

**2016 Convention**

23 - 24 November 2016

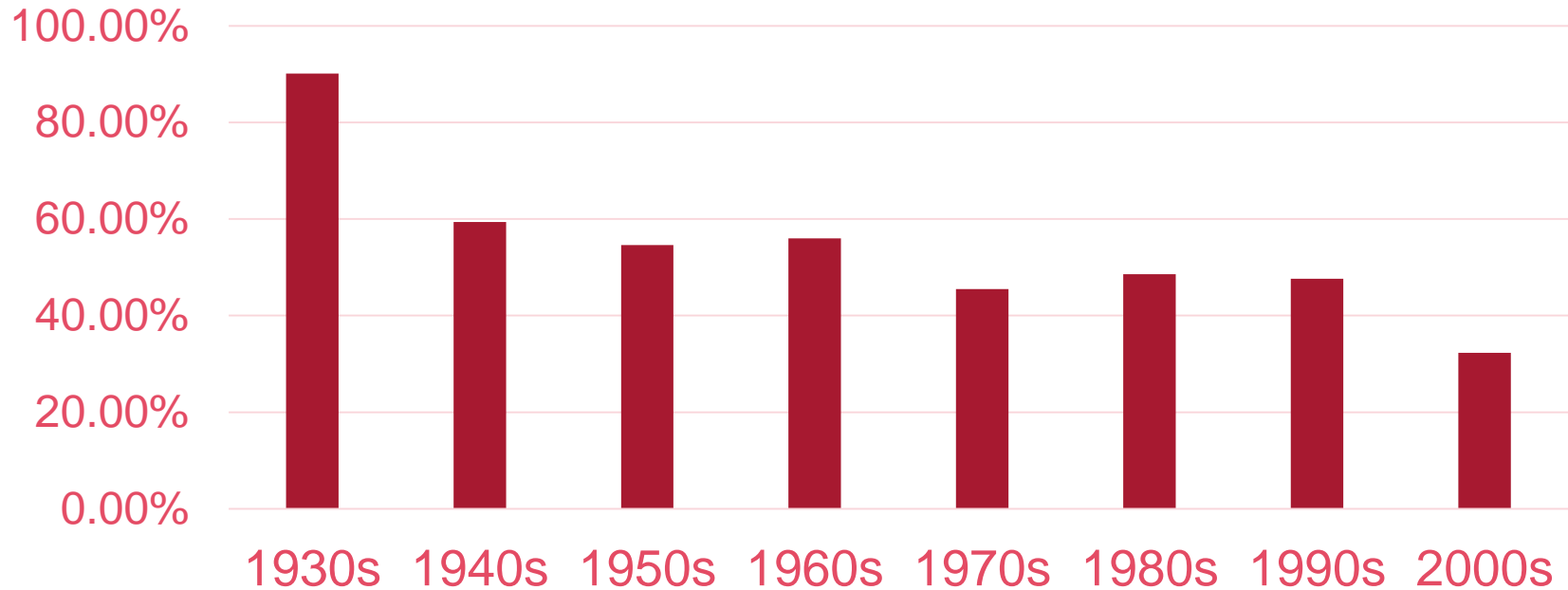


# Dividend policy as a key part of capital management for insurers

**David Kirk**

# Pay Out Ratio History

## Average S&P500 POR



# Outline

1. General determinants of Dividend Policy and empirical evidence
2. Asymmetry
3. Liquidity
4. Interaction with Risk Appetite measures
5. Treatment in the ORSA
6. Useful modelling proposals

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# Dividend Theory... 1

## Bird-in-the-Hand Theory

- Certain current cash dividends preferred over uncertain future capital gains

## Signalling Theory

- “Changes in dividends convey information”
- Are increased dividends good or bad?

# Dividend Theory...2

## Agency Theory

- Dividend payments reduce excess capital
- Instil discipline in management

## Taxes

- Significant changes in taxation of dividends and capital gains over time

# Typical Dividend Policies

## Stable dividend policy

- Even if corporate earnings are in flux, stable dividend policy focuses on maintaining a steady dividend pay-out.

## Target pay-out ratio

- A stable dividend policy could target a long-run dividend-to-earnings ratio. The goal is to pay a stated percentage of earnings, but the a nominal amount is declared that adjusts to its target at the earnings baseline changes.



# Typical Dividend Policies

## Constant pay-out ratio

- A company pays out a specific percentage of its earnings each year as dividends, and the amount of those dividends therefore vary directly with earnings.

## Residual dividend model

- Dividends are based on earnings less *funds the firm retains to finance the equity portion of its capital budget* and any residual profits are then paid out to shareholders.



# Dividend Irrelevance

Miller and Modigliani theorised that dividends could be irrelevant to shareholders and therefore irrelevant to the value of the firm

- Synthetic dividends can be created by selling shares for cash
- Dividends can be reinvested

Dividend irrelevance applies in a world with:

- no taxes
- no transaction costs (for synthetic dividends AND capital raising)
- infinitely divisible shares
- and no agency costs, no information content

# Dividend policies in South Africa

Secondary source: Firer, Gilbert and Maytham (2005) "Dividend Policy in South Africa"

Sènèque and Gourley (1983 survey of 143 JSE listed companies)

- Management at that time pursued dividend policy as an active variable, and strongly supported the view that continuity of payments and stable pay-out ratios were of great importance.
- When setting dividend policy, respondents were chiefly influenced by 'recorded earnings and the prospect of future earnings'.

# Dividend policies in South Africa

Marx (2001)

- Reasons for dividend policy changes should be communicated to investors.
- 70%: a company should avoid making changes to dividend rates that might be reversed in the near future
- A company should strive to maintain an uninterrupted record of dividend payments.
- Two-thirds believed that companies should have target dividend pay-outs...
- and periodically adjust the pay-out towards the target

# Dividend policies in South Africa

Firer, Gilbert and Maytham (2009)

- 84% of SA firms and 87% of US firms consider prior year dividends per share
- 68% of SA firms and 94% of US firms avoid reducing dividends per share
- 66% of SA firms and 90% of US firms try to maintain smooth dividends
- 55% of SA firms and 90% of US firms are reluctant to make dividend changes that might have to be reversed in future
  
- Target POR still a key metric in SA, but less so in US

Group considerations

# Coherent Pay Out Ratios

Dividend POR (Pay Out Ratio) is Dividends / Earnings

Proportion of year's earnings distributed as dividends

*Intuitively, greater retained earnings increases the company's capital base to drive growth in future earnings.*

- Assuming constant ROE and constant POR
- $Earnings_t = E_t = Equity_{t-1} \times ROE$
- $Equity_t = Equity_{t-1} + E_t \times (1 - POR)$
- $Earnings\ Growth = g = \frac{E_t}{E_{t-1}} - 1$
- $g = ROE \times (1 - POR)$

Gordon Growth Model:

$$Share\ Price_0 = \frac{D_1}{(r - g)}$$

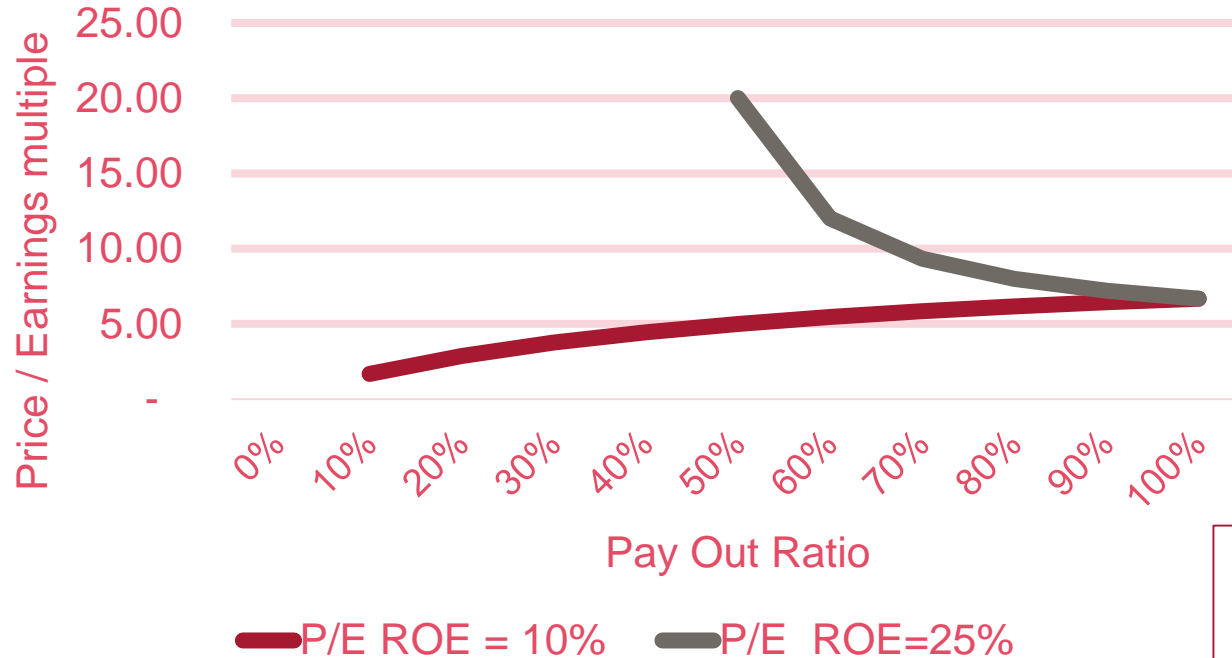
r is Cost of Equity or Required Return

$D_1$  is the dividend in one year

$$PE\ multiple = \frac{POR}{(r - ROE \times [1 - POR])}$$

## Comparison of PE multiples for different ROE and POR

$r = 15\%$



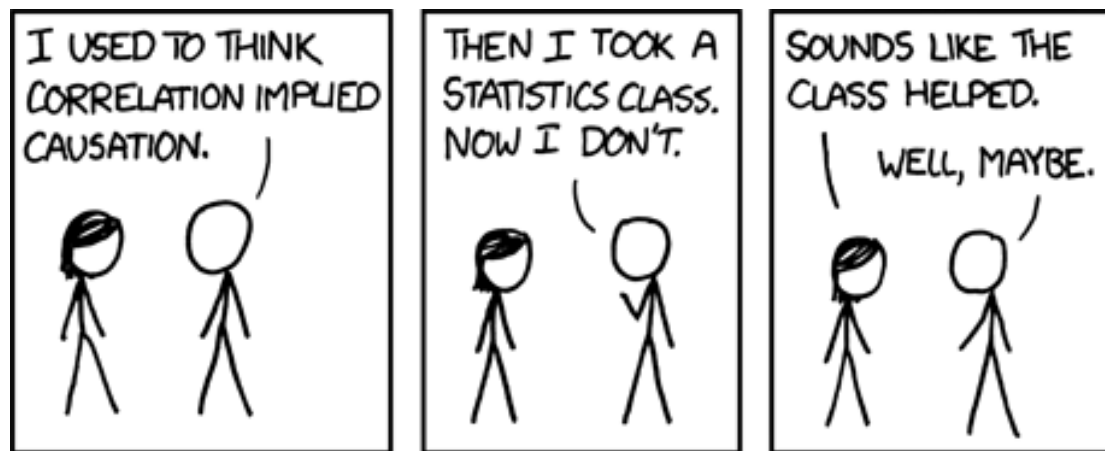
$$PE = \frac{POR}{(r - ROE \times [1 - POR])}$$

# Surprising empirical results for POR

Arnott and Asness (2003) identified a positive correlation between POR and future earnings growth

Vermeulen (2011) confirmed this for South Africa

- Support for Signalling Theory?
- Is paying high dividends the best way to grow earnings?



<https://xkcd.com/552/>

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2. **Asymmetry**
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# Dividend Asymmetry

- Negative dividends are not possible
- Downside shocks are more severe than upside shocks
- Constraints placed on dividend declarations (e.g. minimum solvency coverage) will introduce additional asymmetry
- Easier to distribute excess capital than to raise additional capital
- Time to accumulate additional capital by retaining even 100% of earnings can be significant



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# Liquidity and dividends

Two separate considerations:

1. Listed share liquidity and dividend policy
  - Evidence that more liquid shares pay lower dividends
  
2. Liquidity considerations and risk analysis as part of dividend policy
  - Typically more relevant for ST insurers
  - Do robust measures of liquidity exist for dividend approvals?
  - Cash built up leading towards dividend – and how modelled in catastrophe shock scenarios under ORSA?
  - Supports frequent (half yearly or even quarterly) dividend payments

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# Risk Appetite & Capital Measures

Risk Appetite still regularly misunderstood and misapplied

Best examples focus on:

- High level qualitative statements on attitude towards risk in general and across different risk types
- State how risk is defined
- Include performance objectives as well as risk constraints
- Provide quantitative, multi dimensional measures of appetite for risk
- Provide links to lower level tolerances and limits

# Risk Appetite & Capital Measures

A common risk appetite metric is maintaining regulatory solvency

- But with what confidence or frequency?
- How to determine?

Other interesting factors might be:

- The average (mean and mode) Solvency Coverage Ratio (Economic or Regulatory)
- Probability of being below target
- The proportion of time spent below target or threshold SCR or EC coverage
- The average number of years to return to meeting Solvency Coverage Target after modelled 1 in X year shocks.

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# ORSA and Risk Appetite

Not possible to project balance sheet without coherent dividend policy

One school of thought is not to model future dividends

Another is to follow “residual dividend policy” and assume all surplus capital is distributed

A realistic formula-influenced dividend policy?



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# The “realistic formula-influenced dividend policy”

Influence != Specification

Can set a range or a maximum or a “guideline” for dividends

## Impact dividend measures

- Probability of cutting dividend (by more than x%)
- Probability of not meeting y% growth target
- Probability of no dividend

## Asymmetry on capital measures

- Average SCR or EC coverage
- Probability of being below target / threshold SCR or EC coverage
- Years to return to SCR or EC coverage after a 1 in x year shock

# Modelling

## *Option A*

Fully fledged internal model  
with 100,000 simulations

## *Option B*

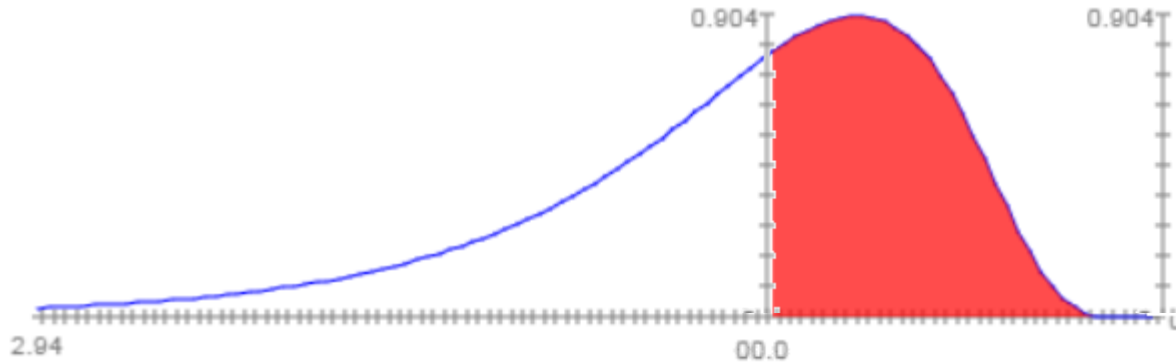
Simplified proxy-component parametric model  
calibrated to expectations and SCR and cat models

## *Option C*

“Trivial” shifted lognormal distribution of losses calibrated to SCR and expectations

# Option C

Lognormal isn't naturally an obvious choices for modelling profits or losses  
Strictly positive



Invert and shift (to allow the chance of profit at least some of the time)  
Solve for  $\mu$ ,  $\sigma$  relative to expected profit and SCR (assuming 99,5<sup>th</sup> percentile)

# Some obvious conclusions

Higher growth requires lower dividends

Average SCR coverage < “dividend cover target”

Higher required earnings retention implies longer time to return to target SCR coverage levels for 1 in x year shock

Lower average POR implies lower average SCR coverage

More frequent dividend declarations increases likelihood of breaching targets

Autocorrelation of earnings matters a great deal