

Comparison of model biomass coefficients of variation in “on” and “off” survey years

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Time series of model biomass estimates (spawning biomass for Tiers 1-3, survey biomass from the random effects model for Tier 5), together with flags indicating which years in the time series were “on” and “off” years for the respective surveys, were obtained for 29 stocks/complexes from the authors of their respective stock assessments. However, the data for a few of these stocks/complexes were not usable because:

- There were no “off” years in the time series;
- There were “off” years in the time series, but no data were provided for those years; or
- No standard errors were provided.

Two statistics were examined:

- The average coefficient of variation (CV), computed separately for “on” years and “off” years.
- The ratio of the CV in each “on-year-plus-one” to the CV in the preceding “on” year.

For each of the above two statistics, values were computed for both the overall time series and, in the event that the time series terminated in an “off” year, the value for the final year in the time series (there were only four such cases, however). All of these things were computed separately for stocks/complexes managed under Tiers 1-3 and those managed under Tier 5.

Results are summarized below:

Stat:	Pooled CV								CV(on_yr+_1)/CV(on_yr)			
Tier(s):	1-3				5				1-3		5	
Year(s):	All			Endyr	All			Endyr	On+1	Endyr	On+1	Endyr
Survey:	On	Off	Both	Off	On	Off	Both	Off	Off	Off	Off	Off
N:	13	13	13	3	9	9	9	1	13	3	9	1
Mean:	0.117	0.127	0.124	0.170	0.145	0.227	0.191	0.440	1.006	1.074	1.419	2.465
Sdev:	0.089	0.083	0.085	0.103	0.084	0.210	0.152	N/A	0.018	0.050	0.535	N/A

For the pooled CV:

- The 13 stocks/complexes managed under Tiers 1-3, the pooled CV was 8% higher on average in “off” than in “on” years for the time series overall.
- For the 3 cases in which the time series terminated in an “off” year, the pooled CV was 35% higher on average than it was for those same 3 stocks overall.
- The 9 stocks/complexes managed under Tier 5 showed an average increase in pooled CV of 56% when comparing “off” years to “on” years.
- For the 1 case in which the time series terminated in an “off” year, the pooled CV was 42% higher on average than it was for that same stock overall.

For the CV ratio:

- The 13 stocks/complexes managed under Tiers 1-3 showed an average increase of only about 1% between “on+1” and “on” years for the time series overall.
- For the 3 cases in which the time series terminated in an “off” year, the CV ratio was about 7% higher on average than it was for those same 3 stocks overall.
- The 9 stocks managed under Tier 5 showed an average increase of about 42% between “on+1” and “on” years for the time series overall.
- For the 1 case in which the time series terminated in an “off” year, the CV ratio was 146% higher than it was for that same stock overall.