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Issue 4a
Non-performing loans

NON-PERFORMING LOANS — IMPACT ON FISIM

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Background

1. During the discussion on non-performing loans (NPL) in Bangkok, one issue unresolved was how to deal with FISIM on an NPL. It was suggested that there were three possibilities:

- 1) Continue to estimate FISIM on NPLs and allocate it to the corresponding borrowers but consider how unpaid FISIM is recorded in the accounts in such a way as to increment principal outstanding;
- 2) Estimate FISIM on interest received (rather than receivable) and on interest payable so that FISIM is not attributable to NPLs;
- 3) Estimate FISIM on a basis including NPLs but allocate the whole amount of FISIM only to those borrowers servicing their loans.

2. It was agreed examples on these three possibilities would be prepared including the case where collateral is forfeited. This paper sets out the examples as a basis for an e-consultation to resolve this remaining part of the NPL issue.

Base Case

3. Suppose a bank has only three clients. A borrows 9 000 at 8% interest; B borrows 1 000 at 8% interest and C deposits 10 000 and receives 2% interest. Further, suppose the reference rate is 5% and the bank has intermediate costs of 400 and compensation of employees of 125. Thus we can formulate a combined production and generation of income account for the bank as follows.

Output payable by A (=3% of 9 000)	270
Output payable by B (=3% of 1 000)	30
Output payable by C (=3% of 10 000)	300
Total output	600
Intermediate consumption	400
Compensation of employees	125
Gross operating surplus	75

4. **Option 1:** Continue to estimate FISIM on NPLs and allocate it to the corresponding borrowers but consider how unpaid FISIM is recorded in the accounts in such a way as to increment principal outstanding.

5. Suppose that B's loan becomes an NPL. Under this assumption, the production account for the bank is unaffected. Indeed none of the SNA aggregates are affected; the problems come in the accumulation accounts.

6. The amount of (SNA) interest recorded for B remains 50 (reference rate of 5% times principal of 1 000) and 30 (8% -5% times principal) is shown as FISIM payable but, like the interest, it is not paid. The unpaid interest results in an increase in the loan from 1000 to 1050. The unpaid FISIM presents a problem. The question is where to record the negative effect on net worth. The bank would record the whole of the (bank) interest of 80 as adding to the loan when it was unpaid in the first period even though for the SNA the level of principal outstanding is only 1050. It therefore becomes clear that if we record FISIM as payable on a loan when (bank) interest is not paid, this amount should be treated as adding to the principal of the loan outstanding. Strictly this would apply to all unpaid interest on bank loans and not just to unpaid interest on NPLs.

7. The conclusion of option 1 is that none of the aggregates of the system are altered by identifying NPLs. The rule for accumulating unpaid interest to principal outstanding has to be amended to include accumulation of unpaid FISIM also.

8. **Option 2:** Estimate FISIM on interest received (rather than receivable) and on interest payable so that FISIM is not attributable to NPLs.

9. Again in this case we assume that the loan to B becomes non-performing. Here the production and generation of income account change as follows.

Output payable by A (=3% of 9 000)	270
Output payable by B (=0% of 1 000)	0
Output payable by C (=3% of 10 000)	300
Total output	570
Intermediate consumption	400
Compensation of employees	125
Gross operating surplus	45

10. The impact of this change on the level of GDP and other aggregates of the system depends on whether the FISIM which should have been attributable to B would have been recorded as intermediate or final consumption. If it should have been recorded as intermediate consumption, GDP will not be affected. The decline in value added of 30 of the bank will be exactly offset by the increase in the value added of B because intermediate consumption has been reduced by 30. If, however, the payment of FISIM by B would have been treated as final consumption, GDP will decline by 30.

11. In this case, unlike option 1, there is no problem in the accumulation accounts. There is no difference between (bank) interest and (SNA) interest because there is no deduction of FISIM. The full value of this interest automatically accumulates to the outstanding principal.

12. One objection to this option is that the output of the bank does not really reduce because one of its clients does not service a loan, indeed the amount of work done by the bank may well increase as efforts are made to recover the (bank) interest due. A possible

rationalisation would be to say that in this case the level of the bank output does not decrease but its intermediate consumption increases. This is not very convincing as there is no reason to suppose the amount of effort exactly matches the FISIM in question or that it would all be intermediate consumption and not in part compensation of employees. Even if it were so, increasing output and intermediate consumption of the bank by matching amounts would not affect value added.

13. The conclusion of option 2 is that there may be an effect on GDP and the other aggregates of the system if the FISIM on the loan in default would have been treated as final consumption but not if it had been treated as intermediate consumption. No adjustments need to be made to the accumulation accounts.

14. **Option 3:** Estimate FISIM on a basis including NPLs but allocate the whole amount of FISIM only to those borrowers servicing their loans.

15. Option 3 assumes that the level of output of the bank does not alter but the costs are spread to others customers of the bank, in a similar way to the fact that the margin paid to retailers is sufficient to cover the cost of shop-lifting. Assuming that the default by B is paid for by other borrowers, in this case A only, the account for the bank becomes the following:

Output payable by A (=3% of 10 000)	=	300
Output payable by B (=0% of 1 000)	=	0
Output payable by C (=3% of 10 000)	=	300
Total output	=	600
Intermediate consumption	=	400
Compensation of employees	=	125
Gross operating surplus	=	75

16. The impact of this on GDP and other aggregates of the system now depends on two factors, how the FISIM of B is treated and how the FISIM of A is treated. If FISIM for both is treated as either intermediate consumption or final consumption, the net effect on GDP will be zero since the increase for A will be offset by the fall for B. If FISIM for A is intermediate consumption and for B is final demand, GDP will decrease by 30; if FISIM for A is final demand and for B is intermediate demand, GDP will increase by 30.

17. Changing the proportion of (bank) interest assigned as FISIM makes the interpretation of the reference rate questionable. In this example, A will pay (bank) interest of 720, (SNA) interest of 420 (720-300) or a rate of 4.67% whereas the reference rate was supposed to be 5% and this is what was applied to the deposit by C.

18. It may be thought that an alternative is to spread the increased cost of FISIM to both borrowers and lenders but every increase of one per cent in the reference rate increases the FISIM paid by C by 100 but lowers FISIM paid by A by 90 and vice versa for decreases in the reference rate. There is thus no way to retain exactly the same level of FISIM as previously simply by altering a common reference rate applied to A and C

while B is still assumed non-performing.

19. As in case 2, the whole of (bank) interest on B's NPL is treated as SNA interest and accumulates to principal outstanding.

20. The conclusion of option 3 is that there may or may not be an effect on GDP and other aggregates of the system depending on whether the unpaid FISIM of the holder of the NPL and that of those borrowers servicing their loans has the same effect or different effects on intermediate consumption and final consumption. No adjustments need to be made to the accumulation accounts.

Rest of the world effects

21. It is also necessary to consider the impacts of the different options on the rest of the world accounts. There are two possible cases. One is where B is resident but has an NPL with a non-resident bank. In this case options 2 and 3 will increase GDP because of the corresponding reduction in imports. On the other hand, if B is non-resident having an NPL with a resident bank, options 2 and 3 will decrease GDP because of a reduction in exports. The size of the reduction under option 3 will depend on the nature of the extra FISIM paid by resident borrowers.

Payment via collateral

22. The AEG asked that the case of collateral being called in when there is non-payment of interest. The SNA treats all payments "in kind" other than social transfers in kind as if they are a payment in cash followed by the purchase of the goods and services delivered in kind. It seems consistent, therefore, to say that any payment of either interest or principal by B supplying some other form of asset (possibly including a non-financial asset) to the bank, should be recorded as the exchange of this asset for some liquid asset which is used to meet some or all of the interest and principal repayments. This may be sufficient to reclassify the loan from its NPL status but does not lead to any accounting consequences.

23. **Another option, (option 4)** not mentioned in the AEG, would be to calculate both SNA interest and FISIM on the NPL, as in option 1, but only on the market value of the loan and not on its nominal value. While this might have some merits, it seems inconsistent with recording the NPL at the nominal value on the balance sheet and recording the market value only as a supplementary item.

Summary of options

24. Option 1 is the option in the 1993 SNA, except that an amendment is needed to say that any FISIM associated with unpaid interest must also be accrued as part of the principal outstanding. It is consistent with the decision to record the even non-performing loans at nominal value. It is operationally feasible and would lead to no change in GDP.

25. Option 2 appears to recommend a change in the SNA by choosing to record interest on a cash rather than an accrual basis. The possible impact on GDP, compared with measuring interest on a full accrual basis is described in the full explanation of option 2. In practice, if a statistical office records interest in the accounts on the basis of interest reported by banks, it is probable that this may be on a cash basis or at least exclude interest due on loans the bank considers to be non-performing. To the extent this is so, a conceptual change in the SNA would not lead to any change in practice.

26. Option 3 is a change from the SNA. The consequences for the impacts on GDP and other aggregates is described above. Although this option starts from the reference rate approach to calculating FISIM the implication is that the final estimate for (SNA) interest is not derivable by applying the reference rate to the stock of performing loans.

27. None of options 1, 2 or 3 imply changes in current recording of entries in the balance sheets.

28. Option 4 is noted mainly for the record. If a decision were to be made to change the valuation of loans in the balance sheet from nominal value to market value, then options 1 and 2 would not apply and the choice would then be between options 3 and 4. However, option 4 is inconsistent with the decision to keep the valuation of NPLs at nominal value in the balance sheet.

Questions for the AEG

29. Do you agree with this analysis of the options available for recording FISIM on a non-performing loan?

If so, do you prefer

Option 1

Option 2

Option 3

Option 4

If not, what alternative procedure do you propose?