

Can you change the size of "investment" in ecological "assets" without affecting the CV? E.g. fisheries catches or profits. Or do you have abundance data?

Harvest
or profits

Abundance

The CV is an appropriate size-independent measure of variability. You could use the average-CV PE.

Do you have environmental time-series data and a suspected mechanism through which the environment could drive population dynamics?

No environment data

Environment data

You may be able to model environmental response diversity through a mechanistic model (e.g. Ives et al. 2003, Thibaut et al. 2012, de Mazancourt et al. 2013)

Are you working with a metapopulation or a community of species?

Community

Metapopulation

You may need to account for additional complications such as overyielding, different mean-variance relationships, and trophic interactions. Consider Equation 7 from Thibaut and Connolly (2013) as a starting point.

Can you model the mean-variance scaling relationship (z)? Does the model fit well? Are the subpopulations clearly defined?

z estimated

z ambiguous

Neither the average-CV nor the mean-variance PE may be appropriate. Consider a metric such as the synchrony index (Loreau and de Mazancourt 2008, Thibaut et al. 2013).

Is z approximately 2?

$z = 2$

$z \neq 2$

You could use the average-CV PE if it addresses your research question.

Account for the z value using the mean-variance PE if it addresses your research question.