Roth:

**Controversies regarding surplus allocation and**

**leverage ratio**

Why leverage ratio should not be used:

Traditionally first get a profit as % of premium, and then use leverage ratio (surplus/premium) to get rate of return on surplus.

Not good: 1. Wide range of risks not based on premiums. E.g., catastrophe and credit; 2. Companies who have same premium size and same line may require completely different surplus level because of reserves/ other risks.

Leverage ratio crudely derived compared to carefully calculated other numbers

Actual surplus will be more or less than surplus imputed based on leverage ratio

Study in 1970 repudiated 1921 profit formula, which recommended income from all sources should be considered, including income on capital funds.

1984 concluded total return approach is most appropriate

Calculation of Income: Surplus Change + Dividends- paid-in = dS =total economic income

GAAP surplus and SAP surplus : at a stable ratio of 1.15-1.20, Rate of Return does not vary in terms of accounting definition of surplus

Hope Natural Gas case: test of income /return: Fair and reasonable rate of return

* Commensurate with returns on investment with same level of risks
* Sufficient to attract capital and maintain credit

Adequate and inadequate two criteria for each

* industry attracts capital, new companies are being formed
* stockholder dividends are greater than the capital inflow, companies are leaving the market

Should provide enough rates for :

Expense and Claim Inflation, Increase in Reserves, Increase in Demand

Required rate of return and required surplus change:

Rate of return counted in capital changes, while surplus change no consideration of those