

Space for Notes



**Paul Rosenstein-Rodan,
Problems of Industrialization of Eastern
and South-eastern Europe*
(1943)**

“I should like to buy an egg, please,” she said timidly. “How do you sell them?”
“Fivepence farthing for one-twopence for two,” the Sheep replied. “Then two
are cheaper than one?” Alice said in a surprised tone, taking out her purse. “Only
you *must* eat them both, if you buy two,” said the Sheep “Then I’ll have *one*,
please,” said Alice as she put the money down on the counter. For she thought to
herself, “They mightn’t be at all nice, you *know*.”-(*Through the Looking-Glass*.)

(1) It is generally agreed that industrialization** of “international depressed areas” like Eastern and South-Eastern Europe (or the Far East) is in the general interest not only of those countries, but of the world as a whole. It is *the* way of achieving a more equal distribution of income between different areas of the world by raising incomes in depressed areas at a higher rate than in the rich areas. The assumptions in the case under discussion are: that there exists an “agrarian excess population” in Eastern and South-Eastern Europe amounting to 20-26 million people out of the total population of 100-110 million, *i.e.*, that about 25% of the population is either totally or partially (“dis-guised unemployment”) unemployed. The waste of labour is by no means confined to rich industrial countries. It is considerably greater in poor agrarian countries. If the principles of international division of labour are to be applied, labour must either be transported towards capital (emigration), or capital must be transported towards labour (industrialisation). From the point of view of maximising the world income, the difference between these two ways is one of transport costs only, and may be assumed to be negligible. Emigration and resettlement would, however, present so many difficulties in immigration areas (and in emigration areas) that it cannot be considered feasible on a large scale. A very considerable part of the task will have to be solved by industrialisation.

* This is a chapter from the forthcoming report of the Economic Group of the Committee on Reconstruction, The Royal Institute of International Affairs. [Originally published in the *Economic Journal*, 53, (1943), pp. 202-211.]

** One might consider the industrialisation of these countries as one chapter of agrarian reconstruction, or one might treat the improvement of agrarian production as one chapter of industrialisation. What matters is to remember that the two tasks are interconnected parts of one problem.

(2) In order to reach an “optimum size” of the industrial enterprises, the area of industrialisation must be sufficiently large. This fact, as well as the possibility of lowering the marginal risk of investment, make it imperative to aim at an economic unit comprising the whole area between Germany, Russia and Italy. Though large in terms of square miles or population, it is not large in terms of output. The total national income of this economic unit amounts to £2,000 million-*i.e.*, 40% of the income of Great Britain.

(3) There are two fundamentally different ways of industrialisation of that area

(i) That Eastern and South-Eastern Europe should industrialise on its own, on the “Russian model” by which we do not mean communism), aiming at self-sufficiency, without international investment. That would imply the construction of all stages of industry, heavy industry, machine

industry, as well as light. industry, with the final result of a national economy built like a vertical industrial concern. This way presents several grave disadvantages: (a) It can only proceed slowly, because, capital must be supplied internally at the expense of a standard of life and consumption which are already at a very low level. It implies, therefore, a heavy and, in our opinion, unnecessary sacrifice. (b) It will lead finally, since there are appropriate natural resources in the area, to an independent unit in the world economy implying a reduction in the international division of labour; i.e., the output of the world as a whole would be less than it might be, the world would be poorer in material goods. (c) The difference in world economic structure is most clearly seen in the case. of heavy industries. Building up heavy industries in Eastern and South-Eastern Europe at a great sacrifice would only add to the world excess capacity of heavy industry, and would constitute from the world's point of view largely a waste of resources.

(ii) The alternative way of industrialisation would fit Eastern and South-Eastern Europe into the world economy, which would preserve the advantages of an international division of labour, and would therefore in the end produce more wealth for everybody. It would be based on substantial international investment or capital lending. This way presents several advantages: (a) It could proceed more quickly and at a small sacrifice of consumption of this area. From the point of view of international political stability there may be all the difference in the world if 50 % of the agrarian excess population in Eastern and South-eastern Europe were profitably employed within ten years after the war instead of, say, 20%. (b) The sound principles of international division of labour postulate labour-intensive--i.e., light industries in over-populated areas. (c) Even for the purposes of an expanding world economy, the existing heavy industries in U.S.A., Great Britain, Germany, France and Switzerland could certainly supply all the needs of the international depressed areas.

(4) Clearly this way of industrialisation is preferable to the autarkic one. It is a tremendous task, almost without historical precedent. There is no analogy to the process of industrialization in the early nineteenth century for a number of reasons which may be mentioned briefly before being examined in more detail. (a) International investment in the nineteenth century was largely self-liquidating, based on exchange of agrarian and industrial products. Nowadays liquidation can no longer be assumed to be "automatic," although the problem can be solved if it is properly planned. (b) Existing institutions of international investment (floating of shares and loans) re inappropriate to the task of industrialisation of a whole area. They deal with too small units, and do not take advantage of external economies. Capital mostly goes to individual enterprises. There has never been a scheme of planned industrialisation comprising a simultaneous planning of -several complementary tries; which is --part of our plan for Eastern and South-Eastern Europe (see (6) and (8). (c) Technical progress was the main driving-force in the nineteenth century. Industrialisation in international depressed areas, on the other hand, implies the application of *given* technical knowledge. (d) The increase in overhead costs and fixed capital since the nineteenth century has raised the risk of loss of capital and lowered the mobility of resources and the flexibility of the economic system. It has vastly increased the average size of the firm. (e) Political-risks of international investment are very much greater to-day than in the nineteenth century, when it was assumed that certain things were "not done." State supervision and guarantees can, therefore, substantially lower risks, and for that reason constitute the *conditio sine qua non* of international

investment on a large enough scale. Active participation of the State in economic life is a new factor which must be taken into account as a new datum. (f) People (even Eastern Europeans I) are not as tough to-day as they used to be. Social conscience would not stand for as much misery in peace-times as was taken for granted in the Darwinist nineteenth century. Milder methods must be used.

An institutional framework different from the present one is clearly necessary for the successful carrying out of industrialisation in international depressed areas. In what follows arguments are submitted tending to show why the whole of the industry to be created is to be treated and planned like one huge firm or trust.

(5) The first task of industrialisation is to provide for training and “skilling” of labour which is to transform Eastern European peasants into full-time or part-time industrial workers. automatism of *laissez faire* never worked properly in that field. It broke down because it is not profitable for a private entrepreneur to invest in training labour. There are no mortgages on workers-an entrepreneur who invests in training workers may lose capital if these workers contract with another firm. Although not a good investment for a private firm, it is the best investment for the State. It is also a good investment for the bulk of industries to be created when taken as a whole, although it may represent irrecoverable costs for a smaller unit. It constitutes an important instance of the Pigovian divergence between “private and social marginal net product” where the latter is greater than the former. Training facilities (including transport and housing) of one million workers per annum would involve costs of certainly more than £100 million per annum-a sum which may be too great to be borne by the State (or the Eastern European national economy) if taken apart from the costs of the 60% participation in its own “Eastern European Industrial Trust” * that we shall propose. It should be counted as capital investment in the Eastern European Industrial Trust (E.E.I.T.).

* The name is provisional for want of a better one. It will have to be changed because of the unpleasant associations connected with the term “trust.” Eastern European Industrial Corporation, Board-or Holding Company might be considered.

That is not, however, the most important reason in favour of such a large investment unit.

(6) Complementarity of different industries provides the most important set of arguments in favour of a large-scale planned industrialisation. In order to illustrate the issues involved, let us adopt the somewhat roundabout method of analysing two examples. Let us assume that 20,000 unemployed workers in Eastern and South-Eastern Europe are taken from the land and put into a large shoe factory. They receive wages substantially higher than their previous meagre income *in natura*. It would be impossible to put them into industry at their previous income standard, because they need more foodstuffs than they had in their agrarian semi-unemployed existence, because these foodstuffs have to be transported to towns, and because the workers have to pay for housing accommodation. If these workers spent all their wages on shoes, a market for the products of their enterprise would arise representing an expansion which does not disturb the pre-existing market, and 90% of the problem (assuming 10% profit) would be solved. The trouble is that the workers will not spend all their wages on shoes. If, instead, one million unemployed workers were taken from the land and put, not into one industry, but into a whole series of industries which produce the bulk of the goods on which

the workers would spend their wages, what was not true in the case of one shoe factory would become true in the case of a whole system of industries: it would create its own additional market, thus realising an expansion of world output with the minimum disturbance of the world markets. The industries producing the bulk of the wage goods can therefore be said to be complementary. The planned creation of such a complementary system reduces the risk of not being able to sell, and, since risk can be considered as cost, it reduces costs. It is in this sense a special case of "external-economies."

It may be added that, while in the highly developed and rich countries with their more variegated needs it is difficult to assess the prospective demand of the population, it is not as difficult to foresee on what the formerly unemployed workers would spend their wages in regions where a low standard of living obtains.

(7) Two other types of "external economies" will arise when a system of different industries is created. First, the strictly Marshallian economies external to a firm within a growing industry. The same applies, however (secondly), to economies external to one industry due to the growth of other industries. It is usually tacitly assumed that the divergence between the "private and social marginal net product" is not very considerable. This assumption may be too optimistic even in the case of a crystallised mature competitive economy. It is certainly not true in the case of fundamental structural changes in the international depressed areas. External economies may there be of the same order of magnitude as profits which appear on the profit and loss account of the enterprise.

(8) The existing institutions of international and national investment do not take advantage of external economies. There is no incentive within their framework for many investments which are profitable in terms of "social marginal net product," but do not appear profitable in terms of "private marginal net product." The main driving-force of investment is the profit expectation of an individual entrepreneur which is based on experience of the past. Experience of the past is partly irrelevant, however, where the whole economic structure of a region is to be changed. An individual entrepreneur's knowledge of the

market is bound to be insufficient in this case because he cannot have all the data that would be available to the planning board of an E.E.I.T. His subjective risk estimate is bound to be considerably higher than the objective risk. If the industrialization of international depressed areas were to rely entirely on the normal incentive of private entrepreneurs, the process would not only be very much slower, the rate of investment smaller and (consequently) the national income lower, but the whole economic structure of the region would be different. Investment would be distributed in different proportions between different industries, the final equilibrium would be below the optimum which a large E.E.I.T. could achieve. In the international capital market the existing institutions are mostly used to invest in, or to grant credit to, single enterprises. It might easily happen that any one enterprise would not be profitable enough to guarantee payment of sufficient interest or dividend out of its own profits. But the creation of such an enterprise, e.g., production of electric power, may create new investment opportunities and profits elsewhere, e.g., in an electrical equipment industry. If we create a sufficiently large investment unit by including all the new industries of the region, external economies will become internal profits out of which dividends may be paid easily.

(9) Professor Allyn Young's celebrated example elucidates our problem. He

assumed that a Tube line was to be built in a district and that an accurate estimate was made of costs and receipts. It was found that the rate of profit would be below the usual rate of yield on investments obtainable elsewhere. The project was found not profitable and was abandoned. Another enterprising company bought up the land and houses along the proposed Tube line and was then able to build the line. Although, the receipts from the passenger traffic would not pay a sufficient rate of profit, the capital appreciation on the houses and land 'more than made up the deficiency. Thus the project was realised, the Tube line was built. The problem is: Is it desirable-i.e., does it lend to an optimum allocation of resources and maximisation of national income-that this form of capital gain (external economy) be included as an item in the calculus of profitability, or is it not? Allyn Young hints that it is not desirable because the capital appreciation of houses and land along the Tube line due to an influx of people from other districts has an uncompensated counterpart in a capital depreciation of houses and land in districts out of which people moved into the Tube-line district. Agricultural land in Eastern and South-Eastern Europe will, however, not depreciate when the agrarian excess of population moves out. In this case external economies should be included in the calculus of profitability.

(10) External economies are often invoked as an argument in favour of a different programme of industrialisation. National and international investment should concentrate at the start on building of "basic industries" and public utilities which give rise to new investment opportunities. "Let us build railways, roads, canals, hydro-electric power-stations, the rest will follow automatically." Where the lack of transport facilities is a flagrant obstacle to economic progress, as, for instance, in China and parts of Latin America, that may indeed be the best start of development investment. The situation is different, however, in Eastern and South-Eastern Europe. There is no comparable deficiency in railroads there. Rail mileage per £ million. of national income is very much higher than in the Far East. A general vision of the future economic structure is necessary in order to know where to build communications, how much of them, and what for. The quality of "basic" industries is not confined, moreover, to some public utilities. We have seen how complementarity makes to some extent all industries "basic."

If sufficient capital (national and international) is available for investment in "basic industries" the normal multiplier effect will "naturally" lead to further industrialisation according to the advocates of this programme. The argument assumes, however, a smooth working of the equilibrium mechanism of balance of payments and capital movements which is not likely to obtain in the structural disequilibrium situation after the war. Industrialisation in international depressed areas, once it is accomplished, may create an equilibrium, from which onwards normal private incentives may operate successfully. But it seems hopeless to rely on them before that point is reached. "Most of the countries of the world are undertaking national development or will undertake it after the war on the basis of imported capital equipment-locomotives, steel, tractors, steam shovels, cement mixers, turbines. In some instances they have foreign assets which can be used to purchase this equipment. In the majority of cases, however, they will be able to acquire it only by cutting down imports of consumer goods and pushing exports, to develop an export surplus, or by borrowing. Private investors . . . after the experience of the last twenty years, will probably not be willing to lend monies in sufficiently large amounts or low rates of interest to enable national development in debtor areas to get off to a good start. The alternative is for governments in creditor countries to guarantee the loans, or to lend the funds themselves The availability of foreign funds, foreign technical assistance

and foreign machinery, however, will transform the process of national development from one which would threaten to disrupt international economic relations and trade into one which can make a key contribution to the expansion of world income and the reorganisation of world trade.”*

**International Development Loans*. Planning Pamphlets, National Planning Association, No. 15, p. 14. New York. 1942.

(11) Governments in creditor countries will not guarantee the loans or shares unless they see how interest or dividend service is assured. If they have sufficient control on the board of E.E.I.T. they will be able to give the guarantee at no cost or risk to themselves, since the real risk of the whole enterprise is very much lower than the risks relating to parts of the whole would be. But while the investment “pays” in Eastern and South-Eastern Europe, it is not necessarily self-liquidating. Liquidation will have to be planned-i.e., one part of the industries created in Eastern and South-Eastern Europe will have to be export industries. The flow of their exports will have to be sold in creditor countries. These exports will represent the main part of the rich countries' share in the world expansion. The placing of these exports has to be foreseen and planned in such a way as to minimise the burden of necessary adjustment of economic resources in the creditor countries. Eastern and South-Eastern Europe will most probably cease to be an exporter of cereals. It will export processed foods and light industrial articles.

International trade in the nineteenth century functioned more or less smoothly because all countries had a high income elasticity of demand for imports. On the higher standard of living in the rich countries of the twentieth century the income elasticity of demand for imports may be lower. There may be only one good for which the income elasticity of demand is high: leisure which does not require imports of material goods. Accordingly, the rich countries may have to accept a part of their share in economic expansion in the form of more leisure. They may have a 40- or 35-hour week, while Eastern Europe maintains a 48-hour week.

(12) Attention is confined here to what ought to be done rather than how it is to be done. The institutional implementation of this programme must be left over to another occasion. Its main outlines are: At least 50% of the capital required must be supplied internally. “Creditor” and “debtor” countries acquire each 50 % shares of a trust formed of all the industries to be created in the region. They will plan and proceed as business partners with Government representatives on the board. The creditors acquire shares in the trust which are redeemable after twenty years at 10% above parity if an average dividend service of 4j% at least has been maintained in the past. An average dividend service of 3 % is guaranteed by Governments on the shares subscribed in their countries. Private investments in Eastern and South-Eastern Europe requiring foreign credits are licensed. Shares may be acquired by contributions *in natura*: for instance, the establishment of branch factories. Guarantees of non-discrimination in the internal taxation policy will be obtained from Eastern European authorities.

(13) The aim of industrialisation in international depressed areas is' to produce a structural equilibrium in the world economy by creating productive employment for the agrarian excess population. It may be assumed that creditor countries will not be willing to enter into commitments for more than ten years. How much can be achieved in that period, and what is the rough order of magnitude of the capital required?

Industrial employment has to be found for (a) 20 million of the agrarian excess population + (b) 7-8 million = 40-50% of the increase in population during the next decade (assuming that 50-60% will be absorbed by agriculture) = 28 million people = 9 million active men and 3 million active women = 12 million workers. Up to 2 million workers can be employed in idle capacity. Capital has to be found for 10 million workers. Since the available capital is scarce, labour-intensive-i.e., light industries will prevail. According to such statistics as are available, the following classification of industries is proposed: (1) light industries-capital equipment per head £100-£400; (2) medium industries-capital equipment per head £400-£800; (3) heavy industries-capital equipment per head £800-£1,500. Since some heavy industries cannot be avoided, let us assume that £300-£350 per head will be required, including housing, communications and public utilities. That amounts to £3,000 million, to which has to be added £1,800 million on maintenance of *old* and new capital in ten years, giving a total of £4,800 million. Eastern Europe would have to supply at least 50% i.e., £2,400 million. Another £1,200 million of capital will be necessary for the improvement of agriculture, of which *we* assume that the bulk *would* have to be provided internally,* so that Eastern and South-Eastern Europe would have to supply £3,600 million capital internally between, say, 1946-1956.** Since its total income is £2,000 million per annum, that would represent a rate of investment of 18% (equal to that of Russia). Even if we take account of the gradually rising national income, rates of savings beginning with 8% and leading at the end of a ten-year period to 15% would seem to represent the maximum one can plan for. Assuming a national income rising annually by 4%, and an average rate of investment of 12%, the internal capital supply would only amount to £3,000 million. It appears, therefore, that, even a bold and rather optimistic programme of industrialisation cannot abolish the whole of the surplus population in the next decade. At best 70-80% of the unemployed workers could be employed. It follows that emigration will still have to supplement industrialisation. Besides that, however, German reparations in the form of capital equipment might provide one part of the capital of the L.E.I.T. Reparations in money to the rich Western countries created a problem of the last war. There is no difficulty with reparations *in natures* to poor countries. Germany can increase her consumption above the war-time standard, and transfer reparations *in natures* representing 25-50% of what she used to spend on armaments.

P. N. Rosenstein-Rodan

University College, London.

* A small part of it may be borrowed from abroad, but in this case in the form of bond credit.

** The immediate transition period of the first two years after the war is not included in these calculations, so that de facto it is a twelve-years plan, not a ten-years plan.