Comparison of Setup Time Repair Effectiveness Between ECOSight and Commercial Tools (ns)

		b12	b14	b15
Initial timing	WNS	-1.483	-5.61	-8.33
	TNS	-35.159	-635.831	-1335.772
	VM	44	188	387
Tool A	WNS	0	-2.708	-1.8561
	TNS	0	-206.1	-154.842
	VM	0	163	224
	ECOM	120	2551	3259
	TNSRE	0.293	0.168	0.362
Tool B	WNS	-0.496	-3.618	-4.003
	TNS	-2.897	-297.637	-643.992
	VM	13	170	352
	ECOM	134	1379	2063
	TNSRE	0.241	0.245	0.335
ECOSight	WNS	-0.318	-3.054	-4.913
	TNS	-2.237	-283.295	-636.426
	VM	16	165	358
	ECOM	41	478	622
	TNSRE	0.803	0.738	1.124

WNS (Worst Negative Slack): The most critical timing metric in static timing analysis, representing the most negative slack value among all timing paths. It indicates the most severe timing violation.

TNS (Total Negative Slack): The sum of negative slack values for all paths that violate timing constraints. Compared to WNS, TNS measures the overall timing health of the entire circuit rather than just the worst-case path.

VM (Violation Number): The number of timing violation paths.

ECOM (ECO Number): The number of ECO (Engineering Change Order) modifications performed.

TNSRE (TNS Recovery Efficiency): A metric that measures the efficiency of TNS recovery per unit ECO operation. A larger TNSRE indicates that more TNS is repaired per ECO operation, making the ECO solution more effective. This metric is used to evaluate and select the most effective optimization strategy among different ECO approaches.