

2022 Virtual ASTIN AFIR/ERM Colloquia,
June 21-23

How the changes of dividend for policyholders reduce or increase the solvency margin?

June, 2022

Ono, Yutaka (Meiji Yasuda Life Insurance)

Presenter: Yamashita, Miwaka (Tokai Tokyo Financial Holdings)

The views and opinions expressed herein are those of the author and do not necessarily reflect the views of the belonging company.

Contents

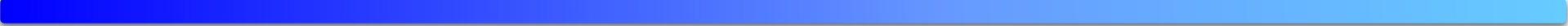
Introduction

Model

Simulation

- The Effect of the Management Action of Dividend Policy

Summary



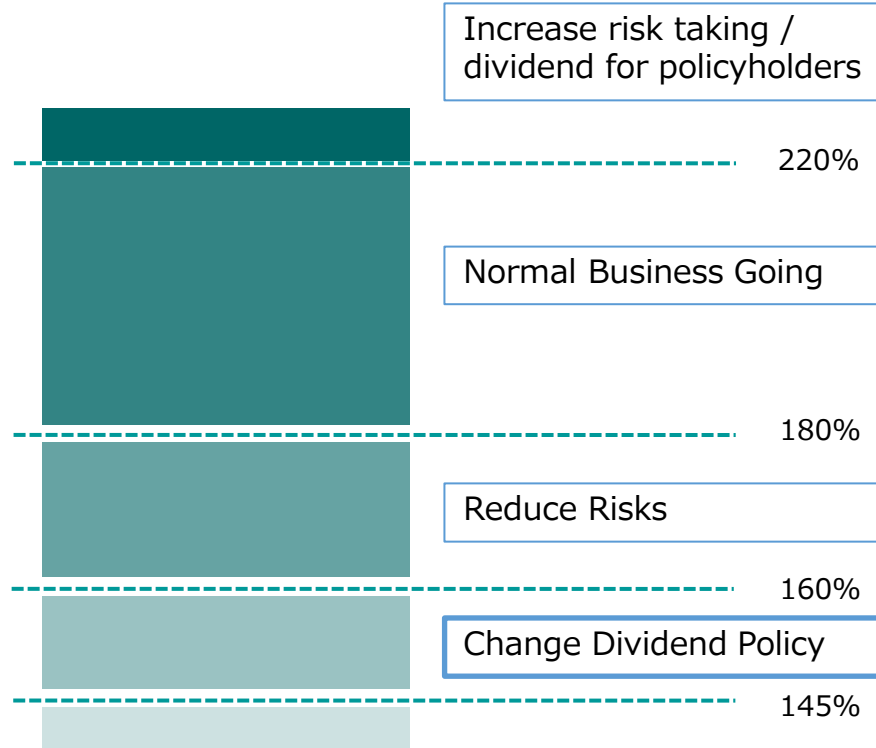
CS and Solvency II allow insurers to take “management actions” into account, those actions including changes of dividend for policyholders, actuarial assumption, condition for claims paid, investment portfolio, reinsurance strategy. The management actions affect both net asset value of insurers (capital) and their total risks. In this presentation, setting the model for the effect of management actions, how the changes of dividend for policyholders reduce or increase the solvency ratio, both reduce of the capital and total risks considered. The model where dividend for policyholders increases in proportion to its solvency ratio, the action makes the ratio increase in a short term, and decrease in a long run.

Introduction

Allianz case

- Typical example is that risk take attitude and/or dividend policy for policyholders/shareholders are subject to Solvency Margin (economic value-based solvency)
- In Allianz (German Insurer) case, in the case of the margin is over 220%, it increases business risk taking and dividend policy for policyholders/shareholders. On the other hand, in the case of under 160%, it reduces those.

【Allianz case】



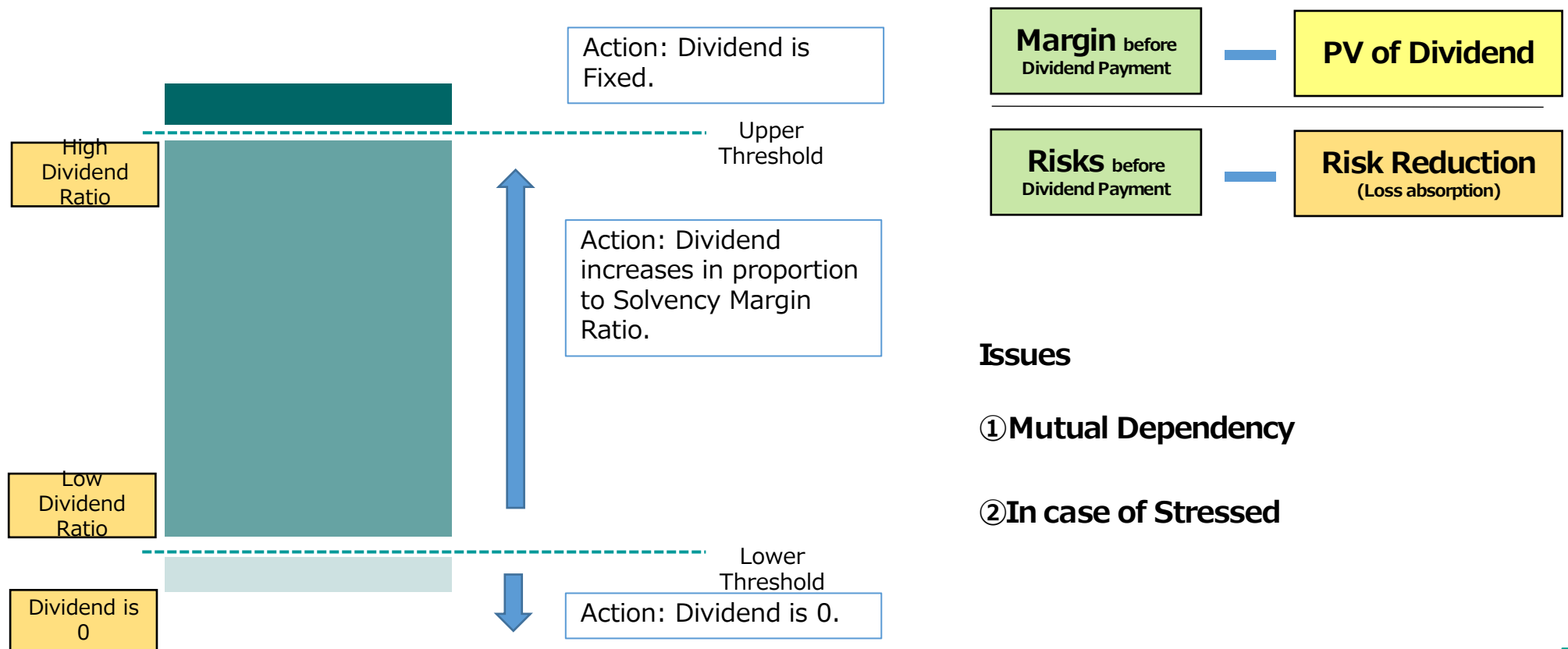
Source: Allianz Disclosure

Model

The Model (Dividend Adjustment Model)

- Management Action: Dividend for policyholders proportionally increases as Solvency Ratio increase.
- Think about the mutual insurance case.
 - ✓ Seen as below, dividend for policyholders are present value of future cash flow.
 - ✓ There is risk reduction effect if dividend decreased.
- Practically, there are two issues. They are mutual dependency and stressed case issue.

[Dividend Adjustment Model]

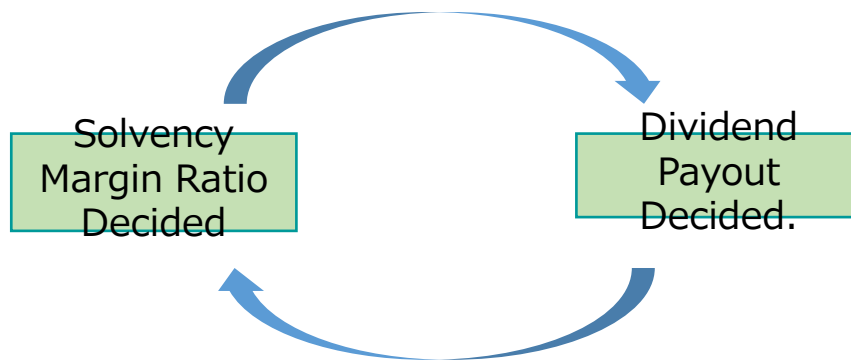


Issue ① Mutual Dependency

- Dividend for policyholders are calculated as to find a present value of all future cash flow.
- For the multiple period calculation, each period could have various solvency margin, which decides next year cashflow.
- We use iteration process.

[Solvency Margin Ratio and Dividend for Policyholder]

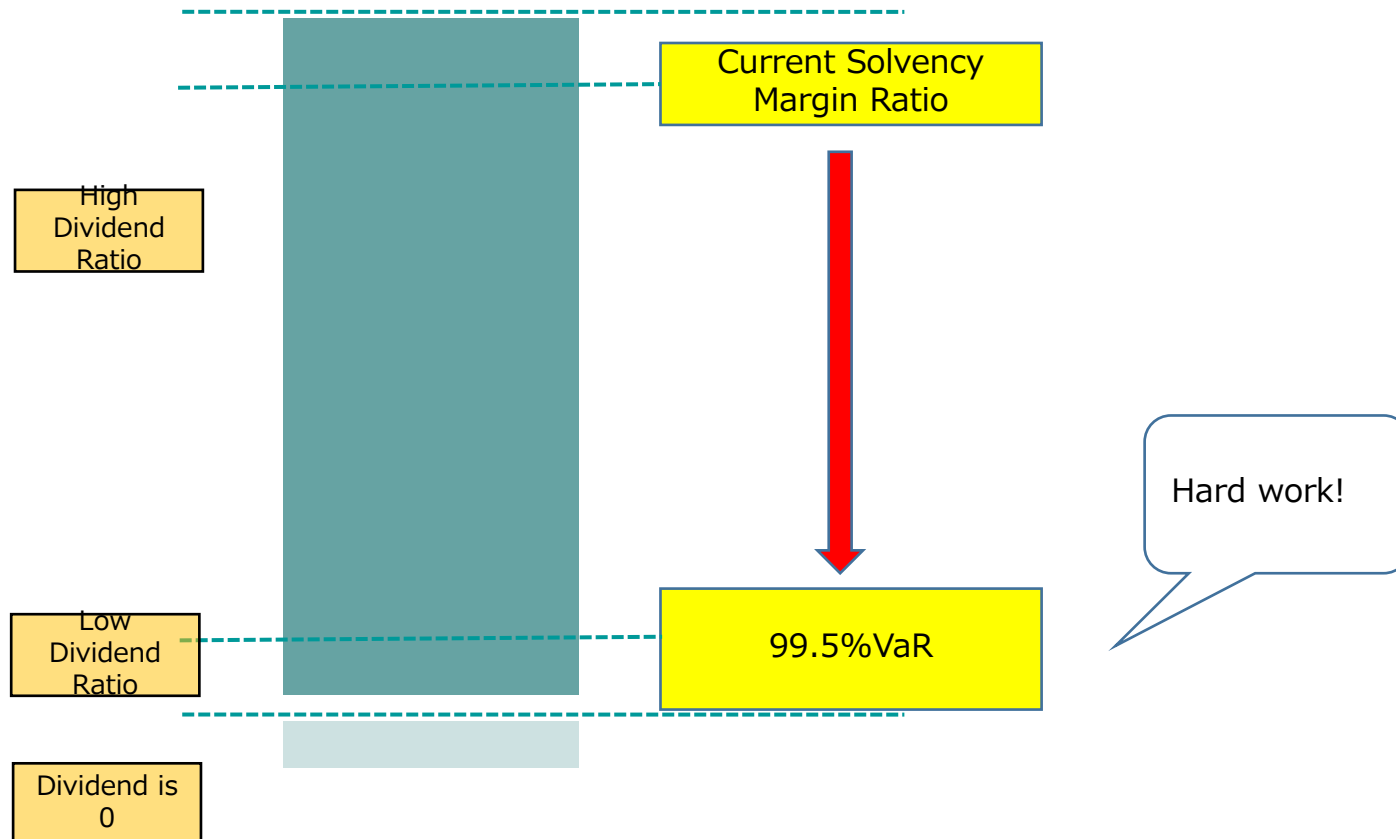
Again, the decided Solvency Ratio affect the Dividend Payout.



Issue ② In case of Stressed

- It takes a lot of load for at risk solvency margin ratio calculation because in case of stressed (VaR99.5%)

[In case of Stressed]



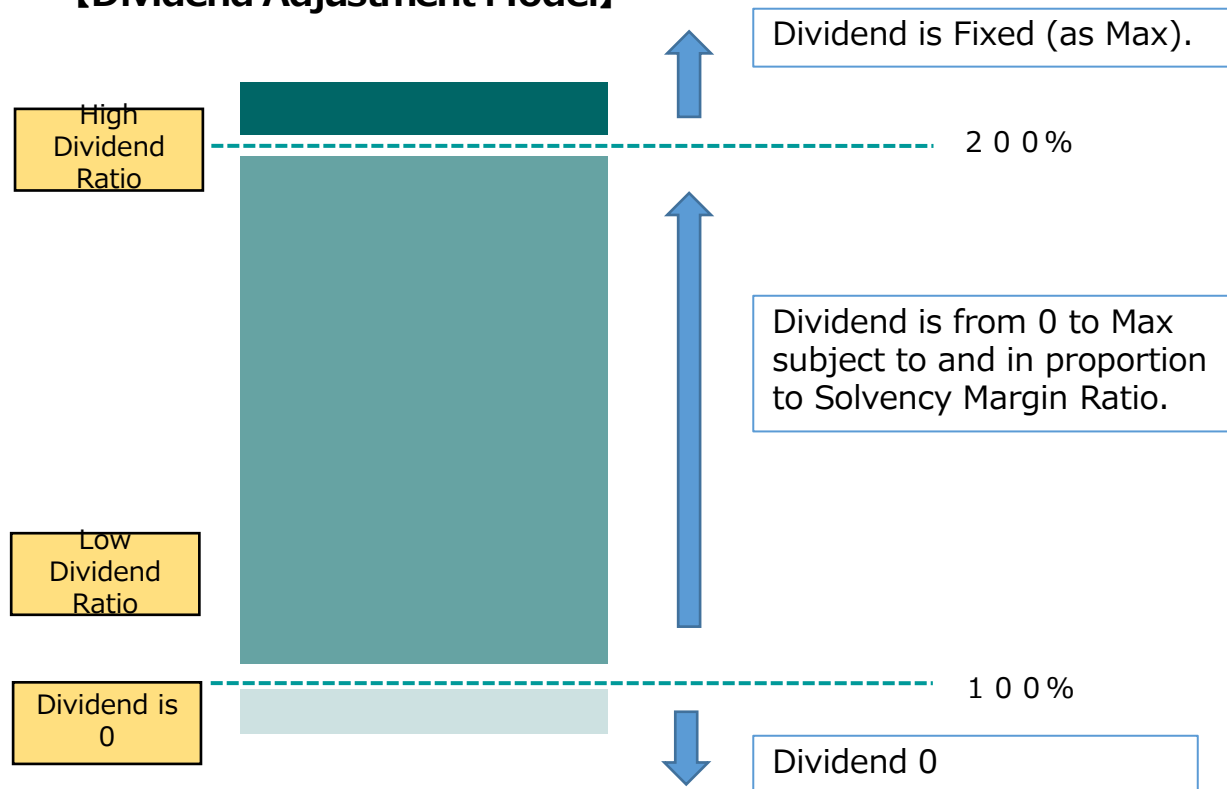
Simulation

- The Effect of the Management Action of Dividend Policy

Dividend Adjustment Model's Terms

- Dividend is from 0 to Max subject to and in proportion to Solvency Margin Ratio (from 100% to 200%).
- There are upper limit "Max" and lower limit 0 for dividend.
- Initial setting for the insurer: Margin JPY5,000 billion and total risks JPY3,000 billion. Annual earnings after tax is JPY200 billion.
- Regarding mutual dependency issue①, use iteration method.
- The risk of 99.5%VaR is simplified as 75% of the notional.
- Subject to ICS Ver2.0. Tax ratio 28% and maximum tax reduction effect is 20% risk reduction.

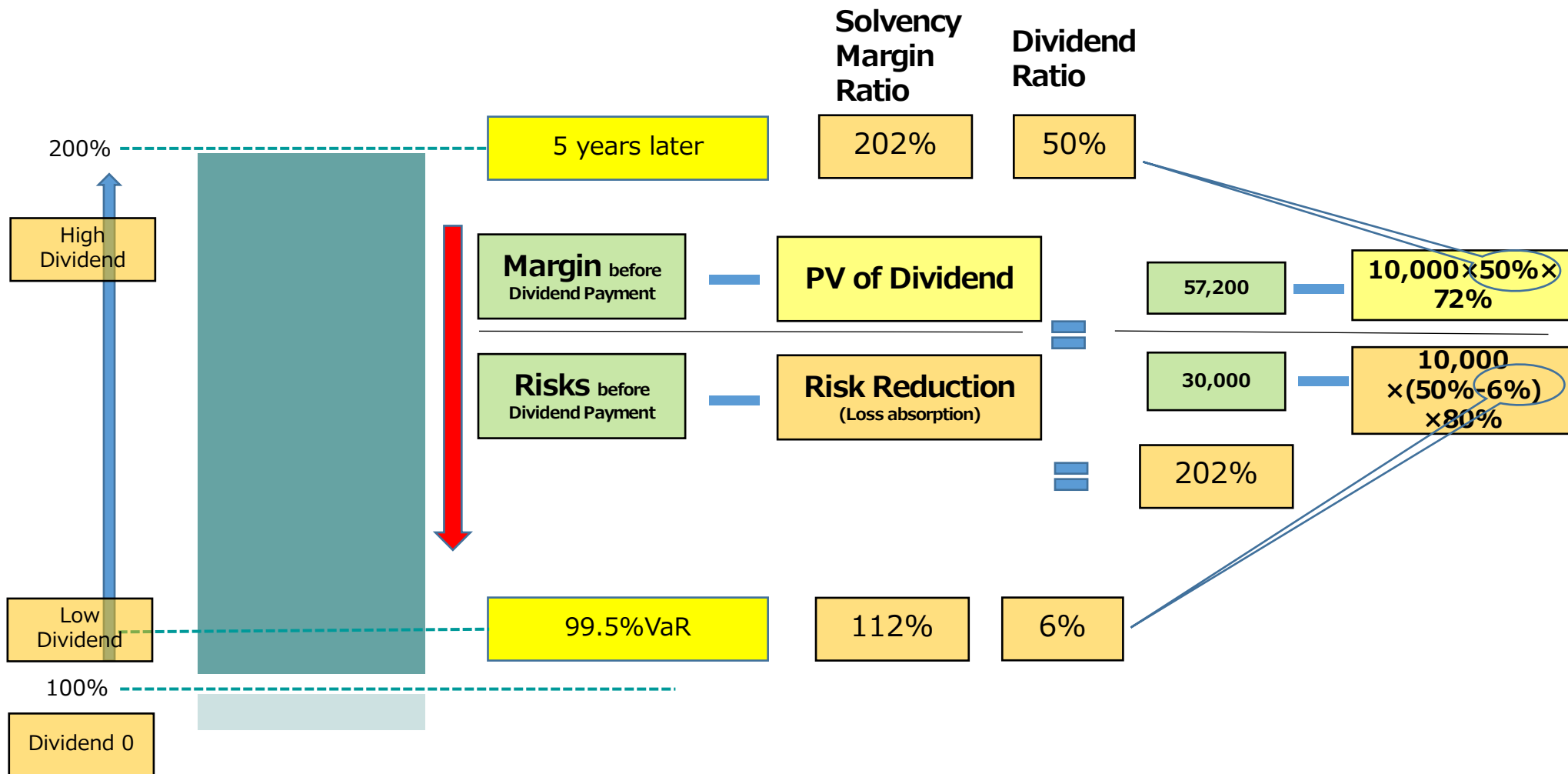
【Dividend Adjustment Model】



Simulation Chart Example

- Maximum Dividend Ratio=50%
- Calculation example is at 5 years later.

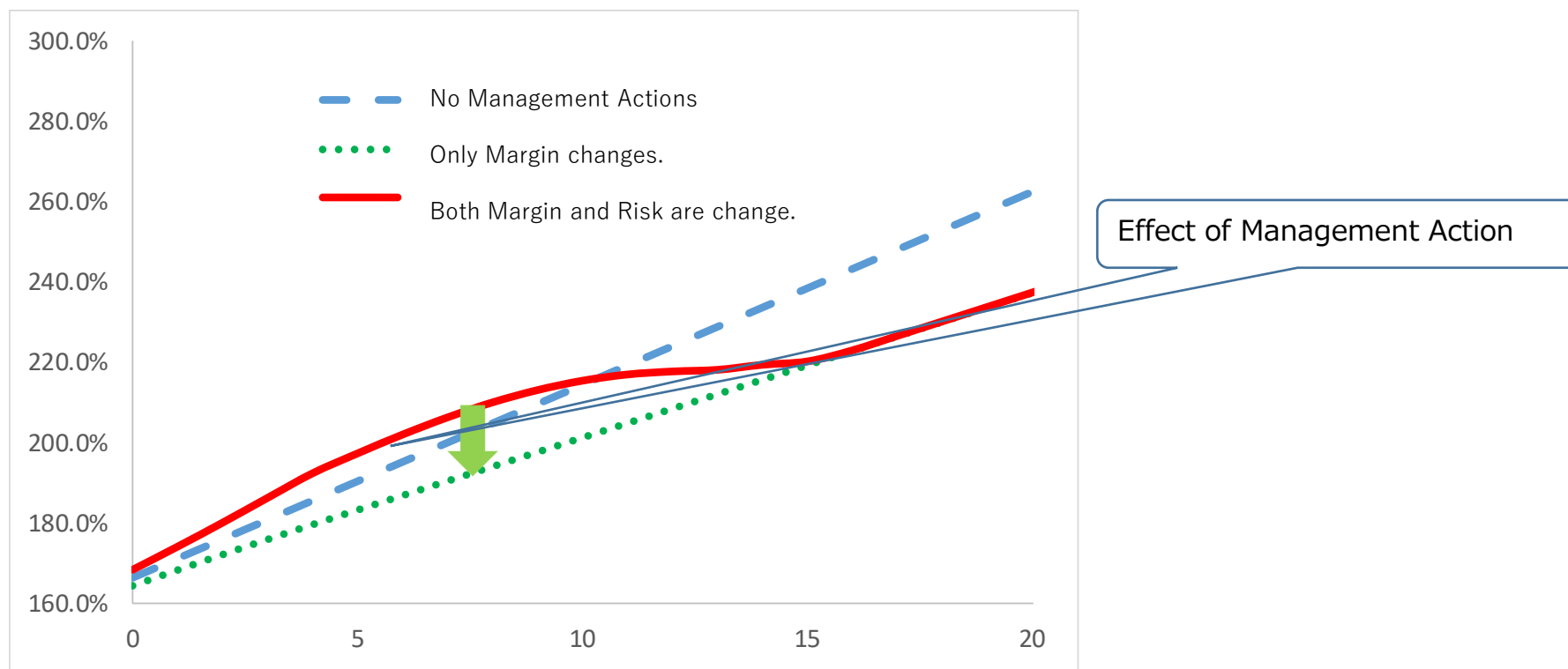
【Example】



Simulation Result (Maximum Dividend Ratio 25%)

- In case of Maximum Dividend Ratio is 25%, Solvency Margin Ratio is better by Management Action, i.e., Dividend Adjustment. However, longer later, the effect decreases.

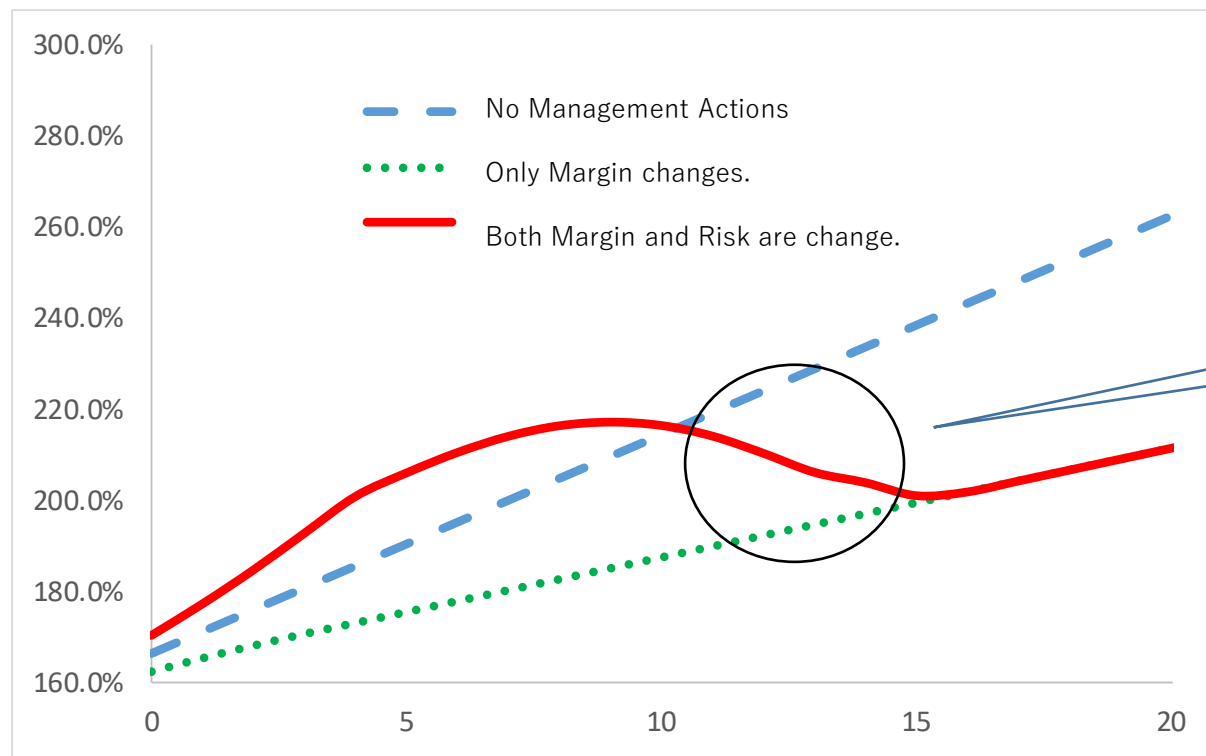
【 Maximum Dividend Ratio 25% (Annually JPY50 billion) 】



Simulation Result (Maximum Dividend Ratio 50%)

- Margin increase does not cover risk increase.

【 Maximum Dividend Ratio 50% (Annually JPY100 billion) 】

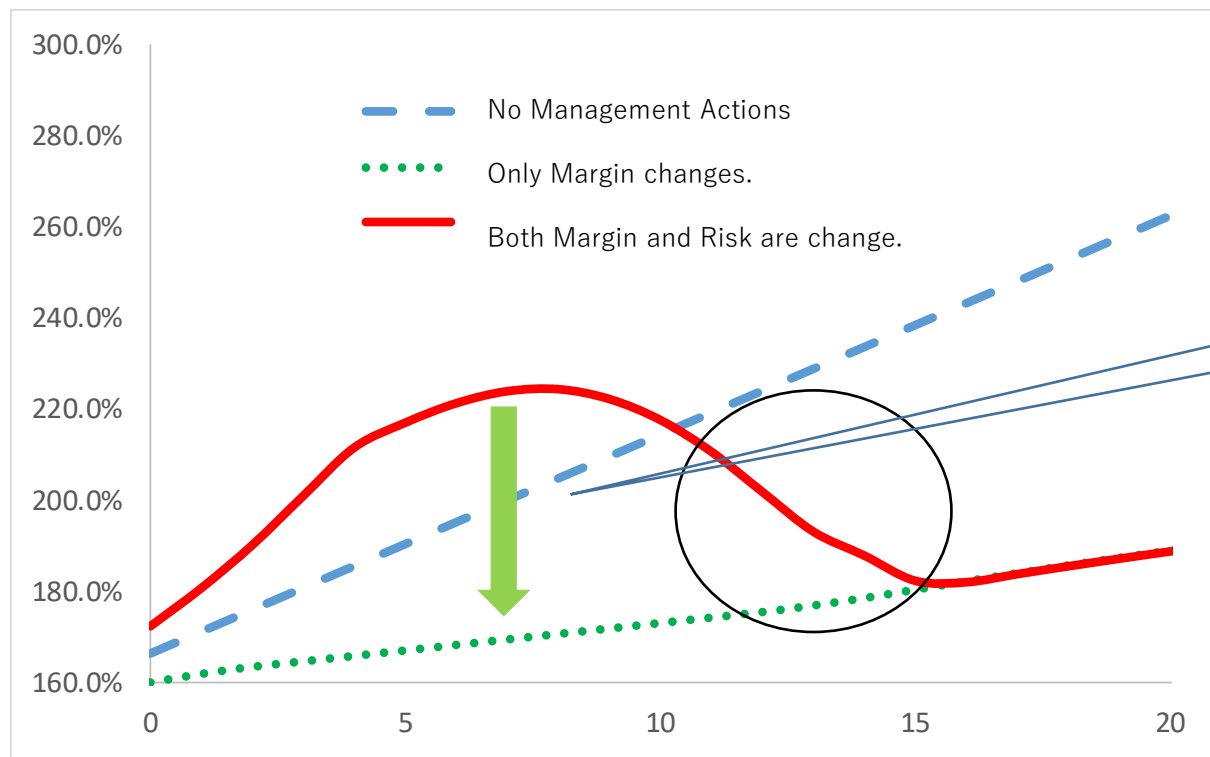


Margin increase does not cover risk increase.

Simulation Result (Maximum Dividend Ratio 75%)

■ Largest Effect.

【 Maximum Dividend Ratio 75% (Annually JPY150 billion) 】



Largest.

Summary

- Examined Management Action Effect for Solvency status.
- Set Dividend Adjustment Model as a management action, how the action affects is simulated.
- The model where dividend for policyholders increases in proportion to its solvency margin, the action makes the margin increase in a short term, and decrease in a long run.

Thank you for your attention!