



**CALCULATION OF N-YEAR TERM JOINT LIFE  
INSURANCE PREMIUM RESERVE USING GROSS  
PREMIUM VALUATION METHOD**

**UNDERGRADUATE THESIS**

**Submitted as one of the requirements to obtain  
Sarjana Aktuaria (S.Aktr)**

**by:**

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**FACULTY OF BUSINESS**

**ACTUARIAL SCIENCE STUDY PROGRAM**

**CIKARANG**

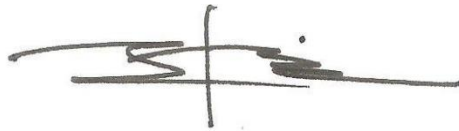
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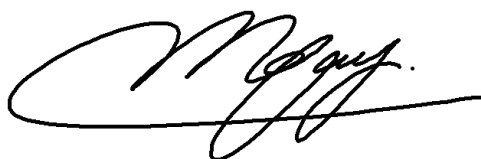
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## Calculation of N-Year Term Joint Life Insurance Premium Reserve

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## **ABSTRACT**

The premium reserve is important in the life insurance business since it reflects on the company's liability to be paid to the insured. As a result, a sufficient amount of premium reserve is required while negative amount can be detrimental especially for newly developed company. In n-year term joint life insurance, the insured are two people that will obtain benefit only when the first person dies within the contract years. This study is aimed to focus on the calculation of premium reserve of n-year term joint life insurance and will be using Gross Premium Valuation method for calculating premium reserve. The annual premium to be paid for joint life insured aged 30 years male and 28-year-old female is Rp 871.146,00. While the premium reserve discovered no negative amount during the first few years of the contract and that the amount gradually increasing over the years until the contract ended at year 20 which resulted in Rp 21.174.747,95 for the final year. Additionally, the result of gross premium valuation and prospective reserve were found to be similar with only a little difference. The sensitivity towards adjustment on interest rate, initial fee, and maintenance fee also by no means has significant impact to the reserve value.

**Keywords** : Gross Premium, Gross Premium Valuation Method, Joint Life Status, Term Life Insurance



## **ABSTRAK**

Dalam asuransi jiwa gabungan berjangka waktu n tahun, tertanggung adalah dua orang yang akan memperoleh manfaat hanya jika orang pertama meninggal dunia dalam tahun kontrak. Cadangan premi penting dalam bisnis asuransi jiwa karena mencerminkan kewajiban perusahaan yang harus dibayarkan kepada tertanggung. Maka diperlukan cadangan premi dalam jumlah yang cukup, selain itu jumlah cadangan negatif dapat merugikan perusahaan. Penelitian ini bertujuan untuk memfokuskan pada perhitungan cadangan premi pada asuransi jiwa gabungan berjangka n tahun dan akan menggunakan metode Gross Premium Valuation untuk menghitung cadangan premi. Premi tahunan yang harus dibayarkan oleh kedua tertanggung laki-laki yang berumur 30 tahun dan perempuan berumur 28 tahun adalah sebesar Rp 871.146,00. Sementara cadangan premi tidak ditemukan jumlah negatif selama beberapa tahun pertama kontrak dan jumlah tersebut secara bertahap meningkat selama bertahun-tahun hingga kontrak berakhir pada tahun ke-20 yang menghasilkan Rp 21.174.747,95 untuk tahun terakhir. Selain itu, hasil valuasi premi bruto dan cadangan prospektif ditemukan hampir sama hanya dengan sedikit perbedaan.

Kata kunci : Asuransi Jiwa Berjangka, Cadangan Premi, Gross Premium, Metode Gross Premium Valuation, Status Hidup Gabungan

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Cikarang, Indonesia, March 2023

Melly Sptyani

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