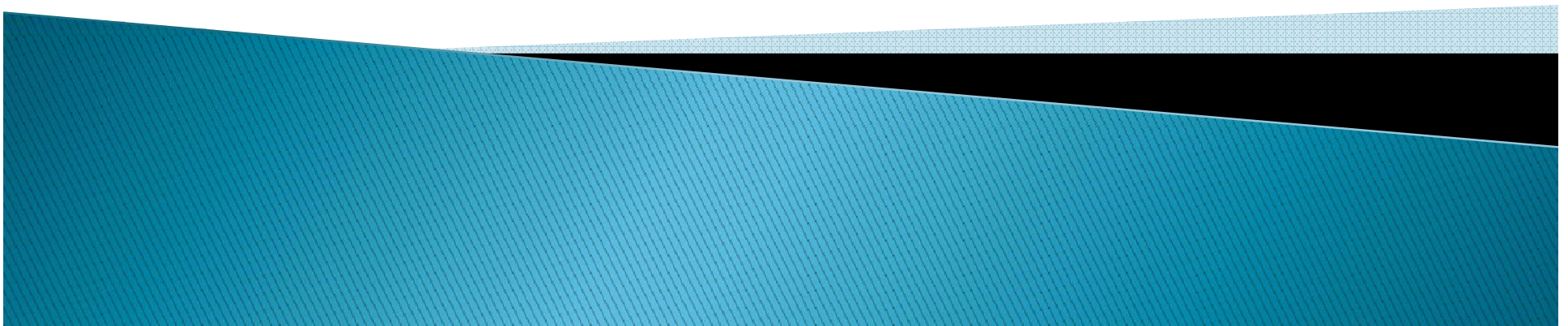


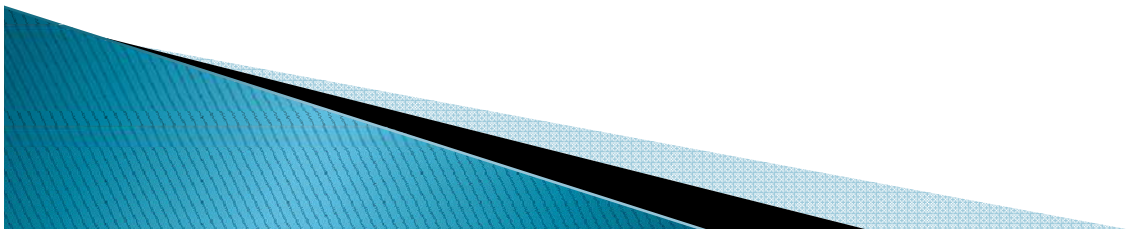
2nd Workshop on Employee Benefits_Group4

Organized by Institute of Actuaries of India



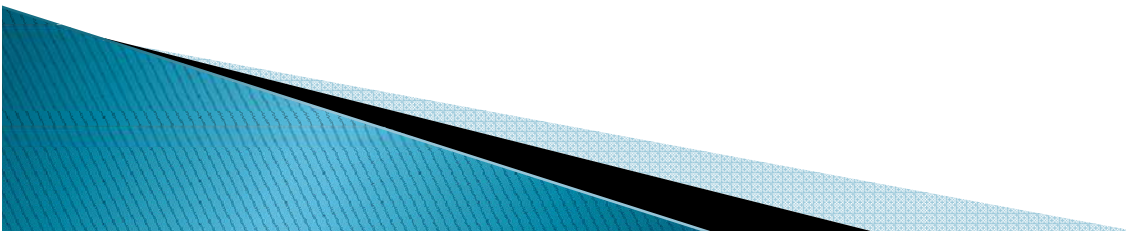
Group Members

- ▶ Group Leader– Mr. K.Sriram
- ▶ Other Members (Names in order as circulated by IAI)
 - ❖ Shrayans Jain,
 - ❖ A. Balasubramanian
 - ❖ D. C. Khansili
 - ❖ Ramaiah Divvela



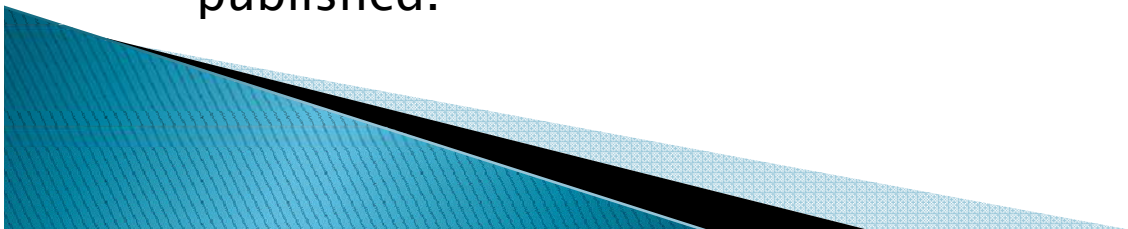
TOPIC

- ▶ **Provident Fund Valuation**



Points for discussion

- ▶ In case of exempt provident fund trusts, companies are required to offer the same (?) interest rate as if declared by the Government. This exposes the sponsoring enterprise to guarantee /interest rate risk and thus an actuarial valuation of guarantee is required.
- ▶ Various approaches are following by various Actuaries in both determining the value of guarantee as well as the disclosures. Also , questions have been raised on deterministic approach (most widely followed approach) enshrined in GN29on Valuation of Interest Rate Guarantees on Exempt Provident Funds(Ver.1.00/01/04/2011)
- ▶ In light of above, this session need to discuss the amendments required to GN 29 to streamline the valuation approach of interest rate guarantee on exempt PF Trust. Disclosures requirements for PF Valuations shall also be discussed.
- ▶ In light of above, the session proposes to discuss the practical approaches that can be adopted to allow for longevity improvements until new mortality tables with study of mortality improvements is published.



GN 29– Guidance Note on Valuation of Interest Rate Guarantees on Exempt Provident Funds under AS15 (Revised)

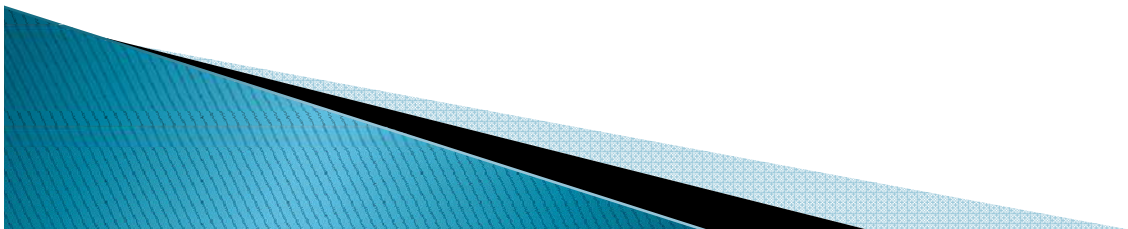
- ▶ This is recommended practice;
- ▶ The methodologies recommended:
 - ✓ Deterministic Approach;
 - ✓ Option pricing Approach;
 - ✓ Stochastic Modeling Approach

The choice of methodology will depend upon what the Actuary thinks is most appropriate under the given circumstances and also on the materiality of the value of the guarantee in the overall context.



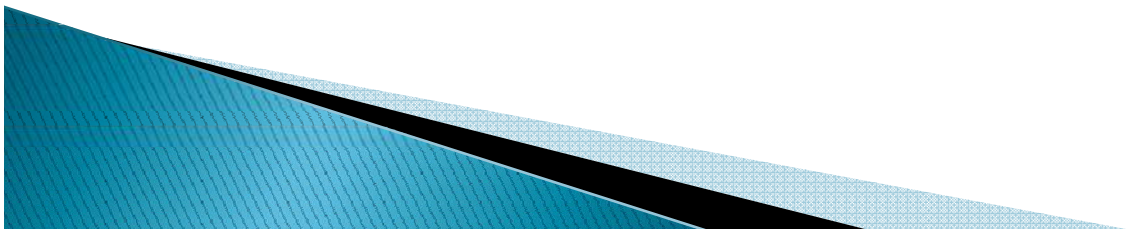
Workshop focuses on

- ▶ questions raised on deterministic approach (most widely followed approach);
- ▶ amendments required to GN 29 to streamline the valuation approach of interest rate guarantee on exempt PF Trust;
- ▶ Disclosures requirements for PF Valuations;
- ▶



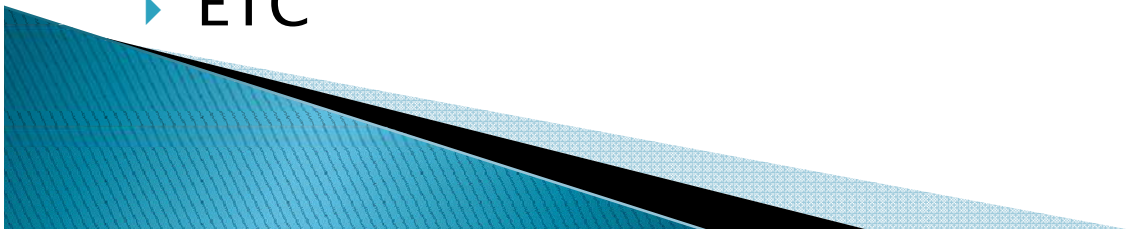
questions raised on deterministic approach (most widely followed approach);

- ▶ What does GN 29 states (In brief)
- ▶ Decrement adjusted remaining term of obligations;
- ▶ Current GOI Bond yield of appropriate term
- ▶ Average historic yield;
- ▶ Difference between average historic yield and GOI Bond yield would give yield spread
- ▶ Add spread to GOI Bond yield
- ▶ Compare
- ▶ Sensitivity
- ▶ PVO at different



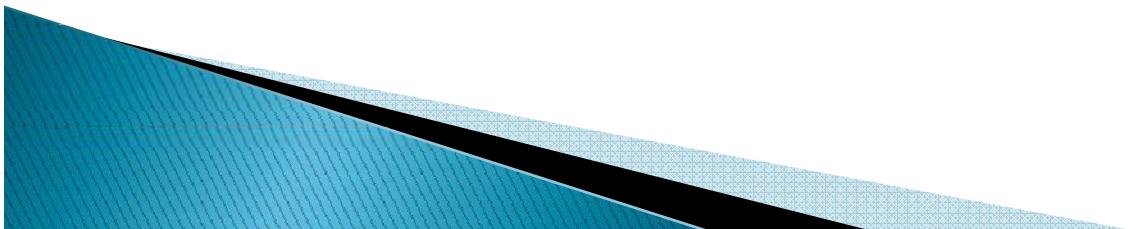
Points for consideration for using deterministic approach

- ▶ Simplicity,
- ▶ Current bond yield reflect future expectations
- ▶ Past experience being taken care also
- ▶ Deep market only 10 year Govt yield
- ▶ Remaining term of plan asset portfolio is short which add risk
- ▶ PF remaining term very long, especially new organisations and other not matured
- ▶ Choice of discount rate
- ▶ Where world moving today
- ▶ How to allow for recent years volatility in this approach
- ▶ What Actuarial subjects teach today
- ▶ ETC



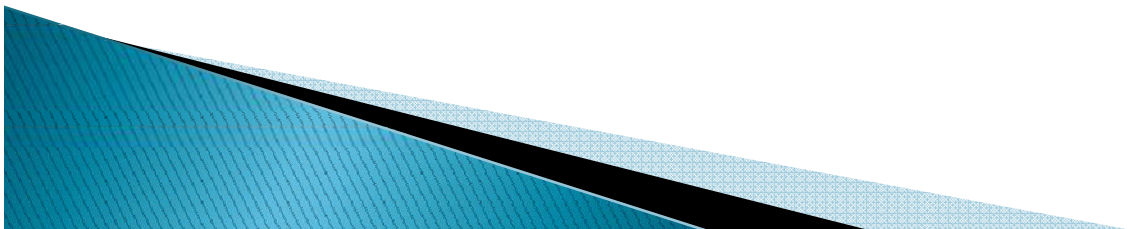
Other approaches

- ▶ Log Normal distribution is suggested
- ▶ This is useful if interest rates remain positive(non zero)
- ▶ Negative interest rate became reality in various part of world (Denmark)
- ▶ GN should also capture this reality in future
- ▶ The choice of using distribution be left to Actuaries,
- ▶ Interest rate risk modeling using extended log normal distribution
- ▶ Negative interest rate– log normal =inefficient delta hedging



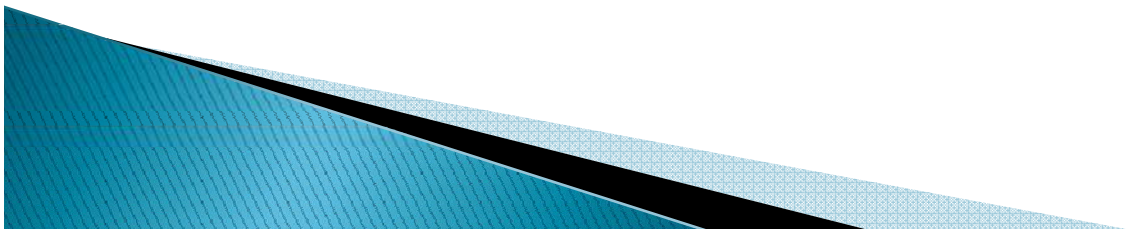
Other approaches

- ▶ Other solution to tackle negative interest rate scenario;
- ▶ Normal distribution, shifted log normal
- ▶ Any Model suggested–
- ▶ Parsimony,
- ▶ Transparency
- ▶ Results can be communicated easily
- ▶ Over complexity
- ▶ Time to run model



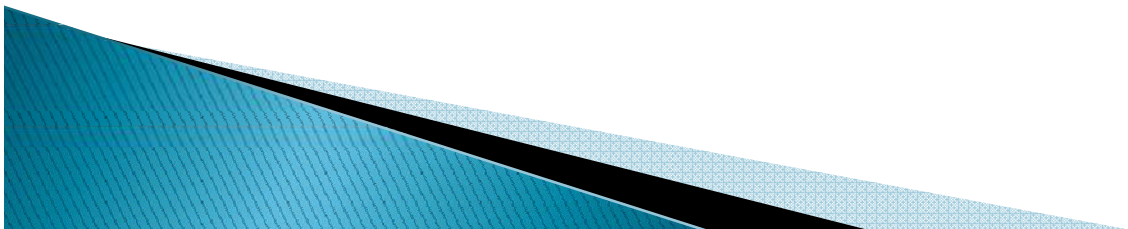
Disclosures

- ▶ Disclosures are optional
- ▶ Should Methodology be explained;
- ▶ If yes, target client will understand?
- ▶ Another approach– The documentation of methodology be with Actuaries,
- ▶ If client asks, the same be shared;
- ▶ Risks of wrong interpretation be clearly mentioned



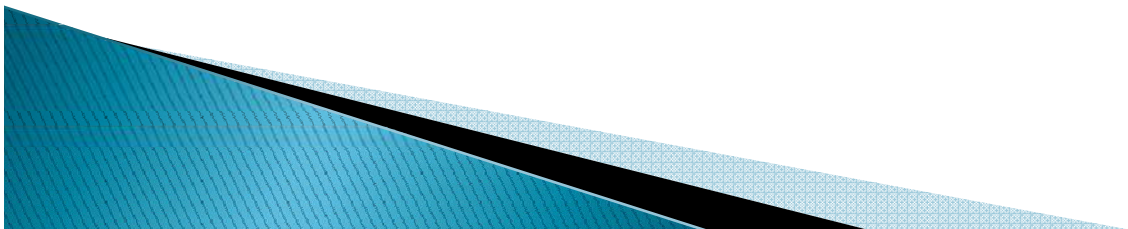
Some Practical Considerations in addition to earlier stated

- ▶ Future interest rates declared by EPFO are unknown
- ▶ Difference between Past interest rate earned and guaranteed rate of interest can be assumed constant?
- ▶ How can we define current service cost?
- ▶ Because AS15 R require disclosure in line of Gratuity valuation
- ▶ Views of ICAI on PF disclosure and valuation



Take Away

- ▶ Appropriateness of deterministic approach in GN 29 in current circumstances Comparison with GN 22?
- ▶ Full disclosure be responsibility of Actuaries but to what extent
- ▶ Asset Valuation– AS 15 R 2005 asks for fair value of asset while PF Act asks for Book Value of Asset
- ▶ Interface with ICAI so that they inform to their members



▶ THANK YOU
▶ Qns Please

