The Progressive Amalgamation Technique

Table 10-10: The Four PA Technique RB Estimates for GPP Based on Amalgamation

Sequence 1

N_b	N_a	Am_{1,N_b,N_a}	Amalgamation Equation	Unit Set Before Amalgamation $\{S_{b,1,N_b}\}$	Unit Set After Amalgamation $\{S_{a,1,N_a}\}$	Relative Benefit for Individual Amalgamation Step $= RB(Am_{1,N_b,N_a}) = RB_{1,N_b,N_a}$	Cumulative Relative Benefit $= RB(Am_{1,8,N_a}) = RB_{1,8,N_a}$
8	7	$Am_{1,8,7}$	NSW + ACT → NSW-ACT	NSW VIC QLD WA SA TAS ACT NT	NSW-ACT VIC QLD WA SA TAS NT	$RB_{1,8,7}$ = \$6.3172 b	$RB_{1,8,7}$ = \$6.3172 b
7	6	$Am_{1,7,6}$	VIC + TAS → VIC-TAS	NSW-ACT VIC QLD WA SA TAS NT	NSW-ACT VIC-TAS QLD WA SA NT	$RB_{1,7,6}$ = \$6.0624 b	$RB_{1,8,6}$ = \$12.380 b = $RB_{1,8,7} + RB_{1,7,6}$
6	5	$Am_{1,6,5}$	SA + NT → SA-NT	NSW-ACT VIC-TAS QLD WA SA NT	NSW-ACT VIC-TAS QLD WA SA-NT	$RB_{1,6,5}$ = \$1.2498 b	$RB_{1,8,5}$ = \$13.629 b = $RB_{1,8,6} + RB_{1,6,5}$
5	4	$Am_{1,5,4}$	WA + SA-NT → WA-SA-NT	NSW-ACT VIC-TAS QLD WA SA-NT	NSW-ACT VIC-TAS QLD WA-SA-NT	$RB_{1,5,4}$ = \$9.4466 b	$RB_{1,8,4}$ = \$23.076 b = $RB_{1,8,5} + RB_{1,5,4}$
4	3	$Am_{1,4,3}$	NSW-ACT + VIC-TAS → NSW-ACT-VIC-TAS	NSW-ACT VIC-TAS QLD WA-SA-NT	NSW-ACT-VIC-TAS QLD WA-SA-NT	$RB_{1,4,3}$ = \$19.8125 b	$RB_{1,8,3}$ = \$42.889 b = $RB_{1,8,4} + RB_{1,4,3}$
3	2	$Am_{1,3,2}$	NSW-ACT-VIC-TAS + QLD → NSW-ACT-VIC-TAS-QLD	NSW-ACT-VIC-TAS QLD WA-SA-NT	NSW-ACT-VIC-TAS-QLD WA-SA-NT	$RB_{1,3,2}$ = \$21.5443 b	$RB_{1,8,2}$ = \$64.433 b = $RB_{1,8,3} + RB_{1,3,2}$
2	1	$Am_{1,2,1}$	NSW-ACT-VIC-TAS-QLD + WA-SA-NT → AWSS	NSW-ACT-VIC-TAS-QLD WA-SA-NT	AWSS	$RB_{1,2,1}$ = \$0.9558 b	$RB_{1,8,1}$ = \$65.389 b = $RB_{1,8,2} + RB_{1,2,1}$

Four Relative Benefit Estimates

RB Estimate $RB_{1(j)}$	Formula and Estimate
$RB_{1(1)}$	$RB_{1(1)} = RB_{1,8,1}$ = \$65.39 b
$RB_{1(2)}$	$RB_{1(2)} = RB_{1,8,3} + 2RB_{1,3,2}$ = \$42.889 b + (2 × \$21.5443) = \$85.98 b
$RB_{1(3)}$	$RB_{1(3)} = RB_{1,8,4} + 3RB_{1,4,3}$ = \$23.076 b + (3 × \$19.8125) = \$82.51 b
$RB_{1(4)}$	$RB_{1(4)} = RB_{1,8,5} + 4RB_{1,5,4}$ = \$13.629 b + (4 × \$9.4466) = \$51.42 b