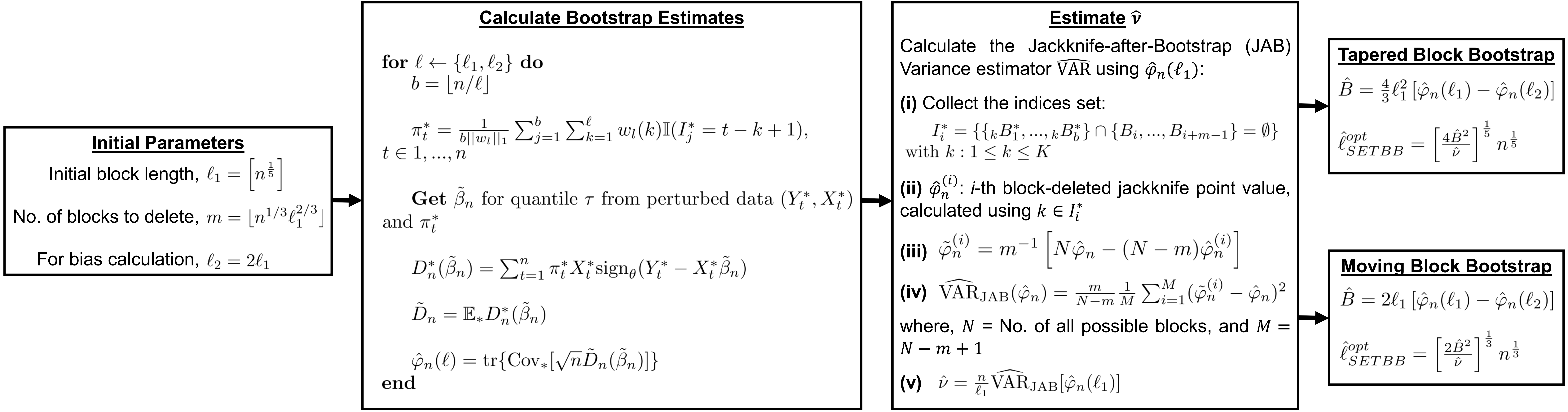
Initial Parameters
Initial block length, $\ell_1 = \left\lceil n^{\frac{1}{5}} \right\rceil$
No. of blocks to delete, $m = \lfloor n^{1/3} \ell_1^{2/3} \rfloor$
For bias calculation, $\ell_2 = 2\ell_1$
Calculate Bootstrap Estimates
for $\ell \leftarrow \{\ell_1, \ell_2\}$ **do**
$b = \lfloor n/\ell \rfloor$
$\pi_t^* = \frac{1}{b||w_l||_1} \sum_{j=1}^{b} \sum_{k=1}^{\ell} w_l(k) \mathbb{I}(I_j^* = t - k + 1)$, $t \in 1, ..., n$
Get $\tilde{\beta}_n$ for quantile τ from perturbed data (Y_t^*, X_t^*) and π_t^*
$D_n^*(\tilde{\beta}_n) = \sum_{t=1}^{n} \pi_t^* X_t^* \mathrm{sign}_\theta(Y_t^* - X_t^* \tilde{\beta}_n)$
$\tilde{D}_n = \mathbb{E}_* D_n^*(\tilde{\beta}_n)$
$\hat{\varphi}_n(\ell) = \mathrm{tr}\{\mathrm{Cov}_*[\sqrt{n}\tilde{D}_n(\tilde{\beta}_n)]\}$
end
Estimate $\hat{\nu}$
Calculate the Jackknife-after-Bootstrap (JAB) Variance estimator $\widehat{\mathrm{VAR}}$ using $\hat{\varphi}_n(\ell_1)$:
(i) Collect the indices set:
$I_i^* = \{\{{}_kB_1^*, ..., {}_kB_b^*\} \cap \{B_i, ..., B_{i+m-1}\} = \emptyset\}$ with $k : 1 \leq k \leq K$
(ii) $\hat{\varphi}_n^{(i)}$: *i*-th block-deleted jackknife point value, calculated using $k \in I_i^*$
(iii) $\tilde{\varphi}_n^{(i)} = m^{-1} \left[N\hat{\varphi}_n - (N - m)\hat{\varphi}_n^{(i)} \right]$
(iv) $\widehat{\mathrm{VAR}}_{\mathrm{JAB}}(\hat{\varphi}_n) = \frac{m}{N-m} \frac{1}{M} \sum_{i=1}^{M} (\tilde{\varphi}_n^{(i)} - \hat{\varphi}_n)^2$
where, N = No. of all possible blocks, and $M = N - m + 1$
(v) $\hat{\nu} = \frac{n}{\ell_1} \widehat{\mathrm{VAR}}_{\mathrm{JAB}}[\hat{\varphi}_n(\ell_1)]$
Tapered Block Bootstrap
$\hat{B} = \frac{4}{3}\ell_1^2 [\hat{\varphi}_n(\ell_1) - \hat{\varphi}_n(\ell_2)]$
$\hat{\ell}_{SETBB}^{opt} = \left[\frac{4\hat{B}^2}{\hat{\nu}} \right]^{\frac{1}{5}} n^{\frac{1}{5}}$
Moving Block Bootstrap
$\hat{B} = 2\ell_1 [\hat{\varphi}_n(\ell_1) - \hat{\varphi}_n(\ell_2)]$
$\hat{\ell}_{SETBB}^{opt} = \left[\frac{2\hat{B}^2}{\hat{\nu}} \right]^{\frac{1}{3}} n^{\frac{1}{3}}$