Project **Insurance contracts**

Topic **Unbundling Example**

[This paper provides an example on unbundling supporting the unbundling discussion in Agenda paper 2E (FASB Memorandum 45E)]

1. I've been playing around my old reliable spreadsheets and the question of unbundling. I'm beginning to think that we aren't asking quite the right question. Unbundling is really a series of questions about cash flows and accounting models. If we think of a book of insurance contracts as a closed system, then cash flows can belong to one of three classes:

    a. The policyholder account, presumably with financial instrument accounting;

    b. The insurance contract, with building-block measurement and amortization of the residual (or composite) margin;

    c. Neither a nor b, presumably with cash-basis accounting.

2. The policy in my spreadsheets is a good test bed for this sort of analysis, because it has some of everything.

    a. Premiums – assumed at CU 1400 per year, received on the first day of the year

    b. Premium load – a charge of 15% of the premium plus CU 27

c. Mortality charge – based on a predetermined scale applied to the policy face amount less the account balance at the end of the preceding year. The amounts in the scale increase with policyholder age.

d. Policy face amount – the policy pays CU 100,000 on death. This amount begins to increase if necessary (age 67 in the illustration) to maintain the "spread" required by US Internal Revenue Service regulations necessary to continue qualification as an insurance contract. Death benefits are paid at the end of the year.

e. Interest credit – assumed for the current illustrations at 6%, credited at the end of the year. To keep things simple, I have also assumed a 0% interest spread. That is, investments also earn 6%.

f. Surrender charges – CU 1500 if the policy surrenders at the end of year 1. The amount is reduced gradually each year. There is no surrender charge after year 9. Surrenders are paid at the end of the year.

3. The only criticism I've ever heard about this illustrative contract is that it is too profitable for the insurer. Nobody could sell a policy with so many loads and charges. The criticism is correct, but that's not the point. I've tried to build in as many moving parts as possible.

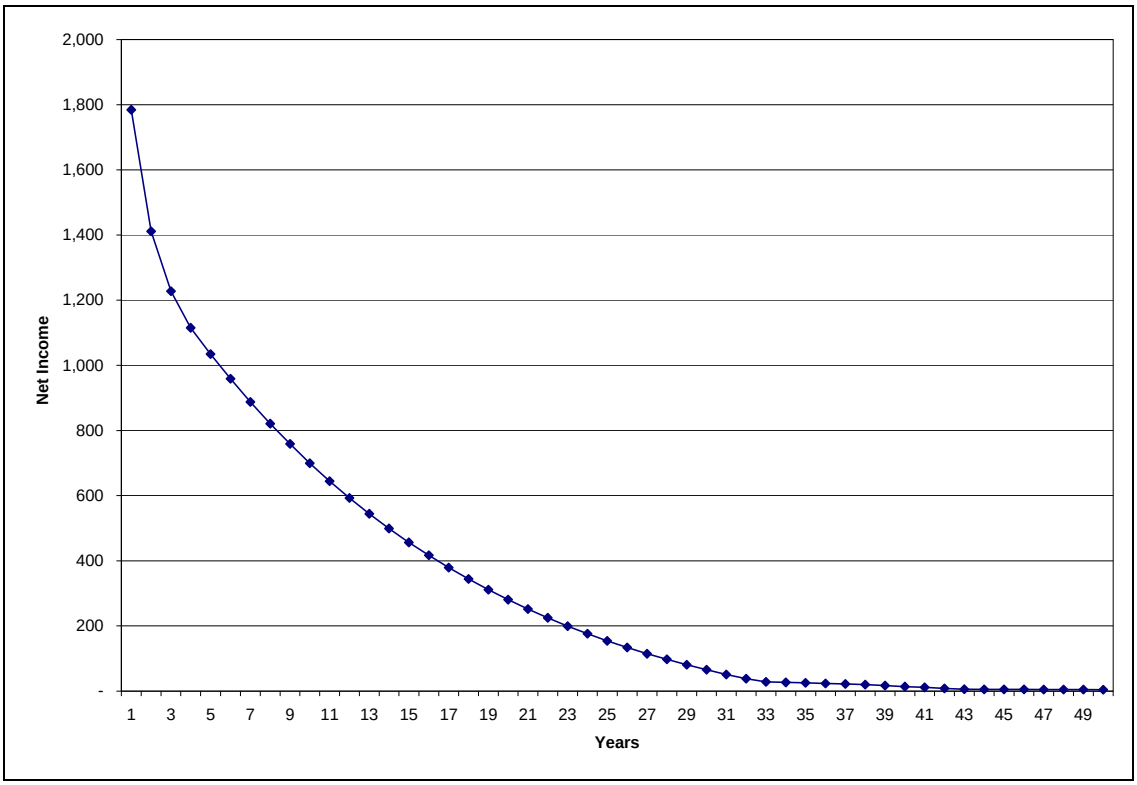
4. To start the process, I modelled the book of contracts without unbundling and using a discount rate of 6%. I also assumed that the insurer would earn 6% on investments. That process produced a composite margin of CU 10,574. For simplicity's sake, I worked with a single composite margin, rather than separate risk and residual margins.

5. As described in greater detail in the FASB *Primer*, the model assumes that the fictional company either distributes an amount equal to each year's reported income or borrows an amount equal to a reported loss. Stated differently, the fictional company always holds investment assets exactly equal to its reported liabilities. That way, the present value of reported net income always the same, although the pattern may change.

6. To start, I assumed that acquisition costs were treated the same as any other cash flow in the building block model.

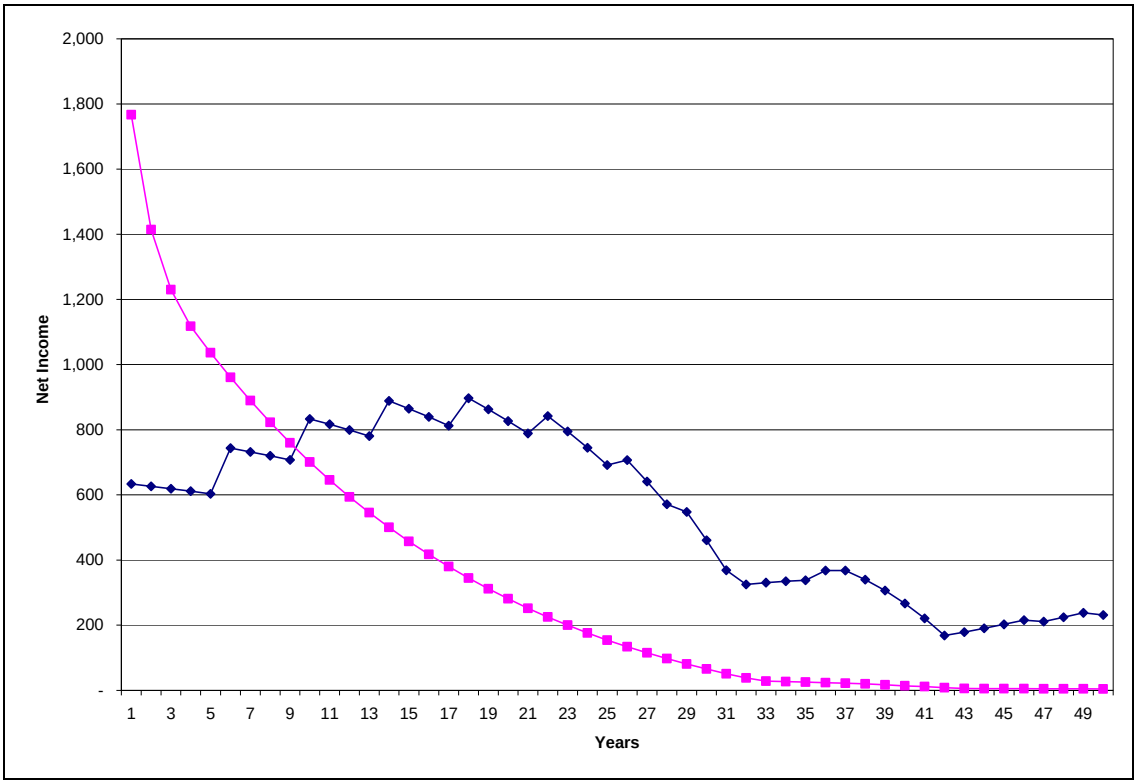
7. Now comes a question that has to be answered before we turn to unbundling. What is the basis for amortizing the composite margin? Remember, none of the choices will change the present value of reported income. You can change the pattern of reported income, but the present value will always return CU 10,574. Of course if you change the discount rate at some point in the illustration, the relationships break down. Let's keep it simple for now.

8. The IASB team identified three possibilities. We could amortize the margin based on the net mortality exposure (policy face amount less account balance) over the life of the book. That process produced an unwinding of net income looks like this:



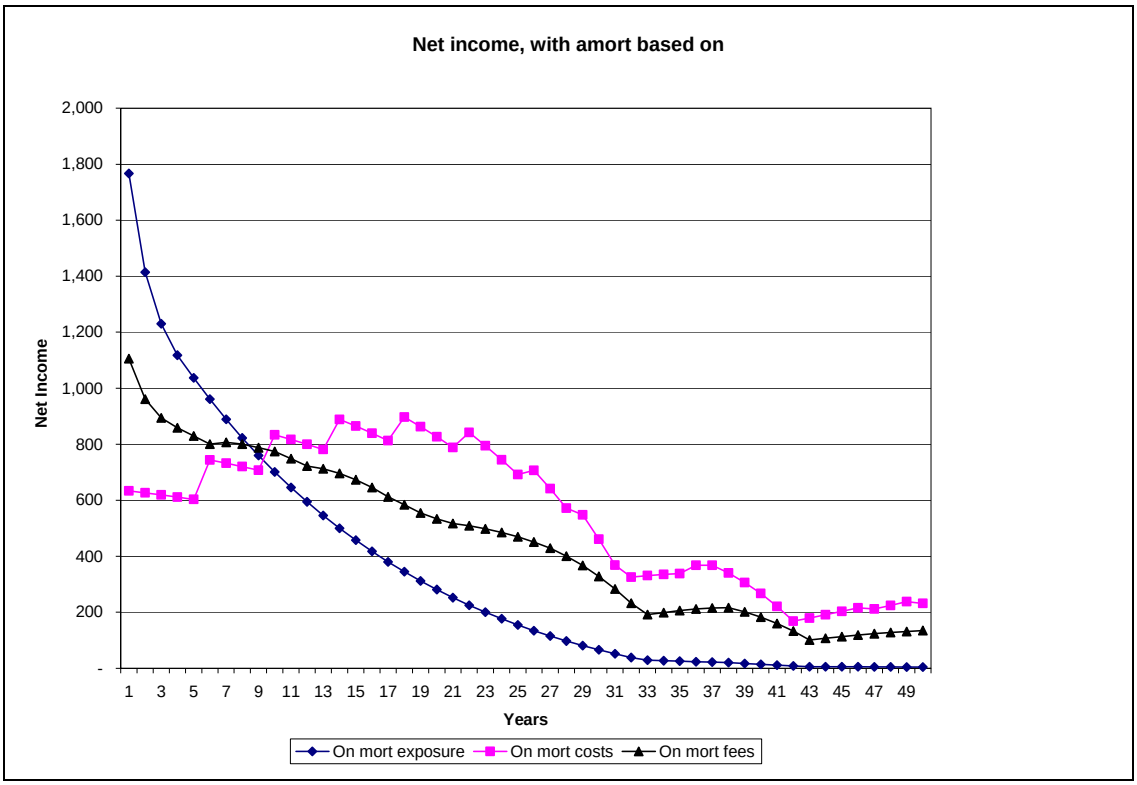
9. Of course, if I pull the acquisition costs out and charge them to expense, there is a big loss in year 1, a larger composite margin, and higher reported income in the remaining years than is illustrated here. The shape of the patterns after year 1 remains the same.

10. We next considered amortizing the margin based on the expected net cost of mortality benefits (total payments on death, net of related account balances). The pattern of net income is significantly different, as pictured below:



11. The saw tooth pattern is a by-product of the assumption that policyholders die or surrender in integers. That is, 4 policyholders may die, or 5, but not 4.6.

12. Finally, we experimented with amortizing the margin based on the mortality charges. This has the advantage of combining both the relative amount of mortality exposure (high in early years, less in later, owing to growing account balances) and the price of mortality risk (low in early years, high in later). Now we have a pattern of net income that falls between the first two, as shown below:



13. From here on, I will illustrate assuming the composite margin is amortized based on mortality fees, because it's the pattern in the middle. I should observe, though, that it would not be possible to apply it to contracts without explicit mortality fees.

14. I then ran the models on an unbundled basis. I treated the account balance as a simple "host" account that earns interest at an assumed 6%. All of the charges against the account became quasi-cash flows incorporated into the building block model. Instead of premiums, the model now had premium loads, mortality charges, and surrender charges. Instead of death benefits, it now had death benefits net of account balance.

15. If we treat the account balance as a host contract, an interest-earning bank account used to pay charges by the insurer, there is no difference in the pattern of reported net income. I should say, no difference in this case, because the account in this contract is a simple host with a variable interest rate. Right now, a more complex case, like an indexed or unit-linked host is beyond the capacity of my simple model.

16. I then assumed that surrender charges were an "account balance" activity and all other charges remained insurance activities. Now the picture changes. Under IFRS 9, we would measure the account balance at amortized cost using an effective

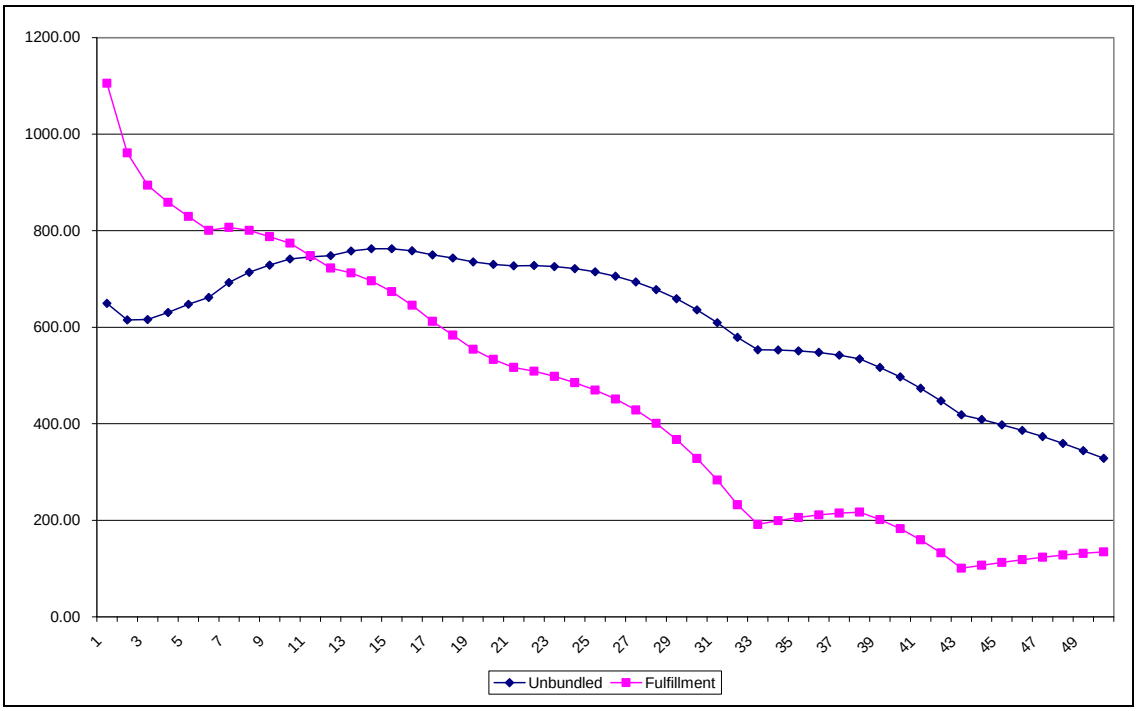
interest method. Including the surrender charges brings the effective interest rate for the account to about 5.47%. As I understand the developing FASB position on financial instruments, this liability would be measured at fair value. I'm not sure exactly how that would apply in this circumstance.

17. The present value of expected net income is still CU 10,574. With this unbundling:

    a. CU 4,862 will be recognized as the spread between the 6% earned on invested assets and the 5.47% effective rate on policyholders' accounts, and

    b. CU 5,712 will be recognized as the runoff of the composite margin.

18. The resulting pattern('unbundled'), compared to the all-insurance approach ('fulfilment'), looks like this:



19. As I said before, we have a basket of charges, credits, balances and cash flows that need to be sorted. Each can belong to one (and only one) of three categories, assuming unbundling:

    a. Financial instrument accounting;

    b. Insurance (building block) accounting, or

c. Neither of the above (I suppose this means as realized or paid).

20. I think the list below includes everything. I'd be interested in how each of us would arrange them into the three categories just described:

    a. Premium "loads" – amounts deducted from deposits to the policy account (in this case, 15%);

    b. Account fees – amounts deducted from the policy account, either as a flat amount or as a percentage of the account (in this case, CU 27 per year);

    c. Mortality charges assessed against the account balance;

    d. Surrender charges;

    e. First-year commissions and other nonrecurring costs of initiating the contract (in this case, a 50% first-year commission and CU 438 of other costs);

    f. Renewal commissions (in this case, 5% of premiums);

    g. Other recurring costs of servicing the contract (in this case CU 18);

    h. Costs of processing deaths (CU 64) and surrenders (CU 10);

    i. Mortality benefits paid in excess of the account balance.