists, and a traditional sector. Growth was restricted largely to the modern sector. For our purpose what is relevant is the fact that the capital for the modern sector of the factory enclave came initially (i.e., till 1910) from Japan, and later from the profits of the firms. (Ho, 1978, pp.83-89). Taiwanese capital was confined to the traditional sector of the factory enclave. It may be presumed, though it is not known for certain, that savings from factor incomes transferred to

the non-agricultural sector contributed to the development of the traditional factory sector. However, in view of the fact that Taiwanese industry remained relatively underdeveloped during the colonial period, and the traditional sector's contribution to whatever growth that took place was not very significant, the role of the factor incomes transferred to the non-agricultural sector in industrial development may reasonably be assumed to have been very limited.

The role of the transfer on government account must also be cautiously interpreted. During the initial phase of colonialisation (i.e., till 1910) there was a net inflow of capital from Japan into Taiwan (Ho, 1978, Table A-67). For the rest of the period, however, Taiwan had an export-surplus vis-a-vis Japan which was financed largely by profits repatriated by Japanese capitalists. The fiscal system played an important role in making possible the Taiwanese export surplus. According to Ho:

> "Even though the corporate sector because of its ability to pay taxes and ease of enforcing tax compliance was one of the most obvious sources of tax revenue, it was never effectively tapped..... Thus the tax burden shouldered by the Japanese owned corporate sector was indeed light. This meant that the corporate sector was able to capture and retain in the form of profits the bulk of the export surplus' generated in Taiwan." (Ho, 1978, p.139).

It follows, therefore, that the function of agricultural taxation was not to raise resources for the development of Taiwan's non-agricultural sector, but to enable the government to grant tax concessions to Japanese dominated companies for the ultimate channelisation of funds to Japan.

In the post-colonial period (i.e., between 1950 and 1960), even according to Lee, the contribution of visible resource transfers (savings, taxes and factor incomes) from agriculture was not signi-

by 1962 the visible resource flow had reversed into the agricultural sector (Ishikawa, 1967, pp.300-301, Table 4.1). Lee, however, argues that the invisible resource flow (via the terms of trade changes against agriculture) was significant (Lee, 1971, p.30).

There seems reason to question Lee's figures on the terms of trade movement. Kuznets (1979) has computed indices of prices paid and received by farmers. These are reproduced here as Table 4. Even a casual look shows that there was no change in the terms of trade during the period under consideration. However, even if Lee's gigures are accepted, his conclusion does not follow. Real resource flows may be decomposed into visible flows (i.e., financial flows in terms of base year prices) and invisible flows (i.e., flows due to terms of trade changes). According to Lee's calculations, the visible and invisible flows were of the same order of magnitude during the 1950s. (Lee, 1971, p.29, table 3).

Besides, the contribution of agricultural resources becomes clearer if we consider the other sources of finance to non-agriculture. During the 1950s, capital formation in agriculture formed 18% of GDCF (Kuznets, 1979, p.76) and foreign savings formed 40% of GDCF (Ho, 1978, p.236, Table 11.6). This implies that foreign savings financed almost 50% of the capital formation outside agriculture (since there was no net savings inflow into agriculture). Moreover, during the 1950s, agriculture contributed only 28% of the GDP (Kuznets, 1979,p.76) and almost half of the working force, and hence population, was in the non-agricultural sector. Non-agriculture therefore had a considerable savings potential of its own. In fact, Lundberg (1979, p.267) has suggested that this period saw a large transfer of savings from the industry! Hence it doesnot seem that the contribution of agricultural resources was of significant importance to non-agricultural growth in

5. U.S.S.R.

It is often supposed that the U.S.S.R industrialised on the basis of a significant resource contribution from agriculture. The reference is largely to the First Plan period and the judgement qualitative. Johnston and Kilby (1975, p.285), for instance, feel that there was a transfer of *resources from agriculture during the First Plan period.* According to them what lends credence to this view is the 'indisputable fact' that: "The Soviet Union has been successful in transforming a relatively underdeveloped economy into a modern industrial power."[8/]

There is, however, little justification in thus taking for granted that agricultural resources were of importance to the development of industry and infrastructure. On this question, Lenin (in 1921) said: "... the State cannot carry on any economic development unless the army and the urban workers have regular and adequate supplies of food"; however he stressed that: "the exchange of commodities must become the principal means of collecting foodstuffs" (Lenin, 1921, pp.383-384, emphasis added). Soviet policy and practice were, therefore, both directed to the extraction of marketed surpluses of food and agricultural raw materials. The necessity to appease the peasant, for the fear of a 'peasant' strike, was widely recognised. Consequently, the extraction of agricultural produce was by no means unrequitted. We shall review here, briefly, the pattern of commodity flows between agriculture and non-agriculture in post-revolutionary Russia upto the the end of the First Plan period.

During the War Communism years (1917-1920), the government resorted, on a large scale, to inflationary financing. Since grain prices were controlled and there was no check on the prices of manufactured goods, the purchasing power (in terms of manufactured goods) of the peasant marketing his output declined considerably. This resulted in wide-spread withholding of agricultural supplies. The government reacted with coercive methods: the surplus of each peasant farm, over and above essential needs of subsistence and seed corn, was subjected to compulsory requisitioning (Dobb, 1966, p.103). The consequence was a rapid shrinkage of area under cultivation. In view of these varied developments, the direction and extent of the net resource flows cannot be unequivocally determined.

> "Nominally the produce handed over to the state was balanced by an equivalent distribution of manufactured goods through the co-operatives in the villages, the receipt for grain deliveries serving as a voucher for purchases at the co-operative stores. Larin, writing in 1920, actually maintained that the peasant secured between 1917 and 1920 for each pood of grain supplied to the state twice as much as manufactured goods he received pre-war. But this is a statement of <u>values</u> of manufactured goods received by the peasant at current prices; and we have seen that the price of manufactured goods had risen much more (by two or three times) than the prices of agricultural products (Dobb, 1966, p.117).

It must be noted, however, that while the terms of trade did move against agriculture, the considerable shrinkage in the <u>volume</u> of agricultural supplies would imply that a resource transfer from agriculture on account of adverse relative prices could not have been significant.

The importance of the War Communism period lies, besides, in the shape it gave to policy thereafter. It was realised that the peasant could, at best, be squeezed only for a short period (Dobb, 1966, p.186). The compulsory requisitioning of grain was replaced by a tax in kind, which took a fixed share of the peasant's surplus.

The conciousness that the peasant deserved a fair deal was manifest in the determined manner in which the government dealt with the second phase of the 'scissors-crisis' when relative prices moved against agriculture. Pressure was exerted in three ways on the industrial trusts and syndicates to secure a lowering of their prices. Credit to industry was drastically rationed; maximum selling prices were fixed; and 'in a few special cases, as a temporary expedient, the policy known as "goods intervention," of importing manufactured goods at the lower world market prices and using them to undercut the prices of industrial syndicates was adopted.' (Dobb, 1966,p.173).

Possibly there was a net resource flow from agriculture between the end of the War Communism years and the beginning of the First Plan: we do not know. The accent, however, was on the extraction of a "grain surplus", and there existed a conciousness that manufactured goods supplies were needed to 'coax' out grain. That the consequence of squeezing the peasant could be dangerous was amply understood. A resolution of the Fifteenth Congress said:

> "It is incorrect to take as the starting point the demand for a maximum pumping over of means from the sphere of agriculture into the sphere of industry; for this demand would mean a political rupture with the peasantry as well as an undermining of the home market, an undermining of export and an upsetting of the equilibrium of the whole system." (Quoted in Dobb, 1966, pp.204-205).

Moreover, the broad economic features of the period should also be considered. Between 1921 and 1927 (the New Economic Policy period)

sluggish (Carr, 1967). By the mid-1920s it had been recognised that the industry was large enough to generate its own resources (Carr, 1970, p.59). On the other hand, the condition of agriculture was precarious. Consequent upon the land reform in 1917, about 85% of the agricultural output was produced by small and middle farmers, who were essentially subsistence farmers (Cohn, 1970, p.13). There was, in fact a secular decline in the volume of marketed output, so that in 1926-27 only 21% of agricultural output was marketed (Cohn, 1970, p.13).[9] The savings of the peasant economy were small since, despite all improvements, the absolute levels of the peasant incomes were low' (Gerschenkron, 1966, p.143). Given therefore the relative strengths of agriculture and industry, it does not appear likely that agriculture was in a position to contribute resources of any importance

In considering the First Plan period also, the economic conditions of the preceeding years must be kept in view. Information that has recently become available suggests that despite the massive reorganisation (in the form of collectivisation), agriculture's surplus generating capacity did not increase appreciably. Millar (1970) has argued that the net resource contribution of agriculture could at best have been of minor significance since reverse flows into agriculture were of the same order of magnitude as the gross flows out of it. Ellman (1975) points out that the direction of resource flows during the First Plan years varies according to the method of valuing the flows. He, however, shows that the large increase in investment in the USSR during the first plan was not accompanied by an increase in the agricultural surplus transferred. In other words, the huge additional resources for the spurt in industrialisation were generated outside agriculture.

Summary and Conclusions

Since it is difficult to make an a priori case and since institutional mechanisms for raising resources vary, the role of agricultural resources has generally been deduced from history. Our aim has been to show that the historical role of agricultural resources in financing modern economic growth should not be accepted uncritically.

In England and Germany, agriculture did not make a resource contribution to industrialisation. If at all there is a lesson from Western Europe, it is that the initial phase of development may require a resource flow into agriculture where, as in Germany, capital-intensive investments in agriculture are required to raise agricultural productivity.

The Japanese case is complex, and we treated it at several levels. First, when considering resource flows, the agriculture-non-agriculture dichotomy seems less meaningful than the small peasant/urban consumer - government/rural elite/ industrial, business class dichotomy. This is all the more so because peasant income was considerably supplemented by off-farm income, and it was from a combination of farm and off-farm income that the land tax was paid. Second, it could be said that the land tax contributed to industrial development indirectly by forcing cheap labour out of farm households. But its more direct contribution is unclear since a large part of government revenues were used unproductively. The negative contribution of the land tax was that it slowed down agricultural growth and increased agrarian unrest. Finally, we pointed out that initial conditions in Meiji Japan being specially favourable, the relevance of the Japanese experience to developing countries may be limited.

The Taiwanese experience was relatively more straightforward. An examination of the agricultural resources against the other resources available to the fast growing sectors indicated that the former could have been only of limited significance.

For the U.S.S.R. we do not have much by way of statistics for the pre-First Plan period. We argued on the basis of policy pronouncements, government intervention in agriculture-industry relationships and the relative strengths of agriculture and industry, that agricultural resources could have played only a minor role in industrial growth. Available statistics allow no more than a similar cautious conclusion for the First Plan period.

It is important to understand the growth implications of agriculture-non-agriculture resource flows. However, a stylised, simplistic understanding of the historical experience does not help. The relationships between different mechanisms of resource transfer, overall magnitudes of resource transfer and growth are complex and must be treated as such.

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Notes:

1/ See also Ranis and Fei (1964), Owen (1966), Erlich (1950).

2/ For all countries, but Taiwan, see Kuznets (1966, pp.88-91). For Taiwan, see Thorbecke (1979, p.134). The share of agriculture in NDP between the 1890s and 1940s was around 40% in Taiwan.

3/ The French experience is not so clear. Landes (1965, p.168) describes the outflow of resources from French agriculture as "thready" and of "relatively minor significance for industrial development."

4/ The farm sector includes agricultural activities as well as the non-agricultural activities of the farm households. Since the farm household is a single decision making unit, breaking it up into its agricultural and non-agricultural components would lead to an artificial exercise.

5/ It should be noted that while Ranis' statistics are often used to arrive at this conclusion, he himself does not have such a neat interpretation, as we shall point out below.

6/ For the following reasons: (a) the bigger peasants would have marketed larger absolute amounts and proportions of their output and (b) they would have been a better position to guard against temporary post-harvest price falls.

7/ See Ranis (1959, p.49) and Lippit (1978, p.73) for similar conclusions.

8/ See also Erlich (1950), Ishikawa (1967, p.291, and Gerchenkron (1966, p.146), Cohn (1970, pp.8 and 23), Kuznets (1961, p.115).

9/ This proportion, it may be noted, is considerably lower than the Indian average in the last few decades.

Table 1

Relative price index for Japan of farm product to current inputs in agriculture (1877 = 100)

Year	1877	1885	1894	1905	1919
Index	100	117.2	107.8	130.9	197.3

Source: Ohkawa (1969), p.29.

Table 2

Functional Classification of Central and Local Government expenditure in Japan

(per cent)

	1880	1890	1900	1910
1 State services	70.6	66.6	57.2	61.8
of which				
Military	13.0	20.5	31.0	41.9
2 Social services	11.6	10.6	14.0	13.6
3. Economic	15.4	20.5	24.4	16.2
4. Unallocable expenditures	2.4	1.6	4.3	8.4
Total	100	100	100	100

Source: Oshima (1965), p.370, Table 2.

Table 3

Components of the resource outflow from agriculture to non-agriculture, Taiwan, 1911-1940

(T $ million)

	1911-1915	1916-1920	1921-1925	1926-1930	1931-1935	1936-1940
1) Net factor income flows	19.9	35.1	40.0	54.0	46.0	72.8
2) Net flows on Govt. account	4.5	7.4	11.9	12.4	15.9	27.9
3) Net capital flows on private account	0.0	-0.4	-1.9	-5.7	-0.1	1.1
Total net resource outflow ((1) + (2) + (3))	24.4	42.1	50.0	60.7	61.8	101.8

Source: Lee (1971), p. Table 16.

Note: (1) Net factor income flow = land rent paid to NA + Interest paid to NA - Income from A

(2) Net flow on government account = taxes and fees - public investment in A - subsidy to A.

(3) Net capital flow on private account = savings deposits & repayment of loan - loan & private investment.

Table 4

Indexes of prices received and paid by farmers in Taiwan (1971=100)

	1951-53	1954-57	1958-60	1961-63	1964-67	1968-70	1971-73
1. Received	41.6	44.3	62.1	80.5	88.4	95.5	110.5
2. Paid	42.5	44.9	60.8	83.9	89.6	97.6	110.2

Source: Kuznets (1979), p.60, Table 1.11.

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