Benefits: pay for losses, manage cash flow uncertainty, meet legal requirements, risk control, efficient use of resources, Insured's Credit, Investment funds source, reduce social burdens. Ideally Insurable Exposure: Pure Risk, Fortuitous Losses (random), Definite & Measurable, Large # of similar exposure units, independent & not catastrophic, affordable (limits on freq. and sev.) Distribution system: Independent agency/brokerage, direct writer, exclusive agency. Insurer goals: earn profit, meet customer needs, comply with legal requirements, diversify risk, fulfill duty to society. Constraints: Internal constraints (efficiency, expertise, size, financial resources, brand reputation), and External (Regulation, rating agencies, public opinion, competition, economics, insurane marketing and distribution) Purposes of Underwriting: profitable book of business, weed out adverse selections, ensure adequate ph surplus, enforce underwriting guidelines Measuring Results: Combined Ratio = (Incurred Loss)/(Earned Premium) + (UW Expenses)/(Written Premium) Does not include investment income Can be distorted by unusual or rapidly changing circumstances. Nonfinancial measures: Selection / Product or line of business mix, pricing accuracy, accommodated accounts, retention ratio, hit ratio. Pool - policy for full amount issued by member; reinsured by other members following agreed upon percentages. Syndicate - Each member shares the risk with other members by accepting a percentage. collectively constitute a single, separate entity. Association - Blend of reinsurance and risk sharing Ceding commission: flat - fixed percentage with no adjustment. Profit-sharing - contingent on reinsurer earning greater than expected profits. Sliding scale - adjusts commission based on profitability of agreement. Coverage A: Dwelling (bldg policyholder lives in) Covg B: Other structures ( Garages, sheds, etc. 10% of Cov A for HO-3). Coverage C: Contents. Policyholer's 'stuff'. (For HO-3, 50% of Cov A) Coverage D: Loss of Use. Hotel & restaurant bills while a house is under repair. Also, lost rental income (for HO-3, 20% CovA) Cov E: Personal liability. Covers certain amts policyholder becomes legally obligated to pay because of bodily injury or property damage. Cov F: Medical Payments to others. Pays for medical treatment of people who are not residents. Does not require legal responsibility for payment

EVPV = expected value of process variance (within-group variance) -- VHM = variance of hypothetical means (variance between groups) -- N = number of observations -- K = EVPV/VHM -- Z = N/(N + K) Commonly used complements: loss costs of a larger group that includes the group being rated - loss costs of a larger related group - rate change from the larger group applied to present rates - harwayne's method - trended present rates - competitor's rates

Other Considerations: Just because a rate indication tells us we need a rate indication tells us we need an x% change in premiums doesn't mean that will happen, due to: regulatory, operational, and marketing constraints/considerations. Regulatory constraints: Insurance is regulated by the states. Regulation is tighter for personal lines & lines where individuals are the beneficiaries than for commercial lines. Rule & rate regulations: can be classified from most to least restrictive: mandated rates, prior approval, file & use, use & file, open competition. Sometimes a limit may be placed ont the maximum overall premium change, or on the maximum change for any one policyholder. Could be forbidden or might require written notice or public hearings. Why would those actions be required? If there is a limit, how do those insurers react? Some jurisdictions may restrict rating variables that can be used. Insurance response to Regulatory presures: Legal action - revise UW guidelines, restricting customers for whome adequate rates are not allowed - Change marketing tactics to avoid undesireable customers - find a proxy for a disallowed variable. Operational constraints: constraints due to limitations of personnel, hardware, or software. The IT dept is always busy: changing an existing value is easy. changing the steps or their order is hard. Adding a new variable is hard. Marketing considerations: Raising premiums increases profits until consumers start using substitute goods. It is nearly impossible to discover the demand elasticity of an insurance policy. The best we can do is use standard metrics: hit ratio (a.k.a. close ratio / conversion rate), retention ratio, win ratio, istributional analysis, policyholder dislocation analysis