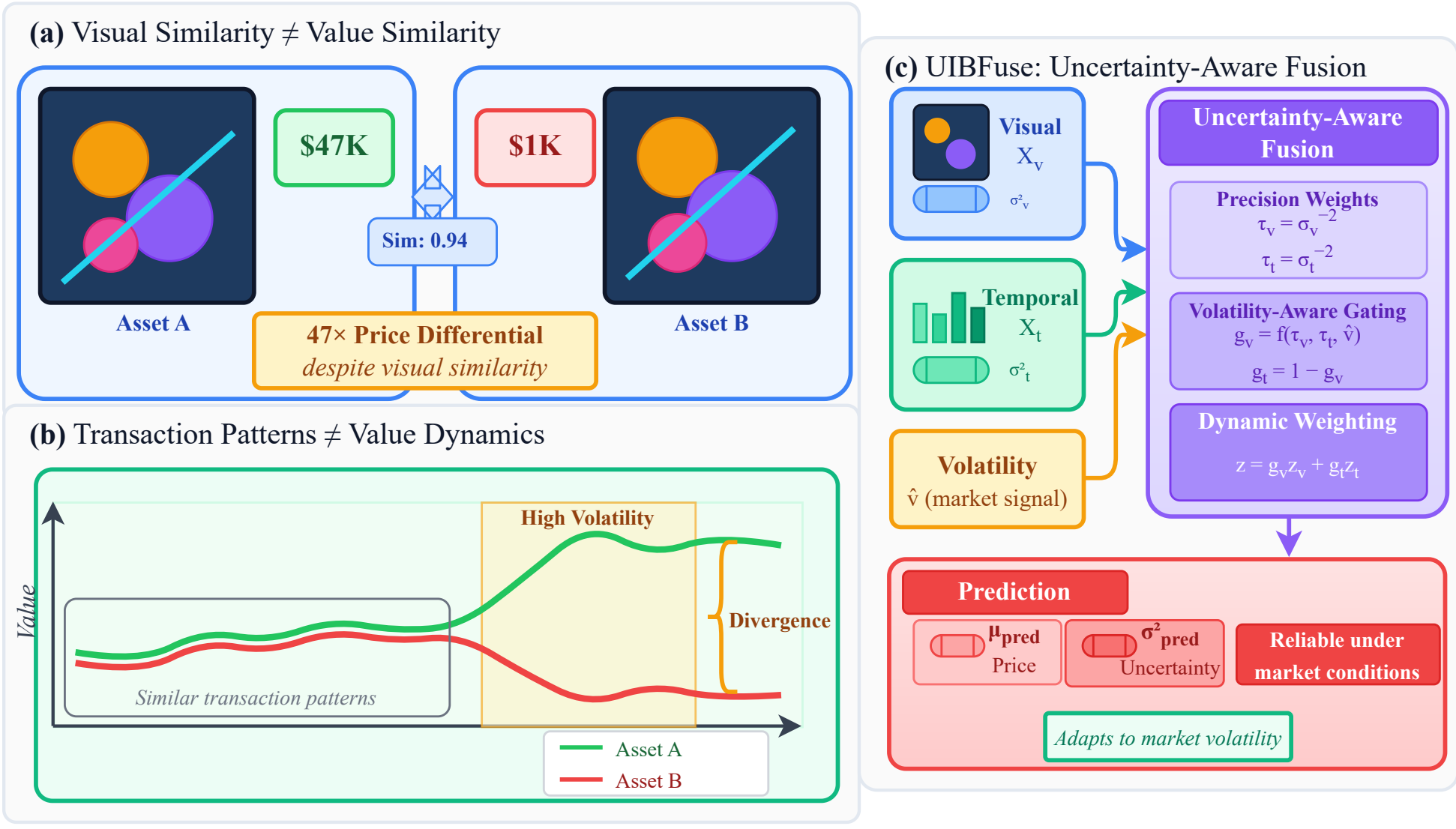
(a) Visual Similarity ≠ Value Similarity
$47K
$1K
Sim: 0.94
Asset A
Asset B
47× Price Differential
despite visual similarity
(b) Transaction Patterns ≠ Value Dynamics
Value
High Volatility
Divergence
Similar transaction patterns
Asset A
Asset B
(c) UIBFuse: Uncertainty-Aware Fusion
Visual
X_v
σ^2_v
Temporal
X_t
σ^2_t
Volatility
$\hat{v}$ (market signal)
Uncertainty-Aware Fusion
Precision Weights
$\tau_v = \sigma_v^{-2}$
$\tau_t = \sigma_t^{-2}$
Volatility-Aware Gating
$g_v = f(\tau_v, \tau_t, \hat{v})$
$g_t = 1 - g_v$
Dynamic Weighting
$z = g_v z_v + g_t z_t$
Prediction
μ_{pred} Price
σ^2_{pred} Uncertainty
Reliable under market conditions
Adapts to market volatility