

# VALUATION of STREAMS OF SHARED INTEREST PENSION DIVISIONS

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This monograph concerns what happens to a pension when one is unable to carve the pension in two and provide each party with his/her own separate pension for his/her separate lifetime. The latter is called a separate interest. We here are concerned with an arrangement for a shared interest, with or without an optional benefit stream payable to the surviving former spouse.

Actuarial science values benefits on a present basis. In effect it answers the question: on average, what sum of money in today's dollars would one need to invest in a reasonably secure investment in order to provide the streams of benefits being valued.

## **Interest:**

The interest rate chosen by the actuary<sup>2</sup> measures the time value of money. Certainly, receiving \$1000 today is worth more than the receipt of \$1000 five years from now. The amount of that difference is calculated by the actuary who seeks to find how much must be invested at prevailing interest rates in order to have \$1000 in hand five years from now. Thus the lower the interest rate, the more of today's dollars will be demanded to provide the future benefit.

## **Mortality:**

In measuring any benefit stream, the actuary determines how likely it is that a party will live to receive each possible payment of a benefit.. To oversimplify what actuaries do in determining this mortality, look at a life expectancy (LE) table. It will show that, until they are somewhat over age 50, women's LE exceeds men's LE by over 5 years. The difference is over 4 years until age 70, declining ultimately to about 2.5 years at age 80.

Look at Alma, age 50 and Pete, age 50. Actuarially, being female, Alma's life expectancy is 5.3 years longer than Peter's. But, if Pete is age 55, Alma's life expectancy is 10.3 years longer than Peter's.

Consider a benefit of \$1000 a month, with survivor to take \$1000 on death of the first (a 100% joint and survivor annuity). If Alma is age 55.5 and Pete age 50, you can

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<sup>2</sup> Many economists are skilled at these actuarial calculations. "Actuary" is used for ease of reference.

equally divide that benefit by saying “Split it 50-50 during joint lives; survivor take all.”<sup>3</sup>

Why? Husband age 50 and Wife age 55.5 have an equal chance of survival—and thus an equal chance of being the one to outlive the other and get the survivor benefit. This woman-older-than-husband arrangement seldom presents itself however, and that’s where the actuary comes in.

### **Independent Value of Survivor Benefits and Popups:**

Actuaries employ sophisticated means to determine the probability and duration of the joint survival of a couple as well as the alternate contingency and duration of the survival of either of the parties to a joint and survivor annuity. Thus the actuary can give the value of each of the three streams of a joint and survivor annuity, providing the value of the contingent payment streams, payable (a) while both alive, (b) while he only is alive (which may involve a “popup”<sup>4</sup>) and (c) while she only is alive.

### **How to Value a Joint and Survivor Annuity for Division**

Describe the plan details (e.g. whether and what kind of COLA is payable, what percent is payable to each on the prior death) to your actuary. Then provide the actuary with the birth dates of your clients. Request that the actuary to provide the value of each \$1 per month payable in the three streams.<sup>5</sup>

The answer supplied by the actuary can then be plugged into an Excel Spreadsheet along with the percentage of the benefits belonging to the community<sup>6</sup> in order to determine how much, if any, of the joint lives benefit will be paid to each spouse.

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<sup>3</sup> It is good to ascertain the parties’ health. If health is normal for a person of that age with no serious health conditions such as hypertension or diabetes, the actuarial tables will fairly measure the values. If there is a condition affecting life expectancy, a few actuaries (e.g., Patricia Watt of San José, California) are expert in reviewing medical records in order to determine whether and to what extent to “surcharge” the life expectancy of the affected individual. Thus Fred, age 60, may be treated like a 68 year old for the valuation analysis.

<sup>4</sup> Most plans impose a cost for a joint and survivor annuity. Some plans delete that cost when the contingent annuitant dies before the member, thus “popping” the benefit back up to the original amount. An example is the federal civil service (CSRS and FERS) and Nevada PERS.

<sup>5</sup> In order to make the actuary’s report “reproducible”, you should ask the actuary to state the valuation date and provide information regarding the mortality table(s) and interest rate(s) selected.

<sup>6</sup> Usually determined by the time rule, e.g., as set forth in *Gemma v. Gemma*, 105 Nev. 458, 778 P.2d 429 (1989); *Fondi v. Fondi*, 106 Nev 856, 02 P.2d 1264 (1990). *In re Marriage of Judd*, 68 Cal.App.3d 515, 137 Cal.Rptr. 318 (1977).

In playing with these numbers, one realizes that one cannot value survivor benefits by their cost. Survivor benefits are especially heavily subsidized by government—especially federal. For example a civil service or military member pays the same premium for a spouse 6 years older as he does for a spouse who is ten years younger.

Should the former spouse get the benefit of a 3x value survivor benefits by only being assessed the 1x cost? In an equal division community property state such as Nevada and California, the community property benefits in a Defined Benefit Pension Plan must be divided equally. To ignore the actuarial present value of the three components will violate this requirement.

### **Shared Interest Domestic Relations Order Without Survivor Annuity**

Note: Upon the death of the nonmember, many plans such as Nevada PERS, ERISA plans and the military will only pay the nonmember's benefits to the Member spouse. Here we have **two streams** of benefit: (1) Payable during joint lives and (2) payable upon Nonmember's early death. The same analysis can be used to determine how much to increase nonmember's benefit in order to compensate her for this reversion.