

Proposals of A Suitable Solvency Regulation for Vietnam Life Insurance Industry

– Based on the Experience from
the US and Japan

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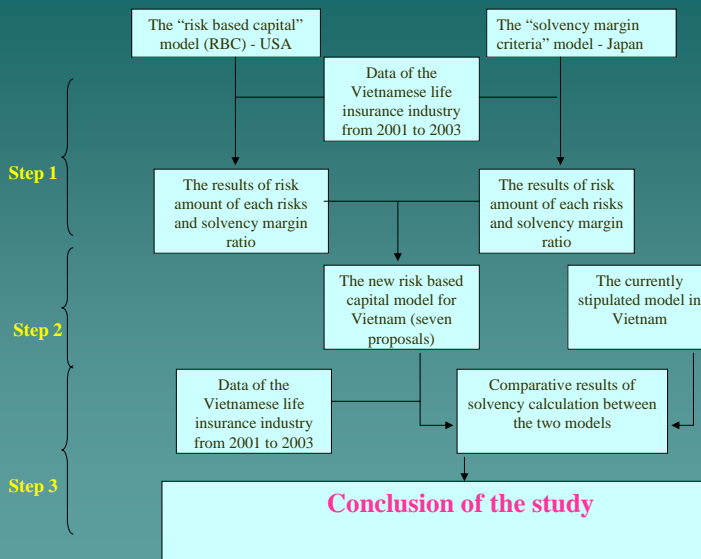
Outline of the presentation

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 - Main steps of the study
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Background of the study

- ◆ Two common methods of supervising solvency in the world: fixed -ratio model and risk-based capital model (RBC)
- ◆ The “fixed-ratio” model used by European Union since 1979
- ◆ The “risk-based” capital model (RBC) used in USA in 1992
- ◆ Japan introduced the new model called “solvency margin criteria” in 1996, which is in general similar to RBC of the US (so called Japanese RBC)
- ◆ Vietnam issued new standards of solvency margin and threshold value in 2000 based on the fixed-ratio model
- ◆ Up to now there has been no study that uses the experience and data from Vietnam life insurance industry to compare the effectiveness of fixed-ratio model with that of risk-based model

Main steps of the study



$$\sqrt{(R_1^2 + (R_2 + R_3)^2) + R_4 + R_5}$$

Step 1 - Calculating solvency margin ratio by using the two RBC models

◆ Japanese RBC model

- Total risk amount

$$R = \sqrt{(R_1^2 + (R_2 + R_3)^2) + R_4 + R_5}$$

R_1 : Risk amount to insurance risks

R_2 : Risk amount to assumed interest risks

R_3 : Risk amount to asset management risk

R_4 : Risk amount to business administration risks

R_5 : Risk amount to major catastrophic risks

- Solvency margin (S) = Owner's equity + Price fluctuation provisions + Subordinated debts

$$\sqrt{(C-4a) + \sqrt{((C-1) + (C-3a))^2 + (C-2)^2 + (C-5)^2}}$$

Step 1 - Calculating solvency margin ratio by using the two RBC models

◆ Japanese RBC model

- Solvency margin ratio (M) = S / (0.5 * R)

◆ US RBC model

- Total risk amount (R)

$$R = \sqrt{(C-4a) + \sqrt{((C-1) + (C-3a))^2 + (C-2)^2 + (C-5)^2}}$$

C-1: Risk amount of assets

C-2: Risk amount of insurance risks

C-3a: Risk amount of interest rate risks

C-4a: Risk amount of operational risks

C-5: Risk amount of catastrophic risks

C-1, C-2, C-3a, C-4a and C-5 are signs of different risk amount, not formulas

Step 1 - Calculating solvency margin ratio by using the two RBC models

- ◆ US RBC model
 - Solvency margin (S) = Owner's equity
 - Solvency margin ratio (M) = $S / (0.5 * R)$
- ◆ In common sense, US RBC model is considered as *tighter than* Japanese RBC model
- ◆ In my calculation, US RBC model seems *looser than* Japanese RBC model. There are two reasons:
 - Strict requirements given to joint venture, shares and real estate in US model do not affect total risk amounts of Prudential and AIA

Step 1 - Calculating solvency margin ratio by using the two RBC models

- Tight requirements given to assumed interest rate specified in Japanese model largely affect total risk amounts of Prudential and AIA
- ◆ Implications to the current situation of Vietnam life insurance industry
 - Recent prolonged recession in Japan → life insurers found difficult to earn enough investment returns to cover high assumed interest rate of in-force insurance policies → tighter requirements for life insurers setting high assumed interest rate. In Vietnam, life insurers are also setting high assumed interest rate → if applying Japanese model will increase total risk amount of each insurer

Step 1 - Calculating solvency margin ratio by using the two RBC models

- ◆ Implications to the current situation of Vietnam life insurance industry
 - In USA, capital market is so developed → for purpose of security, strict requirements on risky investments such as shares, joint venture and real estate. In Vietnam, stock market is in its infancy → life insurers cannot invest in such risky investments → if applying US model will not be so effective to regulate investments of life insurers in Vietnam

Step 2 – Creating a new RBC model for Vietnam

- ◆ Because of the risk of highly assumed interest rate in Vietnam, it should be suitable to apply interest rate risk factor of Japanese RBC
- ◆ It should be reasonable to exercise asset management risk factors for shares, deposits and real estate as specified in the US RBC
- ◆ Because of undue reinsurance regulations in Vietnam, it should be useful to take reinsurance risk factor of Japanese RBC
- ◆ In Vietnam the amount of receivable accounts of unpaid premiums has become high, it should be safer to use receivable risk factor of the US RBC

Step 2 – Creating a new RBC model for Vietnam

- ◆ In order to deal with risks of adverse assumed mortality or morbidity rate, it is appropriate to apply insurance risk factor of Japanese RBC
- ◆ To prevent occurrence of loss beyond anticipation in business administration, it is necessary to take business administration risk factor of the US RBC
- ◆ Because of many catastrophic risks in Vietnam, it is not surprising to use catastrophic risk factors of Japanese RBC

Step 3 – Comparative study of the proposed model and the current model

- ◆ Calculating solvency margin ratio of each life insurer in Vietnam by using the proposed RBC model → compare with the current model being used in Vietnam → there are two points
 - for BaoViet and BaoMinh-CMG: not so different between results of two models
 - for AIA, Prudential and Manulife: quite different between results of two models

Step 3 – Comparative study of the proposed model and the current model

- ◆ Necessary to find out the difference and the reasons in cases of AIA, Prudential and Manulife
- ◆ In case of AIA
 - In 2001, as specified by the old regulation, solvency margin (S)=paid up capital. AIA suffered losses and had remaining owner's equity much lower than legal capital but still recognized by MOF as being solvent. The proposed model clearly shows this insolvency
 - In 2002, as specified by the new regulation, solvency margin (S)=Owner's equity. AIA had to increase its capital from its parent company

Step 3 – Comparative study of the proposed model and the current model (solvency margin ratio and financial condition)

	Year 2001		Year 2002		Year 2003	
	Current model	New model	Current model	New model	Current model	New model
AIA	N/A	0.1%	1,008 %	510%	729%	315%
	solvent	insolvent	solvent	solvent	solvent	solvent
Prudential	N/A	129%	103%	69%	207%	89%
	solvent	solvent	solvent	insolvent	solvent	insolvent
Manulife	N/A	531%	441%	246%	279%	147%
	solvent	solvent	solvent	solvent	solvent	solvent

Step 3 – Comparative study of the proposed model and the current model

◆ In case of Prudential

- In 2001, by using the old regulation → no sign of risky condition in the company. However, by using the proposed model, Prudential's ratio was 129%, very close to required ratio of 100%
- In 2002, by applying the current model, the ratio was 103% → still solvent. By using the proposed model, the ratio was 69% → insolvent. In fact, Prudential set assumed interest rate 12% much higher than that of government bond (8.5%) → much higher total risk amount

Step 3 – Comparative study of the proposed model and the current model

◆ In case of Prudential

- In 2003, Prudential increased its paid up capital but still had accumulated losses → the ratio from the current model was 207% → quite solvent. Nevertheless, the ratio from the proposed model was 89% → still insolvent. Not reducing such a high assumed interest rate is main reason for this fact
- If Prudential still keeps high assumed interest rate and does not increase its capital, its financial conditions will not be changed in 2004

Step 3 – Comparative study of the proposed model and the current model

- ◆ In the case of Manulife
 - Even for results of both models, this company is still solvent. However, sharp decrease in solvency margin ratio cannot be ignored
 - With high growth of new business and no injection of capital may make Manulife fall into risky situation in 2004
- ◆ At the end of 2004, MOF issued a new circular to limit assumed interest rate not higher than 80% of interest rate of government bond (around 9% per year). It means that assumed interest rate for new life insurance policies from 2004 will not be higher than 8% per year.

Conclusion

- ◆ The proposed RBC model seems stronger than the current one
- ◆ With high growth of economy, Vietnam life insurance market has big potential to develop. When the market becomes bigger, it should be more effective to replace the current model by the proposed RBC one to maintain the solvency of life insurers
- ◆ Through the cases of AIA in 2001 and Prudential in 2002, solvency report should be submitted to MOF quarterly rather than yearly to help MOF quickly intervene any life insurer in danger of insolvency

Limitations of the study

- ◆ Because Vietnam life insurance market was born recently, this study is based on data of Vietnam life insurance industry for short period of 2001-2003
- ◆ The business of life insurance is experiencing dramatic changes worldwide that will pose unprecedented challenges for supervisory authorities in the future. The results of solvency calculation should be modified in cases of having remarkable changes in Vietnam life insurance industry

Thank you for your attention!