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INDUCEMENTS FOR INDUSTRIAL DEVELOPMENT

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INDUCEMENTS FOR INDUSTRIAL DEVELOPMENT:

WHEN ARE THEY WORTHWHILE?

1. Developing and predominantly agricultural countries nearly all seek to promote industries. The reasons for their doing this are obvious. They see that the high-income countries are, with few exceptions, all industrialized: they also see that manufacturing industry suffers far less than agriculture from market price fluctuations, and in addition is at little risk from the weather. Small wonder they wish to jump on the industrial bandwagon and are prepared to make considerable sacrifices in order to acquire industrial development. Whether the sacrifices are justified depends on a fairly complex set of factors. This paper attempts to formulate a theory embracing at least the main factors.

2. Cause and effect are here closely interwoven. Fundamentally what the high-income countries have is a great deal of capital per person - not all in physical form, some of it being in the form of education and training, and some in the form of developed social organization. With this high capitalization they have been able to develop industry either instead of or in addition to agriculture. But this does not mean that developing countries should postpone industrial development until their rate of saving has risen to a level approaching that of the wealthier countries, and still less until their capital per head has matched such a level. For industrial development itself fosters capital formation which might otherwise not take place. There are several reasons why this is so.

3. First of all, the opportunity to invest in manufacturing may well encourage some people to save and invest who otherwise would not have saved at all or as much. Second, the profits of a successful industry can usually be ploughed back easily into an expansion of the same line of manufacture, whereas reinvestment of farm profits may easily be inhibited by problems of land tenure or by technical conservatism, or both. Third, the existence of successful manufacturing enterprises in an underdeveloped country tends to attract external enterprises with external capital to go there. (Admittedly this third effect might also be achieved by plantation agriculture, but in practice the scope for foreign plantation companies is often limited, for several reasons).

Author's Note

The author wishes to acknolwedge the help he has received from discussions in this field with Mr. E. H. Cownie and with Professors Paul Clark and Philip W. Bell and others at Makerere University College. They do not however necessarily agree with the author's views expressed here, which are likewise not necessarily shared by the United Nations Technical Assistance Board or the Uganda Government, for which he is working.

4. Thus the developing countries are generally right in their instinctive search for industrial development. But this does not mean they are right to seek it regardless of cost. The questions they need to consider in any particular case are:- What benefit is being gained? What are the effects of the different types of inducement? and in each individual case, Do the benefits justify the inducements?

What Benefit is being gained?

5. The ultimate aim of industrialization should be a net increase in total national welfare, in the usual sense of a rise in total national income taking into account also social effects such as income distribution and employment. This seems so obvious that it could scarcely be overlooked. Yet it appears that sometimes it is overlooked in an indiscriminate scramble for industry.

6. The welfare increase is not a simple immediate gain. It is the net result of future flows of costs and gains, both directly and indirectly attributable to a project. In principle these future effects should be discounted to give an aggregate present worth. But this is difficult, first because it involves making an arbitrary assumption about the rate at which to discount the future and second because the net increase in national income is the only element which can be quantified in an aggregatable way. Thus in practice the final assessment must be based partly on quantitative estimates and partly on judgement.

7. The analysis is based on resource use - i.e. on the effects of resource diversion and resource mobilization - so that it applies equally to public and private enterprises. It starts by distinguishing two circumstances - (a) where the development will be wholly or almost wholly carried out from local resources, and (b) where there will be a substantial proportion of resources coming in from outside.

(a) Industrial development with local resources

8. This will inevitably:-

(a) divert resources from other production, and/or

(b) divert resources from consumption, and/or

(c) bring into productive use resources which would otherwise have been idle.

It is also quite conceivable that it may:-

(d) put into disuse some resources previously utilized.

And of course in practice there is likely to be a combination of these various effects.

9. In most developing countries the only resource which it can be safely assumed would otherwise be idle on a large scale is unskilled labour. Skilled labour of most sorts is likely to be scarce, and the more highly trained the scarcer. This scarcity, however, is really a shortage of the capital required for investment in education and technical training, as distinct from a shortage of trainable people.

10. Somewhat the same considerations apply to land. Even if a country has plenty of wide open spaces, land for industrial sites usually requires considerable investment in transport and other facilities. Moreover industrial sites will often be in populous districts where land would be used for other purposes if not used for industry.

11. As for capital, industrial expansion may certainly attract into capital expenditure some resources which would otherwise have been consumed. There are at least two reasons why this is to be expected. First, the people with a margin of wealth to either consume or invest are in many developing countries to be found in or near the towns. If they invest in manufacture, the factory can be located where they can see for themselves how the investment is being managed. Second, industrial assets are if need be likely to be more saleable than investment in agriculture.

12. There is a good chance that industrial development will give opportunities to individual enterprise which would otherwise have found no outlet. This may be because of greater difficulty in obtaining land for agriculture than for industry, or it may be a matter of individual aptitude for particular types of activity.

13. Nevertheless, in spite of the fact that industrial development is likely to bring into play some resources which would otherwise have been either idle or consumed, it is generally speaking likely that development from local resources will divert some capital, some enterprise, some skilled labour, from agriculture or other economic activities. This diversion need not necessarily be a direct withdrawal of resources already in use. Indeed in many cases that would be impossible, for capital invested in breaking-in land, enterprise committed to new farms, and technical or managerial skill engaged in agriculture, could not easily be switched to industry. The important diversion is that of the flow of uncommitted resources which would go into agriculture or some other sector, e.g. commerce or mining, if industrial development was absent.

14. However, even if industrial development does not mobilize any unused resources but operates wholly with resources diverted from existing uses, it may still represent on balance a gain to the country. Indeed, if the development occurs spontaneously there is a presumption that it will represent a gain. The practical problem is how to decide whether there will be a gain in inducing industrial development which would not otherwise occur spontaneously.

15. The assessment of gain for this purpose starts with an estimate of the resultant future increase in national income, not just the immediate annual increase but the whole pattern of prospective increases. In concept this is measurable, but measurement may be difficult. Not least is the problem of valuing the output of a development. If the product is an import substitute receiving tariff protection it is quite unrealistic to credit it with increasing the national income because its prices are higher than were the prices of the imported equivalent. Constant price valuation would be more accurate, but differences in design and quality and changes in consumer demand may vitiate comparison.

16. It is also arguable that some goods are in an absolute sense less valuable to the community than others, even if the market values of their outputs total the same. Thus £100,000 of scent production for sale to the wealthier may be regarded as less valuable than £100,000 of cheap cotton textiles to clothe the poorer. Basically this is an issue of social policy which can easily be embodied in the present analysis by arbitrary revaluation of the product. It is a practical issue also when import restrictions on luxury goods stimulate their local manufacture.

17. Income multiplier effects may be considerable both from the use of local materials and components and from the increased personal consumption of those engaged in the new manufacture. The real result in national income will depend on the extent to which underutilized resources are drawn into use in supplying these goods and services. A growing urban industrial population can stimulate food production in the surrounding countryside. But if the industrial population is already adequately fed before it moves into industry, the increase in personal incomes may show a high propensity to import, with no stimulus to the economy except for the import and distributive trades.

18. The secondary effects of manufacturing industry in stimulating other new manufactures should in principle also be taken into account. These may be 'forward' or 'backward' effects on vertically related industries. They may also be parallel effects in demonstrating to other entrepreneurs the possibilities of a particular market or a particular country. These secondary effects can however seldom be foreseen with any accuracy, and it is certainly unwise to rely on them to contribute substantially to the gains from an industrial project unless linked developments are known to be planned.

19. The social effects to be assessed will seldom be measurable in terms of addition to or subtraction from national incomes, even though they may be the subject of quite comprehensive statistics. The importance to be attached to these effects will thus be a matter of judgement. This is all the more reason for analysing carefully what their impact is likely to be, not least because it may well be quite different in different societies.

20. For example, in a peasant agricultural society with few or no landlords the effect of industrial development will very probably be to increase the inequality of income and wealth-distribution, by creating a few wealthy industrialists and a small technical middle class. On the other hand in an agricultural society with small tenant farmers and large land-owners industrialization may well bring some levelling-up, by providing a variety of employments other than agriculture, some of them relatively well paid. This may be true even if the land-owners themselves also become the industrialists.

21. Again, the effect on total employment may vary from case to case. In light or medium industry the amount of capital required per employee is commonly around £2,000, and may well be more. (This neglects infrastructure investment in e.g. communications, which can be very large). If all the capital for the industrial investment, or even some of it, has been diverted from less capitalized developments, the industrial development may well reduce total employment.

22. Another indeterminate result is the effect of creating larger aggregations of population. This makes it possible to provide some services which cannot be afforded, or cannot be so good, in a scattered rural community. Piped water, electricity, and schools within reasonable walking distance are examples coming to mind at once. On the other hand these possibilities are often not carried into reality for a long time except for a minority of the town dwellers, and in practice urban squalor commonly results from the early stages of industrial growth, while enclaves of industrial development generate stresses between the town dwellers and the rural population.

23. Other social effects are more clearly known either to be beneficial or the reverse. On the positive side are, for example, greater stability of the national income, wider choice of occupations for the individual, the stimulating effects of wider specialization and a growing cash economy, and the training effects of industry in spreading skills. On the negative side are such effects as new occupational diseases and dangers, the risk to the individual of losing his job, and the social disruption engendered by the movement of many people from stable rural communities to a new and less secure urban life.

24. Clearly many of these social effects need not be taken as wholly exogenous factors for an industrial programme. They can be substantially modified by deliberate action, both public and private. Indeed the feasibility of such modification may be important in assessing whether a particular industrial development is worthwhile.

25. The more that industrial development depends on the diversion of local resources from other productive activities, the greater is likely to be the significance of the social effects in determining whether there is a gain to total national welfare. Conversely the more it draws

or local resources not otherwise used, the less the relative importance of the social effects. Where, however, substantial resources are drawn in from other countries, the position is rather more complicated.

(b) Industrial development with substantial external resources

26. In this context the resource mainly in mind is external capital, though often the external enterprise element is very important too. In the initial stages external skills and commercial connections are also likely to be significant.

27. There is a prima facie assumption that the addition of external resources will increase income, because resources brought in are likely to be those scarce locally, and the local resources used are likely to be those less scarce. Thus the gross increase in production may be nearly all net increase. But it does not follow that the country of location necessarily reaps all or even the major portion of this benefit. The shareout will depend on the returns to the various resources, on e.g. the wage and salary rates, company and income taxation, local authority rates, regulations about profit remittance and capital repatriation, the policy of the enterprise in ploughing back profits, and the prices paid for land and local materials.

28. First, however, it is necessary to estimate what net increase there is in total income generated in the territory. This involves assessing to what extent local resources used would have been otherwise productively engaged in any case. It also involves the problems of valuing mentioned in paragraphs 15 - 16 above. Suppose on the one hand the gross increase in income from a factory is found to be all, or nearly all, net increase i.e. with no, or little, decrease of other production in the country of location because of resource diversion; then the relative returns to the different factors determine the shares which go to the country of location and to the external sources of capital and enterprise. On the other hand, suppose that the net increase in income is much less than the gross increase, but that the returns to individual factors stay the same. Then the share going to external sources of capital and enterprise will be a larger proportion of the net increase in income; in an unfavourable case the whole net increase may go to the external sources.

29. Such an unfavourable case is by no means impossible. It could occur for example if a factory based on external capital and enterprise recruited all its skilled and managerial staff by drawing them from existing local employers and these latter could not then employ their unskilled people in the absence of the skilled and the managers. The net increase in total income might then be quite small. It could easily be no greater than the profits remitted abroad. It might even be less, depending on the relative capital/output ratios and skilled/unskilled ratios of the existing and the new enterprises.

30. Although such a case may only occur rarely, because employment is seldom as inelastic as all that, nevertheless it underlines the importance of not taking for granted that external capital and enterprise invested in industry is necessarily advantageous to the country of location.

31. The social effects of development with external resources are unlikely to differ from those of development with local resources, though the demerits may attract more attention insofar as they are attributable to external entrepreneurs.

32. So far, the analysis has been concerned with the assessment of the net welfare directly or indirectly arising from the industrial development itself. The next question is the effects of inducements which are given to foster industrial development, whether by local or expatriate capital and enterprise. Such inducements take several forms, all of them liable in one way or another to be a burden on the ordinary citizen in his capacity as consumer, taxpayer or both.

What are the effects of the different types of inducement?

33. There are nine main types of inducement commonly offered.-

(i) protective tariffs
(ii) quantitative restrictions on imports
(iii) remission or refund of customs duties
(iv) market monopoly
(v) tax concessions
(vi) grants and loans
(vii) provision of building sites
(viii) provision of factory buildings
(ix) guarantees.

34. The different effects of the various types of inducement can also be assessed, like the net benefits, in terms of resource use and rewards to factors.

(i) Protective tariffs

35. The immediate and most obvious effect of a protective tariff is that it places a burden on consumers by increasing their cost of living. That however does not mean that the sacrifice is imposed on the whole community. Certainly, consumers who still buy the imported goods are paying more by way of duty, but this extra sum is a transfer payment to the tax authority. Whether this will increase or decrease total welfare is indeterminate. Consumers who buy the local products, higher priced but with no duty, can be regarded as making the equivalent of a transfer payment being the excess above the duty-free import price.

36. The immediate effect on income will then depend on the use of local and external resources, and the returns paid for external resources, by the local producers of the protected goods. The total welfare result may be modified not only by the social considerations outlined in paragraphs 19 - 22 above, but also by the sort of individuals who pay the higher prices and the sort to whom the returns for local resources are paid. If for example, duty on a luxury import stimulates local production by unskilled people otherwise unemployed and with external capital not otherwise available, then there is a strong probability that total welfare will increase. Conversely, if a protective duty on something used widely, such as food or cotton cloth, stimulates heavy investment in capital-intensive projects by local wealthy people, there is an equally strong probability of a decrease in total welfare. If these people would otherwise have invested in something else the presumption of a welfare decrease is even stronger.

37. These are however only the immediate results of protective tariffs. Whatever these immediate effects the longer-term effects are unlikely to be worse, and may well be better, for two reasons.

38. The first reason is the chance that a new industry will trigger off the development of others. The second reason is the normal infant industry case. The local infant industry may take many years to become competitive with imports if it really cannot avoid relative inefficiency; on the other hand it may take surprisingly little time if the real trouble has been that opportunities for local production were overlooked or under-estimated because the status quo suited the existing business community. And it is easy to under-estimate these opportunities if they are judged on the basis of the scale of production required by the most advanced technology.

39. Conversely, however there is the possibility that a high protective tariff on an intermediate good may discourage the development of industries for which it is an input.

40. There is also the theoretical possibility that if some of the dutiable goods continue to come in, as they commonly do, the tariff may improve the terms of trade, depending on relative elasticities of supply and demand. This would represent a gain to the country as a whole. It must, however, be regarded as a windfall gain if it should happen. Moreover it is only a gain to the extent that the imports continue to come in; thus it is an alternative, not an addition, to possible gains from local manufacture of import substitutes.

41. It is worth noting the possible results on external trade. In a period of rapid development industrialization is as likely to increase imports as to reduce them, because of the need for machinery, components and materials for the new manufactures. Subsequently, at a much higher

stage of industrialization, trade may move towards mutual specialization in advanced technology. But in the medium term, import substitution might cut total imports. The individual small country rightly regards its production of import substitutes as too small to influence the world's power to purchase its exports. But when most developing countries are tending to make the same assumption, then clearly the trend towards import substitution must, to the extent that it cuts the import bill, hit the importing power of their trading partners. This will of itself tend to put some resources in underdeveloped countries out of use.

42. Even for the individual country which does succeed in cutting its imports but not its exports, it must be remembered that this implies it is lending abroad (unless of course it is just reducing its borrowing). It would be questionable for any developing country to be using productive resources, some at least of which would probably be scarce, to do this as a permanent feature of its trade pattern.

43. Thus a rigorous analysis would take account of the fact that the direct local effects of bringing some resources into productive use to replace imports may sooner or later be offset by the indirect effect that other, export producing, local resources are put out of use. This may or may not be advantageous depending on whether the direct production of local needs, rather than production by exporting and importing, in the long run contributes more or less to total welfare. But in any case the probability is that as fast as substitutes are produced for some imports, any consequent supplies of foreign exchange will be spent on new types of import, so that for most developing countries it is likely that these complications can be ignored.

44. Raising a tariff to be really protective will almost certainly cut the government's customs revenue. The revenue loss is sometimes referred to as if it were itself the cost of attracting industry. It need hardly be said that this is really a secondary consideration. If it could be assumed that governments always started with the most desirable forms of taxation first, then there would be some disadvantage in having to replace the lost revenue by taxing something else. But this is a big assumption to make. Customs duties are a crude regressive form of taxation except to the extent that they bear more heavily on luxury goods. When customs duties can no longer be relied on to provide the main source of revenue, this will stimulate welcome fresh thinking on tax structure.

(ii) Quantitative Restrictions

45. Taking quantitative restrictions to include both import quotas limited by volume or value and complete import bans, their effects are basically the same as those of a protective tariff. The consumers are again in effect making a special payment to local producers to make some-

...ning dearer than the imported article would have been, with the consequent effects on the national income and total welfare. There is a minor difference from protective tariffs in that those who do now buy the limited quantity of imported goods do not make a transfer payment to the tax authority, unless the authority sells import licences. The consumers may in fact themselves have the benefit of the lower price of the limited quantity of imports, but it is more likely that the importers or distributors or both will be the beneficiaries.

46. There is also an important practical difference between a protective tariff and quantitative restrictions. While the former does allow some flexibility, e.g. in response to changes in price or quality, the latter imposes a rigid limit, which may in fact be more restrictive than is necessary to achieve the desired degree of protection for local industries.

(iii) Customs Refunds and Duty Exemptions

47. It is quite common practice for an imported raw material or component used in local manufacture, and liable to customs duty, to be given whole or partial exemption or refund of duty. Again, the producers are receiving a special payment to produce something more costly than the imported article. The effects on national income and total welfare are basically the same as for a protective tariff, except for two differences which can be quite significant.

48. The first difference is that customs refunds of this nature on materials or components are granted in order to make a protective tariff on the fully manufactured import more effective. The more the dutiable import content of the local product, the more valuable is the customs refund to the local producer, and other things being equal the less the gain from the whole enterprise to the country of location. In some cases duty exemption or refunds may be allowed on imported components which are simply assembled locally with nothing added of local origin except unskilled or semi-skilled labour and some simple management. It is of course entirely possible for the incentives given to such a local assembly enterprise to be well worthwhile, depending on the combination of resource use and rewards to factors - e.g. if many unemployed are put to work with a relatively low capitalization.

49. Second, the payments for local production come not from the consumer (as with the effect of the protective tariff), but from the taxpayers generally, or to be precise from those taxpayers on whom falls the extra taxation needed to make up for the loss of duty. Thus the ultimate welfare effects of helping local industry in this way are likely to differ somewhat from those of protective tariffs.

50. The revenue loss to government is no more a measure of the economic price paid for the benefits than it is in the case of a protective duty

or of quantitative restrictions.

iv) Market monopoly

51. Manufacturers, both local and foreign, starting up new lines of manufacture in developing countries often ask for some degree of monopoly position. Commonly what is stipulated is both a formal restriction on the local manufacture of similar goods, plus a substantial protective tariff or quantitative restriction, or both. The basis of this case is usually that the market is too small for two or more viable plants, and that consequently if two or more start up competition will force prices below average cost, or price fixing will restrict sales and revenues, until all but one go out of business.

52. The proposition that a particular market is too small for more than one viable plant, begs two questions. First, is it too small in relation to optimum plant size? The argument is often heard that a market is too small because the output of a modern plant would satisfy its needs in a week. But in the countries with the large modern plants there are usually also many much smaller plants which continue to operate successfully. There are good technical, commercial and human reasons why this is so, and some at least of these reasons may apply in a developing country. In addition there is the basic difference in factor endowment and factor rewards - e.g. in labour supply and wages - which can radically alter the optimum capital/output ratio and production scale.

53. The second question which is begged is the level of protection given. A factory may have to be designed for a scale of operation below the contemporary technical optimum, and it can still be a viable enterprise given adequate protection by tariff or quantitative restrictions.

54. Thus the basic point of whether the market will support more than one plant is not to be answered simply by reference to the most modern plants in developing countries. It is a more complex question. But assuming the question can be answered, the worthwhileness of granting a monopoly can be assessed on the same basis as other inducements.

55. If the market is too small for more than one plant, then in the long run the monopoly as such makes no difference, as the effect of competition will be to eliminate all but one producer (though in the short run competition would benefit the consumers through depression financed by capital losses). Then the real assessment again depends on the resource-use and factor-reward pattern, and is not modified by the monopoly.

56. If, however, the market will support more than one, but the prospective manufacturer stipulates a monopoly as a matter of commercial policy, the assessment does need to be modified. It is reasonable to assume that the manufacturer would raise prices and profits above the

competitive levels, and this would be obtaining a special payment from consumers akin to the effect of a protective tariff. In cases where the market will, without protection, support more than one plant of optimum size (taking into account local circumstances), there is in general no case for a monopoly. In cases however where the market will support two viable plants only with protection there is the choice of maintaining the protection and refusing the monopoly, or giving the monopoly and removing or eliminating the protection. In either case the result is a special payment by consumers to producers, to be weighed along with the resource-use and factor-reward effects.

(v) Tax concessions

57. Tax concessions to encourage industrial development are of two basic types. First, there are remissions of company, corporation, profit or income tax, as may be appropriate to the tax structure. Sometimes there is a complete tax holiday. Second, there are tax rules designed specifically to encourage new investment or reinvestment of profits or both. With either type of tax concession the main effects depend on the impact on resource use and factor rewards. In particular if the investment stimulated is from external resources the gain accruing to the country of location will depend partly on the nature and extent of tax concessions plus the rules about remittance of profits and interest abroad. If remittance abroad is freely allowed, concessions on income and profits tax, etc. are prima facie less advantageous to national welfare than investment-stimulating concessions. These concessions commonly take the form of either a lower rate of tax on profits reinvested in the country or else provisions for accelerated depreciation on newly invested physical assets, or both; their exact effect depends on the whole structure of taxation. For example, with depreciation allowances, broadly speaking the gain to an investor in being able to write off say 30% of his investment in the first year may not be very significant unless he is able to carry forward accumulated losses to debit against future gross profits.

58. Reinvested profits will tend to be ploughed back in the same lines of production, which may not be from a welfare point of view the best next investment. Thus if reinvested profits are exempt from profit or income tax, the effect may be less advantageous than the same concession given to other sources of capital which would be available for other types of production.

59. Not only is it important to make reasonably certain that the gains from any external investment are worth the tax concessions, but also it is essential to strike a balance between encouragement of private investment and government's own needs for development funds which are themselves derived from taxation.

60. It is sometimes argued that a tax concession on an investment which would not otherwise have taken place cannot represent any loss. This is not necessarily so. Not only must it be assessed along with the total effect

or resource use, but in practice tax concessions tend to set precedents which have to be observed rather indiscriminately. In any case it must often be difficult to tell whether or not an investment would in the end take place without a tax concession, particularly if it is an investment of internal capital.

(vi) Grants and Loans

61. Grants are in effect special payments to producers, similar to customs refunds in that the burden falls not on consumers of the particular products but on the taxpayers marginally affected. As the grant will almost certainly be tied to a particular investment in fixed assets, the producer has to continue production in order to get the benefit of the grant, just as he has to do with customs refund on materials.

62. In practice grants are usually made only to small - or medium - scale local businesses, and their economic justification is that they mobilize sources of enterprise which otherwise would be inactive, or not fully effective, for lack of capital. The potential gain from this depends on the relative scarcities of enterprise and capital. Where local manufacturing enterprise is even scarcer than capital, such grants are prima facie likely to increase total production. There are, however, often difficulties in administering grants which reduce their effectiveness in stimulating new manufacture.

63. Loans, insofar as they are at sub-commercial interest rates, can constitute on inducement similar to grants. The fact that they have to be paid back, if this is enforced, is an additional incentive to achieving and maintaining efficient production, as compared with outright grants.

(vii) Provision of Building Sites

64. The investor in a developing country often has difficulty in obtaining secure title to land by private treaty. Frequently it is much easier and cheaper for the government to solve the problem, and sometimes it is the only agency which can do so satisfactorily. It is cheaper because usually the government can by law possess itself of a good title, and then pass on the security of the title (not necessarily the freehold ownership) to an individual occupant. This is a very definite inducement, in the sense that it removes an important obstacle to development. Moreover it is an inducement unlike the tax and customs concessions in that it does not of itself demand any sacrifice from the country of location to be offset against the gain from the industrial development. The use of the land may be a sacrifice of a resource which could be used otherwise, but the removal of obstacles to secure tenure is no sacrifice.

65. Vacant sites may be just vacant ground, but often they are laid out with a minimum of services provided, such as water mains and electricity and access roads. This may represent a substantial investment, and is in effect part of the investment for industrial projects. It is nevertheless a significant inducement in that the individual entrepreneur is spared substantial investment in services which he may have no experience of providing for himself, probably could not provide as cheaply anyway, and certainly could not remove for disposal elsewhere if his business failed.

66. The effect of these two inducements, industrial sites and basic services, on national income and on total welfare depends again on their effect on resource use and factor rewards. If the site is compulsorily acquired by the government, it is possible that it was, or would have been, utilized more profitably for some other purpose. However, this is not very likely to be true of industrial sites. Industry has a fairly high ratio of added value per square foot of site. It is improbable that anything but shops, hotels or commercial office property will have a higher ratio, and deliberately planned industrial sites are almost always away from the high-land-value areas of town centres.

67. In assessing whether to make an investment in site services for industry there is the relatively simple criterion of whether the industrialist will be willing to pay a price based on the cost of the services. If so, the inducement is costing nothing to the country of location but may still be a significant inducement to industry. Vice versa, if the services are charged below cost the country of location is subsidizing the producer. And with site services at subsidized prices, there will be a tendency for the industrialist to overspend on them, distorting the pattern of resource use and reducing the prospective gain from the whole development.

(viii) Factories to let

68. The provision of factories to let is basically similar to the provision of industrial building sites. The same considerations arise over charging the cost price, charging below cost (which many industrialists will expect initially), and alternative uses of resources.

69. Certainly the provision of factory buildings to rent is a considerable inducement. The government shoulders a significant proportion of the total investment burden. Also, as with sites, the government shoulders one of the risks which many entrepreneurs would regard as the most serious, in that a vacant factory building is not necessarily readily saleable in time of need, especially if it is in a country with little manufacturing industry or if the factory is specialized to a particular product.

70. There is, however, little if any scope for overall economy in the provision of factories by the government. An entrepreneur whose factory is being built for him specially may insist on various features which make the building both more expensive and less adaptable to other uses.

If, on the other hand a series of factories is built in advance, there is the risk of not getting tenants fairly soon, or even at all; and this is a risk not run at all if entrepreneurs are left to put up their own factories.

71. Thus with the provision of factories to let the sacrifice to be set against the gain on the project is largely a matter of risk-bearing and of any element of subsidy in the price charged to the industrialist.

(ix) Guarantees

72. Frequently a government gives to a new manufacturer, or to an existing one who is expanding, specific guarantees about such things as remitting profit and capital out of the country, no nationalisation without compensation, no discriminatory taxation, no restriction on specified imports of raw materials and components, employment permits for expatriate staff, administrative help with obtaining public utility services and in dealing with land acquisition, local authorities, etc. Most but not all of these guarantees are of special interest to foreign manufacturers and investors.

73. Usually these guarantees are formal statements of what is settled government policy, so that, provided the government is confident that the country will be able to honour the guarantee in full, there is nothing lost in giving the guarantee. To the new investor the guarantee may nevertheless be an important inducement.

74. Where a country may lose by giving such guarantees is in freedom of action in emergency. If there is a balance of payments crisis it might be very useful to restrict profit remittance for, say, six months. This would of itself be little hardship to most manufacturing businesses, but if there were a formal guarantee in existence a breach of its terms would attract very adverse publicity. Thus the terms of guarantees should avoid committing a government to obligations in circumstances where the disadvantage to the country may for a short time be very great, yet make little real difference to the inducement offered.

Conclusion - Do the benefits justify the inducement?

75. It remains to bring the prospective gains and costs together systematically so as to facilitate the assessment of any particular case. This can be done in the formula that inducements and concessions fostering industrial development are worthwhile provided the following sum is positive:-

The aggregate of the discounted future values of:-

(i) (the gross increase in national income from the added value of production directly due to the industrial

development) plus (any other welfare benefits, less any welfare losses, directly due to the industrial development);

plus (ii) (the gross increase in national income from the added value of extra production due to the income multiplier effects of the industrial development) plus (any other welfare benefits, less any welfare losses, directly due to this extra production);

and plus (iii) (the gross increase in national income from the added value of production in further new industries stimulated by the original new industry) plus (any other welfare benefits, less any welfare losses directly due to these further new industries);

less (iv) (the reduction in national income due to reduced added value of output of other parts of the economy arising from any diversion of resources or disuse of resources caused by the industrial development) plus (any other welfare losses, less any welfare benefits, arising from this diversion or disuse);

and less (v) (the reduction in national income due to rewards, including inducements and concessions, given to factors from other countries), plus (any other welfare losses, less any welfare benefits, arising from these incentives and concessions as such);

and also less (vi) any reduction in welfare arising from the re-distribution of income or wealth inherent in giving the inducements and concessions to factors from domestic sources;

and also less (vii) any loss of total welfare due to reduction in government investment for lack of money which could have been collected but for the tax remissions for industrial development.

76. Application of this formula to the facts, and probabilities, of a given case will not automatically produce the right answer. The most it can do is to set in their correct relationships the numerous arguments for and against which may be put forward on any scheme deliberately to foster industry. To do this is, however, a long step forward in making

an assessment which must be at least as much a matter of judgement as of measurement.

77. Appendix I shows a real case in East Africa, Appendix II is an imaginary case bringing in features typical of many developments.

Appendix I.

A MANUFACTURING PROJECT IN EAST AFRICA

(This is based on a real development; the company provided very detailed cost data on the understanding that its identity was not revealed).

1. This is an import substitution project designed to have a production capacity of 24,000 units per year. It has not yet built up to full production and it has been necessary to estimate what the unit costs will be at full production, by separating variable costs and fixed overheads.

2. Its product was previously duty free, but a protective tariff of 25% has been given.

3. The total capitalization is £1,160,000 composed as follows;-

	£	
Equity,	76,000	foreign subscribed
	434,000	locally subscribed
	510,000	Total
Loan,	250,000	overdraft from a local bank
	300,000	local loan
	100,000	machinery on supplier credit.
Total	1,160,000	

4. The total employment at full production will be about; -

semi-skilled and unskilled	285	(all local)
technicians and skilled mechanics	52	(15 expatriate initially)
administrative, clerical, stores	30	(all local)
total	367	

5. The unskilled and semi-skilled operatives are taken on totally untrained and unskilled, earning initially sh 4/25 a day. When fully trained, their salaries go up to sh 600/- - 700/- per month.

6. The 37 local technicians and skilled mechanics have mostly been in some employment before, but few have any length of experience and so few can have been key men at their previous employment.

Cost structure

7. The following are the estimated unit costs of production at 24,000 units per year; -

	Total	local inputs "diverted" and External paid for	Inputs not "diverted"	Rewards to factors
Raw materials	277.3	277.3		
Expendable equipment	95.3	95.3		
Electricity	57.2		57.2	
Other fuel	20.4	20.4		
Water	5.0	5.0		
Direct Labour	71.9			71.9
Mtce. & General	94.8	25.2	-	69.6
Total variables	621.9	423.2	57.2	141.5
less value of waste material	- 8.5	- 8.5	-	-
Net variables	613.4	414.7	57.2	141.5
*Fixed overheads	136.4	16.4	-	120.0
TOTAL COSTS	749.8	431.1	57.2	261.5
say	750	431	57	262

* includes some salaries, office expenses, interest and depreciation.

Price Appraisal

Cost per unit ex factory	= 750/-
Average cost of local product delivered Nairobi	= 862/-
Price per unit of imported product at Mombasa	= 700/- (duty free)
Average price per unit of imported product at Nairobi	= 800/- (duty free)

Taking Nairobi as centre of market, imported product is 62/- cheaper so deduct 62/- from cost of local product to give real value of local product ex factory, i.e. 750/- - 62/- = 688/-.

Effect of 25% duty on imported product, = plus 175/- on price, raising Nairobi price of imported product to 975/-.

This gives profit margin of 975/- - 862/- = 113/- per unit after meeting interest and depreciation charges.

113/- per unit for 24,000 units = £135,000 representing 26.5% on the £510,000 paid-up share capital.

Final Analysis.

(i) Gross Increase in National Income.

= Added value of project, omitting from costs all rewards to factors and all non-diverted local inputs.

= 688/- - 431/- = 257/- per unit

Gross increase in national income = 257 x 24,000 = £308,000 p.a.

This figure however counts electricity as non-diverted local input, which is reasonable for say five years, until the Owen falls power station is operating to capacity; but thereafter the 57/20, say 57/-, electricity costs must be counted in, making the figures 688/- less 488/- = 200/- and giving a gross increase of 200/- x 24,000 = £240,000 p.a.

The main welfare effect is likely to be accidents failing to be cared for by the free state medical services. Allowing on average an accident a week costing £20 of health service, time, drugs and facilities (only 1 a month is a hospital case), that is about £1,000 a year. This reduces the above figures to £307,000 and £239,000 respectively.

5. The unskilled and semi-skilled operatives are taken on totally untrained and unskilled, earning initially sh 4/25 a day. When fully trained, their salaries go up to sh 600/- - 700/- per month.

6. The 37 local technicians and skilled mechanics have mostly been in some employment before, but few have any length of experience and so few can have been key men at their previous employment.

Cost structure

7. The following are the estimated unit costs of production at 24,000 units per year; -

	Total	local inputs "diverted" and External [illegible]	Inputs not "diverted"	Rewards to factors
Raw materials	277.3	277.3		
Expendable equipment	95.3	95.3		
Electricity	57.2		57.2	
Other fuel	20.4	20.4		
Water	5.0	5.0		
Direct Labour	71.9			71.9
Mtce. & General	94.8	25.2	-	69.6
Total variables	621.9	423.2	57.2	141.5
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Assuming an average life for the various elements in the project of 20 years, the present worth of the discounted future values (using the short p.w. formula), at a social interest rate of 12% is,

Years 1 - 5 at £307,000 present worth at year 1	=	£1,130,000
Years 6 - 20 at £239,000 " " " "	=	£ 960,000
	=	£2,090,000

(ii) Multiplier Effects.

Principal effects will probably be in inducing production of additional foodstuffs, of which the supply is highly elastic. This will include some preparation of cooked foodstuffs. There will be some other expenditure on e.g., textiles, drinks, housing. The 285 operatives who started at 4/25 per day and rise to an average of 650/- per month have an aggregate increase in earnings of about £80,000. On the basis of some very approximate estimates, it appears that about half of this increase is spent in multiplicative ways and half on import content and in diversionary ways. This would generate an immediate secondary income of £40,000 of which the tertiary etc., effects might raise the total to £60,000.

This situation may well not last the full 20 years life, but as the discounted values of the later years make little difference, it is reasonable to take the present worth of an extra £60,000 p.a. for 20 years discounted again at a social interest rate of 12%. This is £530,000.

No special welfare effects are predictable.

(iii) Other Industrial Development Stimulated

This industry can be expected to stimulate the local manufacture of various goods using its product as a component. Also it is already purchasing £70,000 a year of locally produced inputs, some of which would not be produced economically but for this market. Although the net result of these other industrial developments cannot be estimated, it represents a potentially large increase in income which might be worth hundreds of thousands of pounds.

(iv) Factor Diversion or Disuse

Capital

Of total capitalization to date of £1,160,000 about £176,000 is external and £984,000 is local.

The £984,000 at 12% would have earned about £118,000 p.a. The p.w. for 20 years is £1,050,000.

Labour

At present most technicians are scarce, but as these were mainly of little experience, the opportunity cost of diverting them from other work can be taken at or near their actual pay. Say 37 technicians at £500 p.a. = £18,500 p.a. This short fall will probably not last much more than 5 years, so the present worth of this opportunity cost is £68,000.

Welfare losses cannot be guessed without knowing what other industries might otherwise have used these factors. But it can reasonably be assumed there would be a loss of multiplied income, which is taken as $\frac{984}{1160}$ x the multiplied income, (see (iii) above). This is £450,000.

(v) Rewards and Inducements to External Factors

External Capital

Supplier credit	£100,000
Equity	£ 76,000

Supplier Credit

£100,000 @ 8% for 10 years = payment of £15,000 a year for 10 years, p.w. of £15,000 discounted at 12% 10 years = £90,000.

(N.B. p.w. is less than £100,000 because social rate on capital of 12% is higher than rate paid of 8%).

Equity

Now total cost of production of sh750/- per unit includes interest and depreciation payments under "fixed", so the 113/- is available for profit on equity capital (including tax). 113/- x 24,000 = £135,000, say tax £40,000, net profit £95,000.

Total paid up equity capitalization is	£510,000
External held equity is	£ 76,000

Payments to external equity = $\frac{76}{510}$ x 95,000 = £14,200

p.v. of £14,200 for 20 years @ 12% £126,000

No direct welfare effects of the tariff protection as such.

Labour.

15 expatriate technicians, say for an average of 5 years, each remitting £250 a year abroad = £3,750.

p.w. of £3,750 for 5 years at 12% = £14,000

(vi) Internal Income Distribution

Gross return on equity capitalization 20.7%
Net-of-tax " " " " 14.7%

Cost of some goods in general use will be fractionally higher because this local product will be 7 3/4% dearer at Nairobi than the imported product. This price increment is a transfer payment from purchasers (who will include all income brackets except the very poorest) to the investors (who will be generally well above average in income). Thus there will be some indefinable loss of welfare, but only a small loss because price differentials are small.

(vii) Gain or Loss of Tax Revenue, Holding up Financing of Other Developments

No customs refunds. Any imports which do come in over the tariff will in fact bring in Government revenue not previously existing. Thus no hindrance to development. Although the enterprise will bring in some tax (£40,000 p.a.) it cannot be argued that this necessarily constitutes a gain, as the enterprise will certainly give rise to social costs which will have to be met from taxation.

Summary

		p.w.	
Gains	(i)	2,090,000	Direct
	(ii)	530,000	Multiplier
	(iii)	Substantial	Other industrial development
	plus	2,620,000	
Losses	(iv)-	1,050,000	Capital diversion
	-	68,000	Labour diversion
	-	450,000	Multiplier from diversions
	(v)-	90,000	Supplier credit (external)
	-	126,000	Equity (external)
	-	14,000	Staff (external remittances)
	(vi)-	small	Internal income distribution
	(vii)-	nil	Tax loss, anti-development
		1,798,000	plus small
		822,000	plus

Thus the project is clearly worthwhile of itself, even without the substantial gains from the stimulation of other industrial developments.

PROJECT FOR DRY BATTERY MANUFACTURE

(This is an imaginary project; prices, costs, customs tariffs and other quantities are for illustration only, and are not necessarily accurate in reality.)

1. At present, East Africa imports about 34 million dry batteries of all types, mainly for electric torches and for radio sets. The average price (c.i.f. Nairobi (taken as the geographical centre for transport cost purposes) is Cts 45 excluding duty, Cts 61 including 40% duty.

2. The Everbright Battery Corporation proposes to establish a factory in East Africa to serve the whole East African market, probably with some sales to the Southern Sudan, Eastern Congo and Rwanda and Burundi. A new company, the Africa Star Battery Co., has been registered in East Africa with a nominal capital of 4 million 5 - shilling ordinary shares. It is proposed that all these shares shall be fully called, a local associate subscribing 1 million and the Everbright Corporation 3 million. A return of 11% after tax is expected. It is also proposed to borrow £900,000 by issuing 7% debentures, of which local interests are prepared to take up £200,000 and the Everbright Corporation will place the other £700,000, (£100,000 in East Africa and the rest overseas). In addition, commercial banks in East Africa are prepared to extend an overdraft facility of £100,000 towards the need for working capital, also at 7%.

3. The factory will produce all the main types of dry battery now in use in East Africa. Total capacity will be 30 million units a year, with an average ex factory cost of Cts. 50. Transport costs will raise the c.i.f. Nairobi cost to Cts. 60. It is expected that the batteries will be quite as good as imported batteries and that the (wholesale) price difference of Ct. 1 will be enough to make them competitive once established as a brand. For the first three years, however, an extra duty on the imported batteries, of 50% instead of 40%, will be necessary to overcome the brand preference. This will raise the price of imported batteries to Cts. 65.

4. In addition, a customs refund has been given of 25% duty on imported raw materials worth £50,000 (duty free price).

5. Total employment will be about 1,200; i.e., 1,000 unskilled, 200 skilled, plus managerial and office staff. Initially the three senior staff will all be expatriates - general manager, sales manager and production engineer. Unskilled workers will be mainly on piece work, and are expected to earn £12 - £13 per month, plus about £3 in fringe benefits such as a subsidized canteen meal and a provident fund.

6. Cost Structure

At full output of 30 million p.a., ex factory price Cts. 50, the total output will be £750,000 p.a. The expected cost and profit structure will then

be as in column (1). Columns (2) (3) and (4) analyse costs for the present purpose.

		Total	Local Inputs "diverted" & External paid for.	Local Inputs not "diverted"	Rewards to Factors
		(1) £'000	(2) £'000	(3) £'000	(4) £'000
(i)	wages, unskilled and semi-skilled	192			192
(ii)	wages, skilled	48			48
(iii)	clerical, etc. wages	5			5
(iv)	professional and managerial	5			5
(v)	electricity	20	5+	15+	
(vi)	diesel and other fuel	5	5		
(vii)	materials*	150	150		
(viii)	insurance, services	25	25		
(ix)	Total, operating costs	450	185	15	250
(x)	interest	70			70
(xi)	depreciation	60			60
(xii)	taxes	60			60
(xiii)	net profit	110			110
(xiv)	Total Revenue	750	185	15	450

+ 15 for generation and 5 for transmission.

* after deducting customs refunds.

7. Price Appraisal

Average price of imported batteries cif Nairobi Cts 65 (50% duty)
" " " " " " " " 61 (40% duty)
" " " " " " " " 45 (excl duty)
Average cost of local batteries ex factory. " 50 (no excise)
" " " " " cif Nairobi " 60 " "

Then taking Nairobi as the geographical centre of the market imported batteries are Cts 15 cheaper, so the true value of local batteries ex factory is Cts 50 - 15 = Cts 35.

e. Financial analysis

(i) Gross increase in National Income

Added value of project, counting as inputs only column 2 in the cost analysis, i.e., the local inputs diverted from other possible uses plus external inputs paid for:-

30 million batteries @ Cts 35	=	£525,000
less input costs in Column 2	=	£185,000
Gross increase in national income		£340,000 p.a.

This, however, did not take the full cost of electricity as input. The generating costs was excluded because of surplus capacity available. After say five years, this may not be the case, and thereafter the gross increase in national income will be £340,000 - 15,000 = £325,000 p.a.

The main "welfare" effect is likely to be the introduction of a stable and steady industrial source of income into an area hitherto largely dependent on agricultural exports. Although some of the 1,200 employees will move into the town where the factory is situated and will probably create housing congestion and put up shanty dwellings, the majority are expected to live on their small-holdings and travel in daily. The company has arranged to facilitate this by providing a large bicycle park and by getting the local bus service to put on extra buses at appropriate times.

As this is not a heavy industry, the incidence of factory accidents is likely to be slight, though the traffic accidents, with large numbers of employees cycling to work, may be considerable. Two accidents a week costing the state medical services £60 would cost about £6,000 a year. There might be some risk of lead poisoning in the factory, but this is guarded against by safety precautions and by a milk ration to the operatives affected (included in the canteen costs).

Thus, the measurable welfare effects are a cost of about £6,000 a year, and substantial non-measurable effects on the community which are probably on balance beneficial.

Taking an average life for the project of 20 years, and deducting the £6,000 per year social cost, the net effects can be summed as follows;-

Years 1 - 5 @ £334,000, present worth, 12% discount at year 1,	=	£1,225,000
" 6 - 60 @ £319,000 " " " " "	=	£1,255,000
		£2,480,000

(ii) Multiplier Effects

The principal multiplier effects will come from the increased earnings of the 1,000 operatives now earning £1 - 15 per month on piece rates plus £3 of subsidized canteen meals and other benefits. They will be about £5 per month better off than they were, or would have been, as small-scale cultivators, or £9 better off than if they had been unskilled labourers. A reasonable guess based on what scanty information is available suggests that their demand for extra food, housing and services may result in half of this extra pay being spent in multiplicative ways, say 1,000 x 5 per month, = £60,000 per year. Tertiary effects may raise this to £90,000 per year. Allowing this benefit for 20 years discounted at 12% gives a present worth of £600,000.

(iii) Other Industrial Development Stimulated.

As most of the items used are relatively simple, it is unlikely that any new industries supplying this factory would be started. And as the product is generally a final consumer good, it is most unlikely to foster the development of battery-using industries. On the other hand, the "parallel" effects of an investment as large as this may be considerable.

(iv) Factor Diversion or Disuse

Capital

Of total capitalization of the project of £2,000,000, the local element is £650,000 and the external is £1,350,000.

The £650,000 at 12% would have earned £78,000 p.a. The present worth of this for 20 years is £690,000.

Labour

Many of the skilled operatives will be working on maintenance and repair of machinery; some on chemical processes, or laboratory work. Most if not all of these categories will be scarce for up to say 5 years. Some will probably be so scarce that their attraction to this factory rather than other industries may hamper production elsewhere. The total effect of their diversion might be a loss of as much as say £200,000 worth of production for 5 years, which would have a present worth of £730,000. It is however almost certain that between this £730,000 loss and the £690,000 loss on local capital diversion, there is some double counting as skilled men would have been needed to use the local capital for different projects, or capital necessary to employ these skilled men.

Loss of multiplier Income because of resource diversion and disuse must be assumed. On the basis of the proportion of local capital this can be taken as $\frac{650}{2000}$ times the multiplied income present worth of £800,000, i.e., £260,000.

(v) [illegible] Inducements to External Factors

External Capital

Borrowed	£600,000
Equity	£750,000

Borrowed

£600,000 7% debentures cost £42,000 p.a.; present worth of £42,000 for 15 years discounted at 12% = £372,000

Equity

The cost analysis showed a net post-tax profit of £110,000, accruing to the £1,000,000 equity shareholdings. The share of the £750,000 external equity shareholding is thus £82,500, of which the present worth for 20 years at 12% = £730,000.

Labour

3 expatriate staff for an average of 5 years earning £5,000 a year in total and of this remitting £1,000 abroad.
Present worth £1,000 a year for 5 years at 12% = £3,700 say £4,000.

The higher tariff and the customs refund are not concessions which of themselves have welfare effects other than the calculable effects on payments to external factors (above) and on internal income distribution (below).

(vi) Internal Income Distribution

Here the principal welfare effect is that the purchaser will have to pay Cts 15 more for his local battery than he did when it was imported. This is a transfer payment from the battery-purchasing public to the battery makers, including the equity shareholders both local and foreign. Cts 15 on 30 million batteries is £225,000. But the net profit to equity capital after tax is only £110,000, of which only £82,500 goes to external capital and £27,500 to internal. It is reasonable to argue that the battery users will generally be much poorer people than the equity shareholders. If it is the case, as it probably is, that money is worth at least twice as much to them as to the shareholders, there is a welfare loss of at least £27,500 p.a. say £30,000. Present worth of this for 20 years at 12% is £266,000.

The temporary increase in duty to 50% raising the Nairobi price of imported batteries to Cts 65 (instead of Cts 61 at 40% duty), does not represent any transfer payment to equity shareholders, as this margin is needed to overcome initial brand prejudice and so would not allow the local batteries to be charged more than their cost of Cts 60 delivered Nairobi.

(vii) Loss of Tax Revenue, Affecting the Financing of Other Developments

The customs refund of 25% duty on £50,000 worth of materials per year represents £12,500. However, this is much less than the £60,000 tax revenue paid on the company's profits. It cannot be claimed that as a result there is necessarily a "tax gain", because clearly the new enterprise will give rise to social costs which are met from taxation. There is nevertheless a good probability that the tax loss of £12,500 on customs refund is compensated within the £60,000 tax paid by the enterprise annually.

Summary

		Present Worth £	
Gains	(i)	2,480,000	direct
	(ii)	800,000	multiplier
	(iii)	?	other industrial developments stimulated
		3,280,000	
Losses	(iv)	690,000	capital diversion
		730,000	labour diversion (max)
		260,000	multiplier from diversions
	(v)	372,000	external debentures
		730,000	external equity
		4,000	staff, external remittances
	(vi)	266,000	internal income distribution
	(vii)	?	tax loss, anti-development
		3,052,000	
Net gain		228,000	(other welfare effects not marked)

Thus the net gain is quite small in relation to the sums involved, largely because of the capital output ratio (about 4:1) and because of the fairly high skilled labour content.

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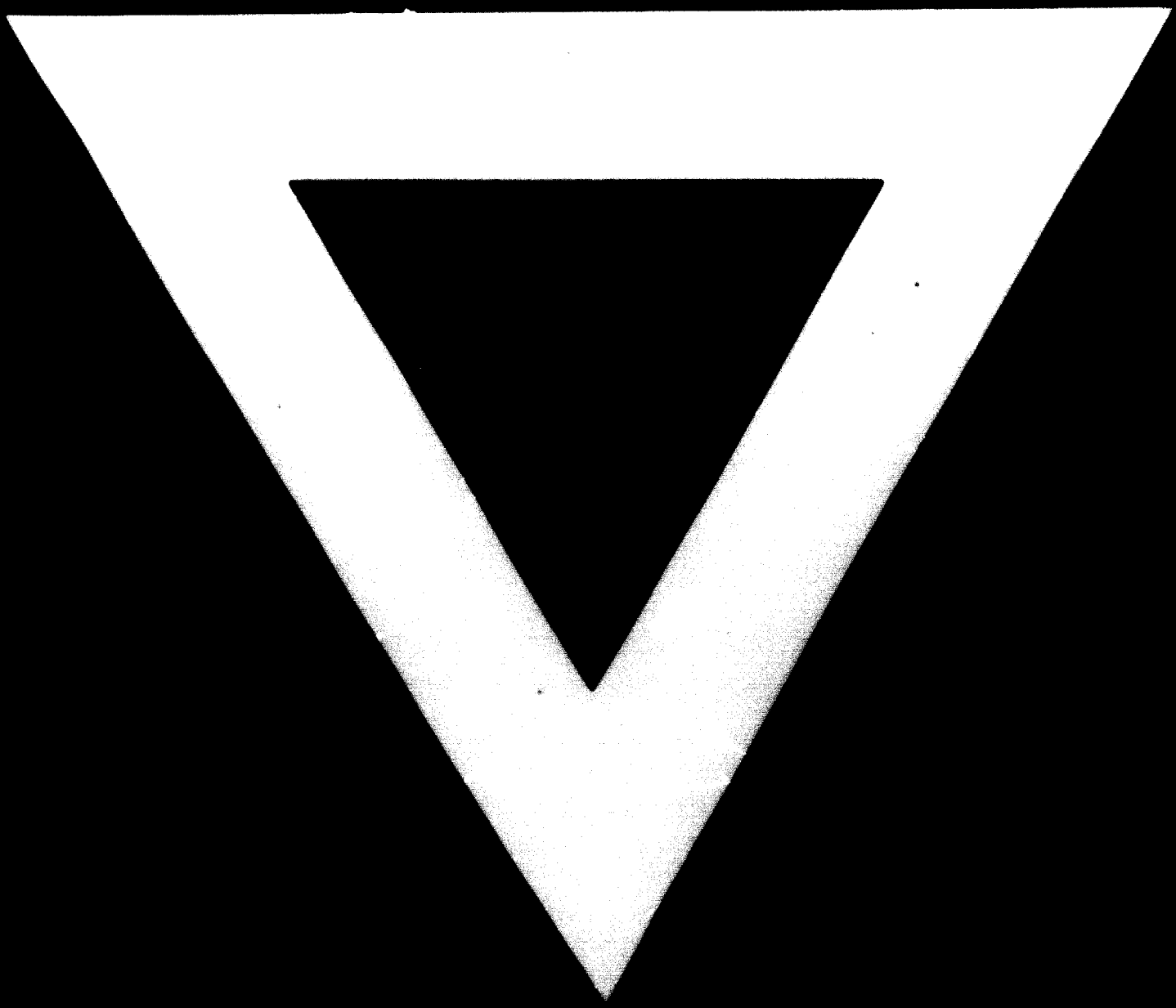

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