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Issue 16
Government owned assets

GOVERNMENT AND OTHER NON-MARKET PRODUCERS' OWNED ASSETS — COST OF CAPITAL SERVICES

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Issue 16: Government and other Non-Market Producers' Owned Assets—Cost of Capital Services

Report on Follow-up to Comments

1.1. The question in issue 16 is whether to replace the estimate of consumption of fixed capital for assets owned by nonmarket producers with an estimate of their capital services—that is, consumption of fixed capital plus a return to capital. Thus far in the Update, this issue has been discussed at two Advisory Expert Group (AEG) meeting.

AEG discussions

1.2. At the AEG meeting in December 2004, issue 16 was discussed on the basis of a paper that presented the recommendations of the Canberra II Group. The Canberra II Group proposed treating similar assets as providing similar services regardless of whether the production was market or nonmarket. It identified four types of assets for consideration: (1) assets used by civil servants in the course of their work (e.g., computers), (2) assets bringing benefits to the economy at large (e.g., roads and other infrastructure), (3) assets used by the community at large (e.g., parks), and (4) land.

1.3. The December 2004 discussion was summarized as follows. There was strong support in principle for including a return to capital, viewed as an opportunity cost, in the measurement of non-market output. However, concerns were expressed about the rate of return to be chosen and availability of data for capital stock. In terms of the range of assets which could be covered, most participants favored including those assets in the generation of government output similar to those assets used in market production. A smaller number favored including roads and other infrastructure assets. Progressively fewer favored including assets such as city parks serving the community at large and land. It was agreed that these range of positions of the AEG [with respect to scope] should be sent to all countries (and inserted on the website) seeking reactions on both conceptual and practical grounds.

1.4. At the AEG's July 2005 meeting, the paper tabled drew on the comments from the global consultation and country responses to the recommendations as background for restating the Canberra II Group's reasoning. (See the analysis of comments below.) This discussion was summarized as follows: The AEG reaffirmed the principle to include a return to capital on non-financial assets used in non-market production. It was agreed to follow-up on a one-on-one basis the comments from the global and country consultations, including those comments on the scope, and report back to the next AEG Meeting in early 2006.

Country Comments and Follow-up

1.5. There were 23 responses in the global consultation and 51 responses to the invitation to comment on the December 2005 recommendations. The responses do not fit easily into the simple categorization of "agree" or "disagree;" there was a spectrum of comments in between that dealt with conceptual, practical, and other considerations.

Some responses called for further discussion, and some indicated less than full understanding of the issue. (The paper presented at the July 2005 meeting was intended to be responsive to these comments.) The comments came from all regions of the world; outside of Europe, the majority of the comments expressed agreement with the recommended change.

1.6. The Project Manager subsequently spoke to representatives of 15 countries about the issue and their country's response. The single most often mentioned aspect was the need to settle on a rate of return to be used in the calculation. As well, scope was mentioned. Although some were uncomfortable on theoretical grounds with the notion of not applying the treatment to all nonfinancial assets owned by nonmarket producers, the interviewees usually came around to accepting the notion of calculating capital services on assets similar to those used in market product and perhaps on roads and other infrastructure.

1.7. As of late November, there were as yet no country comments on the recommendations of the July 2005 AEG meeting. Thus, three points derived from the comments and follow-up seem to dictate the way forward: (1) further clarifying discussion is useful, particularly in the vein of responding to misunderstandings; (2) it would be helpful to identify more specifically a recommended rate of return (and, of course, its justification); and (3) in identifying the scope of assets to be included in the calculation, it would be useful to give heavy weight to practical considerations.

1.8. These points were put before the ISWGNA, which decided to commission a paper for the January-February 2006 AEG.

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Issue 16: Government and other Non-Market Producers' Owned Assets—
Cost of Capital Services

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Executive summary

2.1. This part of the document starts from the position that the AEG has twice affirmed that there should in principle be a return to capital used by non-market producers. Viewed as an opportunity cost of capital, it is part of the costs they incur and therefore should be included in the measure of output when this is estimated as the sum of their costs. Not doing so results in inconsistent valuation of similar assets depending on whether they are used in market or non-market production. It leads to different values of non-market output if the producer switches between renting assets and owning them, as often happens with government buildings, for example.

2.2. At the same time, the ISWGNA is very conscious of the concerns expressed about the proposal to include this recommendation in the 1993 SNA Rev1. The rest of this paper, therefore, addresses, in turn, the three points raised at the end of the Project Manager's report.

1. It presents responses to the conceptual and practical issues raised in the global consultation.

2. It discusses the choice of a reference rate to be used in calculating a return to capital on assets used in non-market production.

3. It discusses the range of assets to be considered as providing a return to capital to non-market producers.

It concludes with a series of questions for the AEG aimed at finalizing the recommendation.

Conceptual and practical issues

2.3. One question raised was what happens to the net operating surplus that would show in the accounts of non-market producers; does this add to net saving and affect the financial accounts? The answer to this is that yes, the level of output increases, but for these non-market producers, the output is for own final use and so this final use increases by the same amount, leaving net saving of the producer, and thus the financial account, unaffected. The level of GDP increases because the return to capital adds to the output measure by increasing the costs being summed as the measure of output; it adds to income by increasing net operating surplus and it adds the same amount to final expenditure of the same producers.

2.4. Some commentators suggested that it would be inconsistent to estimate and include a return to capital used by non-market producers and not do this for market producers. The whole proposal to include a return to capital for market producers comes from the recognition of the fact that whether it is shown explicitly or not, the net operating surplus of market producers is connected with the return on capital used by them. The rationale for including a return estimated using an exogenous rate of return and showing it as an "of which" item under net operating surplus is precisely analogous to what is being proposed for non-market producers. Using an endogenous rate to calculate an implied rate of return asserts that the only cause of net operating surplus is the return on capital employed. There is no exact equivalent to this procedure for non-market producers since there is no independent measure of net operating surplus.

2.5. There is a further point to be considered. If capital services for market producers is a supplementary item and not a standard one; why should the comparable term for non-market producers be standard? The answer is that whether capital services for market production is a standard or supplementary item does not affect the level of GDP and does not affect the economic interpretation of net operating surplus as encompassing the return to capital used by that producer. However, if the return to capital for non-market producers were to be treated as a supplementary item, there would be two levels of GDP available, one including and one excluding this supplementary item. So far, there is unanimous agreement that alternative conceptual measures of GDP are unacceptable and so a choice must be made either to be consistent in the treatment of capital by market and non-market producers or to be inconsistent.

2.6. Some commentators suggest that there is a synergy between the concepts of non-market producers and non-profit institutions in the SNA. The SNA, though, makes clear that using the sum of costs to estimate the output of non-market producers is a convention, one adopted in cases where there is no reasonable alternative. However, there are some NPIs where comparable market prices do exist and should be used. In these cases there will be a net operating surplus accruing to the NPI. Indeed the possibility of having a government unit and an NPI undertaking the same activity with the same assets, while attributing a return to capital in the second case and not in the first, simply underlines the inconsistency of the option of excluding a return to capital for non-market producers.

2.7. Others ask what is the value of including an imputation in the measure of output of non-market producers. In response, it is useful to recall that the distinction made in the SNA between imputing a transaction and imputing a value to an unmeasured transaction (paras 1.71-1.74). Government output is recognized as a fact, a transaction or series of transactions, in the SNA, but the means of measuring its value is an imputation. The simple convention of equating the value of output with the sum of costs, even with actually observed market costs, is still an imputation. Further, some other imputed values are already included. One is the estimate of consumption of fixed capital, another is the estimate for employers' social insurance contributions. Adding an estimate of the return to capital does not introduce a new level of imputation into the measure of non-market output or of GDP.

2.8. The most convincing objection to the proposal is not, in fact, conceptual but practical. In reality, many countries do not at present have comprehensive measures of non-financial capital stock. Some have no measures of capital stock at all, even though the SNA recommends that these are a full part of the System. Under the present guidelines, even countries without capital stock estimates should include an estimate for consumption of fixed capital as one of the costs included in the measure of non-market output. Such estimates can only be approximate, using rough rules of thumb and, hopefully, countries aspire to replace these rough and ready approaches with better estimates as their statistical system develops to include capital stock. If capital stock estimates exist, there is no practical reason not to estimate a return to capital on these stocks. If capital stocks figures do not exist, yet estimates of consumption of fixed capital are made, similar techniques could be used to estimate the whole of capital services (i.e. consumption of fixed capital plus a return to capital). There is a question about whether there are some assets where even an estimate of consumption of fixed capital is not made and this is taken up below in discussing the range of assets to be covered by the recommendation.

Choosing a rate of return

2.9. As noted above, there is no possibility to estimate a rate of return for capital used in non-market production endogenously; it must be chosen exogenously. The question then is, how?

2.10. If the return to capital for market producers is estimated endogenously, it would seem that this would be one possible choice. However, experience shows that these rates are rather volatile and can vary considerably by industry and over time. For these reasons, such a choice is not recommended.

2.11. If an exogeneous rate of return is used for market producers, and if the same rate is used for all industries and all assets, this would seem a more acceptable possibility. However, it can also be argued that market producers face greater risks and uncertainties than government and thus face higher interest rates. A more appropriate option, therefore, would be to take the rate on government bonds as a more appropriate, risk-free rate to use in the case of non-market producers. Rather than simply use the current bond rate being offered, a more stable option would be to use the implicit rate on all government bonds outstanding, to average the term structure and smooth the effects of changes in rates over time.

2.12. Queries have also been raised about whether it is reasonable that countries facing high interest rates should include a higher component of government output due to the return on capital than countries with a lower interest rate. This raises another aspect of the rate of return to be chosen, the rate required is actually a real rate of return. High interest rates typically arise when inflation is high and vice versa. Consider an asset worth 1000 at the start of the year where the rate of inflation is 2 per cent a month (compound) so that the mid year value of the asset is 1126. Suppose the rate of government bonds (averaged as suggested above) is 30 per cent as compared to the annual inflation rate of 27 per cent (2 per cent compounded for 12 months). Then the estimated return to capital should be 3 per cent of 1126, or 341.

The range of assets to be covered

2.13. As recalled in the Project Manager's report, the original issue paper put before the AEG considered assets used in non-market production as being of one of four different types.

1. Assets used by civil servants (or employees of other non-market producers) such as computers, buildings and vehicles;

2. Assets bringing benefits to the economy at large such as roads and other infrastructure;

3. Assets bringing benefits to the community at large by providing the possibility of recreational activities such as city parks;

4. Land.

Each of these is considered in turn.

Computers and similar assets

2.14. These are the assets where comparison with similar assets used in market production is most obvious and inconsistent treatment most difficult to justify. Most commentators who do not reject the proposal outright support the inclusion of a return to capital on these assets.

Roads and other infrastructure

2.15. Views about whether to include a return to capital on roads and other infrastructure is not quite so strong as for the first group of assets. The following arguments could be made to maintain the existing treatment of including consumption of fixed capital for these assets but not including a return to capital.

2.16. These assets are typically owned only by government and although the benefits they bring accrue to all economic agents, this is not shown as a benefit distributed by government other than through the expenditure on collective

[1] To be strictly accurate, the real rate of return should be the difference between the nominal average bond rate and an asset-specific rate of inflation rather than the general rate of inflation. For many assets, but not for computer equipment, for example, this difference may be so slight as to be negligible in practice.

consumption. This might be one reason to treat these assets differently from those in the preceding group, even though government must incur expenditure in establishing and maintaining these assets.

2.17. The 1968 SNA suggested that such assets had indefinite lives and therefore no consumption of fixed capital needed to be charged on them. This was changed in the 1993 SNA, in recognition of the fact that even very long lasting assets need regular maintenance, some of which will be of a capital nature. However, it is not absolutely certain that all countries are following this advice because of the difficulties of establishing the appropriate capital stocks data.

2.18. On practical grounds, and to be as conservative as possible in order to meet some of the concerns expressed, a convention could be adopted that while consumption of fixed capital should continue to be estimated for these assets, a zero rate of return would be used.

City parks and similar assets

2.19. The sort of assets covered here include produced assets, including historical monuments, where there is no admission charge made to the public to take advantage of the amenities they provide. The costs to provide and maintain the assets, like those of infrastructure, are provided as part of collective consumption.

2.20. As with infrastructure, in principle there should be estimates of consumption of fixed capital made in respect of these assets. It is much less likely, though, that estimates of capital stock for these assets exist. It is not easy to put a value on either historical monuments in a state of ruin or on those kept in good repair but where there are no equivalent structures in private hands.

2.21. In these circumstances, even an estimate of consumption of fixed capital may be somewhat arbitrary and it would be possible, in recognition of the data problems, to adopt the convention that for such sorts of assets, not even an estimate of consumption of fixed capital should be made.

Land

2.22. The situation of land is complex and affected by the recommendation to distinguish land improvements (to be treated as fixed capital) from natural land (to continue to be treated as a natural resource, that is non-produced).

2.23. Land improvements, as a fixed asset, should be treated in the same way as other fixed assets, in particular in the same way as buildings (and structures), because in many countries it is not possible to separate the value of land and buildings and the value of the land will often be included under the heading of buildings. This is in line with the recommendation that where separation into two asset types is not possible, the whole should be allocated to the category representing the greater value.

2.24. In some countries, it may be possible to separate the value of buildings from the land underlying them. Even here, though, the cost of preparing the land for the building may be included with other construction costs. If that is so, the value of the land separated from that of the building will be natural land. Even so, a return to capital should be estimated for the land under buildings in order to provide data consistent in coverage with countries where the separation is not possible.

2.25. As a practical step, however, since many countries do not have estimates for the value of open land, it is recommended by convention not to include a return to capital on such land even when estimates do exist.

Questions for the AEG

2.26. Given the recommendation to include a return to capital on assets used by non-market producers, the following practical steps need to be agreed.

1. Should the rate of return in these case be taken to be the real rate of interest on all outstanding government bonds ?

2. Should a rate of return for all assets such as computers, vehicles and buildings used by the employees of non-market producers in their regular work be included in the measurement of the output of the non-market producer?

3. Should a rate of return for assets such as roads and infrastructure be included in the value of output of the government?

4. Should the SNA acknowledge that because data on such assets as city parks and historical monuments are often poor or non-existent, by convention no estimates either of consumption of fixed capital or of a return to capital should be made for these assets?

5. Similarly, should the SNA recommend that a return to capital in respect of land under buildings and structures be included in the measurement of the output of non-market producers where such information is available separately from the buildings and structures involved, but as a convention, neither a return to capital nor estimates of consumption of fixed capital should be made in respect of other land held by government.

2.27. Positive responses to questions 2 and 3 represent changes to the SNA and would lead to increases in the measurement of non-market output and GDP. Positive responses to questions 4 and 5 also represent changes to the SNA and conceptually lead to reductions in the value of non-market output and GDP. However, because many countries are not in the position to implement the present recommendations, in practice no change will be recorded for those countries. Where countries would be faced with reducing their estimates, it would result in better cross-country comparisons, even though on a basis which was less than conceptually perfect.