

حول استخدام معايير الاستثمار في الاقتصاد المتخلف

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بكل ما يتفق مع متطلبات النمو فيها ، سواء من المعايير القائمة على قوى السوق، أو المعايير التي ترفض تلك القوى ، دون الالتزام بالتطبيق العرفي لأي منها . ويتلخص هذا الأسلوب في مبدئين : أولاً : المعرفة الدقيقة ، غير المشوهة ، بالمعدلات « الفعلية » للندرة النسبية لعناصر الانتاج ، كما تحدها قوى السوق . على أن هذه المعدلات « الفعلية » لا تستخدم في تحديد قرارات الاستثمار ، بل تستبعد باعتبارها غير صالحة كأساس للقيام بدور حافز للنمو . ثانياً : افتراض مجموعة من المعدلات « الاستراتيجية » للندرة النسبية للموارد ، تستخدم فعلاً في وضع قرارات الاستثمار . ومن هنا فإن الحكم على مدى نجاح خطة الاستثمار يتوقف على مقدرتها على إحداث تغيرات في المعدلات الفعلية للندرة النسبية للعناصر بما يجعلها تقترب من المعدلات الاستراتيجية على مدى فترة زمنية محددة .

تتناول هذه الدراسة مشكلة اختيار معيار الاستثمار في الدول المتخلفة بما يتفق مع أهدافها في التنمية الاقتصادية . وباستعراض المعايير الأساسية القائمة على رفض الاعتماد على قوى السوق - والتي تتميز بجاذبيتها الخاصة في الدول النامية - يتبين أنها ليست بالبديل المثالي للمعايير القائمة على قوة السوق . ورشادة أي من الفئتين من المعايير هي في الواقع مسألة نسبية ، لاعتمادها على الأحكام الشخصية التي تقتضيها حقيقة اختلاف الظروف الاقتصادية بين دولة وأخرى .

والنقطة الرئيسية التي تعنى المقالة بتأكيد ما هي أن الاقتصادات المتخلفة والنامية لها طابعها المتميز من الظروف والمشاكل الاقتصادية التي تستلزم استخدام معايير خاصة بها . والفكرة المقترحة هي أن تعمل هذه الدول على الاستفادة

ON THE USE OF INVESTMENT CRITERIA IN AN UNDERDEVELOPED ECONOMY

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An especially crucial and urgent issue which presents itself to policy makers in almost all developing countries nowadays is that of investment criteria. The importance of this issue stems from its close association with the goal of efficient implementation of investment policy, which - in turn - should be directed towards the ultimate achievement of national economic goals.

Our purpose in this limited space is to reach some general conclusions on the choice of investment criteria in underdeveloped (and developing) economies. Our attempt in this respect draws mainly on the past early experience (1) of the Soviet Union as a «market-rejecting» economy; as opposed to «market-based» western practices. The importance of this early stage to our discussion lies in the similarity between the major economic features which had then faced the Soviet economy, and those facing many developing countries at the present (2). Accordingly, an objective evaluation of such a completed «historical»

experience can be useful; leading to conclusions which may be relevant to our purpose.

Since investment criteria must follow logically from the nature of the adopted development strategy and investment policy, it was natural - in the Russian case - that the Soviet leaders place on top of their priority scale the development of industry in general, and of its heavy branches in particular. Given the factors which had shaped the Soviet investment policy, it would be of special interest to investigate the principles which guided their resource allocation among alternative projects and investment activities. (3) Here, it may be argued that a logical point of departure is to inquire first about the relative scarcities of factors of production, and their relative prices. Nevertheless, this may not be the proper point of start concerning the Russian case. The Soviet price system had always been a misleading measure of «real costs». First of all, it doesn't reflect relative scarcities of alternative end products and productive factors. During

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1 — By «early experience», to which we limit our attention in this paper, we mean the period from 1928 to 1958.

2 — This similarity is, however, debatable on several grounds. See, for example; Stanley H. Cohn, *Economic Development in the Soviet Union*, D.C. Heath & Co., 1970, pp. 93-105; R.L. Heilbroner, *The Making of Economic Society*, Prentice-Hall, Englewood Cliffs, N.J., 1962., pp. 192-217; Oleg Hoffding, «State Planning and Forced Industrialization», *Problems of Communism*, VIII, No. 6, November-December, 1959, pp. 38-46.

3 — For details on this point see: E. Simmons, ed., *Continuity and Change in Russian and Soviet Thought*, Cambridge, Mass., Harvard Univ. Press, 1955, especially the article by Alexander Erlich, «Stalin's Views...», pp. 81-99.

Stalin's era, in particular, large subsidies to some industries and high rates of «profit» (1) in others were in fact a reflection of the wide departure of prices from actual costs of production (2). Furthermore, the absence of interest charge on scarce capital has been another major factor in the misleading nature of Soviet price structure. (3)

Thus, the Soviet price system used to be only a tool for the purpose of plan fulfillment. Planners' decisions had always been affected by some indicators other than scarcity prices (4) Examples for that are the principles of «the leading link» (giving priority to heavy industry), and «the proportional development of the economy» (5) which would give priority to activities such as transportation and electric power industry... etc. There is also the guiding principle of «national objectives» (6) which, like the previous two principles and even more so, is very hard to define. (7) Of course such definitions in a Soviet-type system would be expected to reflect, predominantly, statesmen's political inclinations and top planners' choices, rather than individuals' choices and preferences. It can thus be argued that since prices in the USSR do not reflect relative scarcities or use values (in terms of utilities to the consumers), a price criteria cannot be used for guiding choice among projects. Thus the calculated relative profitability of alternative projects would be a misleading guide to choice.

Measures for effectiveness of investment :

Within the above stated framework of Soviet practice, we can single out several measures for effectiveness of investment:

First, there is the measure of absolute effectiveness of investment in the economy as a whole. It is defined as the ratio of the increase in national income to the increase in investment; «... the growth of net production and national income should be compared with the size of the completed capital investments which determined this growth.» (8) Essentially, this is the counterpart of the western concept «incremental capital output ratio.» As adopted in the Soviet Union, this criterion has several limitations: (a) It does not take into consideration factors other than capital. (b) The mere fact that it depends on aggregate information diminishes its usefulness for decision — making on the enterprise level. (9)

Second, the minimization of average costs of production (10) the implications of this principle need no clarification or explanation. However, an important remark here is that this criterion does not include any interest charge - on capital - in production costs. In view of the relative scarcity of capital, and the Russians' general preference of advanced capital intensive techniques, it can be rightly concluded that a «minimization of average costs» criterion is quite misleading for choice among alternative projects on the basis of

- 1 — See: G. Grossman, «Suggestions for a Theory of Soviet Investment Planning,» in **Investment Criteria and Economic Growth**, Center for International Studies, MIT, Asia Publishing House, Bombay, 1964, p. 98.
- 2 — However, most of the postwar price reforms had aimed at eliminating subsidies and «abnormal profits».
- 3 — See: G. Grossman, «Scarce Capital and Soviet Doctrine,» QJE, August 1953, pp. 311-43.
- 4 — See for example: Llec Nove, «The Problem of Success Indicators in Soviet Industry» *Economic*, Feb. 1958, pp. 1-13.
- 5 — G. Grossman, «Suggestions...», op. cit., pp. 110-115.
- 6 — Under this principle, in particular, the decision becomes largely political. See for example: Paul Baran, «National Economic Planning,» in B.F. Haley (ed.); **A Survey of Contemporary Economic**, Vol. II, Homewood, Illinois, 1952, pp. 389 ff.
- 7 — Or to conclude from it a clear criterion for choice and decision making.
- 8 — Quoted from: «Recommendations of All-Union Scientific-Technical Conference on Problems of Determining the Economic Effectiveness of Capital Investments and New Techniques in the USSR National Economy,» **Problems of Economics**, I, No. 9, January 1959, p. 88.
- 9 — See G. Grossman, «Scarce Capital...», op. cit., pp. 333-340.
- 10 — A. Bergson, **The Economics of Soviet Planning**, Yale University Press, 1964, pp. 250-265.

«economization».

Third, the choice of the most advanced technique available. This, no doubt, is a progressive criterion; it is quite consistent with the Soviet strategy of rapid growth. However, if Soviet planners were committed also to the above mentioned principle, i.e., minimization of average cost, in the specific sense of producing at the lowest point on the average cost curve of a given scale, the only logical requirement for efficiency realization would be that projects should be operated to their-exactly-optimum size; a condition the fulfillment of which could not have been always guaranteed under the special conditions of the Soviet firm.⁽¹⁾ One more flaw in this principle is that, by its nature and implications, it necessarily overlooks the limitations imposed by the relative scarcities of factors of production (especially capital) in the Soviet economy.

Fourth, the «recoupment period» and the «capital effectiveness»: (2) It was not until about 1954 that these criteria were to be used openly and universally. This tendency may well be considered an indication of a move towards «rationality» (in the sense of taking consideration of relative scarcities). However, this should by no means lead to the conclusion that the Russians had finally achieved «rational» allocation of capital. At any rate, before discussing the issue of rationality, we may better elaborate first the meaning and implications of «the period of recoupment» (T). It is defined as «the number of years in which a given variant—say, project—will «pay off» for itself.» The formula used is:

$$T = \frac{K_i - K_j}{C_i - C_j}$$

Where :

K_i : is the amount of capital invested in the i th variant.

C_i : is the cost of production in the i th variant.

The reciprocal of T (denoted E) is the so called «capital effectiveness.» It measures, in terms of the value of resources saved, the yearly return to the additional capital invested.

The application of the «recoupment period» criterion follows two principles:

a) It is necessary that (T), as obtained by comparing two projects, should satisfy the condition: $T_i < T_j$; (in other words, «E» must satisfy the condition $E_i \geq E_j$), where T_i and E_i are the «norms» (3)

b) There is no uniform T_0 (i.e., no uniform E_0) for the economy as a whole. Instead, there are different «norms» for different industries, ranging from 15% to 30%, except for transportation, electric power, and steel industries where it amounts to 10%.

As mentioned earlier, the «recoupment period» criterion, though indicates a significant tendency towards «rationality», nevertheless it does not lead to its achievement. This is due to the following facts:

First, for reasons which can easily be identified as «ideological», E_0 is not included in cost calculations as an interest charge on capital: According to the labor theory of value, capital is not a productive agent and, accordingly, should not be charged for.

Second, the existence of differential norms for capital effectiveness in different industries had been an arbitrary matter. It is not convincing to claim that this was necessary to guarantee the application of the most advanced technology for the more important industries. To achieve this purpose, it would have been a more sound policy to expand the level of output of those industries to whatever extent might be needed — even with zero, or negative, «profits» — rather than to attach to them arbitrary high norms of effectiveness. It is also not proper to claim low E_0 in some industries where, say, labor recruitment is

- 1 — See A. Nove, «The Problem of 'Success Indicators' in Soviet Industry», *Economist*, N.S. X V, No. 97, Feb., 1958, pp. 1-13.
- 2 — A. Katzenelenbogen, «Problems of the Methodology of Determining the Economic Effectiveness of New Techniques», *Problems of Economics*, Vol. II, No. 5, September 1959, pp. 68-72.
- 3 — «Standard Methodology for Determining the Economic Effectiveness of Capital Investments and New Technology in the National Economy of the USSR», *Problems of Economics*, Vol. III, No. 6, 1960, pp. 11-17.

more or less difficult, in order to allow substitution of capital for labor. Capital and labor are not the only factors used in the production process in these industries. Thus if E_s is to be lowered, capital would substitute not only labor but also other factors as well; which means waste in the use of such scarce factor of production. Thus the proper solution should have been not to lower E_s but to raise wages instead.

Third, there is the very basic problem of how E_s (and T_s) could be determined; which is indeed the crux of the whole matter. Unfortunately, nothing had been mentioned concerning this point; it was probably considered mainly a political — rather than an economic — issue. It seemed too difficult for the Russian ideology to accept the only «rational» way (according to the principles of western economic theory), for the determination of E_s . After all it means a single norm throughout the economy which equates the quantities, supplied and demanded, of capital. But the difficulty here, from the point of view of Soviet ideology, is that this would mean the acceptance of western claims that labor is not the sole creator of value¹. Because, so the argument goes, utility and scarcity are its ultimate determinants, and since capital is a productive agent, it has — as well as labor — an important role in value creation. This reasoning means that the rational determination of E_s necessitates giving up the labor theory

We cannot however infer, on rationality basis, that the Soviet «norms» are inferior if compared to the «interest rate» in western economic thinking. First of all, such comparison is out of the question, since we cannot easily prove that the western criterion is more rational. If we were able to prove this assertion we should be entitled to conclude that the Soviet would have done better had they adopted the western concept instead of their planned norms. But such an assertion is apparently too difficult to support. We should of value.

first have a «generally accepted definition of what is «rationality in a dynamic sense.» This is certainly an extremely difficult task. If «Pareto Optimum» can serve as an acceptable norm of maximum success in a static economic situation, it will be almost useless, and probably misleading, in a dynamic world. The final score of the performance of an economic system on the basis of its investment criteria, will be then subjected to a great deal of value-judgement; a conclusion which would completely breakdown the choice and decision criterion of traditional economic thinking. When value-judgement is allowed, no single criterion of choice can be defended — on purely logical grounds — to be universally rational.

The Relevance to Underdeveloped Countries:

From the previous discussion we may end up with some remarks which may be pertinent to developing countries in their endeavor to achieve their ambitious goals of economic development:

Investment criteria adopted in the Soviet economy over the period under consideration had to be different from those of western countries because of the differences in political ideologies and economic conditions. Although criticisms to each set of investment criteria could be based on sound arguments, each set of criteria could, and indeed did, lead to the achievement of the desired goals of economic growth in the relevant system.

In most underdeveloped countries today, the prevailing economic conditions and problems have their own specific nature and characteristics. Thus a decision to follow a pragmatic attitude towards the issue of investment criteria would probably prove the wisest. Our suggestion may be supported by the following arguments:

First, some of the Soviet investment criteria, such as «leading links» and «national economic effectiveness of investment,» fit with economic conditions and ambitions of underdeveloped countries.

1 — Moreover «even a uniform interest rate, faithfully expressing the marginal rate of substitution between capital and other factors, would be of questionable benefit while the rest of the Soviet price structure remained of doubtful meaningfulness for allocational purposes». G. Grossman, «Scarce Capital...» op. cit., p. 340.

such as the «minimization of average cost,» the «choice of the most advanced techniques,» and the «recoupment period,» are useful examples which may be taken with the following reservations:

1) The minimization of costs of production is no doubt an efficiency promoting principle. However, it cannot lead to the realization of maximum efficiency if — as in Soviet practice — cost of capital is overlooked. Expansion of strategic capital intensive projects can be undertaken without need to distort the true picture of production costs. A margin of «loss» may be accepted in those projects as a calculated margin of «inefficiency», to be tolerated on grounds of achieving national development goals. When economic policy aims at eliminating — or at least minimizing this margin of loss in the future, it results not only in avoiding faulty production decisions and waste in resource use, but also in moving **towards** maximum efficiency in production.

2) Although the principle of choosing «the most advanced technique» would be inductive to rapid growth, two reasons necessitate special attention in putting it into application:

(a) Unless the required facilities, expertise, and technical skills are properly provided, the proper utilization of such techniques is unlikely to materialize. In other words, choosing the most advanced technique would in this situation imply waste in resource utilization.

(b) Should the adoption of advanced techniques be at the expense of solving pressing problems (such as massive unemployment, or environmental and cultural backwardness), the cause of take-off into economic growth may be handicapped.

3) Being, ideologically, uncommitted to the labor theory of value, developing countries should bring their «norms» of «capital effectiveness»

closer than the Russians' — to «rationality». This requires:

(a) Having a uniform (rather than differential) western like capital charges. The encouragement of intensive use of capital in strategic industries need not be based on claim-

Second, other Soviet investment criteria; imposing an artificially low capital charge. The implementation of such projects should be considered a mandatory national policy decision.

(b) True scarcity prices of all factors of production should as well be revealed in order to avoid wasteful and unintended substitutions. Those prices serve mainly as a guiding post; policy makers should be entitled to give priority to growth inductive projects, even though factor scarcities may suggest otherwise.

To sum up, Soviet investment criteria of capital effectiveness have, generally speaking, their own pitfalls whose outcome could be the wasteful use of resources. This is not to argue, however, that market — determined western criterion is more suitable for practical purposes of economic growth in developing countries. Ill and immature market forces in those economies would give misleading and growth deterring criteria.

A pragmatic approach which benefits from both types of criteria may prove congenial to conditions of developing economies. Such an approach may incorporate two sets of factor ratios: The first reflects the actually existing situation of their relative scarcity in the economy. The second is a «strategic» (1) one assumed by policy-makers in accordance with value judgements based on national development goals.

Although the actual, i.e., true, set of ratios is to be rejected as a «rational» basis for growth promoting decisions, its role is to serve as a guide for decision making. The deviations of the strategic factor scarcity ratios from the actual factor scarcity ratios would not be random. It would rather be carefully calculated and deliberately undertaken. Thus, with knowledge of the set of actual ratios, the calculated margins of deviation serve as policy variables. The test for success of an invest-

1 — We call it «strategic» because it represents what is considered, a priori, by policy-makers a growth-promoting situation of relative scarcity of factors of production.

ment policy should be its ability to lead to changes in actual factor endowment ratios such that they approach the strategic ratios over a given planned period.

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