

## The Valuation of Imputed Contributions to Unfunded Pension Schemes

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1. In his contribution to this electronic discussion group dated 6 June 2003, Anton Steurer discusses at length several methods of estimating imputed social contributions (SNA transactions D.122 and D.612). One of the questions he considers is whether contributions to unfunded pension schemes should be “discounted.” That is, the value of the contributions should be the value of the future benefits to which the employees are entitled as a result of providing their labor services in the current period. Mr. Steurer asks whether the value of those future benefits should be discounted to their present value or should they be undiscounted.
2. He notes the guidance in the 1993 SNA that the amount “should be based on the same kind of actuarial considerations that determine the levels of premiums charged by insurance enterprises,” and observes that the intent of the D.122 imputation is to reflect accurately the cost to the employer of the labor services received. He then observes that unfunded schemes differ from funded schemes in that private funded schemes have assets and those assets generate property income. As a result, the contributions are less than they would be without the property income. Because unfunded schemes have no assets and do not generate property income, perhaps the value of D.122 should be higher than it would be for an otherwise identical private funded scheme. Mr. Steurer concludes (page 8) that, “to be in line with the current ESA and SNA the D.122 should be determined by actuarial considerations with respects to all relevant factors such as age distribution, mortality, future benefits etc, but *excluding* imputed property income.” In other words, he is suggesting that the contributions should not be discounted to their present value. As Mr. Steurer points out, the valuation selected is important because it affects GDP to the extent that nonmarket producers, such as government units, operate unfunded pension schemes.
3. At first glance, Mr. Steurer’s suggestion is attractive. In a self-financing pension scheme that pays benefits many years after contributions are made, the benefits paid should equal contributions to the scheme plus property income received, ignoring service charges, erroneous actuarial assumptions, and holding gains. If there is no property income, then the contributions must equal the undiscounted future benefits. This formula is effectively Mr. Steurer’s formula (2) on page 9.
4. In my opinion, however, the value of the D.122 imputed social contributions to a pension scheme should be discounted in exactly the same way that contributions to private funded schemes are discounted. The lack of any property income that can be attributed to insurance policyholders similar to the property income for funded pension schemes has no effect of the value of the social contributions. Most simply, it seems odd that the cost to an employer of providing pension benefits to its employees should be higher if a scheme is unfunded than it if it is funded. The method of financing should not affect the cost. Put another way, the imputed social contributions reflect part of the cost to the employer of the employees’ labor services. The market value of the labor services does not depend on the means by which an employer makes the payment.

5. Mr. Steurer points out another anomaly of his proposal. Assume an employer has closed an unfunded scheme so that there are no active employees in the scheme but there are retirees continuing to receive benefits. The employer's "liability" will increase each period because there will be fewer discounting periods, and this increase would have to be matched by imputed social contributions. But without employees, this imputation would imply compensation being paid to nonexistent employees, clearly an absurd result (see pages 10–11). In other words, the real nature of the cost of that period is a property income, not a current employment cost.

6. The reason why the value of the pension contributions should be independent of the method of financing can be seen easily. If an employer makes an actual contribution to a separate pension fund, those contributions will be invested and earn property income. The sum of the contributions and the property income will finance the eventual pension benefits. Each time the employer makes a contribution, it no longer possesses those funds and cannot use them to earn property income (or a net operating surplus) on its own account. When it is time to pay the benefits, the employer is worse off by the amount of the contributions plus the foregone property income compared to what the employer's position would have been if it had not made any contributions. The employer who does not make a contribution would retain the amount of the contributions plus any property income earned, the total of which would be exactly equal to the pension benefits. Thus, the employer is indifferent between making actual contributions to a pension fund and simply paying the pension benefits when due.

7. Not making contributions to a pension fund but paying benefits when they are due is, of course, the defining characteristic of an unfunded pension scheme. The amount of the imputed D.122 contributions has no effect on the resources of the employer because they are exactly balanced by imputed social contributions from the employee to the employer. Thus, the employer with an unfunded pension scheme has more assets at its disposal than the employer with a funded pension scheme who makes actual social contributions. The employer with the unfunded scheme implicitly invests those additional assets and receives some return on that investment. When the time comes to pay the benefits, the employer with the unfunded scheme has additional assets equal to the benefits to be paid. The fact that these additional assets are not identifiable is not relevant.

8. If the imputed contributions are to be estimated on the same basis as the actual contributions, it would seem that there should be some imputed property income to match the actual property income associated with actual contributions. Such an imputation is, in fact, not necessary with the SNA as it currently stands because no liability is recognized with respect to unfunded pension schemes. Contributions to and benefits paid by unfunded pension schemes are recorded only as transfer payments in the current SNA. Contributions to and benefits by funded pension schemes are recorded both as transfer payments and as acquisitions and disposals of financial assets. It is the acquisitions and disposals of financial assets that creates or modifies a liability on the part of the employer or pension fund and creates the property income. If the contributions and benefits of unfunded pension schemes were also recorded as acquisitions and disposals of financial assets, then property income would have to be imputed.