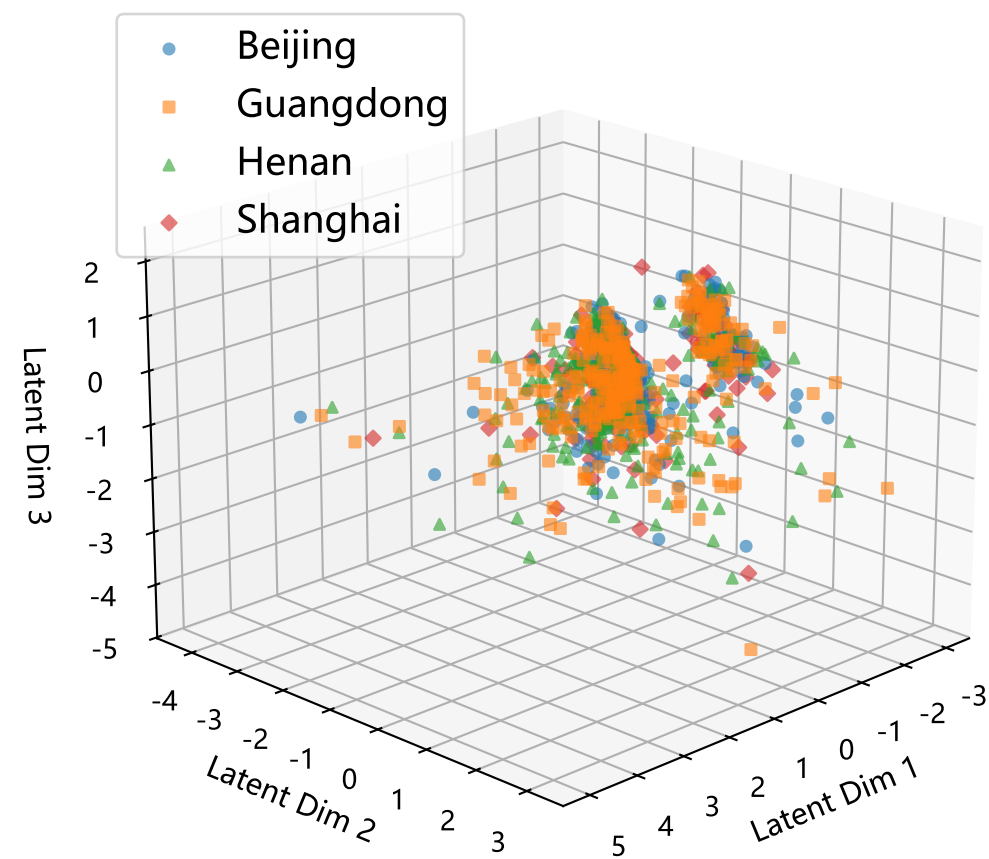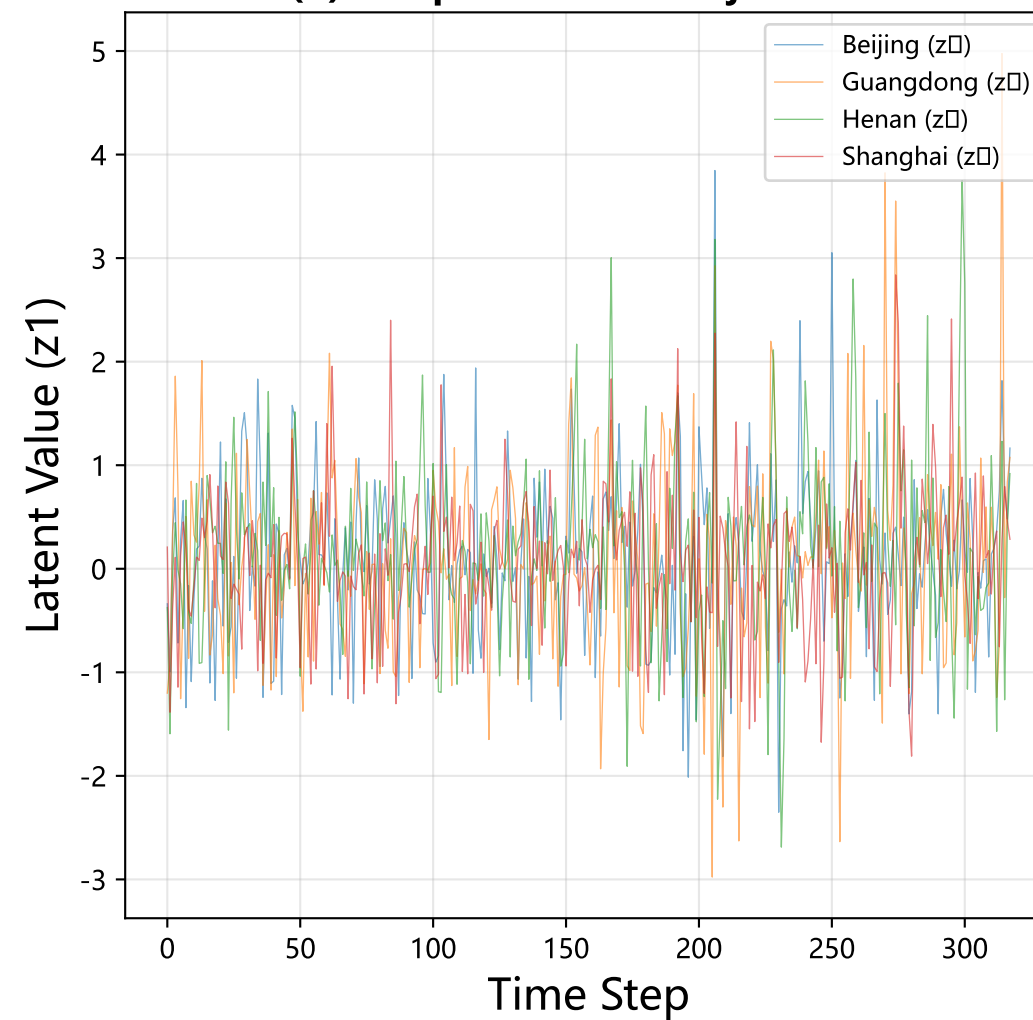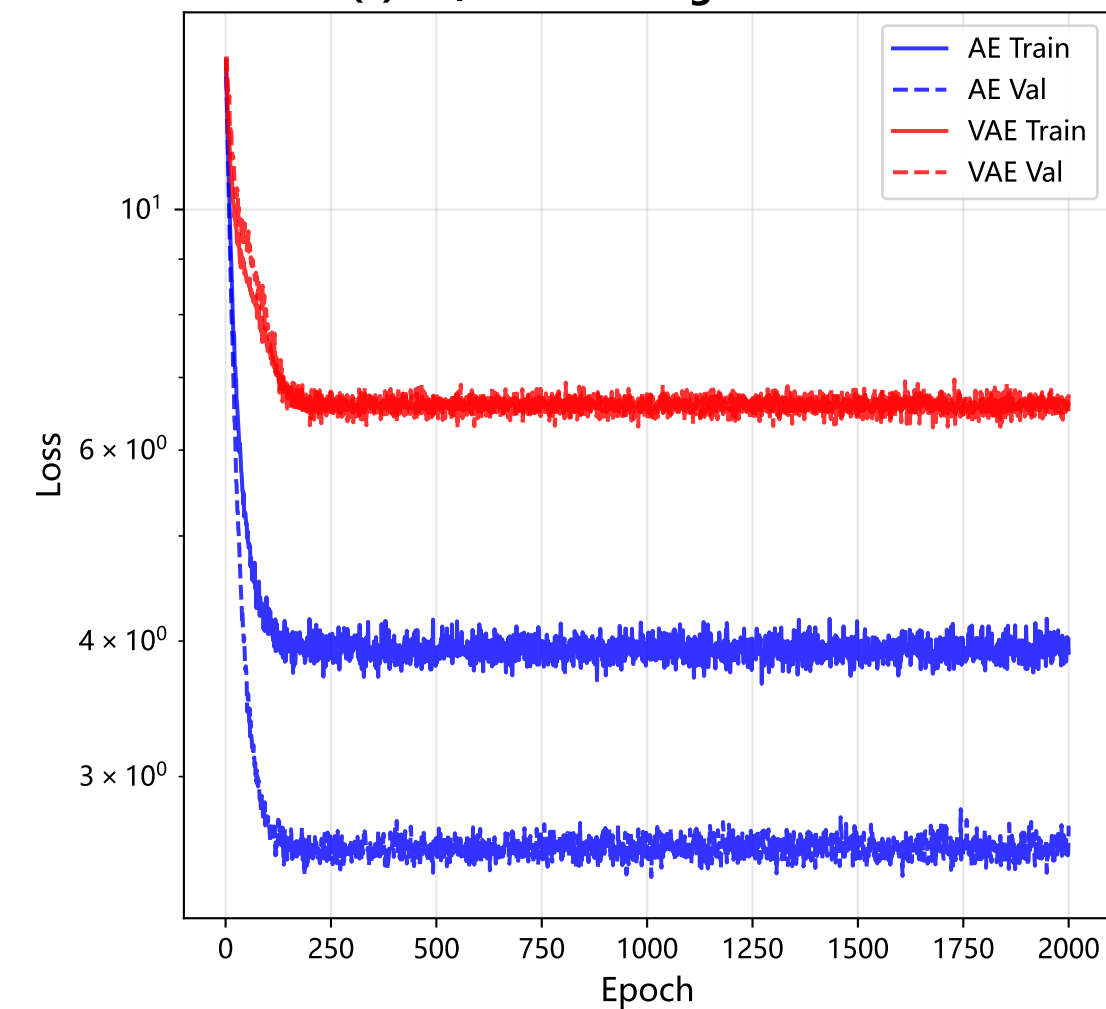**(a) 3D Latent Space by Province**
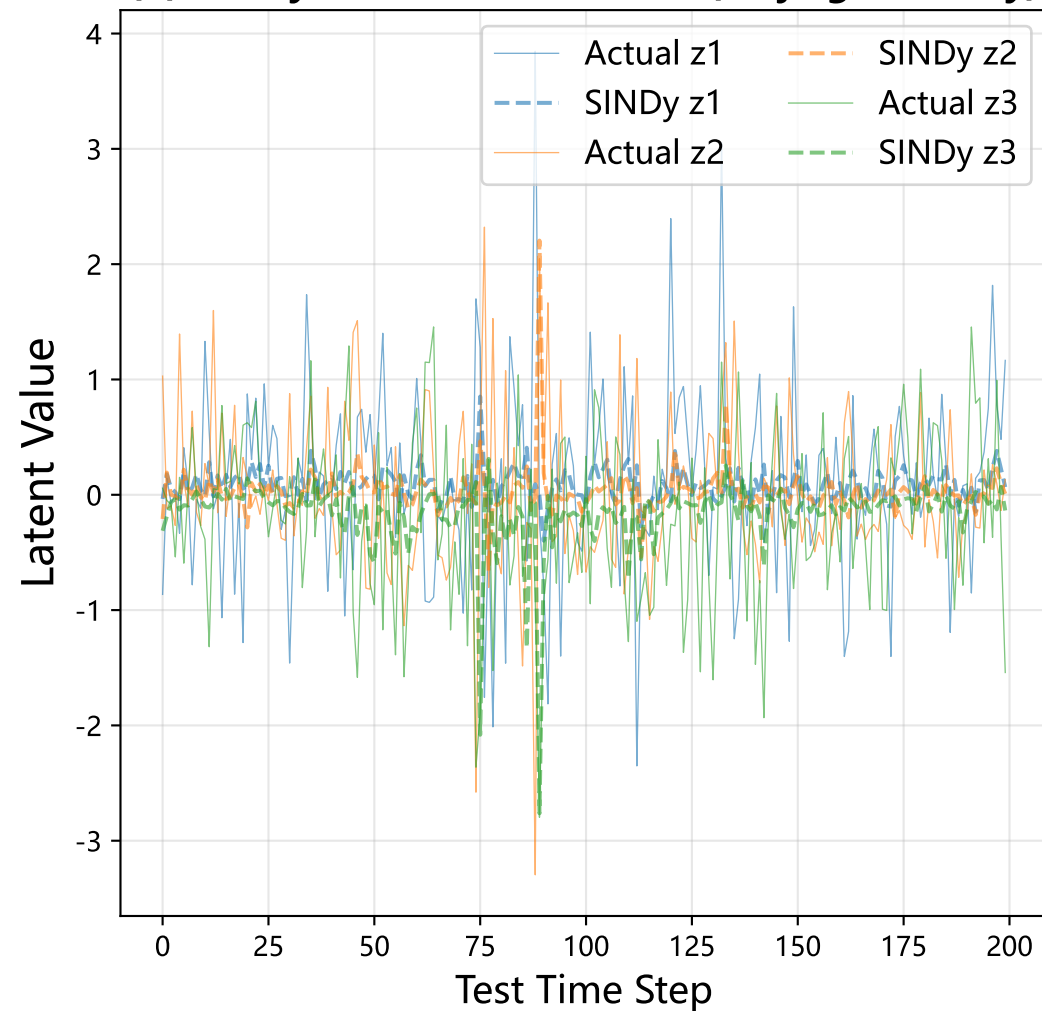
(b) Temporal Latent Trajectories

(c) AE/VAE Training Loss Curves

(d) SINDy Prediction vs Actual (Beijing, 200-day)

(e) SINDy Coefficient Magnitude Heatmap

Province	Constant	Linear	Quadratic	Interaction	Trigonometric
Beijing	1.225	0.337	0.235	0.065	0.500
Guangdong	0.473	0.372	0.136	0.086	0.354
Henan	0.935	0.222	0.131	0.099	0.287
Shanghai	0.663	0.240	0.091	0.092	0.349