

STAT3953

Group Project

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Product Design

Introduction & Background Research

Product Features

Target Markets

Marketing Strategies

Pricing Model

Cash Flow Model

Assumptions

Financial Analysis

Sensitivity Analysis

Possible Policy Variation



Objective



WHO ARE WE?
NEW MANAGEMENT TEAM
OF *AFFINITY INSURANCE*



DEVELOP NEW PRODUCT TO
DIVERSIFY *AFFINITY INSURANCE'S*
BUSINESS PORTFOLIO



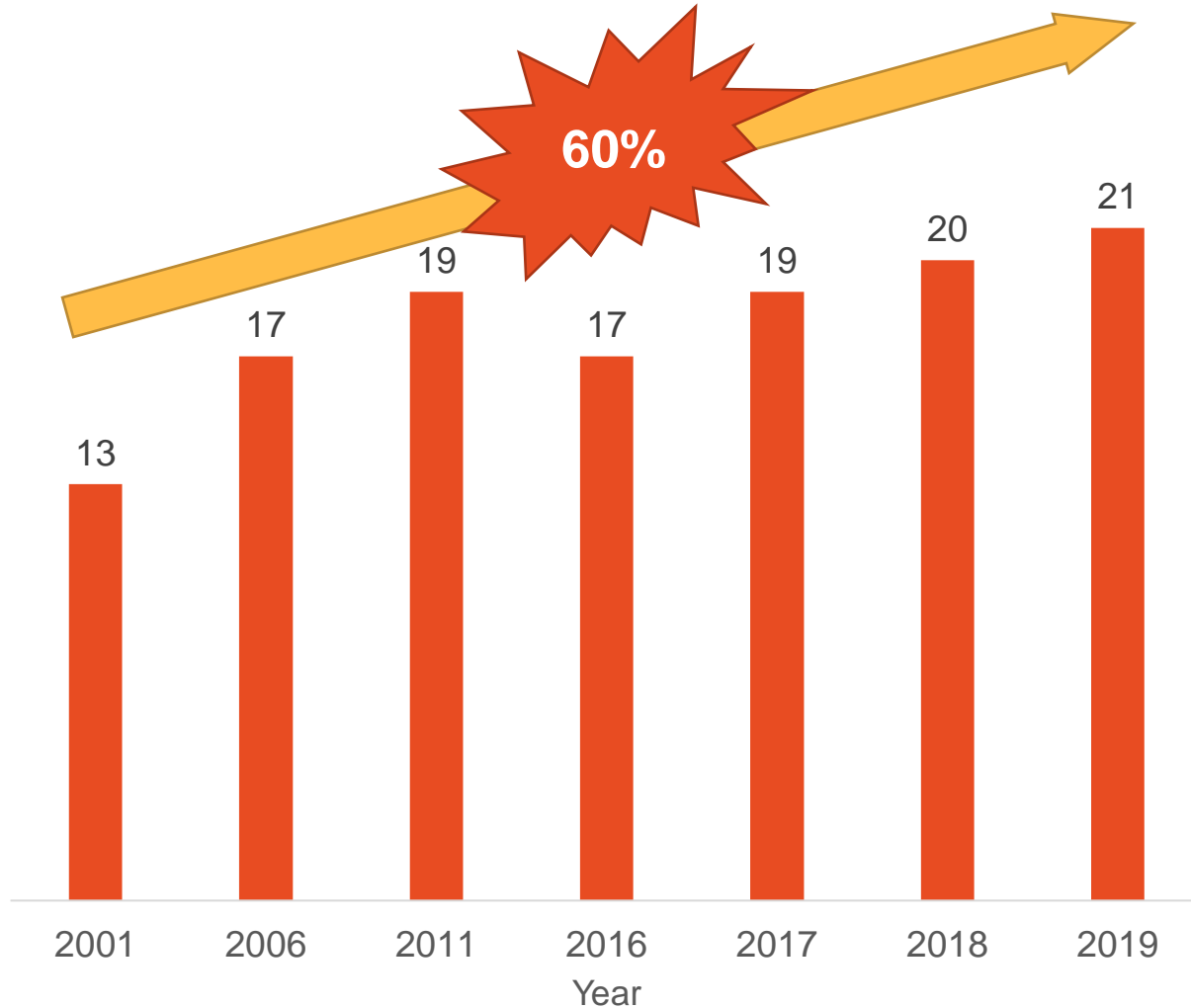
PROVIDE PROPOSAL TO THE
SHAREHOLDERS OF *AFFINITY*
INSURANCE

Marriversary

1st Endowment Marriage Product in HK



Number of Divorce per year in Hong Kong
(thousand people)



HK Divorce Trend 2001-2019

Causes:

- 1) Increasing financial insecurity in HK
- 2) Evolving modern values towards marriage and individual liberty in HK society



Market Consideration





Marriversary

1st Endowment Marriage Product in HK

Marriversary provides contingent benefits to meet couples' needs in the courses of **marriage and divorce**

Client purchases
Marriversary for
his/her spouse

Spouse receives
benefit upon
maturity/divorce/death



Divorce Protection



Anniversary Gift



Product Highlights

1. First and only marriage endowment product
2. Protect against divorce and mortality risks
3. No-fault situation when couples divorce
4. Saving component encourage happy marriage
5. Flexible options on sum assured and maturity year



Product Positioning

Internal Positioning

New product line

No cannibalization of existing products

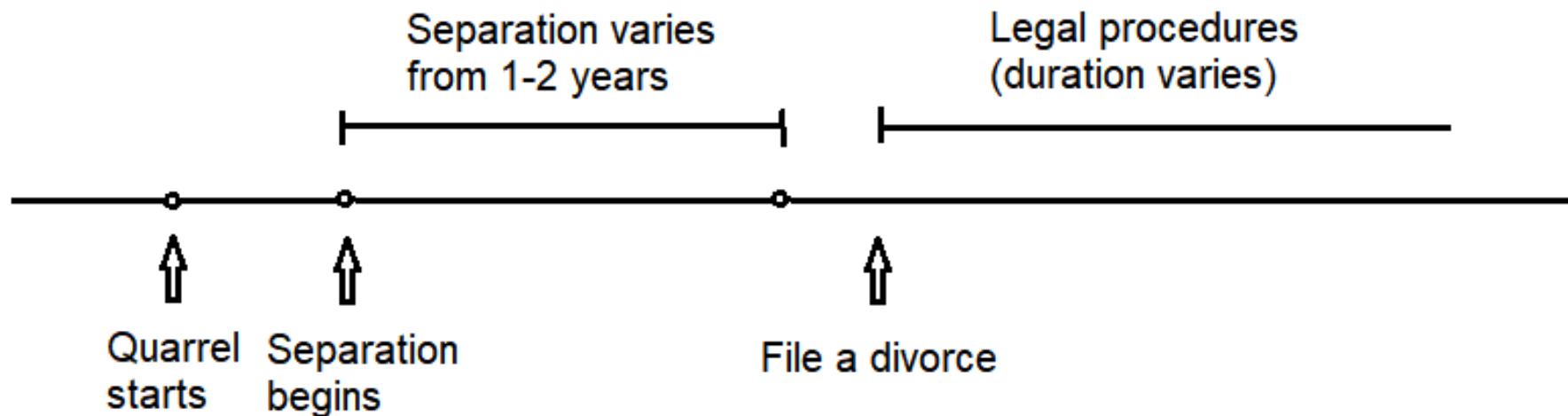
External Positioning

First to market

Gain large market share

Legal Process for Divorce

- Under HKSAR Marriage Law:
 1. If both agree to divorce: at least 1 year of separation before filing a divorce; or
 2. If only one party wishes to divorce: at least 2 years of separation before filing a divorce





Legal Disputes during Divorce

- 50:50 distribution of assets
- Request alimony (贍養費): lump sum or monthly payment

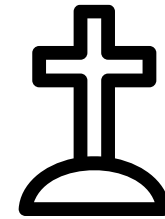
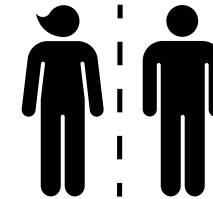
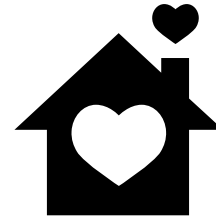
Problem during recovery process:

1. Alimony arrears
2. Late and insufficient alimony
3. Be scold or humiliated when collecting alimony
4. Ex-husband went missing

- *Marriversary* can provide a **no-fault divorce**
 - Lowering cost by avoiding expensive litigation incurred by divorce

Product Features

- Who are the policyholders?
 - Payer
 - Beneficiary
- What benefits do we provide?
 - Maturity Benefit
 - Divorce Benefit
 - Death Benefit
- How to avoid adverse selection?
 - 3-year Elimination Period
 - Linearly increasing sum assured



- Highlight
 - 3-year grace period



Product Features

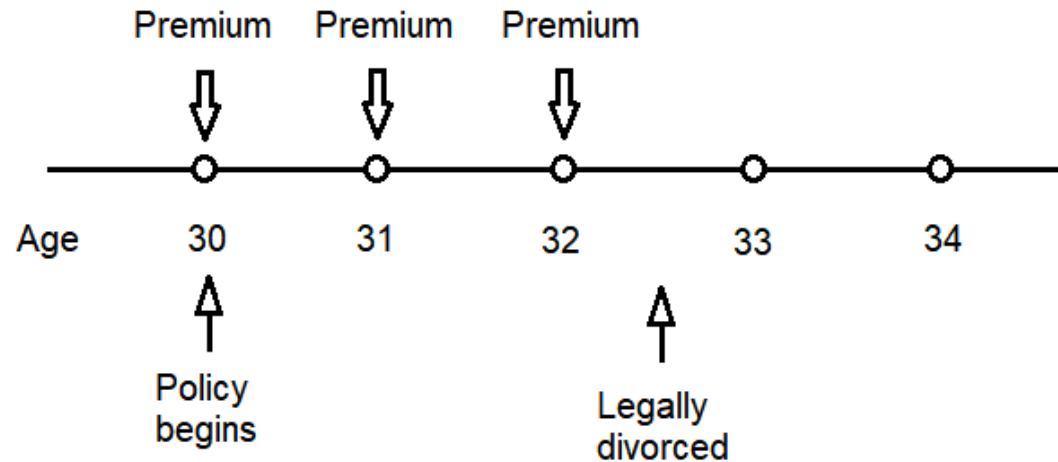
Sum Assured	Minimum: HK\$100,000 Maximum: HK\$3,000,000		
Issue Age	Age 18 - 50	Age 18 - 45	Age 18 - 40
Policy Term	15	20	25
Premium Payment Term	12-pay	17-pay	20-pay
Premium Payment Mode	Annual or monthly		
Premium Structure	<ul style="list-style-type: none">• Level and guaranteed• Varies by plan, issue ages, genders, smoking status of both payer and beneficiary• Waived for 3 years upon indication of divorce		

Product Features - Benefits

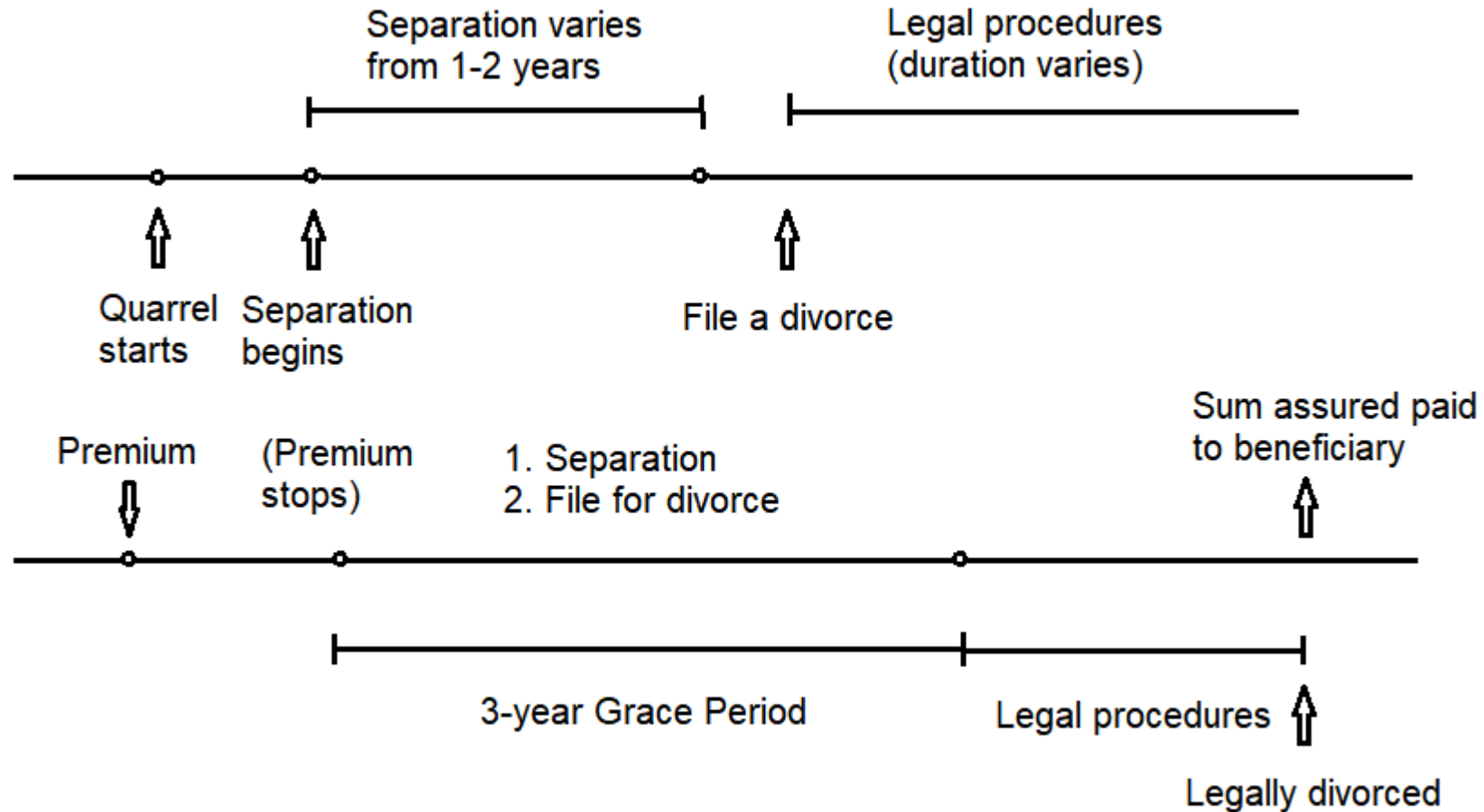
Maturity Benefit	100% of SA	
Divorce Benefit		
Death Benefit	Case 1: Only beneficiary dies	ROP to payer
	Case 2: Only payer dies	100% of SA
	Case 3: Both dies within a policy month	100% of SA
Surrender Charge		
Surrender Benefit	Before 3 rd policy anniversary	None
	After 3 rd policy anniversary	Paid-up policy with reduced and unguaranteed SA less surrender charge

Case Study 1

- Mr. Chan bought *Marriversary* at age 28.
- 2 years later, they file for a divorce
 - Divorce during elimination period
 - No benefit will be paid

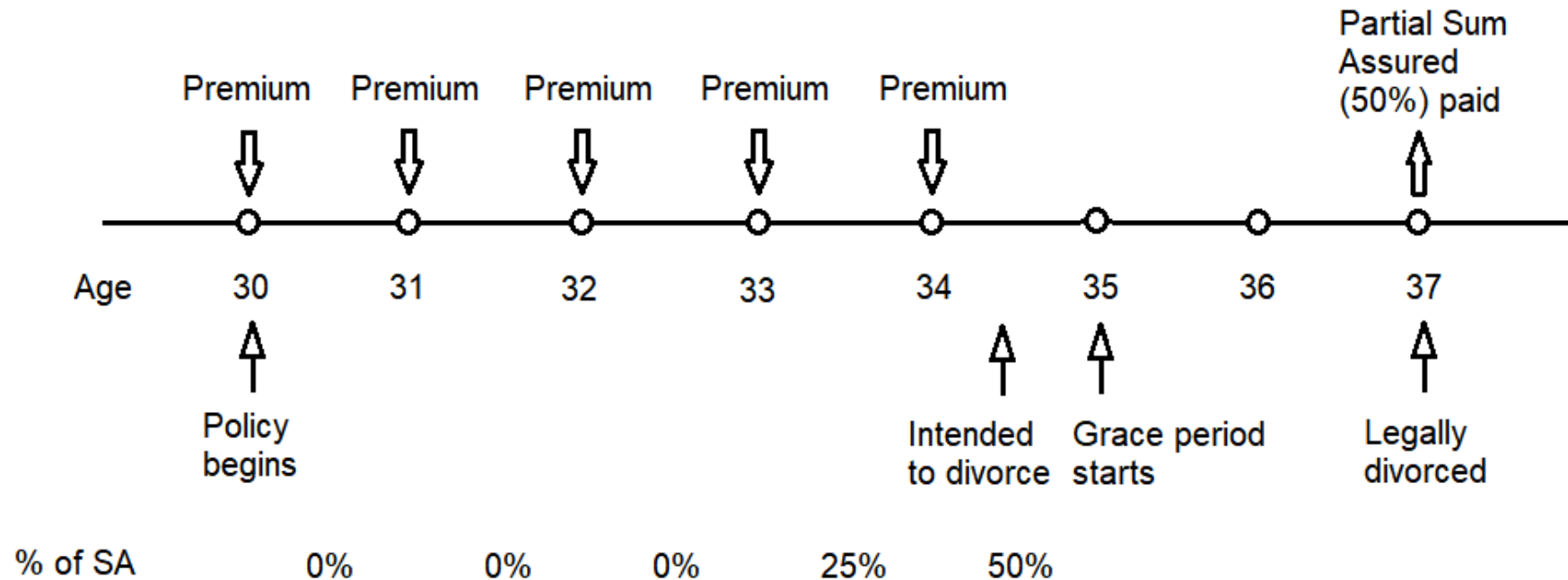


3-Year Grace Period



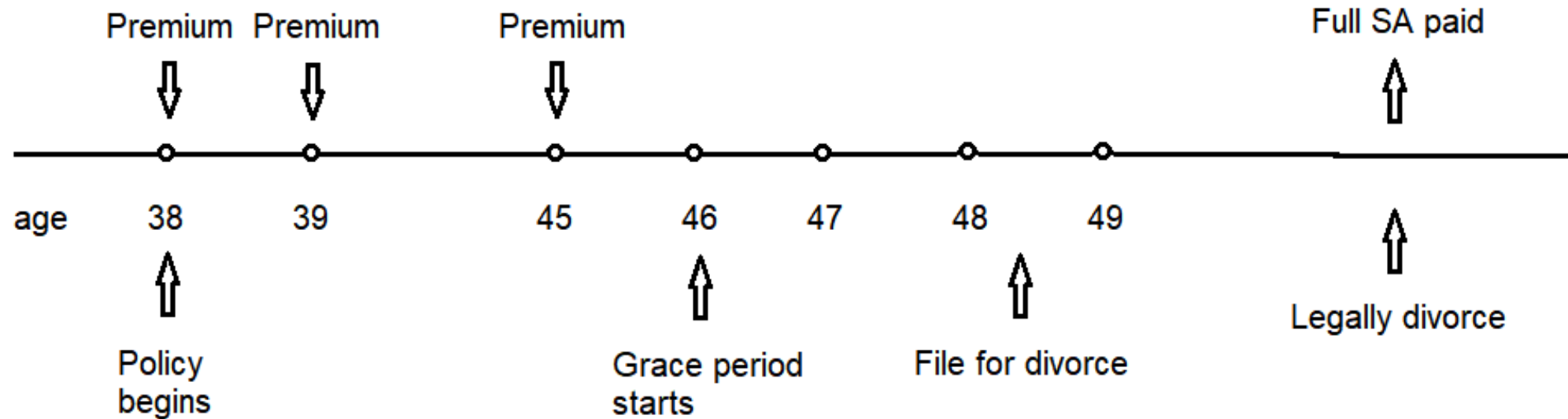
Case Study 2

- Mr. Lee bought *Marriversary* at age 30, SA is HK\$1,000,000.



Case Study 3

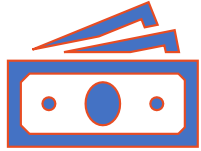
- Mr. Wong bought *Marriversary* at age 38.



Target Markets

- Pre-wed and Married couples
- Different financial status
- Couples who are going through stages of life that may diminish partner's earning ability





Characteristics of Marriversary in the view of Pre-wed and married couples

- Extend protection for beneficiary after premium payment ceased
- Beneficiary makes decisions
- Saving component
- Life protection
- Return of premium
- Level premium



Marketing Strategies



Partnering with wedding planners



Advertisement on public transports



Social media pages



Promotional emails



Through agents



Distribution Channel

Brokers

Direct agents

Online purchase

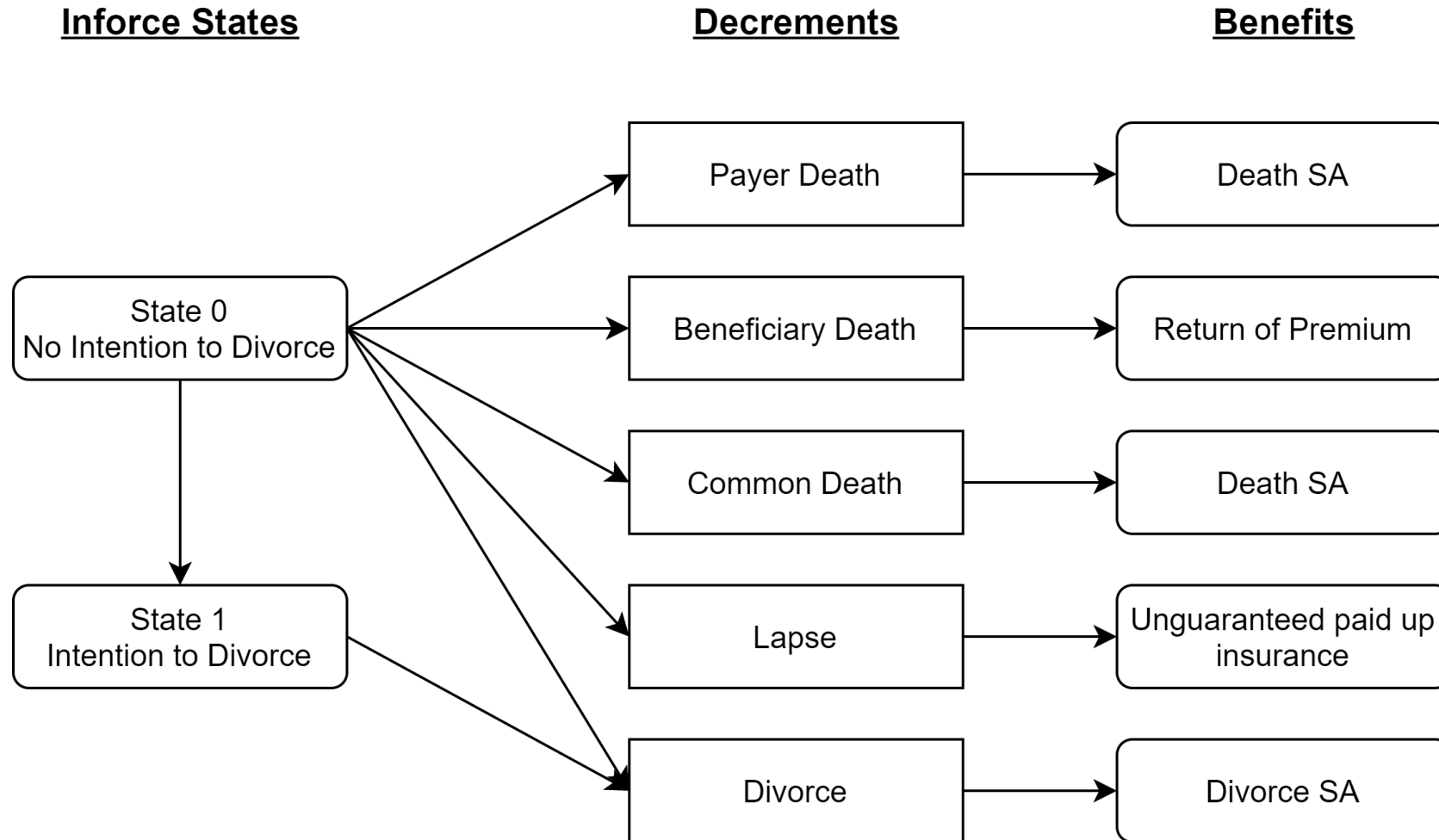


Commission Rates

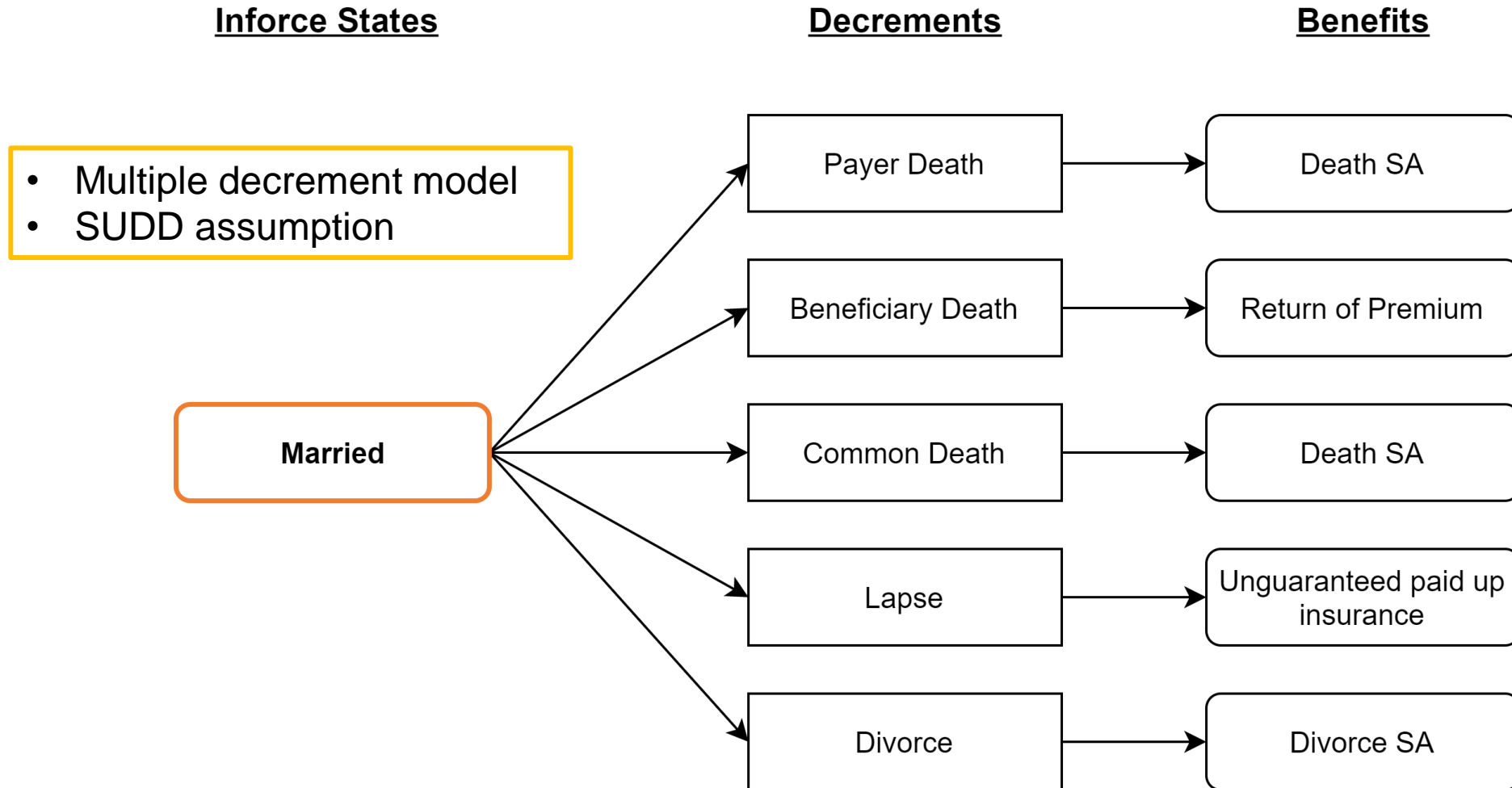
Initial Commission Rate 30% of the first premium

Trailing Commission
Expense 5% of future renewals

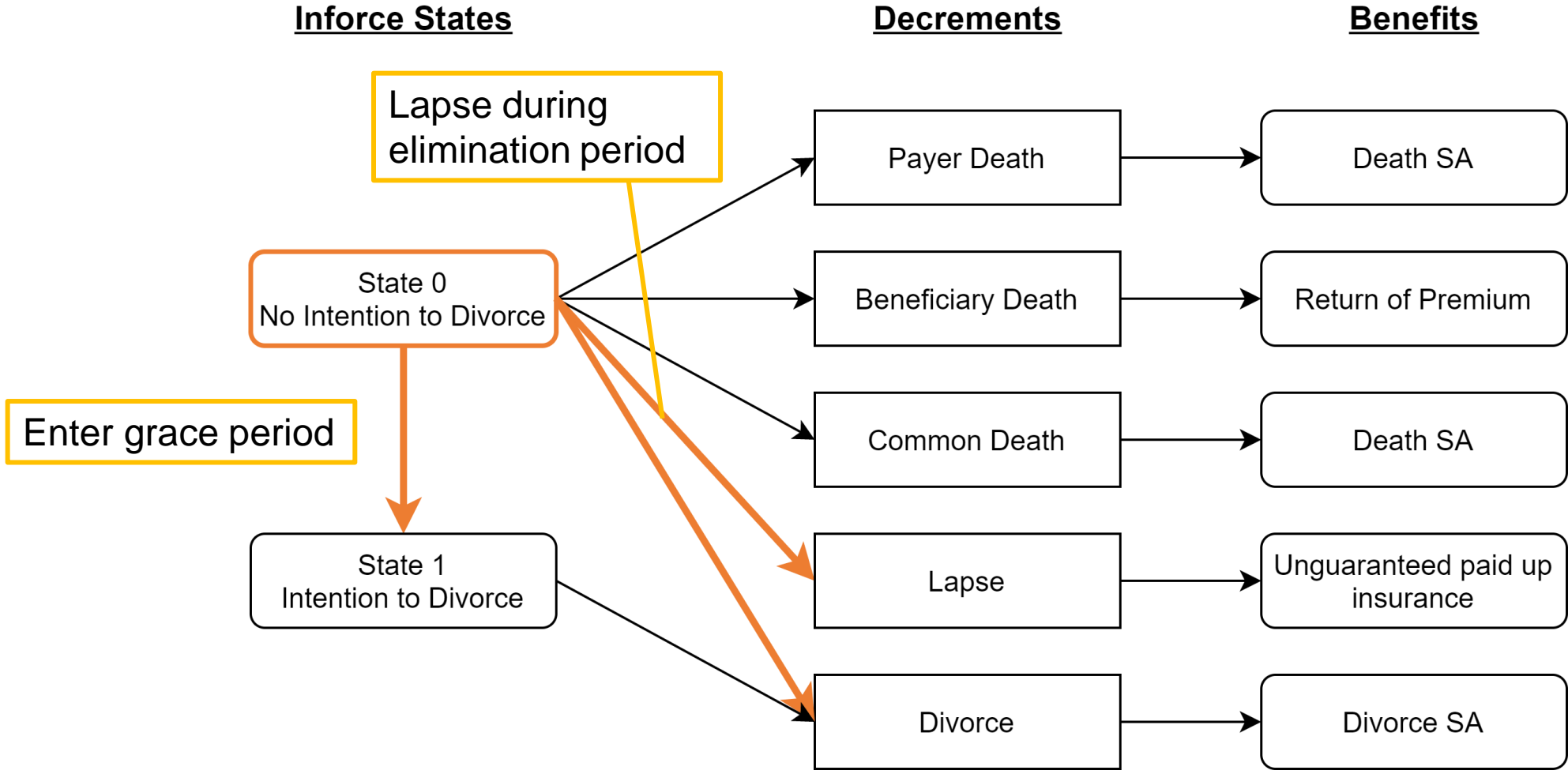
Multi-State Cash Flow Model



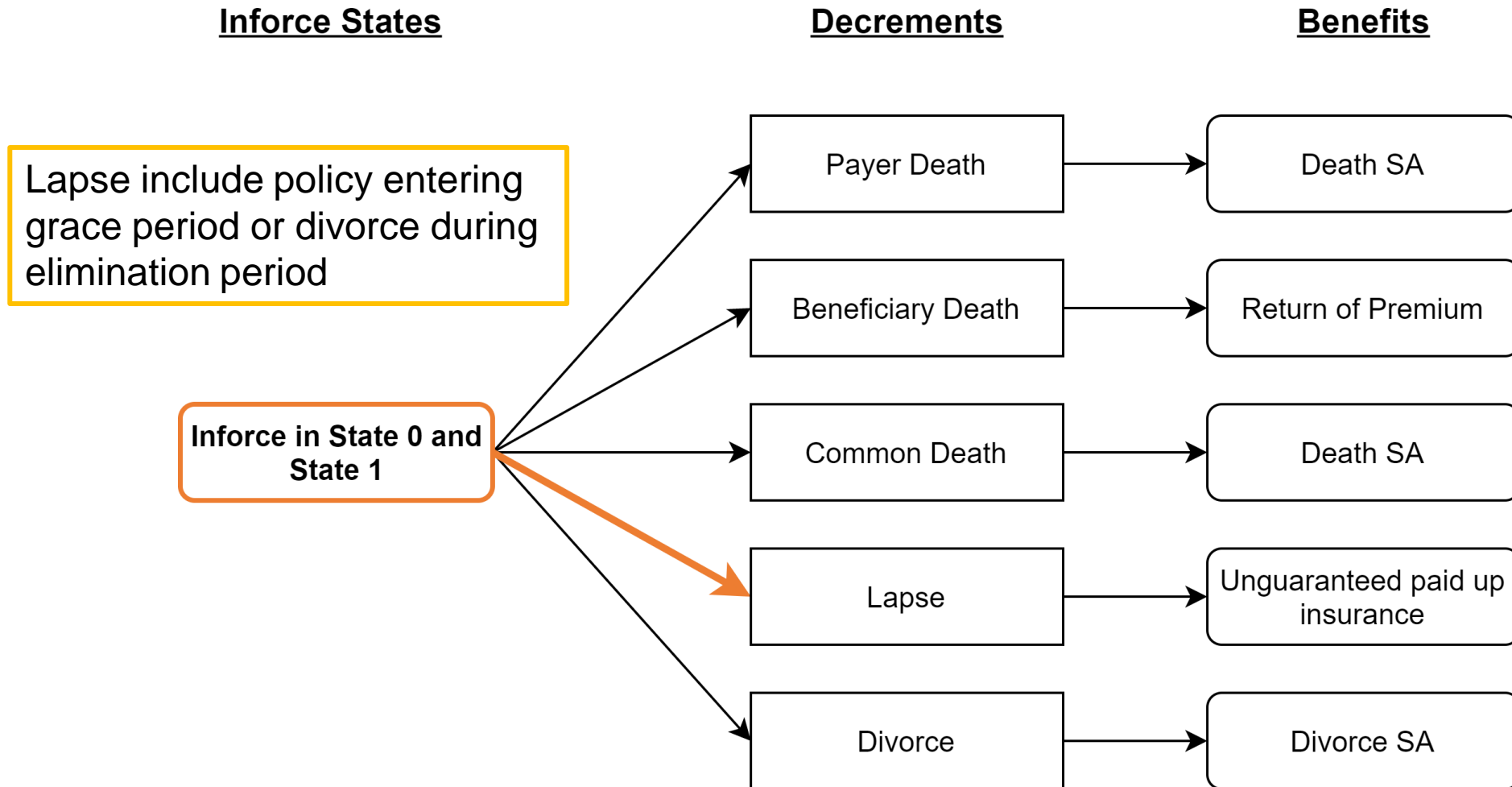
Population Decrement Table



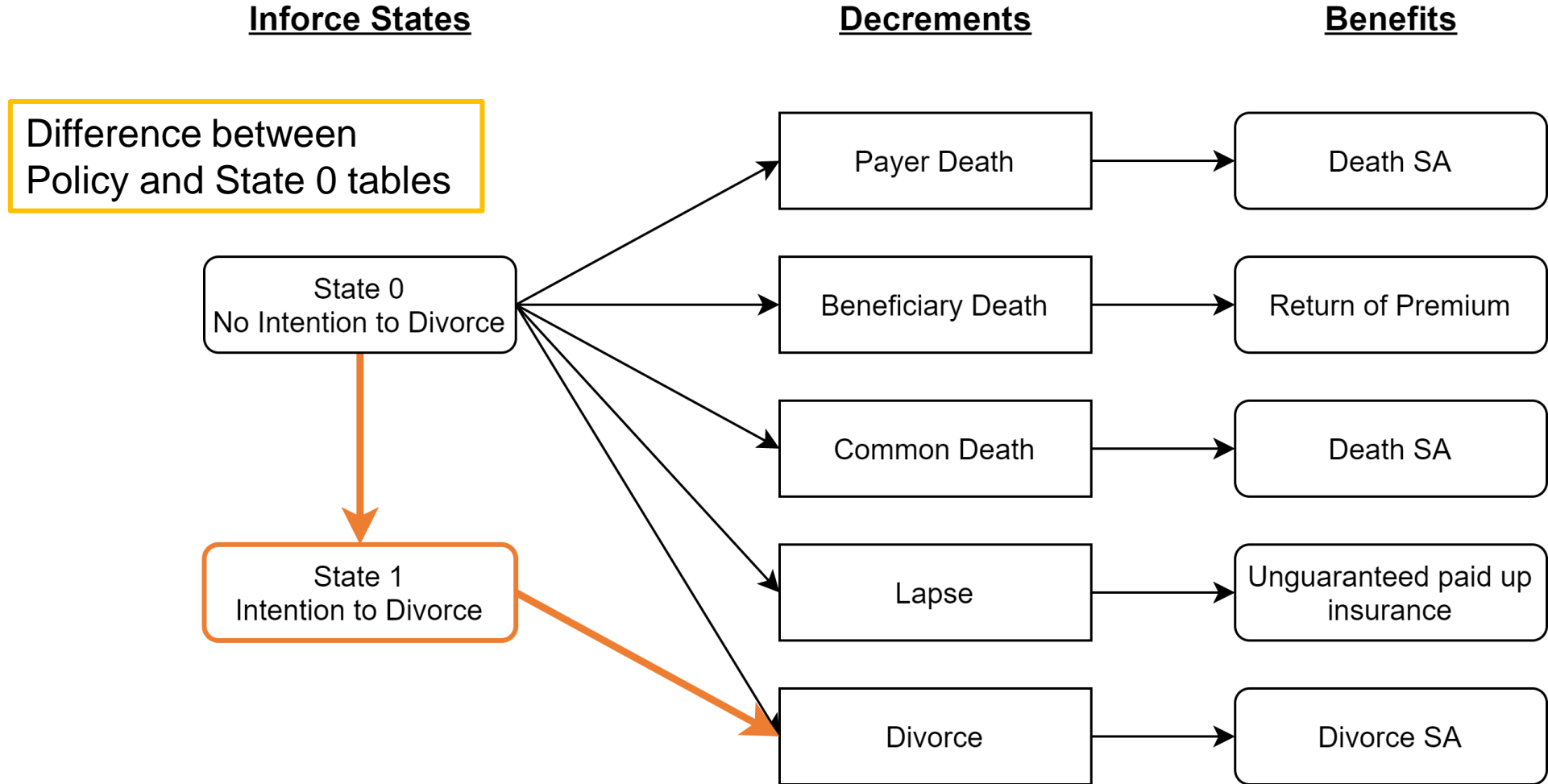
State 0 Decrement Table



Policy Decrement Table



State 1 Decrement Table







Pricing Assumptions

- **Profit Margin:** $\geq 10\%$
- **IRR:** $\geq 15\%$
- **Hurdle Rate:** 10%

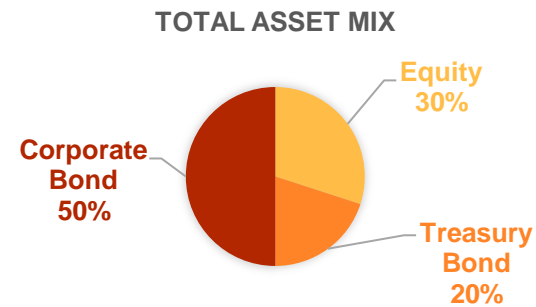
Pricing Assumptions -- Divorce Assumption

-  & 
 - Divorce rates by age group
 - Married population
 - Divorce cases
- Averaging method to merge male rates and female rates
 - High correlation between ages of couples
- Bicubic interpolation and extrapolation, floored by minimum group rate
- Time between having divorce intention and divorce filing completion is uniformly distributed from 0 – 3 years



Pricing Assumptions -- Overview

Mortality		Hong Kong Assured Lives Mortality Table (HKA18) - With 169% adjustment on smoker's mortality
Lapse		0%
Expense	Initial	8% of premium
	Maintenance	5% of premium
	Settlement	\$2 per \$1000 SA
Economic	Rate of Return	5.4648%
	Expected Inflation Rate	3%
	Corporate Tax Rate	16.5%



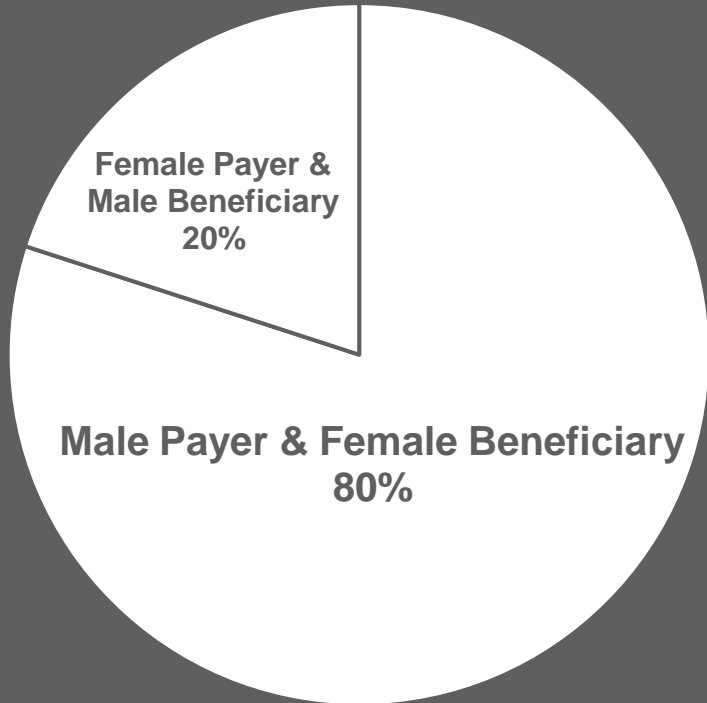
Reserve Assumptions -- Overview

- Liabilities
 - Gross Premium Valuation (GPV)
- Risk margin for insurance and economic risks
 - Provision for Adverse Deviation (PAD) using Hong Kong Risk Based Capital (HKRBC)

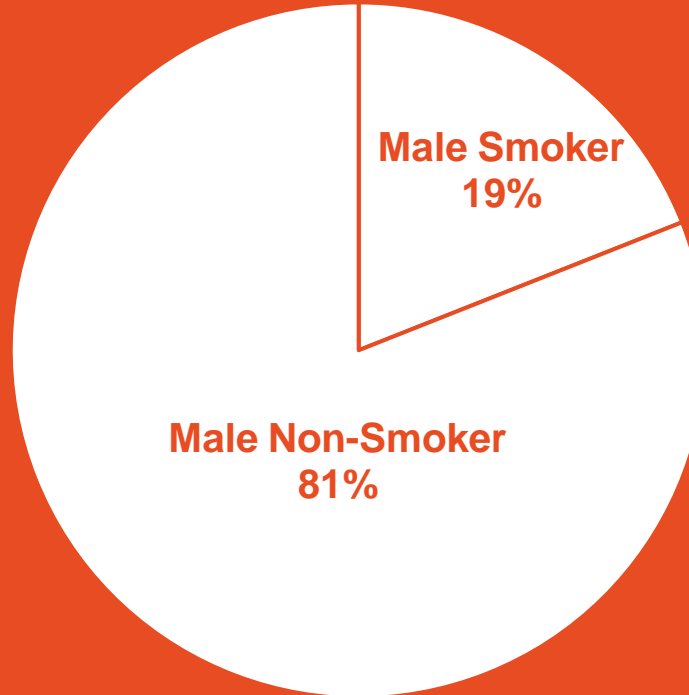
Mortality	Payer	+15%
	Beneficiary	-25%
Divorce		+30%
Lapse		-40%
Expense		+10% for all years +1% additive in expense inflation
Economic	Interest Rate	-25%

Business Mix for Profitability Projection

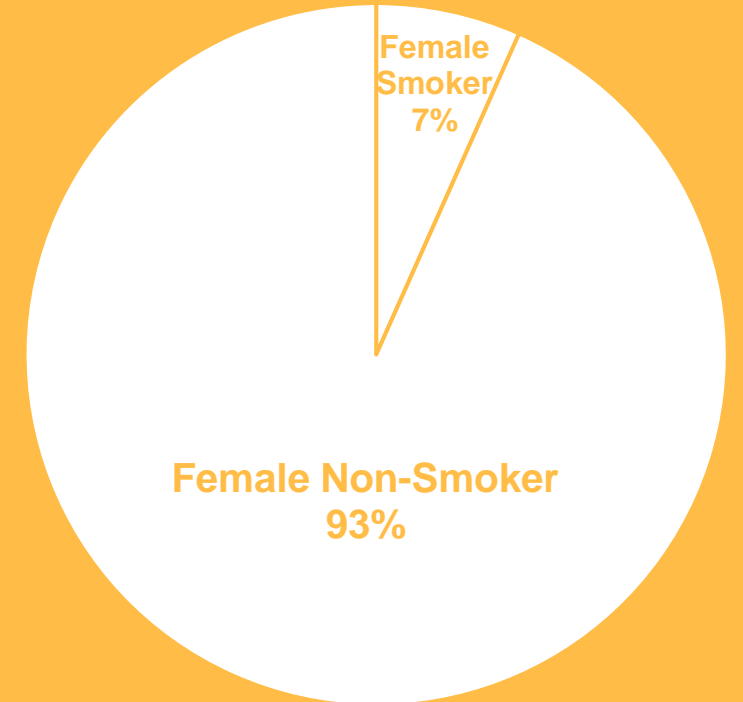
SALES VOLUME
By Sex Distribution



SALES VOLUME
By Smoker Status
(Male)



SALES VOLUME
By Smoker Status (Female)



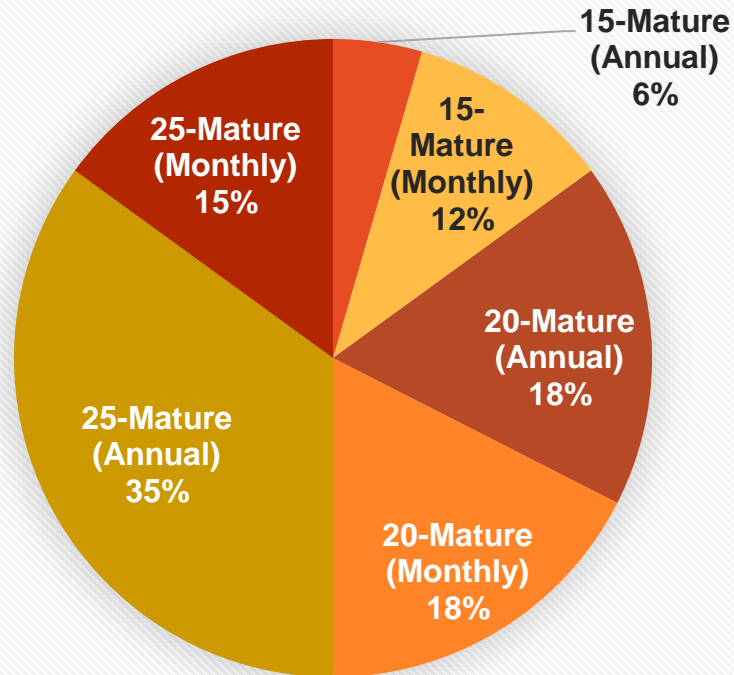
Business Mix for Profitability Projection

Sales Volume By Issue Age Mix							
		Age of Male					
		18	22	27	32	37	42
Age of Female	18	0.2%	0.7%	0.3%	0.1%	-	-
	22	0.2%	5.6%	6.4%	2.2%	0.6%	0.3%
	27	-	1.9%	21.5%	14.5%	3.5%	1.3%
	32	-	0.2%	3.7%	16.6%	6.3%	2.3%
	37	-	-	0.4%	1.8%	3.4%	2.4%
	42	-	-	0.1%	0.3%	0.5%	2.5%

Business Mix for Profitability Projection

SALES VOLUME

By Maturity Year & Payment Mode



By Maturity Year

Maturity Year	Total Sales Volume
15	15%
20	35%
25	50%

By Payment Mode

Maturity Year	Annual	Monthly
15	30%	70%
20	50%	50%
25	70%	30%

Monitoring Experience

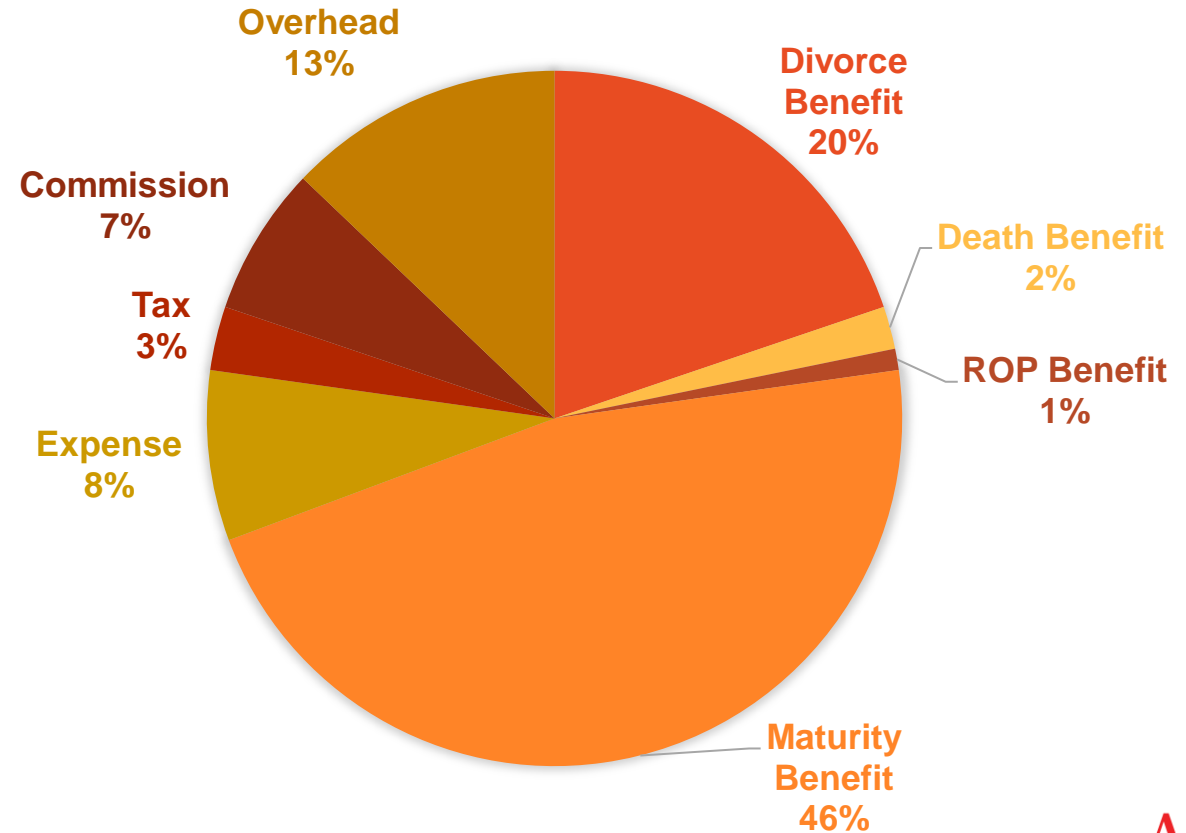
	Experience studies to be performed
Mortality	At least every 3 years
Divorce rate	At least every 3 years
Interest rate	On regular basis by investment team

- Mortality
 - currently assumes lives are independent
- Divorce rate
 - need to reconcile with 2021 census
 - focus on in-house divorce experience in future
 - Current assumption:
 - Static and independent from marriage length
 - No skewness factor in divorce progress
- Interest rate
 - re-pricing when necessary

Profitability Metrics & Premium Split

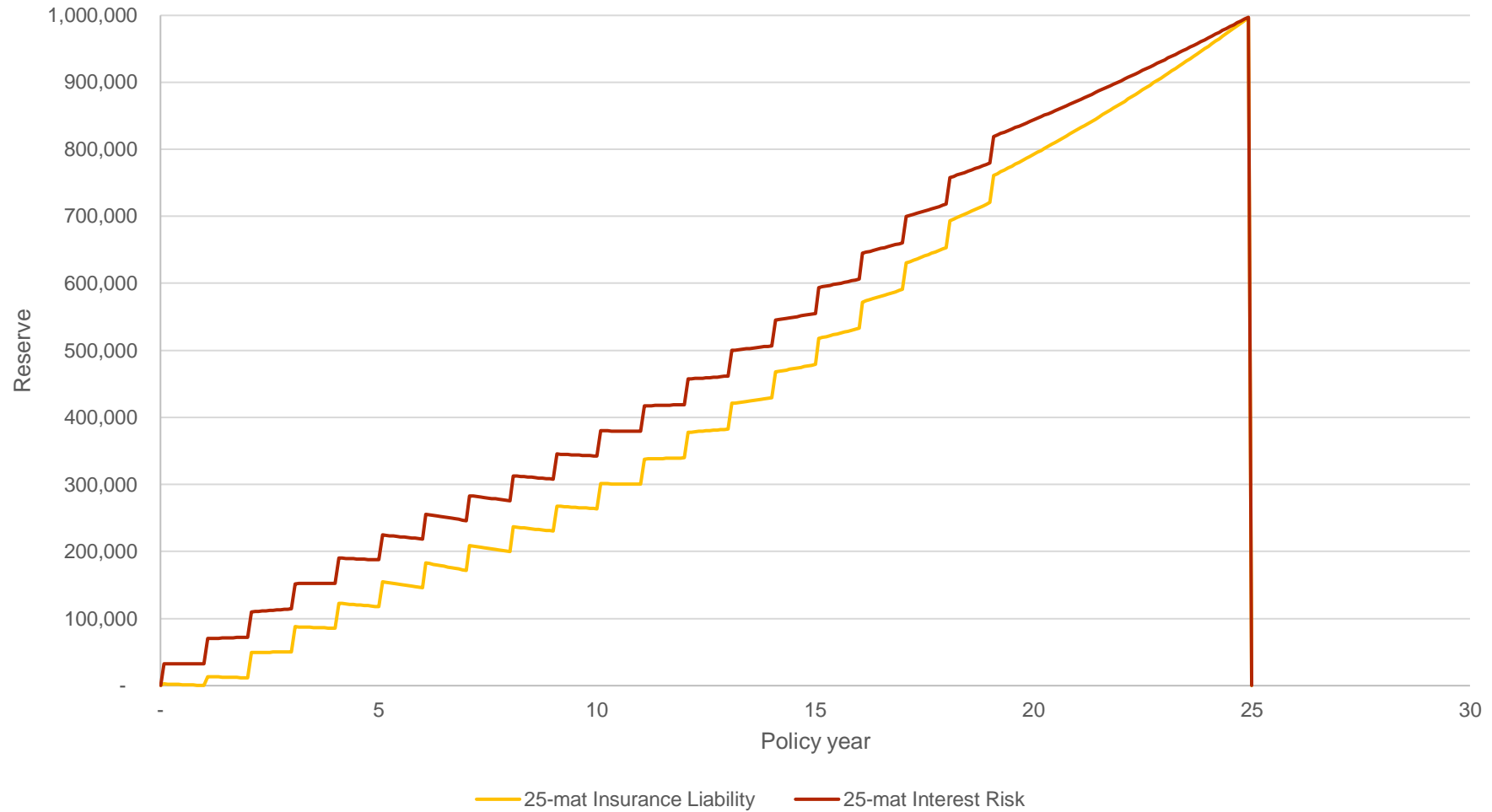
	Total
Profit margin	10.08%
NBV per AP	76.25%
NB strain	22.82%
Discounted payback period	2.42

PORTFOLIO AVERAGE PREMIUM BREAKDOWN



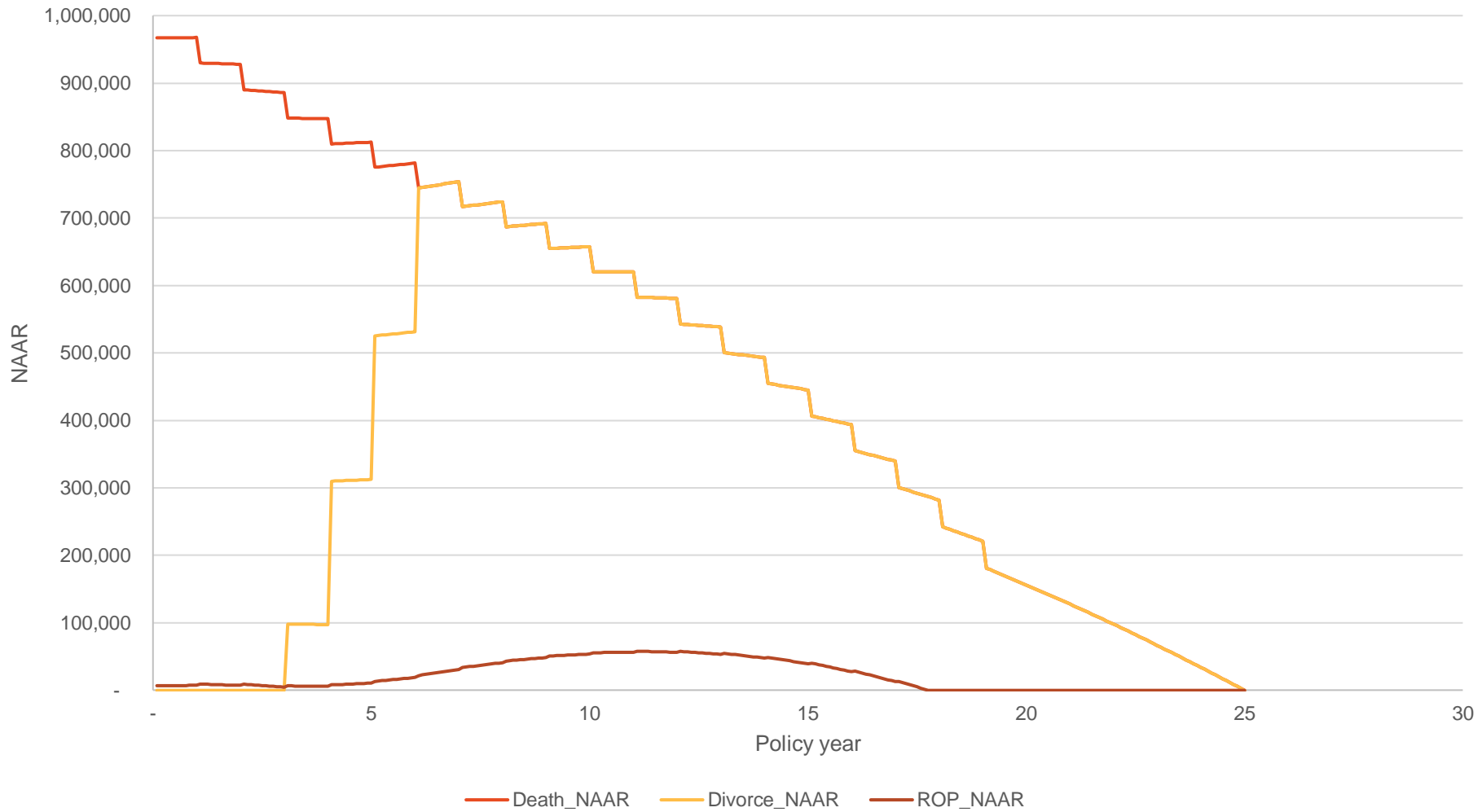
Reserve Pattern

Reserve Pattern for Marriversary



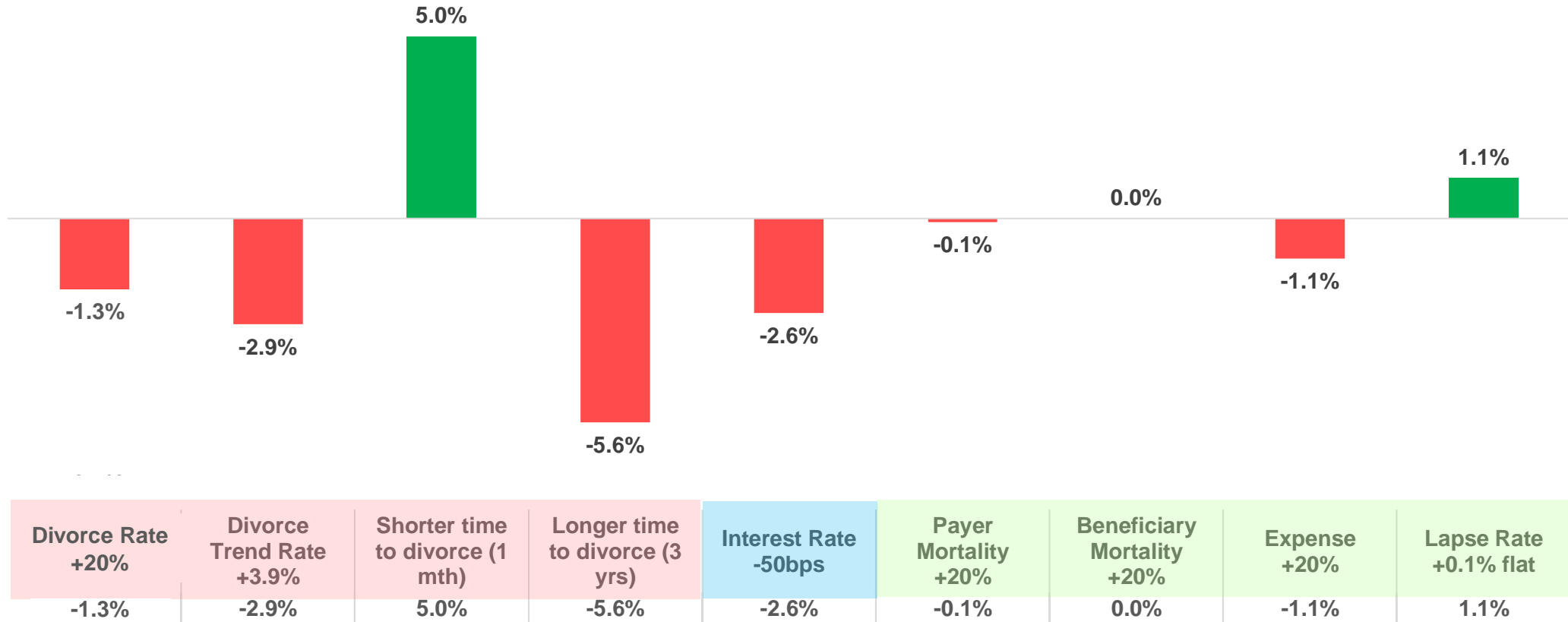
Net Asset at Risk (NAAR)

25-Mature NAAR



Divorce risk and interest rate risk are the key risks to profitability

Impact on Profit Margin





Possible Policy Variation - Participation

Unguaranteed dividends



Aggressive pricing assumptions and investment portfolio



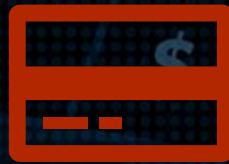
Higher target customer yield rate



Possible Policy Variation



Guaranteed cash
payment



Variations in payment-
term and maturity option



Guaranteed issue



Conclusion

- ✓ First-to-market
- ✓ Revolutionary marriage protection
- ✓ Comprehensive multi-state model

