Large-Scale Multi-Source Integration: Timescale Comparison in Lagrangian Methods
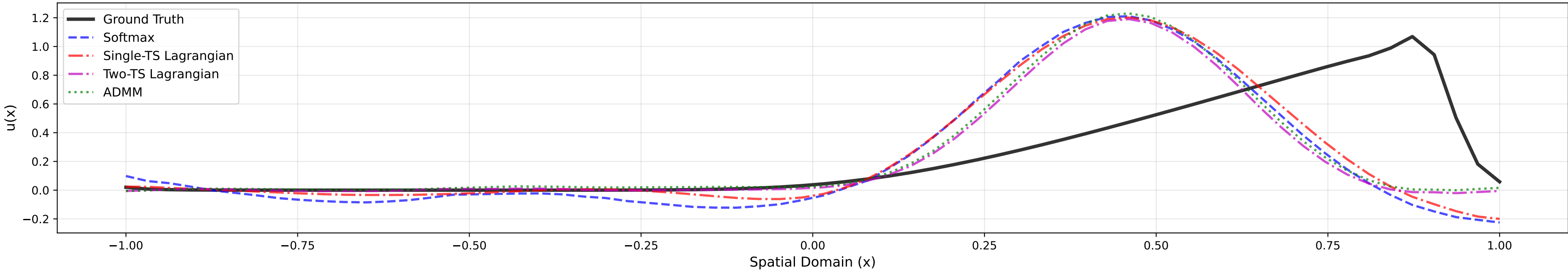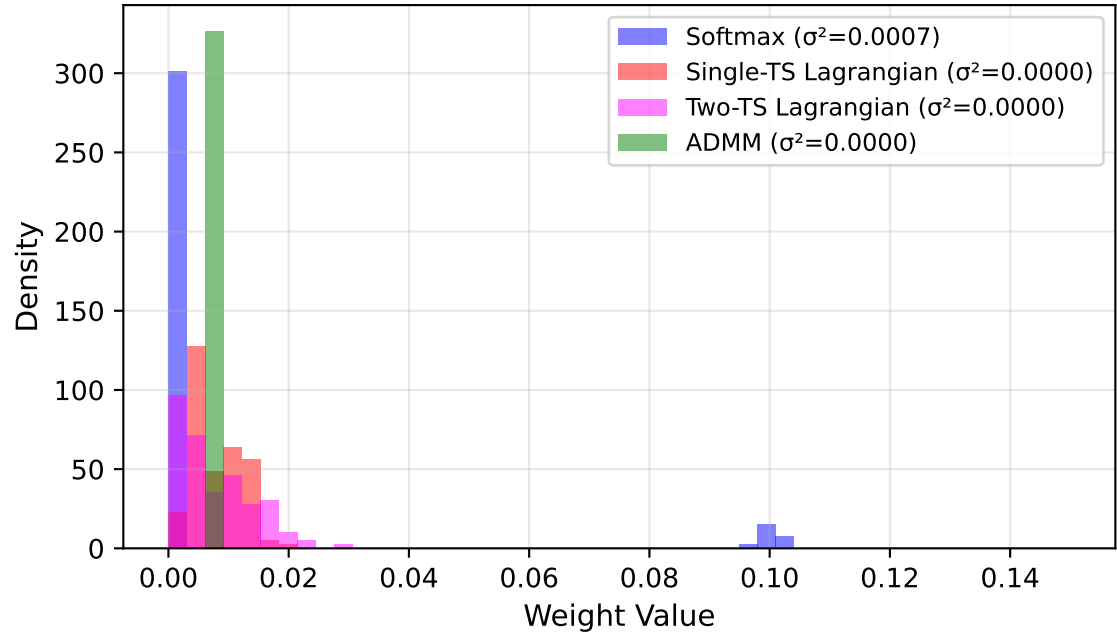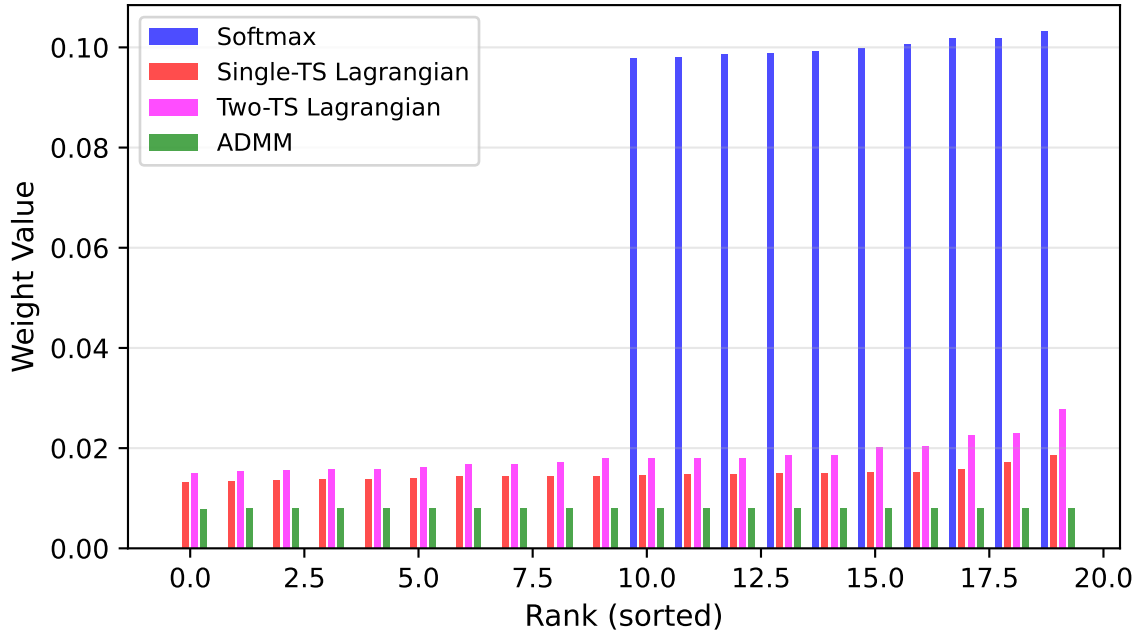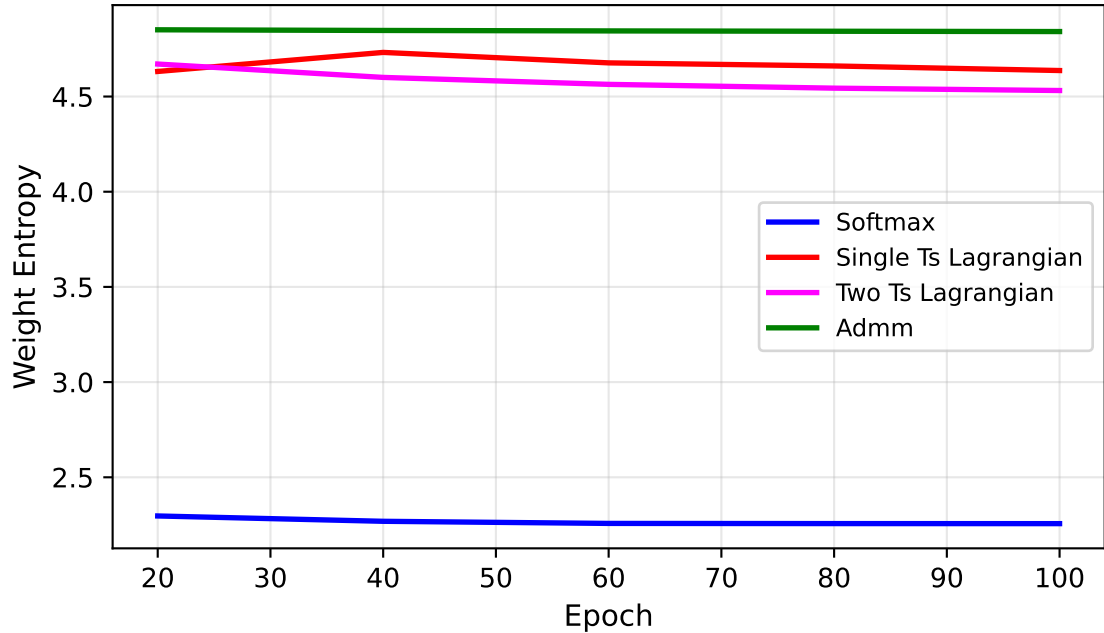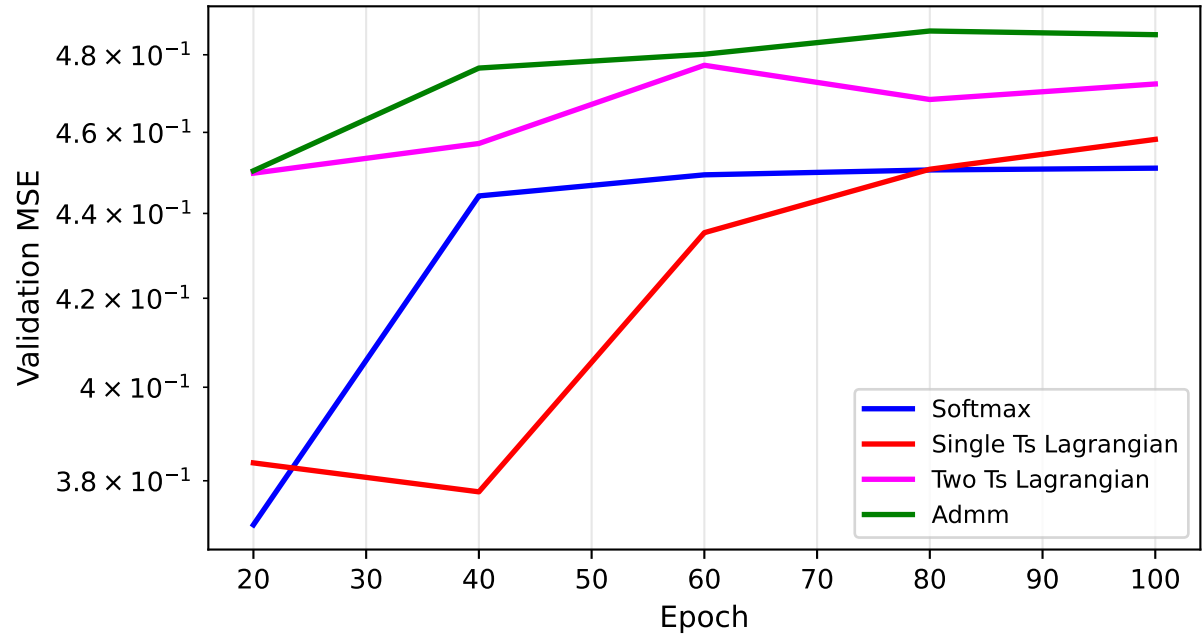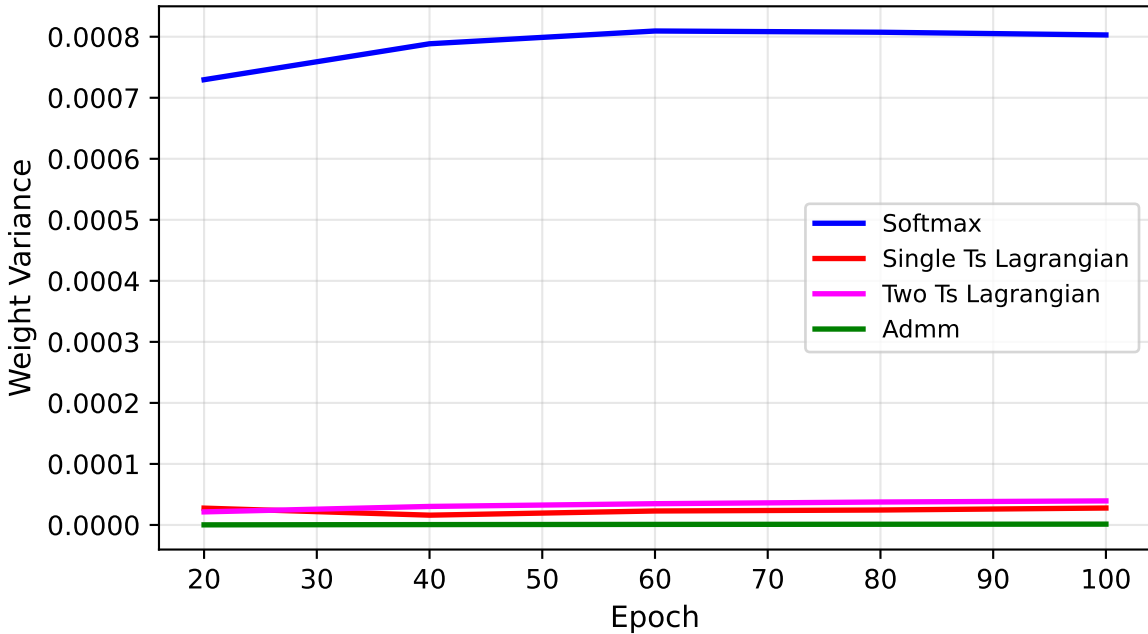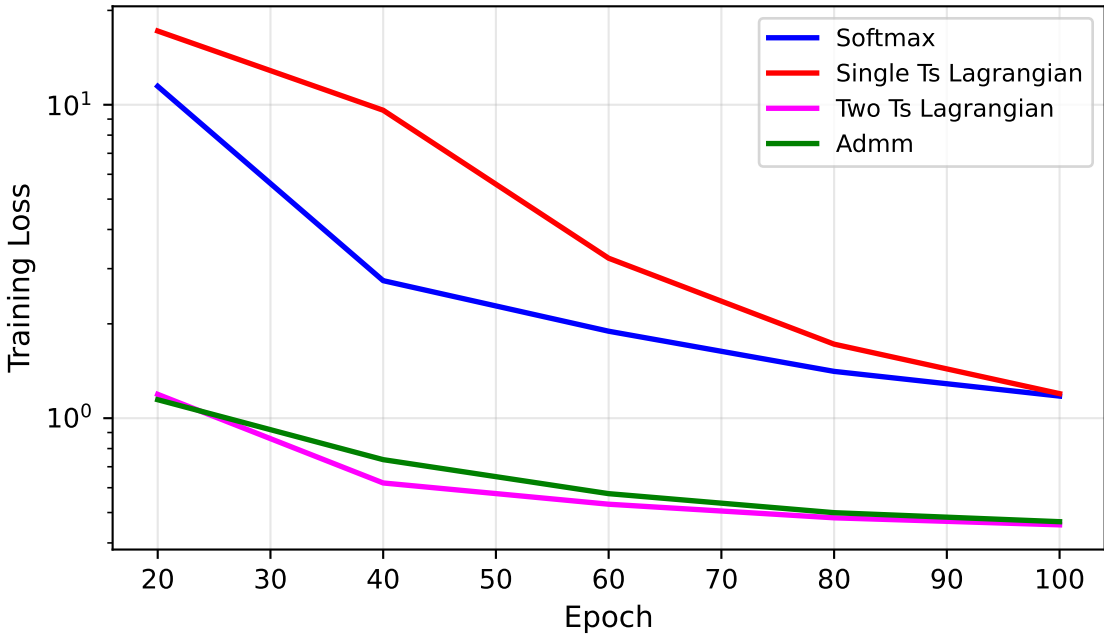

Summary Statistics and Characteristics

Metric	Softmax	Single-TS Lagrangian	Two-TS Lagrangian	ADMM
Final Val MSE	0.4511	0.4582	0.4724	0.4853
Final Train Loss	1.1762	1.1976	0.4568	0.4675
Weight Variance	0.0008	0.0000	0.0000	0.0000
Weight Entropy	2.2565	4.6366	4.5316	4.8413
Characteristic	Balanced Ensemble	Fixed Step Lagrangian	Adaptive Lagrangian	Distributed Optimization

Softmax: Balanced ensemble with top-k sparsity | Single-TS Lagrangian: Fixed dual update step | Two-TS Lagrangian: Adaptive dual learning rate | ADMM: Distributed optimization with fast convergence