Theodore P. Lianos

Concentration and Centralization of Capital in Agriculture

The concentration and centralization of capital is one of the fundamental general tendencies of the capitalist mode of production. This tendency applies, in Marx's view, to the agricultural as well as the industrial sector. In Lenin's words: "The fundamental and principal trend of capitalism is the displacement of small-scale production by large-scale production, both in industry and in agriculture." There seems to be no question about the realization of this tendency in the industrial sectors of modern mature capitalist economies. However, the same economies have not experienced such a rapid substitution of small-scale by large-scale production in their agricultural sectors. Although "where capitalist agriculture in the strict sense has been able to develop in the pure state, the tendency towards concentration and centralization of capital has clearly shown itself in agriculture," it appears that "there have been no obvious manifestations of centralization in agriculture." A similar view is expressed by the writers of Political Economy of Capitalism at the Moscow Institute of Marxism-Leninism:

capitalist development shows several unique characteristics in agriculture. The most important are: agriculture still lags behind industry. . . . This is expressed largely in a much lower concentration of capital; large farms are by far, smaller than industrial enterprises both in number of workers and in volume of outputs."
In this paper we attempt to do three things: first, to review the situation, with respect to concentration and centralization, in the agricultural sector of certain capitalist countries during the post-war period; second, to provide a brief review of some attempts that have been made to explain the low rate of concentration and centralization of capital in agriculture; and third, to suggest an explanation for this apparent retardation.

The Empirical Evidence
Before the empirical data are presented, it is perhaps useful to clarify the meaning of the terms concentration and centralization when ap-

Table 1
Agricultural Labour and Number of Farms in Twenty Capitalist Countries

<table>
<thead>
<tr>
<th></th>
<th>Agricultural Labour (thousands)</th>
<th>Number of Farms (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Canada</td>
<td>757</td>
<td>566</td>
</tr>
<tr>
<td>2. United States</td>
<td>4,944</td>
<td>3,297</td>
</tr>
<tr>
<td>3. Japan</td>
<td>12,670</td>
<td>6,430</td>
</tr>
<tr>
<td>4. Australia</td>
<td>442</td>
<td>374</td>
</tr>
<tr>
<td>5. Austria</td>
<td>679</td>
<td>347</td>
</tr>
<tr>
<td>6. Belgium</td>
<td>274</td>
<td>136a</td>
</tr>
<tr>
<td>7. Denmark</td>
<td>348</td>
<td>229</td>
</tr>
<tr>
<td>8. Finland</td>
<td>705</td>
<td>297</td>
</tr>
<tr>
<td>9. France</td>
<td>3,926</td>
<td>2,266</td>
</tr>
<tr>
<td>10. Germany</td>
<td>3,307</td>
<td>1,714</td>
</tr>
<tr>
<td>11. Greece</td>
<td>1,841</td>
<td>1,130a</td>
</tr>
<tr>
<td>12. Ireland</td>
<td>370</td>
<td>252a</td>
</tr>
<tr>
<td>13. Italy</td>
<td>6,823</td>
<td>2,929</td>
</tr>
<tr>
<td>14. Netherlands</td>
<td>436</td>
<td>299a</td>
</tr>
<tr>
<td>15. Norway</td>
<td>282</td>
<td>168</td>
</tr>
<tr>
<td>16. Portugal</td>
<td>1,358</td>
<td>915a</td>
</tr>
<tr>
<td>17. Spain</td>
<td>4,507</td>
<td>2,792</td>
</tr>
<tr>
<td>18. Sweden</td>
<td>520</td>
<td>254</td>
</tr>
<tr>
<td>19. Switzerland</td>
<td>325</td>
<td>220a</td>
</tr>
<tr>
<td>20. United Kingdom</td>
<td>1,006</td>
<td>659</td>
</tr>
</tbody>
</table>

Notes: a: 1975
plied in agriculture. Concentration of capital is the process by which the individual capitalist increases the quantity of capital under his control and thereby his scale of operation. Thus concentration presupposes accumulation. Centralization refers to the process by which already existing separate capitals come under the control of a single capitalist. In the case of agriculture, where the total increase in land area under cultivation is negligible, the term concentration may mean the increase in capital per unit of labour (or for some purposes, per unit of land). Capital here includes farm buildings, machinery and improvements in land. Centralization means the combining of capitals, including land. Both processes occur simultaneously, although one might expect an increasing importance for the process of centralization as the capital-labour (or the capital-land) ratio reaches a technologically or economically determined level.

1. Agriculture Labour and Number of Farms

Table 1 shows the agriculture labour force for the years 1962 and 1976 for twenty capitalist economies. It is obvious that in a period of fifteen years, agricultural labour has decreased substantially — in some countries by fifty per cent or more. Table 1 also shows a decrease in the number of farms in each country for the rather short period, 1970-76.

2. Changes in the Composition of Agricultural Labour

Table 2 shows the changes in the size of the agricultural labour force that took place during a much longer period in five capitalist economies of Europe, and also the changes in the number of farm operators, of family members that worked on the farm, and of paid employed workers. Table 3 shows the annual rate of change in each of the above categories of farm labour for the period 1965-75 for an additional six countries. In all cases the number of family members fell faster than the number of operators. Also the number of paid workers fell faster than that of operators, except in Canada, the United States and Italy. Given that the group of paid workers includes permanent and seasonal workers who may not be considered agricultural workers in any real sense, and also workers in such diverse activities as livestock production, crop production, fishing and forestry, not much significance should be given to the differences between countries in their rates of decrease. From tables 1 and 2, one may infer that the reduction of agricultural labour applies in all three groups of farm employment, and also that the reduction
of farm operators is slower, with the notable exceptions of Canada and the United States.

### Table 2
Changes in the Composition of Agricultural Labour, 1950-76

<table>
<thead>
<tr>
<th>Country</th>
<th>Operators</th>
<th>Family Members</th>
<th>Salaried Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Germany</td>
<td>1138</td>
<td>-57.7</td>
<td>1700</td>
</tr>
<tr>
<td>2. France</td>
<td>2070</td>
<td>-58.8</td>
<td>2162</td>
</tr>
<tr>
<td>3. Italy</td>
<td>2264</td>
<td>-72.5</td>
<td>2452</td>
</tr>
<tr>
<td>4. Netherlands</td>
<td>223</td>
<td>-34.5</td>
<td>159</td>
</tr>
<tr>
<td>5. Belgium</td>
<td>216</td>
<td>-62.0</td>
<td>265</td>
</tr>
</tbody>
</table>

Sources: Eurostat, *Basic Statistics of the Community* (1965), Table 30; ibid. (1978), Table 40.

### Table 3
Annual Rate of Change in Agricultural Labour, 1965-75

<table>
<thead>
<tr>
<th>Country</th>
<th>Operators</th>
<th>Family Members</th>
<th>Salaried Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Canada</td>
<td>-2.6</td>
<td>-3.5</td>
<td>-0.2</td>
</tr>
<tr>
<td>2. United States</td>
<td>-2.9</td>
<td>-5.5</td>
<td>-0.8</td>
</tr>
<tr>
<td>3. Japan a</td>
<td>-2.7</td>
<td>-7.4</td>
<td>-6.7</td>
</tr>
<tr>
<td>4. Austria</td>
<td>-4.2</td>
<td>-4.5</td>
<td>—</td>
</tr>
<tr>
<td>5. Belgium</td>
<td>-4.2</td>
<td>-9.3</td>
<td>-4.5</td>
</tr>
<tr>
<td>6. Finland</td>
<td>-4.2</td>
<td>-8.8</td>
<td>-2.8</td>
</tr>
<tr>
<td>7. Germany</td>
<td>-3.6</td>
<td>-5.1</td>
<td>—</td>
</tr>
<tr>
<td>8. Italy</td>
<td>-4.2</td>
<td>-8.8</td>
<td>-2.8</td>
</tr>
<tr>
<td>9. United Kingdom</td>
<td>-2.6</td>
<td>-4.0</td>
<td>—</td>
</tr>
</tbody>
</table>

Notes: a: Figures exclude fishing and refer to 1964-74
b: Figures refer to 1963-73
Source: OECD, *Review of Agricultural Policies* (1977; Paris 1978), Table 6, p. 64
3. Changes in the Size of Farms

Table 1 has shown that for the rather short period, 1970-76, the number of farms was decreasing. Similar and additional data are shown in Table 4 for the longer period, 1960-76. Along with the overall decrease in the number of farms in all countries, farms of 1-20 hectares show a significant decrease, but farms of 20 or more hectares show an increase which in some cases is greater in percentage terms than the decrease. In the case of the United States, farm size is measured in financial terms, by volume of sales, and the rate of increase of the relatively large farms in the short period of 1970-76 is really phenomenal: 99 per cent. The group falling between $20,000 and $40,000, which is not shown in the table, is relatively stable in number.

Table 4
Changes in the Number of Holdings (in thousands)

<table>
<thead>
<tr>
<th></th>
<th>1-20 ha.</th>
<th>20 ha. and over</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1960</td>
<td>1976</td>
</tr>
<tr>
<td>1. Germany</td>
<td>1247</td>
<td>685</td>
</tr>
<tr>
<td>2. France</td>
<td>1313</td>
<td>668</td>
</tr>
<tr>
<td>3. Italy</td>
<td>2635</td>
<td>2021a</td>
</tr>
<tr>
<td>4. Netherlands</td>
<td>204</td>
<td>107</td>
</tr>
<tr>
<td>5. Belgium</td>
<td>184</td>
<td>80</td>
</tr>
<tr>
<td>6. United Kingdom</td>
<td>261</td>
<td>116</td>
</tr>
<tr>
<td>7. Ireland</td>
<td>207</td>
<td>173</td>
</tr>
<tr>
<td>8. Denmark</td>
<td>144</td>
<td>74</td>
</tr>
</tbody>
</table>


9. Finland     | 275.0    | 222.2 | -52.8 | -19.2 | 22.5  | 25.7  | 3.2 | 14.2 |
10. Swedenb    | 111.8    | 86.5  | -25.3 | -22.6 | 43.6  | 44.5  | 0.9 | 2.1  |
11. Norway     | 148.6    | 110.6 | -38.0 | -26.2 | 6.3   | 7.0   | 0.7 | 11.1 |
12. Switzerland| 106.9    | 90.8  | -16.1 | -15.1 | 12.3  | 14.9  | 2.6 | 21.1 |

($20,000 or less) ($40,000 or more)


Notes: a: 1975; b: 1970-76
Sources: Eurostate, Yearbook of Agricultural Statistics (Luxembourg 1977), 60; OECD, Review of Agricultural Policies (1977; Paris 1978), 58, Table 4.
4. Land Tenure Patterns

Data on the development of land tenure patterns are not readily available. However, a fairly good idea of the existing situation can be obtained from a publication of the Organization for Economic Co-operation and Development (OECD), which examines to the 1960-70 decade for each of the member countries. The relevant information contained in this publication is presented below:

Austria: 97% of farms were operated by full-owners (1970).
Belgium: 27% of farms are operated by full-owners; 53% of farms partly owned; 20% of operators rent their entire holding (1959).
Canada: 72% of farms were operated by full-owners, and 22.7% by part-owners (1966).
Denmark: 90% of farms were operated by full-owners (1968).
Finland: 6.9% of farms were full- or part-tenancy farms; the rest were operated by full-owners (1969).
France: 50.1% of land was cultivated by full-owners; 44.7% of land was rented (1963).
Germany: 45% of land was cultivated by full-owners alone, and 50% was a combination of owned and rented land.
Ireland: "virtually all land is owned by the farmers themselves" (1970).
Italy: 80% of farms were operated by owners (1961).
Japan: "overwhelming proportion of owner-occupiers have been retained" (1970).
United States: 26% of farms were operated by full owners and 53% by part-owners (1964).
United Kingdom (England, Wales): 47.7% of agricultural holdings were operated by owner-operators (1969).

Despite the rather cryptic character of the above information, it seems fairly obvious that the great majority of farmers cultivate only their own land. In some countries a significant proportion of land is rented to farmers who require land in addition to their own. Thus, the production unit (the firm) in agriculture remains to a great extent the family farm, independent of the fact that a portion of cultivated land is rented. It should also be noted at this point:

A trend common to almost all countries is the increase of part-
ownership, i.e., the proportion of land used by farmers who own some land and rent some other is expanding. . . . This development is associated with structural change in that farmers wanting to expand often prefer — or find themselves obliged — to rent rather than buy additional land, though the opposite is often the case. Further, retiring farmers or farmers taking up non-agricultural employment, who often continue to live on the farmstead, prefer letting their land to neighbours rather than selling it.5

5. Capital and the Composition of Investment in Agriculture
The definition of capital in agriculture differs among countries but it usually includes the value of land, farm buildings, machinery and equipment, livestock, stock of crops, and other supplies on the farm. Whatever the definitions of capital and labour, the existing data for the U.S., Japan and many European countries show that the capital-labour ratio and the machinery-labour ratio are increasing.6 The composition of gross investment in agriculture (excluding forestry and fisheries) for around 1967 shows that capital formation mainly takes the form of machinery and equipment, farm buildings, and land improvement, in that order — with the exception of Japan, where land improvements come first.7

6. Conclusions from the Empirical Evidence
Admittedly, the data presented above are fragmented, incomplete, and for short periods. In addition, they refer to countries with different historical experiences and countries that have followed different growth paths to their present levels of economic development. Thus, one may question the validity of any general conclusion that may be drawn from these data. However, the argument can be reversed, and one may argue that if general tendencies can be derived from these data, given the above weaknesses, then these tendencies must be powerful. After all, these are advanced capitalist economies and the general laws of capitalist development must have their impact despite the diversity of the conditions existing in each country and in each epoch.

In our view, the empirical evidence presented above supports the following conclusions:
1. the size of the agricultural labour force and the number of farms have both been declining;
2. smaller farms are decreasing in number while larger farms are increasing;
3. capital per unit of labour has been increasing;8
4. the predominant type of agricultural firm is the family farm.
One may, therefore, accept the general conclusion that the concentration and centralization of capital in agriculture, although occurring, has not changed significantly the fundamental character of the relations of production in agriculture. Capitalist relations of production are not yet typical in agriculture. As long as the family farm remains the main type of agricultural business firm, the concentration, and particularly the centralization, of capital is bound to be limited. In the rest of this paper an attempt is made to understand the reasons for the persistence of the relatively small family farm and hence of the low rate of concentration and centralization of capital in agriculture.

**Brief Review of the Literature**

The extensive literature that has been developed on the question of the differential development of the agricultural and industrial sectors has been critically reviewed in two recent papers and there is no need for a third review. It may be useful, however, to present briefly some attempts to explain the persistence of family farms, which are not reviewed in the above studies.

1. **Farming as a Way of Life**

A well-known argument for the persistence of the small-size family farm is that the farmer is not an entrepreneur who seeks to maximize profits and the rate of accumulation, but is instead a satisficer, so that as long as he can secure a minimum of welfare he will make no conscious attempt to increase the scale of operation — even when there are ample opportunities for improvement. In other words, farming is not strictly business, but a way of life. The farmer behaves, not as a maximizer, but as a satisficer who preserves a traditionally low level of welfare. Therefore as long as the farmer can cover, in addition to his expenses, a payment for his work, he can survive and avoid the pursuit of profit and ground rent.

A similar view was expressed by A.V. Chayanov who saw the organization of production of the family farm as the result of a process by which the family balances the satisfaction of its needs with the amount of work required for this satisfaction. The farmer neither seeks to maximize his profits not to accumulate, but simply to survive on his piece of land.

2. **Existence of Markets for Farm Products**

In explaining the persistence of small farmers, Mandel observes that
the concentration of capital operates through the elimination of the least profitable firms. Therefore, as long as there is a market for the products of the least profitable farms, concentration cannot occur. Even when the extent of the market is reduced, small farms can compete and survive by using more intensive cultivation methods as they become available. Since intensive cultivation requires an augmentation of capital on farms, Mandel views intensive cultivation as an indirect form of capital concentration.

3. Risk Aversion
The element of uncertainty in agricultural production is much stronger than in industry, and the expected loss increases with the level of production. According to this view, farmers, being risk-aversers, are not willing to take on the risk of big losses associated with large-scale production, and thus prefer to remain small. Also farmers do not easily leave their farm, even when they are marginal producers, because they do not wish to accept the uncertainties of urban life and non-agricultural employment.

4. Absence of Economies of Scale
In the industrial sector, volume of production and cost per unit of output are negatively related over a wide range of production. As the size of the plant increases, the average cost declines. This is an important factor which, in a world of competition, leads to increasing firm size. In the case of agricultural production, it is argued, increasing the size of the farm by increasing the quantities of the productive inputs does not reduce the average cost. This is due to the wide range of scale that exists for most of the implements used in farm production.

In the case of the tractor, for example, the farmer can range from the lawnmower to the giant bulldozer. This divisibility of farm inputs leads to a situation where the average cost of production does not vary significantly as the farm size increases. Some of the existing evidence suggests that as farm size increases, there is at first a dramatic reduction in average cost, but this soon levels off and costs remain relatively stable over a wide range. Thus, there is no optimal size and farms of very different sizes may co-exist even under the pressures of competition.

Further, it is argued that technical innovations related to power, machinery, equipment and buildings have “increased greatly the number of acres, animals and birds which can be handled by one man or the farm family.” It follows that even if the size of the
farm which is necessary for the beneficial use of new technologies increases, the change in technology does not need to disturb the existing relations of production. In fact, it facilitates their continuation.

Comments
The views expressed above, though they seem to fit the data to some extent, do not provide a satisfactory explanation of the persistence of small family farms and of the low concentration and centralization of capital in agriculture.

The idea that farming is a way of life that farmers are willing to preserve even at some pecuniary cost is a mere hypothesis which cannot be sustained on a priori grounds. The persistence of small family farms cannot provide grounds for accepting this hypothesis, as this persistence can be explained by other non-behaviouristic hypotheses. Actually one may suggest that farmers remain in agriculture, not because that is their lifestyle, but simply because they have no other way to secure a minimum of existence; when they have other ways, they do leave their farms, as is evident from the huge movement of labour from agriculture to urban sectors.

With regard to the risk aversion argument, although some farmers may be risk-aversers, others may be risk-takers, and all it takes for the process of accumulation to get started is that some — perhaps only a few — farmers are risk-takers (assuming of course that no other obstacles exist). It is true that large-scale operations entail the risk of big losses as well as the possibility of large profits, but the element of risk is certainly overemphasized, particularly if we take into consideration the income transfers that are taking place in the form of minimum prices, insurance against bad weather, etc. Finally, if one already lives at a minimum of existence, the risk of loss has little practical significance.

Mandel's point that intensive cultivation on small farms can be viewed as a particular form of capital concentration is well taken. But it presupposes that this is the least expensive way of expanding farm production. However, this type of behaviour is one that perpetuates competition among producers and reduces the prices of farm products to the point that the farmer receives no rent for his land. It follows that Mandel's approach does provide an explanation, but it requires either the additional assumption that the small farmer is willing to "sacrifice his standard of living in order to cling to 'his' farm," or the existence of some other constraint on the farmer's ability to leave the farm, such as lack of alternative opportunities, infor-
mation about such opportunities, etc.

Turning now to the argument that is based on the absence of economies of scale in agricultural production, it must be admitted that if in fact economies of scale do not exist, then there may not be sufficient motivation to increase farm size. But it is not generally accepted that economies of scale are absent for farm production. Boussard himself states that out of 31 references, 13 reflect the opinion that economies of scale are difficult to prove, and 10 affirm that such economies very obviously exist. Moreover, it is important to make the distinction between economies of scale and economies of size. Even if economies of scale do not exist, economies of size may very well exist. Farmers with large operations may achieve lower costs, not because of the production technology used, but because they are in a position to obtain their inputs on better terms. Therefore the economic motivation for larger farm size does not disappear.

A Suggested Explanation

In the rest of this paper an attempt is made to present two arguments that may be helpful in understanding the development of agriculture in a capitalist social formation with respect to concentration and centralization of capital.

The first thing to note is the ability of agriculture to increase production without vast increases in new capital: "It is . . . the direct action of man on Nature which becomes an immediate source of greater accumulation without the intervention of any new capital." Beyond a certain point, however, increases in capital are necessary for further increases in production. But here again two factors have contributed to the limited expansion of the size of farms. In many cases, the type of new capital involved did not require an increase in farm size for its operation. Thus the optimum size of the farm in terms of land remained small. But of course, not all capital can be supplied in small, efficient units. When vast increases in capital which the individual farmer could not acquire for himself were necessary, this capital was supplied by the state in the form of public investments (dams, irrigation projects, etc.). Thus the concentration of capital in agriculture takes the form of intensive cultivation on private farms and of public investment in agricultural capital. These two factors, namely intensive cultivation and the availability of public capital, have made it possible or even profitable for the farm to remain small in terms of land. Of course this raises the question of why the state has decided to supply the necessary public investment,
Centralization means that "Capital grows in one place to a huge mass in a single hand, because it has in another place been lost by many." The factors of centralization are competition and credit. In Marx's words, "Commensurately with the development of capitalist production and accumulation there develop the two most powerful levers of centralization-competition and credit." Centralization in agriculture would have meant the elimination of small producers and the creation of large land holdings by a small number of capitalist producers. Small farmers would have had to sell out their lands and either move to urban areas, seeking industrial employment, or become agricultural workers. Given the fact that competition among producers was keen and became worse with the adoption of intensive cultivation, why is it that the capitalist system did not succeed in centralizing capital in agriculture as fully as it did in industry?

There are two basic answers to this question. First, it is not as easy to force the farmer to sell out as it is with the small industrial producer in times of economic crises. Second, the capitalist system did not want a more rapid expropriation of small farmers because it could not afford its social consequences.

With respect to the first answer, how can the small farmer resist eviction from his land and thus block the process of centralization? He can do it by simply refusing to sell his land, even when he is forced to cease production and seek employment elsewhere. He would have to sell if the simple possession of his land entailed expenses he could not afford (as was the case with the Enclosure acts). But such expenses, in the form of property tax, etc., have not been imposed on small farmers. The trend that was noted earlier in this paper, namely an increase in the proportion of land used by farmers who rent other land in addition to their own, is consistent with the proposition that interruption of farming operations is not necessarily associated with the act of selling the land. In fact, this is particularly true in the post-war period when land prices have increased substantially.

Another "peculiarity" regarding the behaviour of the small farmer is the phenomenon of multiple jobs through which a farmer may continue to farm and also supply his labour for non-agricultural, part-time employment. In addition to this, the possibility of dividing the family labour (operator and family members) between farm and non-farm employment increases the ability of the farmer to preserve his property and thus to slow down the process of centralization.
In the United States, 23.3 per cent of farmers operating commercial farms reported off-farm work in 1969. Correspondingly, 53 per cent of total income received by the farm population came from non-farm sources in 1970. Thus the ability of the farm family to supply part of its labour on a part-time basis or during certain periods of the year and/or for full-time, non-farm employment, and thereby receive a substantial amount of income, provides an effective mechanism by which the farmer can keep his land and limit the degree of land centralization. The points made above are in agreement with the analysis of Chevalier and his statement that "the formal and real subsumption of labour to capital has contradictory and unexpected effects which account for many of the essential features of capital dominated simple commodity production."

An important additional factor is the nature of agricultural production and the malleability of land, capital and labour in agriculture — a situation that allows the small farmer to survive if he wishes to remain in agriculture.

The capital of the industrial producer is rarely malleable: his machines and raw materials are either used in the production for which they are designed or they are not used at all. Thus in periods of crisis he has to submit to superior economic forces. In farming, land, labour, fertilizers and, to a large extent, equipment (particularly small items), can be used for the production of a rather large number of agricultural products. Within wide limits, the farmer can easily and quickly change his production — depending on the market conditions for the agricultural commodities — and also provide the means of his subsistence. Therefore, the farmer can remain on his farm and still survive. Unlike much earlier times, it is easier to tempt the farmer to leave his farm by providing some motivation than to force him out of agriculture.

The differentia/specifica between agriculture and industry is to be found in the malleability of land capital and labour in the former and its absence in the latter, and, of course, in the ownership of land and capital by the farmer, who is also the producer. This difference may also explain, to some degree, the high birth rates of small industrial firms during periods of expansion, their high death rates in periods of recession, and the absence of such cyclical behaviour in the case of farms.

The second answer is related to the consequences of a more rapid capital concentration and the formulation of agricultural policy in capitalist societies. A more rapid concentration and centralization in agriculture, with the parallel introduction of mechanization and
other labour-saving techniques of production, would have meant the movement of huge masses of expropriated farmers towards the industrial sectors. This would have meant an increase in the reserve army and a tendency for wages to decline. With a working class growing in numbers, improving its organization, becoming conscious of its class situation and armed with ideological weapons, and living already under miserable conditions, any deterioration of these conditions could have led to an explosive situation with unpredictable results. It is precisely this possibility that capitalism wished to avoid. It is not that it wanted small farmers and in large numbers; it did not want additional workers in the cities because its inability to accommodate them could have proven fatal to the system.

The exodus of people from agriculture had to be regulated by the ability of industry to absorb the surplus labour. This meant that development in agriculture was in fact determined by development of the industrial sector. Generally speaking it is true that the development of agriculture is determined by the development of the capitalist system as a whole, but we disagree with the view that the capitalist system wanted small-scale operations in farming. On the contrary, we believe that the capitalists would have been very happy to have plenty of labour and low wages in industry and at the same time to receive absolute rent from the land. However the risks of such rapid development were high (i.e., social unrest involving dangers of political instability and the possible risk of ultimate overthrow of the system), and capitalism had to provide for its own future by counteracting the course of events dictated by its development. This is not a unique or unusual phenomenon in capitalist development. If it is to survive, capitalism must somehow resolve its own internal contradictions. This explains why the state provides part of the capital necessary for the development of agriculture, sets support prices for agricultural products, supplies low-interest loans, and takes many measures by which it can control concentration and centralization of capital in agriculture.

The thesis expressed above raises the essentially unexplored question of the formulation of agricultural economic policy in advanced capitalist societies. This topic cannot be discussed here but, a brief outline of the main argument may be given. Agricultural policy is subordinate to general economic policy, which is designed to serve the interest of the class that constitutes the driving force in the development process of the economy. However, the state is not completely free in designing agricultural economic policies. It must operate under constraints that are imposed by the relative strength
of the social classes as their relative strengths are expressed in the existing political conjuncture (i.e., in the intensity of the class struggle). Usually, long-run and short-run agricultural policies are contradictory. This is because the long-run policies which are designed to advance the forces of production often lead to results that require corrective measures so that the rural population preserves its conservative character and the class struggle is kept in balance — that is, so that social equilibrium is attained while the ruling class maintains its dominant position.

Before finishing with this point, it is important to recognize that the validity of the above argument depends on the actual level of development of the economy. In a country where the proportion of agricultural population is very small, the dangers of social unrest arising from a rapid exodus from agriculture are rather limited, and the prospects for revolutionary possibilities, minimal. In countries with large agricultural populations these dangers are more substantial, as I believe was the case in Greece where the problem was solved through a huge flow of migration to Western Europe. Of course, general rules about agricultural policy formation have only limited applicability. Every society has its own specific path of development and the tendencies observed require their own specific explanations.

Summary
In this paper we have attempted a critical review of some of the explanations offered for the observed retardation of concentration and centralization of capital in agriculture, and the corresponding persistence of family farming. According to our explanation, these phenomena are the result of two main elements. First, they are due to the nature of agricultural production, in the sense that it provides the means of subsistence, and to the malleability of land, capital and labour used in agricultural production, which increases the resistance of individual farmers by making possible alternative uses of those factors of production. Second, they are the result of the inability of the industrial sector to absorb the masses of people who would be released from agriculture if the centralization of capital were more rapid, and who might present a threat to the capitalist system. It was, therefore, preferable to regulate the development of agriculture so that it could not present a danger.

The role of credit in the process of centralization of capital in agriculture we have not discussed. The examination of this aspect would require separate treatment. However, we have indicated that the role of credit was to make it easier for the small farmer to sur-
vive by providing him with low-interest loans, by occasionally cancel-
ling agricultural debts, etc. Generally, it can be said that the role of credit in agriculture has been to postpone realization of the ten-
dency towards the centralization of capital.

From our analysis it follows that we are not observing an empirical refutation of the tendency of capital concentration and centraliza-
tion in agriculture, but only a retardation dictated by the needs of the capitalist system.

Notes

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2. Ernest Mandel, Marxist Economic Theory, 292

3. Ibid., 133


5. Ibid., 1:55

6. Ibid., 62

7. Ibid., 26

8. Of course, the same is true for the land-labour ratio as it follows from the declining agricultural labour.


11. Mandel, Marxist Economic Theory, 291. (See n. 2 above.)


16. To some extent, this argument involves some sort of technological determinism and has been criticized by Mann and Dickinson ("Obstacles to Capitalist Agriculture," Journal of Peasant Studies (1978), 470. However, their criticism contains two errors. First, the central focus of this argument is not on optimal farm size but, on the contrary, on the absence of optimal size within wide limits. Second, technological improvement does not necessarily mean similar technological conditions. The point of the argument presented above is that technological innovations are embodied in capital equipment of various forms which are adaptable to many farm sizes so that no substantial differences in cost per unit are observed among farms of different size.

17. Marx, Capital, 1:565. (See n. 1 above.)

18. Ibid., 586

19. Ibid., 587

20. B.D. Gardner and R.D. Pope, "How is Scale and Structure Determined in Agriculture?" American Journal of Agricultural Economics (May 1978), 300


22. Chevalier, "Simple Commodity Production," 114-8. (See n. 9 above.)

23. It is to be noted here that the use of such phraseology as "capitalism wished," "capital feared," or "the system wanted" should not be taken as an implicit attempt to personify the capitalist mode of production — to attribute to it humanoid behaviour, and thus indirectly explain its working as a result of some kind of rational behaviour that will make possible its perpetuation rather than as a result of its internal contradiction. This phraseology simply refers to the operation of the economic mechanisms of the system and to the behaviour of the state as an entity that assumes a relative autonomy even though it functions as a class state. On the question of relative autonomy of the state, see R. Miliband, Marxism and Politics (Oxford 1977), chap. 4
24. In their *Monopoly Capital* (p. 165), Paul Baran and Paul Sweezy make the following relevant point: "In the case of almost every major item in the civilian budget, powerful vested interests are soon aroused to opposition as expansion proceeds beyond the necessary minimum. This occurs whenever a significant element of competition with private enterprise is involved but it is also true of other items where competition with private enterprise is largely or even wholly absent." It seems that in the case of public capital formation in agriculture, the opposition by private interests is low. In fact, in some instances, not only is opposition absent but private business may benefit from the provision of public capital. For example, the construction of an irrigation dam, in addition to its usefulness for agriculture, may provide electric power for industry.

25. For a review of this literature, see F.H. Buttel, "The Political Economy of Agriculture in Advanced Industrial Societies: Some Observations on Theory and Method," in *Current Perspectives in Social Theory*, ed. S.G. McNall and G.N. Howe (1982). Also, see T.P. Lianos, "Agriculture and the State: The Formulation of Agricultural Policy in Capitalist Societies" (unpublished manuscript). This paper, which is available upon request, contains an examination of agricultural policy in Greece for the period 1930-80 as a case study which substantiates the argument expressed above.