Topic: Taxation and Policyholder Behavior: The Case of Guaranteed Minimum Accumulation Benefits

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Abstract: This paper considers variable annuity contracts embedded with guaranteed minimum accumulation benefit (GMAB) riders when policyholder's proceeds are taxed. These contracts promise the return of the premium paid by the policyholder, or a higher stepped up value, at the end of the investment period. A partial differential valuation framework, which exploits the numerical method of lines, is used to determine fair fees that render the policyholder and insurer profits neutral. Two taxation regimes are considered; one where capital gains are allowed to offset losses and a second where gains do not offset losses, reflecting stylized institutional arrangements in Australia and the US respectively. Most insurance providers highlight the tax-deferred feature of a variable annuity. We show that the regime under which the insured is taxed significantly impacts supply and demand prices. If losses are allowed to offset gains then this enhances the market, narrowing the gap between fees, and even producing higher demand than supply fees. On the other hand, when losses are not allowed to offset gains, then the demand-supply gap increases. When charging the demand price, we show that insurance companies would be profitable on average. We also show how investment policy, as reflected in the Sharpe ratio, impacts and interacts with policyholder persistency.