CAPITAL INVESTMENT GUIDELINES UNDER THE BUDGET CODE[1]

Article 105 of the newly enacted budget code describes in general terms how investment subsidies from the State budget to local budgets are to be allocated. According to this article, decisions about subventions are to be guided by the following three principles:

(1) investment funds are to be distributed initially to oblasts, the Republic of Crimea and the cities of Kiev and Sevastopol and subsequently redistributed to local self-governments within each of these larger territorial units;

(2) eligibility for these funds will be determined on a competitive basis that implies a formal application and justification process. In addition, each investment award requires the financial participation of the winners and priority is to be given to local self-governments with below average per capita spending over the last three budget years;

(3) the size of the overall investment fund is to specified in the State budget law and exact procedures and terms for investment awards are to be drawn up by the Cabinet of Ministers.

As with a number of provisions in the budget code, there are clear instructions on what to do but little guidance on how exactly to do it. This note attempts to interpret article 105 in a reasonable manner and to suggest alternative ways in which it might be implemented. The first section looks at how investment would be allocated among local governments under ideal conditions, where all local governments have the capacity to conduct quantitative investment appraisal. In the second section, investment allocation rules that might apply in the absence of this appraisal capacity are discussed.

I. Investment Allocation When Efficient Projects can be Readily Identified

The first principle of article 105 lends itself to more than one interpretation of how it might be applied. It could be interpreted as saying that each regional government and the cities of Kiev and Sevastopol are required to suggest and identify an investment program encompassing the sum of all local government investment projects that have passed an oblast administered investment test. Uniform investment screening procedures could be developed for this purpose by the Ministry of Finance for use at the oblast level. The nature of these screening procedures is discussed below. For the moment, assume such screening procedures are in place and, as a result, the investment program of each oblast and the cities of Kiev and Sevastopol contain only economically efficient projects. Under these ideal circumstances, the Ministry of Finance would confidently implement the first principle according to the following allocation formula:

$$K_i = IP_i/\Sigma IP_i \times K \text{ where}$$

K_i = the amount of the investment grant awarded to the i^{th} oblast or cities of Kiev and Sevastopol;

IP_i = the value of the efficient investment program assembled by the i^{th} oblast or cities of Kiev and Sevastopol;

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ΣIP_i = the sum of all of the efficient investment programs proposed by the oblasts and the cities of Kiev and Sevastopol;

K = the size of the capital subvention fund that is specified in the State budget law.

Upon receiving their investment grant each oblast or city would ideally allocate funding to those projects that are most efficient since it is unlikely that there would be sufficient funding to finance the entire set of efficient investment projects. There would be no further role for the Ministry of Finance as the responsibility for implementing the program and selecting projects within the program would devolve entirely to regional governments and the cities of Kiev and Sevastopol.

This solution to the problem of awarding investment grants rests on the strong assumption that oblast investment evaluation capacity is strong and will be rigorously adhered to. It is not clear at the moment how strong oblast investment appraisal capacity is but there is a presumption that it is not as strong as it needs to be to implement this approach in a reasonable manner. Moreover, once oblasts and the two cities become familiar with the workings of the allocation formula there will a tempting incentive to "cheat" and include dubious projects in their investment program in an effort to enhance the size of their investment grant. However, if all oblasts and cities cheated to the same relative extent the distribution of investment grants among the oblasts and cities would be unaffected. Still, there would remain incentives to become relatively large cheaters and this defect of the formula could prove fatal to its effective application.

An alternative method of implementing the first principle is to have the oblast serve the role of an investment conduit, funneling individual investment proposals from itself and its local self-governments to the Ministry of Finance for appraisal. The Ministry would decide on the merits of each proposal and, within the limits of the available capital budget, allocate funds to the oblast for all those projects within the oblast that had been approved by an acceptable investment appraisal technique. Unlike the first alternative, under this approach the issue of subsequent redistribution to local self-governments would be determined by the Ministry of Finance which would also bear some responsibility for implementation of the approved projects.

Regardless of which approach is taken with regard to the first principle, it is clear that project appraisal methods that distinguish between efficient and inefficient projects will need to be more fully developed in Ukraine. What remains unclear is whether these methods would be applied primarily at the central level by the Ministry of Finance or instead in a more decentralized fashion at the oblast level as the first interpretation implies. If the oblast is to become the arbiter for investment projects, the task of the Ministry of Finance could be simplified a great deal. In this case there would be a strong case for treating all regions equally under article 105 and simply distributing the available investment pool on an equal per capita basis. It would then be up to the oblast, perhaps with Ministry guidance, to administer the provisions of the second principle by developing investment screening procedures that accord some priority to poorer local self-governments. The option of per capita investment grants is explored in greater detail below.

The advantage of equal per capita investment grants is that they would remove any opportunity for cheating and would create a positive perception of a regionally equitable distribution of grants. The disadvantage is that this procedure would offer few safeguards to ensure that only efficient investment projects would receive funding. This topic is revisited below after a short description of the basic analytical technique used in most countries for appraising the efficiency of alternative investments.

The standard tool for practically evaluating different investment options is benefit-cost analysis(BCA). An attractive, or efficient, investment opportunity is one whose discounted expected future net benefits exceed the discounted cost of making the investment. Discounting future benefits and costs is required to make benefits and costs that occur in different time periods comparable in value terms. A benefit that occurs a year from now is worth less than what it would be worth if it were

enjoyed today by an amount that depends on the rate of interest. For example, if the interest rate were 10 per cent, 100 UAH of benefits a year hence would be worth today only about 91 UAH(100/1.1) since that amount could be invested today and return 100 UAH a year from now. Similarly, costs that can be postponed to the future are less expensive than currently incurred costs. A cost of 100 UAH incurred a year from now has a real economic cost of about 91 UAH since by deferring the expenditure for one year interest can be earned on the money saved. That is, a cost of 100 UAH a year from today has a present or current value of 91UAH(100/1.1).

An inefficient investment is one whose discounted future expected net benefits are less than the discounted cost of making the investment. Among different efficient investments, the most efficient is the one with the greatest excess of discounted future expected net benefits over the discounted cost of the investment outlays.

There are four basis steps to applying BCA for investment appraisal. The first step is to identify all the unique effects of a particular investment project. This is the question of how the world will be different if the project is undertaken. A second step is to accurately measure all of the benefits and cost associated with the project. For this step good engineering data are required along with reliable price data that can be attached to the project's outputs and inputs. As part of this step, an appropriate choice must be made for the interest rate to be used for discounting. In the literature of BCA choosing the correct interest rate has been one of the most controversial aspects of applying BCA. The third step is to apply the correct decision-making criterion. There is a consensus now that the best criterion in this respect is to choose projects with the maximum difference between discounted net benefits and discounted investment costs. A final step is conduct sensitivity analysis to determine how the ranking of investment projects in terms of economic efficiency is affected by alternative plausible assumptions, for example with regard to the forecast of future prices and costs.

While the principles of BCA are relatively straight forward, in practice some projects are much more difficult to assess than others. Many projects, for example, have significant intangible costs or benefits that defy easy measurement, as in the case of environmental impacts such as the level of pollution caused by a project. As further example, it is difficult to evaluate military investments because the output, national security, is not readily measurable. Moreover, all investments represent something of a gamble because the future is always uncertain. In the case of an oil field investment for example, the attractiveness of the project will be very sensitive to the future price of oil, a price that is influenced by many hard to predict factors, such as the development of alternative energy sources.

II. Investment Allocation When Appraisal Capacity is Weak

In Ukraine where there is no established tradition of conducting BCA at any level of government, it will be necessary to adopt cruder investment appraisal techniques that try to distinguish between productive and unproductive investment activity. One option is to identify priority investment sectors where there is a strong consensus that the expected return on investment is high. For example, it has been frequently observed that many local communities have inadequate, often sporadic, supplies of basic public services such as heat and water. The deterioration in the quantity and quality of these services is the product of years of neglect through under-investment and poor maintenance. Without adequate heat and power, the welfare of the population is adversely affected in basic ways. Schools, hospitals and businesses may have to shut down, at least for certain periods, and people's health may generally suffer.

If priority investment sectors can be identified, choice of investment within these sectors may be guided by crude benefit-cost principles. For example, of two heating projects, the one that promises to deliver the largest increase in BTUs per dollar spent would be most preferable. In comparing different water supply projects, the increase in potable water in a community per dollar spent becomes the appropriate criterion for choosing among competing projects.

However projects are selected, it will be important for the Ministry of Finance to create some capacity to monitor the implementation of the projects. Co-financing provides one easy-to-apply monitoring instrument. If local governments, for example, are required to finance half of the investment cost out of their own budgets, they are much more likely to have a serious ownership stake in the project and a strong self-interest in seeing that the project is properly implemented. Beyond that, payments from the State capital budget can be made in installments with each installment contingent upon the satisfaction of explicit benchmarks for project completion. In addition, strict procurement procedures involving competitive tenders should be used as the method of contracting suppliers to provide the resources for any approved project.

In the absence of institutionalized capacity to carry out BCA, it may be possible to design other, albeit much cruder, techniques for allocating investment funds across and within regions. Physical, rather than financial, criteria may have to be used for allocation purposes. One approach is to measure, in physical terms, the deficit in basic services in different areas and allocate more funds to areas with the largest measured deficits. If, for example, the previous argument about the importance of heat and water supply is accepted, one could use the criterion of the number of inhabitant days without either heat or water during the year as the indicator of relative investment need. One issue in using this criterion is how to take the continuity of service deprivation into account. It can be argued, for example, that ten continuous days without either heat or water is much more severe(costly) than ten days of deprivation that occur every third day. A further issue is whether a day without water should be considered as equivalent in cost to a day without heat.

These issues require careful consideration on the part of policymakers. My own view on these matters is that the measure of service deficit should count only consecutive days in which a community goes without either heat or water. Moreover, it seems apparent that a day without heat is more harmful than a day without water supply because, in the case of water, there are alternative options such as the purchase of bottled water. There are also, of course, substitutes for publicly supplied heat in the form of space heaters but these are costlier alternatives than the purchase of water and lie beyond the current means of the average Ukrainian family. If this view is correct, it makes sense to weight a day without heat two or three times more heavily than a day without water. It may also make sense to consider the investment option of purchasing space heaters for public institutions such as schools and hospitals.

Pulling these various ideas together in the form of an investment allocation equation, it is possible to think of an initial investment distribution among oblasts that, using the earlier notation, would be determined by the following formula:

$$K_i = \theta x K x D_i/\Sigma D_i + (1- \theta) x K x P_i/\Sigma P_i \text{ where}$$

θ = the fraction, or percentage, of the overall investment fund, K, which is devoted to investment projects having the highest sectoral priority;

D_i = a physical measure of the public service deficit in the i^{th} oblast; for example, in the case of heat deficiencies it might be measured as the number of days in the previous year communities within the oblast went without heat multiplied by the number of inhabitants who were affected by the loss of heat. Some sort of weighting scheme would be needed to aggregate different kinds of service deficits.

P_i = population of the i^{th} oblast. As a variable in the second term of the formula, population might be weighted to reflect inter-oblast differences in the degree of economic development. For example, regional economic deprivation could be recognized in the formula by multiplying population numbers by the inverse of the ratio of an oblast's per capita income to the national average.

This formula would channel proportionately more of the investment fund to oblasts with the largest populations and the largest public service deficits. If population were weighted along the lines

suggested above, the formula would also allocate more funds to poorer oblasts. The second term in the formula recognizes that whatever priority investment list is drawn up, the list may not correspond to the peculiar investment needs of a particular oblast and the formula needs, therefore, to have some investment latitude. Unlike the first term of the formula, this second term awards investment grants on an unconditional basis. The formula would also be neutral towards the alternatives of repairing or replacing capital assets. That is, an oblast would have some discretion in deciding whether it would be more cost-effective, i.e., cheaper, to undertake repairs to an existing capital asset rather than replacing that asset with a new one.

III. Co-financing Issues

A matching requirement for local governments is desirable because it provides incentives to avoid wasteful use of investment funds and to instead put forth efficient investment projects. When local governments have to pay for a portion of the investment project they will benefit from, they are much more likely to choose their projects carefully.

Most countries require a matching contribution in their capital grant schemes. Very few countries, however, utilize uniform matching. Grants typically cover 20 to 60 per cent of the total investment cost. Higher percentages ordinarily apply to poorer local governments and to projects that have limited capacity to earn revenue. Since road improvement programs usually earn no direct revenue, these programs often have a high percentage of their costs covered by grants. Revenue earning investments, on the other hand, might be more appropriately financed through formal lending windows.

IV. Investment Commitment

No matter which allocative criteria are adopted in Ukraine, it is vital that the process take into account the typically multi-year time horizon of investment projects. Investment decisions, once taken, need to be adhered to over several years and investments, once started, need to be seen through to their completion. Investment projects that are either abandoned or seriously delayed because of erratic funding result in painful economic waste.

Because the financial tap has been turned on and off over the past 12 years, a new water treatment facility in Sevastopol is still an unfinished investment project. This is an example of the absence of budgetary commitment to investment activity that Ukraine can ill afford to repeat in implementing a new capital grants program.