ACTUARIAL SOCIETY OF SOUTH AFRICA

QUANTIFYING RISK, ENABLING OPPORTUNITY

Capital allocation methods within the new prudential framework

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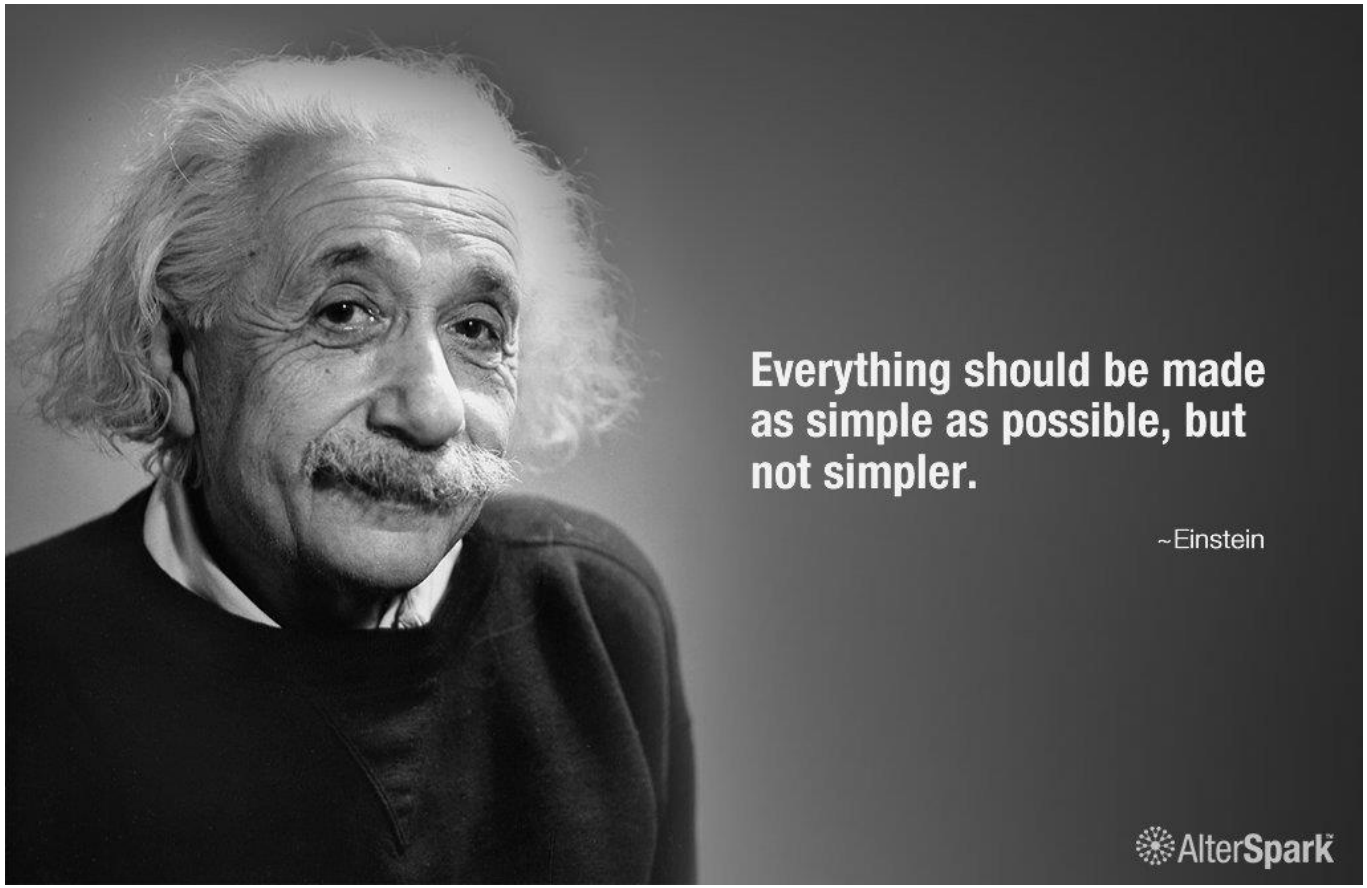
Capital Allocation

A brief agenda

- **Things have changed …**
- **Why capital allocation**
- **Allocation methodologies**
- **A few proposals**
- **Numerical example**
- **Practical challenges**
- **Conclusion**

Things have changed

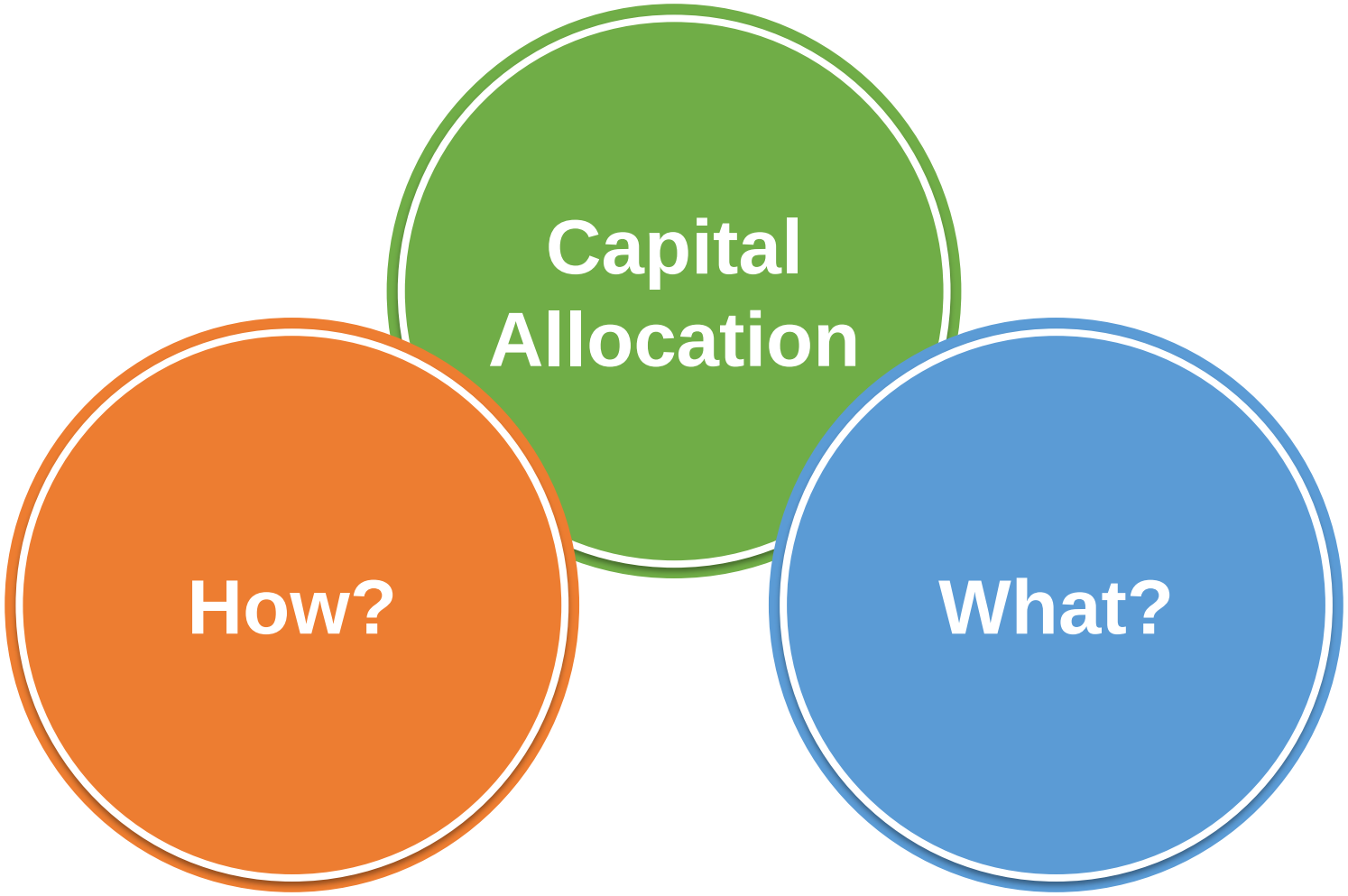


Why capital allocation?

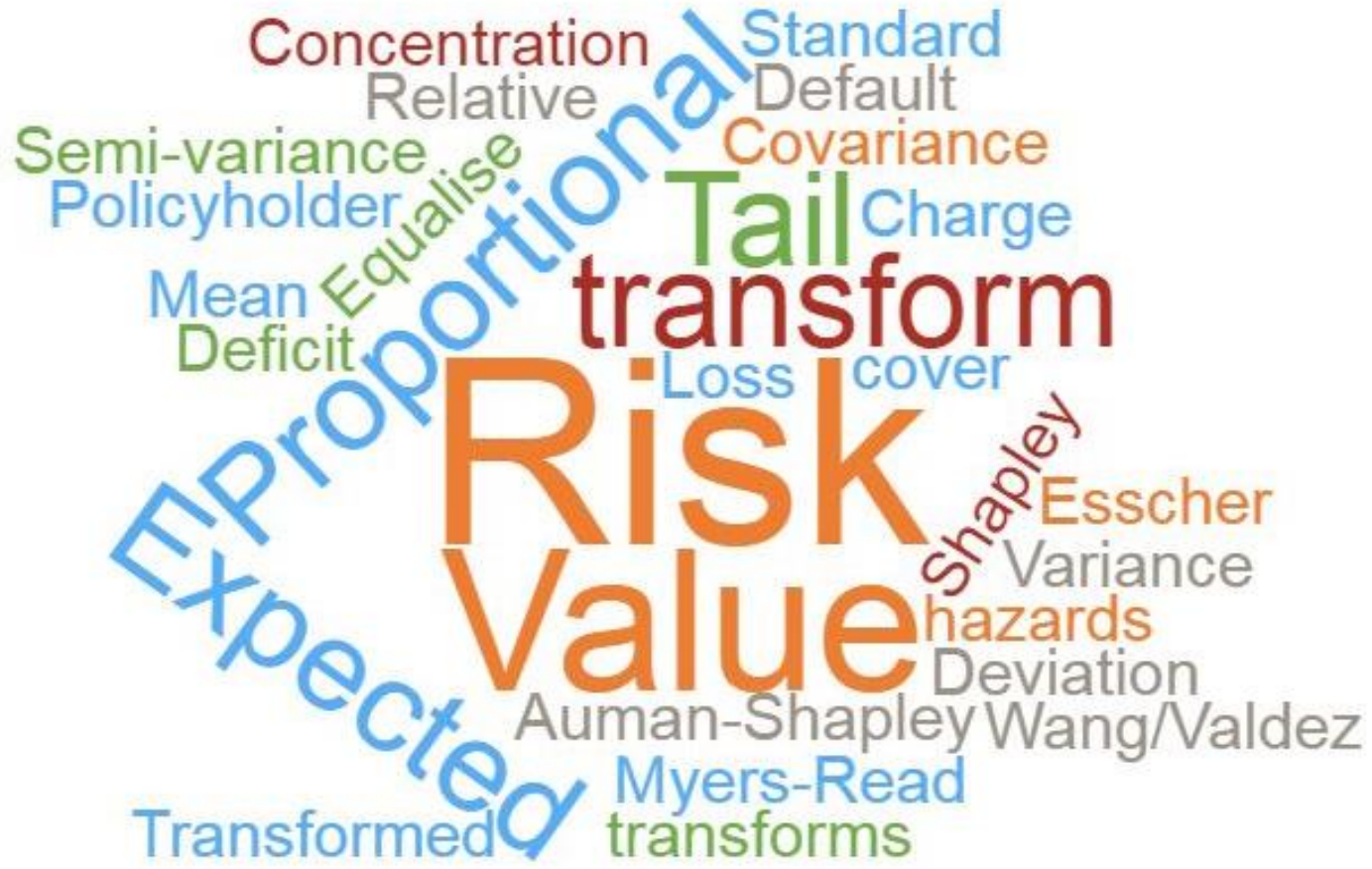
Responsibility

A duty or obligation to **satisfactorily** perform or complete a task

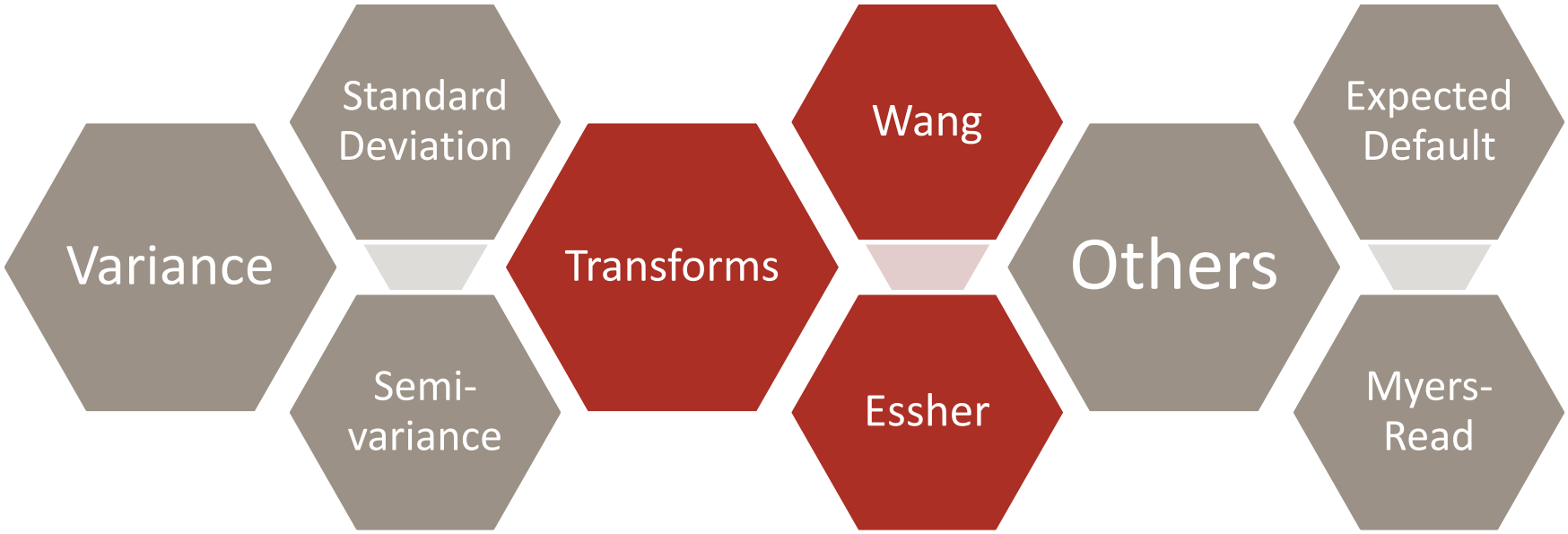
Allocation methodologies



Allocation methodologies



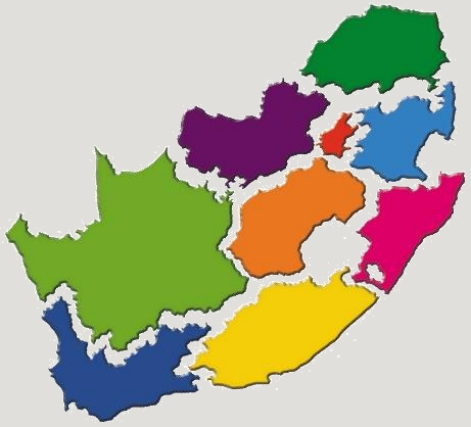
Allocation methodologies



Allocation methodologies

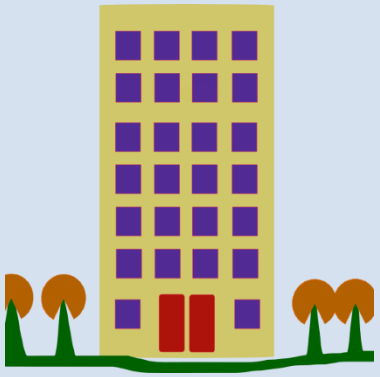
Division

Region

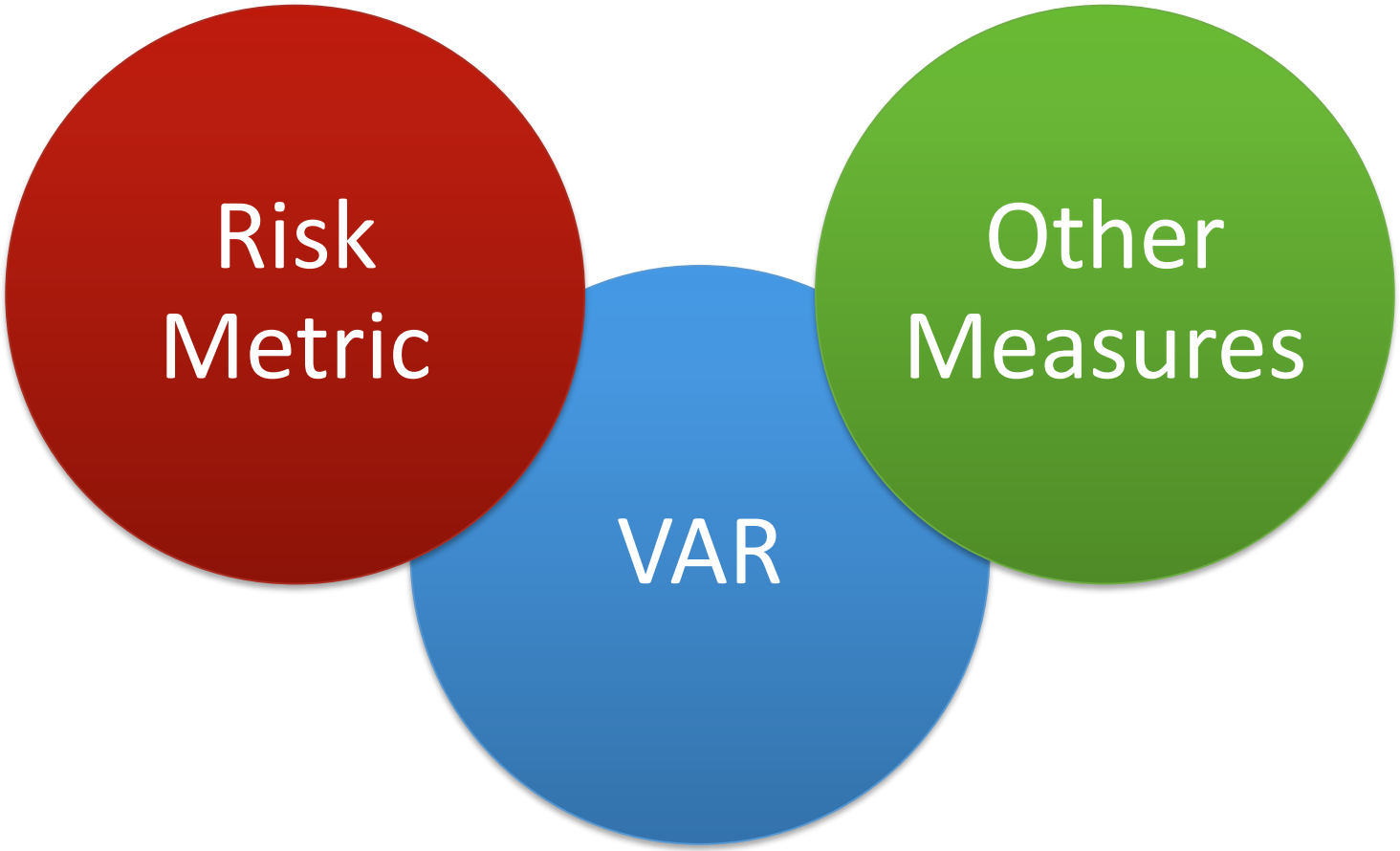


Risk

Product



A few proposals



A few proposals

Proportional

$$C(X) \cdot \frac{C(X_s)}{\sum C(X_s)}$$

Euler

$$SCR_s \cdot \frac{\sum SCR_i \cdot \rho_{i,s}}{BSCR}$$

Marginal

$$C(X) \cdot \frac{C(X) - C(X - X_s)}{\sum C(X) - C(X - X_i)}$$

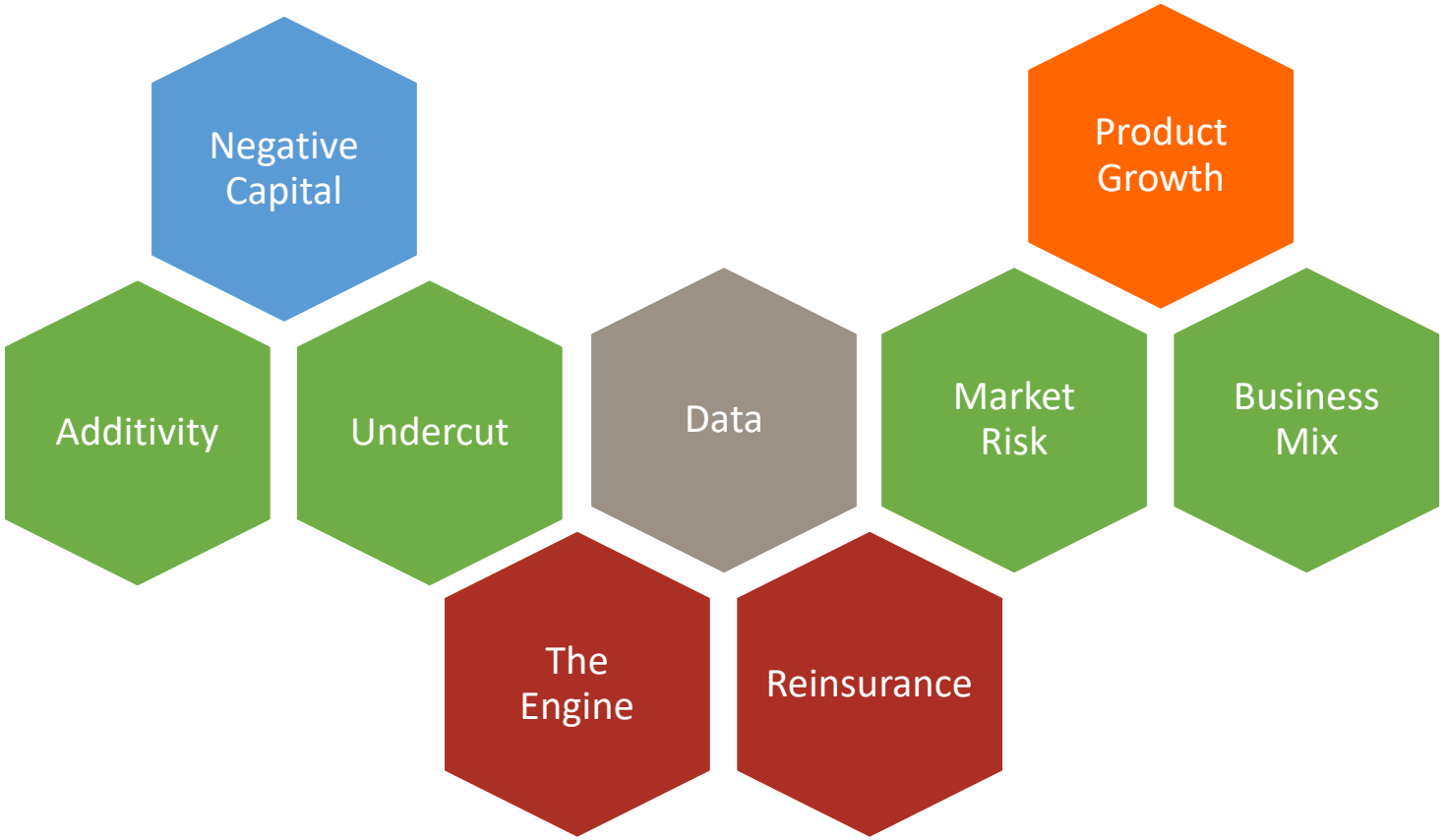
Game Theory

$$\sum \frac{(|k| - 1)!\,(n - |k|)!}{n!} \cdot \Delta C(X_s|K)$$

Numerical Example

	Proportional	Euler	Marginal	Shapley
A	292 034	346 112	342 346	326 757
B	50 650	50 071	54 470	47 903
C	70 979	45 354	43 627	56 970
D	46 962	29 089	29 541	36 667
E	9 564	3 944	4 294	5 278
F	7 388	3 007	3 299	4 002

Practical Challenges



HASTE MAKES WORK WHICH CAUTION PREVENTS

WILLIAM PENN

Thank you