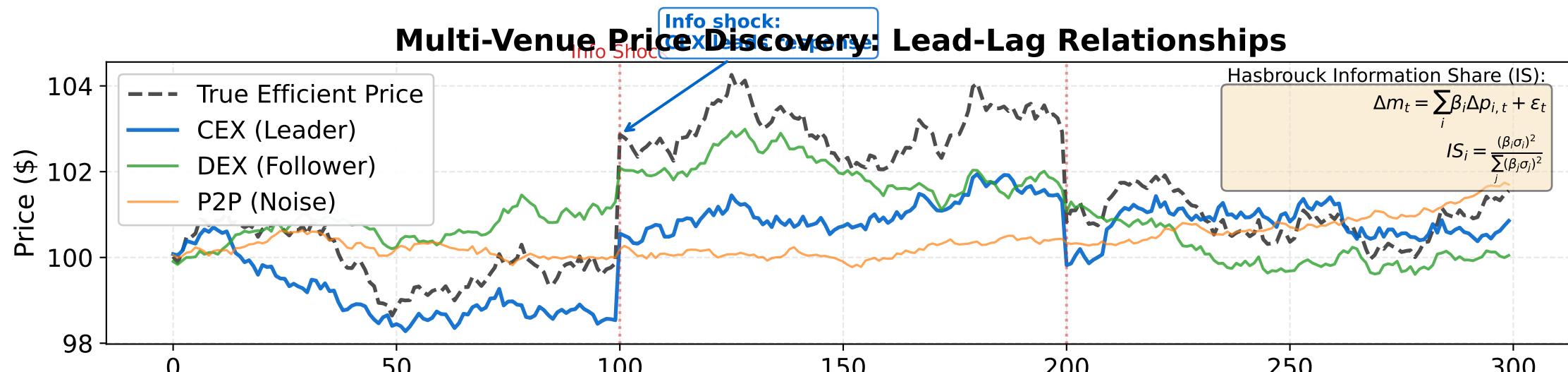


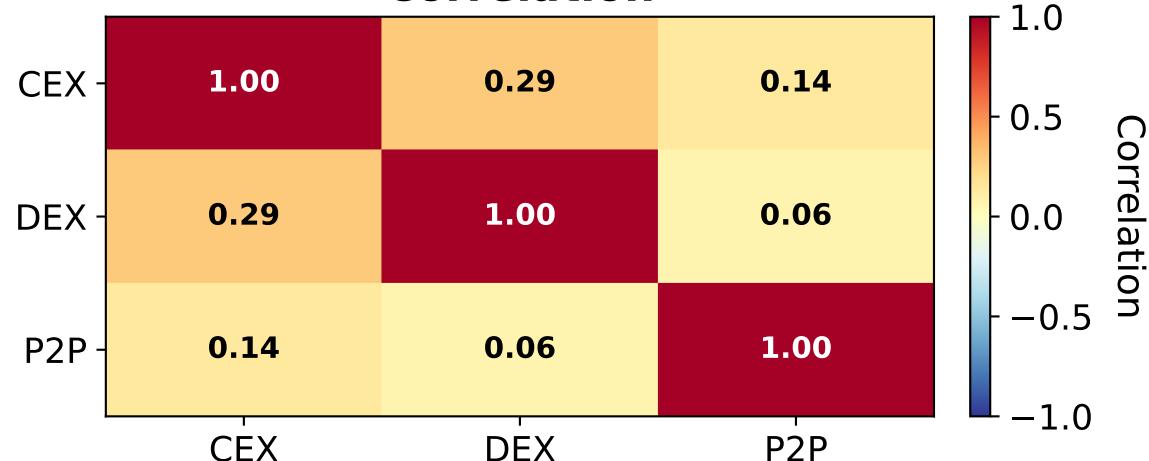
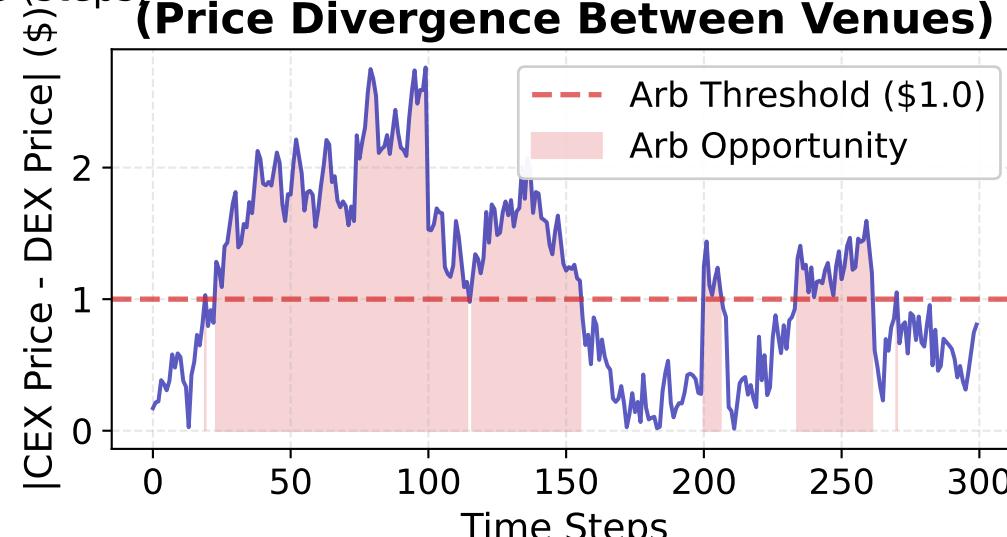
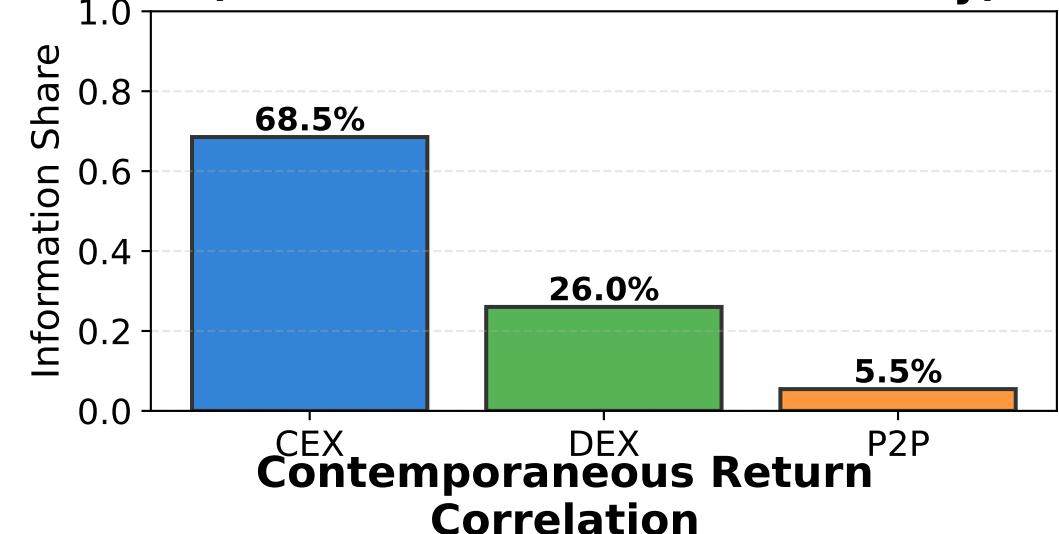
# Multi-Venue Price Discovery: Lead-Lag Relationships



**Hasbrouck Information Share (IS)**  
(Contribution to Price Discovery)

Time Steps (steps)

**Arbitrage Opportunities**  
(Price Divergence Between Venues)



**Price Discovery Statistics**  
=====

Information Share (Hasbrouck 1995):  
 CEX: 68.5% (Leader)  
 DEX: 26.0% (Follower)  
 P2P: 5.5% (Noise)

Lead-Lag Structure:  
 CEX lag: 1 step(s)  
 DEX lag: 3 step(s)  
 P2P lag: 5 step(s)

Arbitrage:  
 Opportunities: 169 periods  
 Avg spread: \$1.145  
 Max spread: \$2.761

Interpretation:  
 • CEX dominates price discovery (~69%)  
 • DEX follows with lag, contributes ~26%  
 • P2P has minimal impact (~5%)  
 • Arbitrageurs exploit temporary spreads