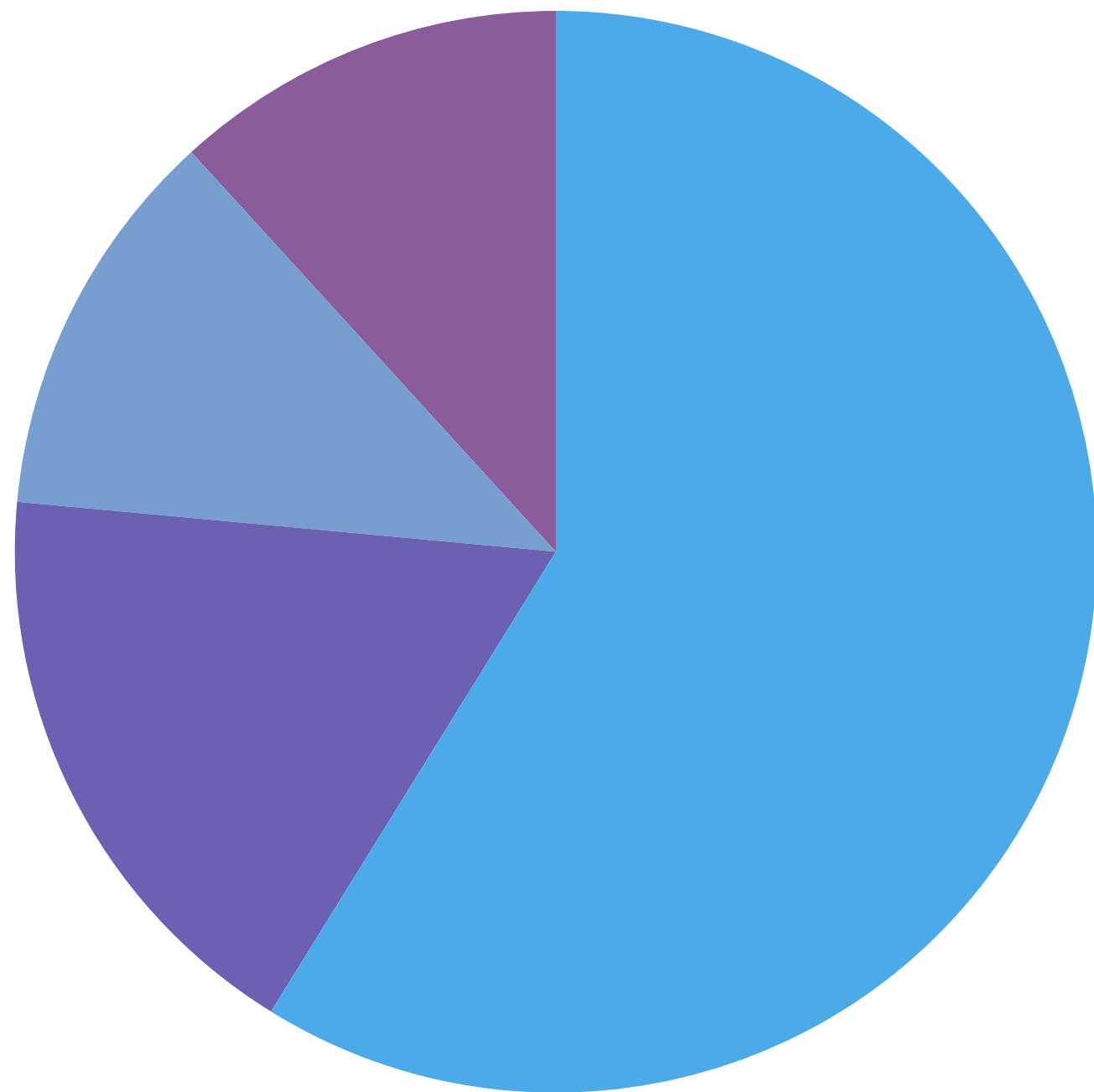INTRODUCTION TO PORTFOLIO ANALYSIS
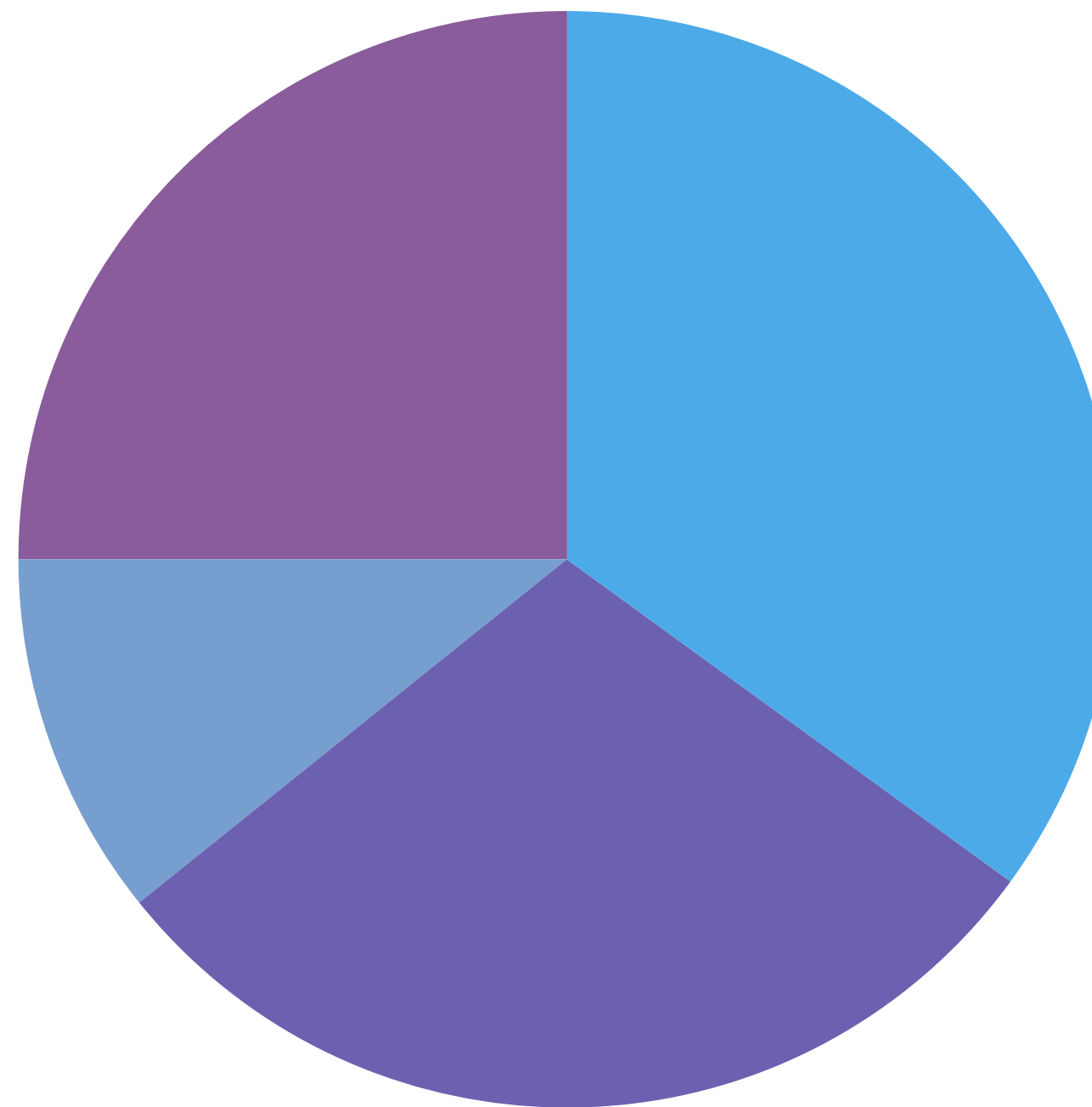
Portfolio Risk Budget

Who Did It?

Capital Allocation Budget

Portfolio Volatility Risk

● Asset 1   ● Asset 2   ● Asset 3   ● Asset 4

Portfolio Volatility In Risk Contribution

- *Portfolio Volatility =* $\displaystyle\sum_{i=1}^{N} RC_i$

  - Where: $RC_i = \dfrac{w_i \left(\sum w\right)_i}{\sqrt{w' \sum w}}$

- Note that the risk contribution of asset *i* depends on the complete matrix of weights *w* and the full covariance matrix Σ

Percent Risk Contribution

$$\%RC_i = \frac{RC_i}{portfolio\ volatility} \quad \text{with: } \sum_{i=1}^{N} \%RC_i = 1$$

- Relatively more risky assets:

  - $\%RC_i > w_i$

- Relatively less risky assets:

  - $\%RC_i < w_i$