

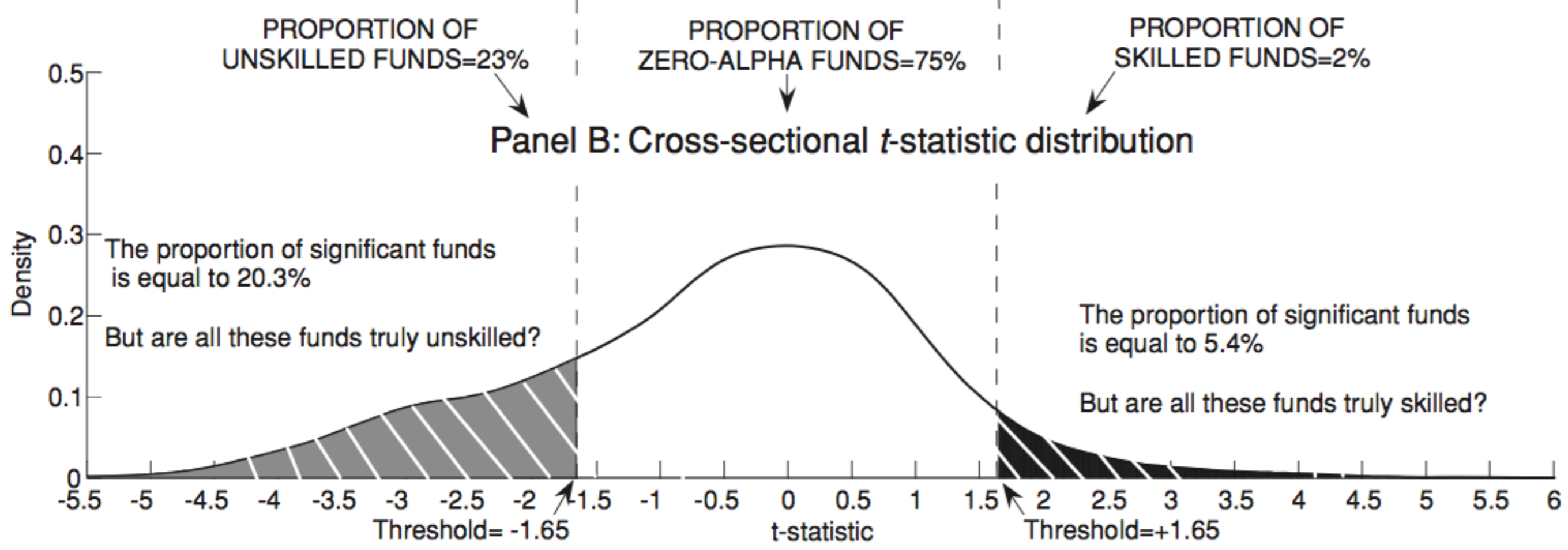
The Social Dynamics of Performance

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INTRODUCTION

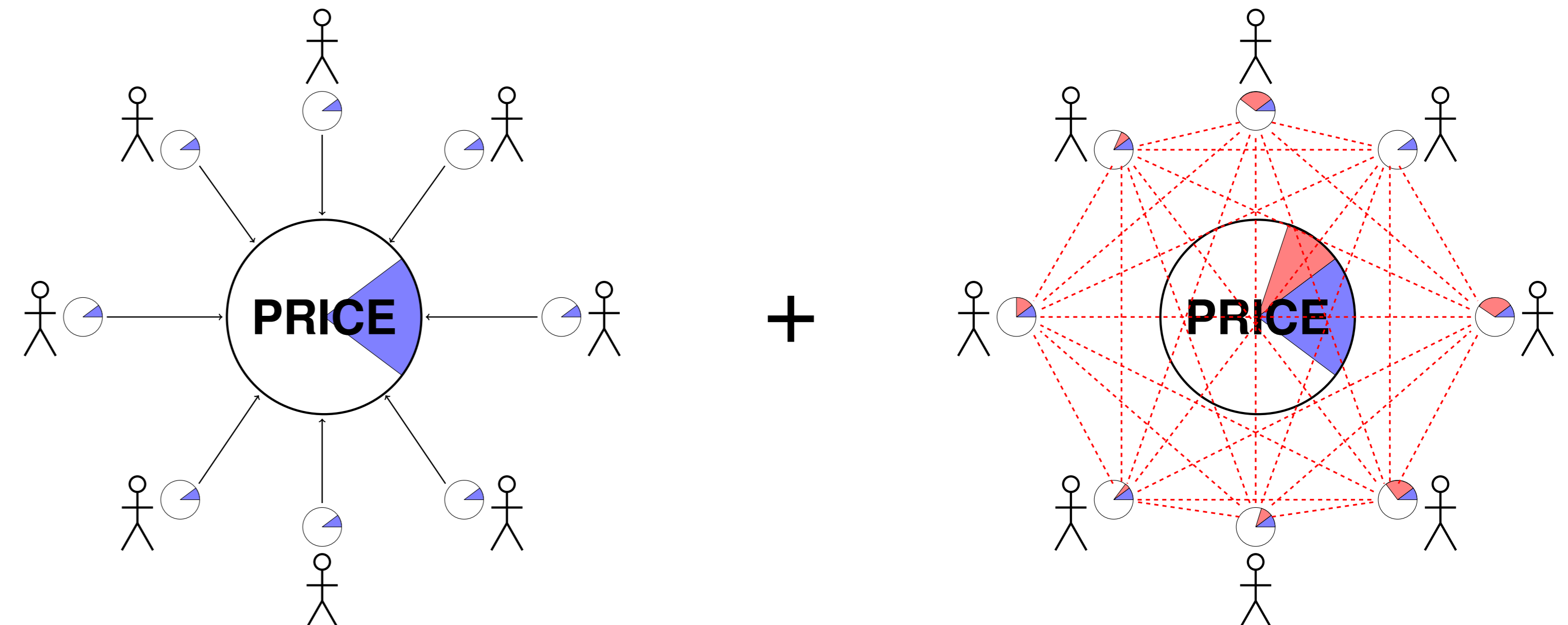
FACT: Mutual fund's performance does not persist.



Cross-sectional distribution of alpha's t-stats
Skilled managers represents merely 2% of the population

SOURCE: BARRAS, SCAILLET & WERMERS (JF, 2010)

CONTRIBUTION: Word-of-Mouth communication in a REE



Standard REE: Agents Learn From Prices

Agents Randomly Meet and Share their Ideas

I BUILD A RATIONAL-EXPECTATIONS EQUILIBRIUM (REE) IN WHICH A "CROWD" OF FUND MANAGERS INTERACT SOCIALLY THROUGH PRIVATE CONVERSATIONS. INTERPERSONAL COMMUNICATIONS ALLOW PRICES TO BECOME MORE EFFICIENT AND MANAGERS TO REAP LARGER DOLLAR RENTS, AND YET CAUSE MANAGERS' PERFORMANCE NOT TO PERSIST. THIS SUGGESTS THAT DOLLAR PROFITS BETTER CAPTURE PERFORMANCE THAN ALPHA. THE MODEL HAS TWO ADDITIONAL IMPLICATIONS: SOCIAL INTERACTIONS GENERATE MOMENTUM IN STOCK RETURNS AND CAUSE MOST MANAGERS TO CHASE THE TREND, CONSISTENT WITH EMPIRICAL FINDINGS.

SETUP



Noise Traders:

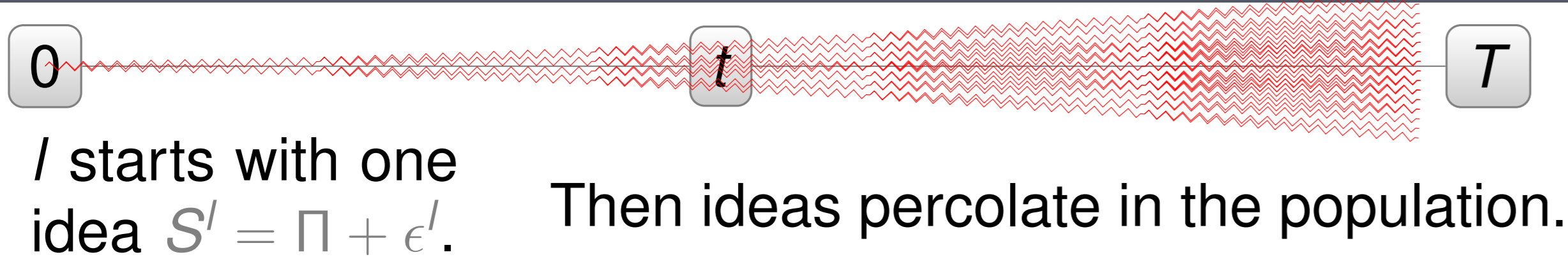
$$d\theta_t = -a_\theta \theta_t dt + \sigma_\theta dB_t^\theta$$

Manager l :

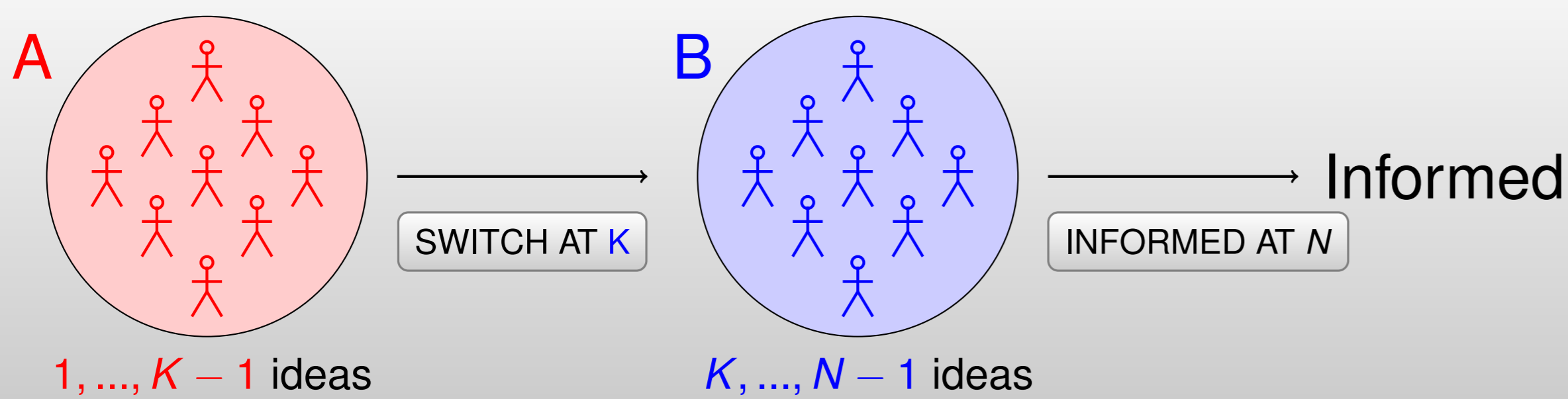
$$\sup_{\theta^l} E \left[-e^{-\gamma W_t^l} \mid \mathcal{F}_t^l \right]$$

$$s.t. W_t^l = W_0^l + \int_{[0,t]} \theta_t^l dP_t + \theta_{T-}^l \Delta P_T$$

INFORMATION PERCOLATION



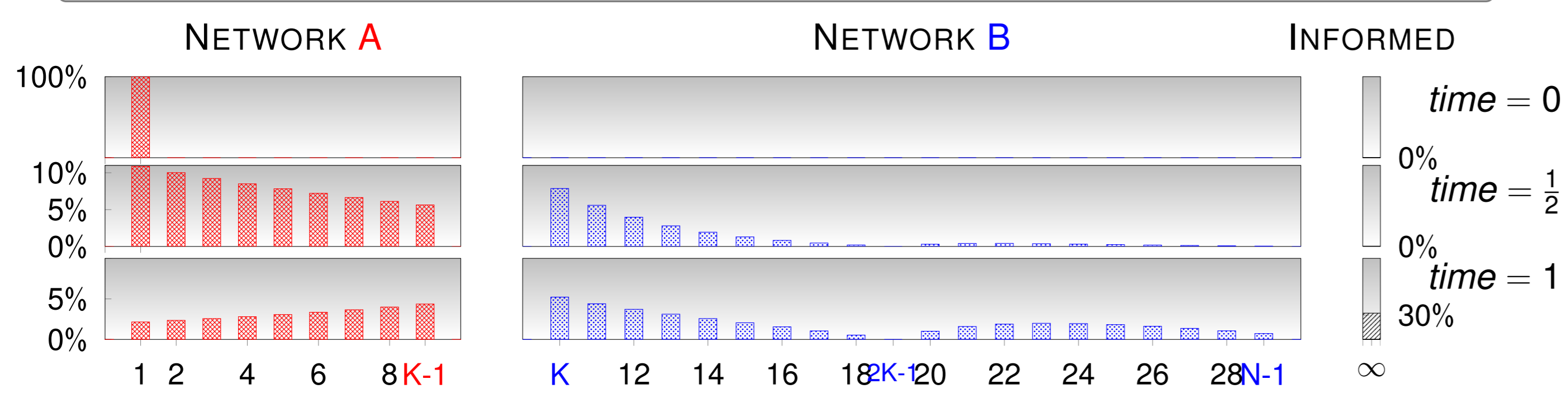
Good Ideas Stay Local



Social Dynamics

$$\frac{d\mu_t^A(n)}{dt} = -\eta q_t^A \mu_t^A(n) + \eta \sum_{m=1}^{n-1} \mu_t^A(n-m) \mu_t^A(m), \quad \mu_0^A(n) = \delta_1$$

$$\frac{d\mu_t^B(n)}{dt} = -\eta q_t^B \mu_t^B(n) + \eta \left(\mathbf{1}_{\{n \in [K, 2(K-1)]\}} \sum_{m=n-(K-1)}^{K-1} \mu_t^A(n-m) \mu_t^A(m) + \mathbf{1}_{\{n \in [2K, N-1]\}} \sum_{m=K}^{n-K} \mu_t^B(n-m) \mu_t^B(m) \right)$$



LEARNING

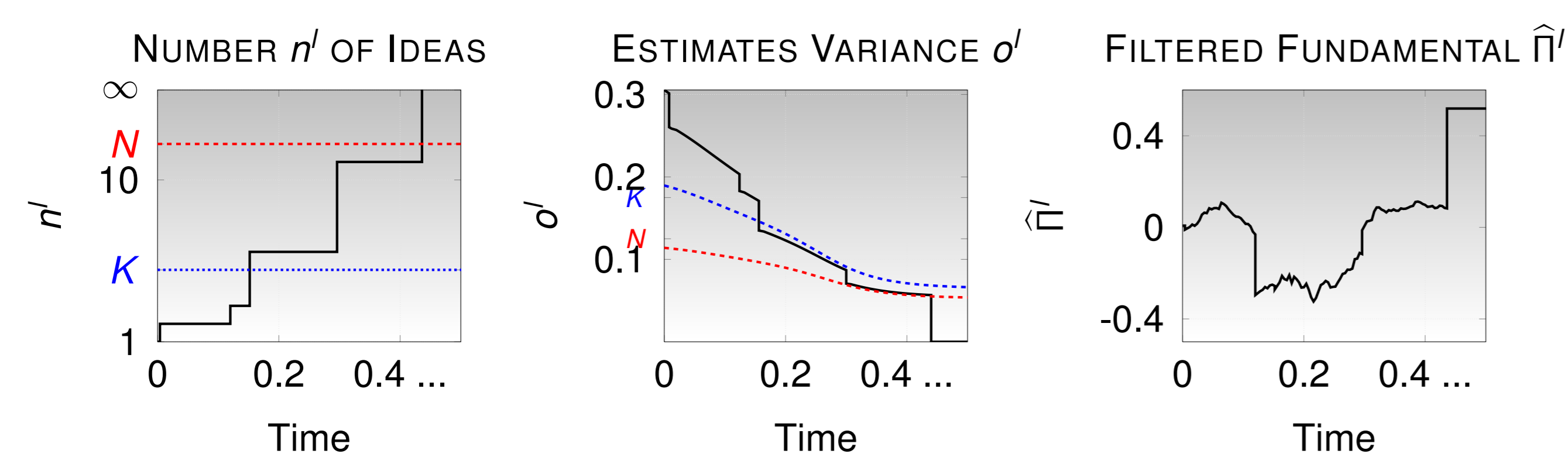
from prices from meetings

How managers update their beliefs

$$d\hat{\Pi}_t^l = o_t^l k_t dB_t^l + Z^l dN_t^l, \quad (\text{FUNDAMENTAL})$$

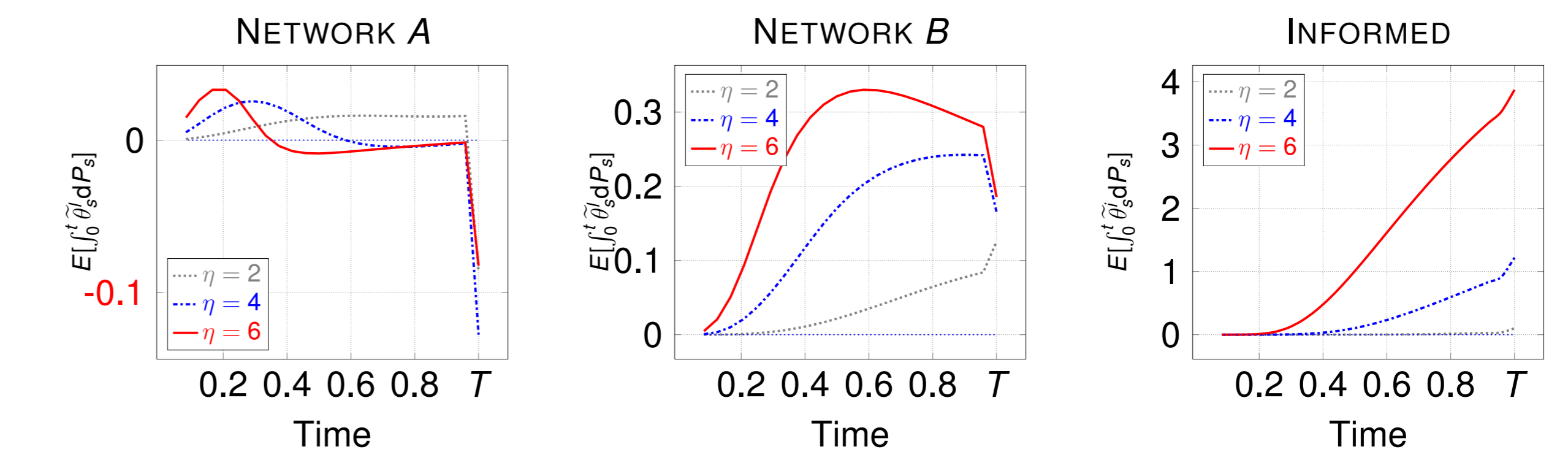
$$do_t^l = -k_t^2 (o_t^l)^2 dt - \frac{1}{\sigma_s^2} o_t^l o_t^l m_t dN_t^l, \quad (\text{ESTIMATES VARIANCE})$$

$$dN_t^l = \left(m_t \mathbf{1}_{\{m_t + n_t^l \in \text{AUB}\}} + \infty \mathbf{1}_{\{m_t + n_t^l \notin \text{AUB}\}} \right) dN_t^l, \quad n_0^l = 1 (\text{NUMBER OF IDEAS})$$

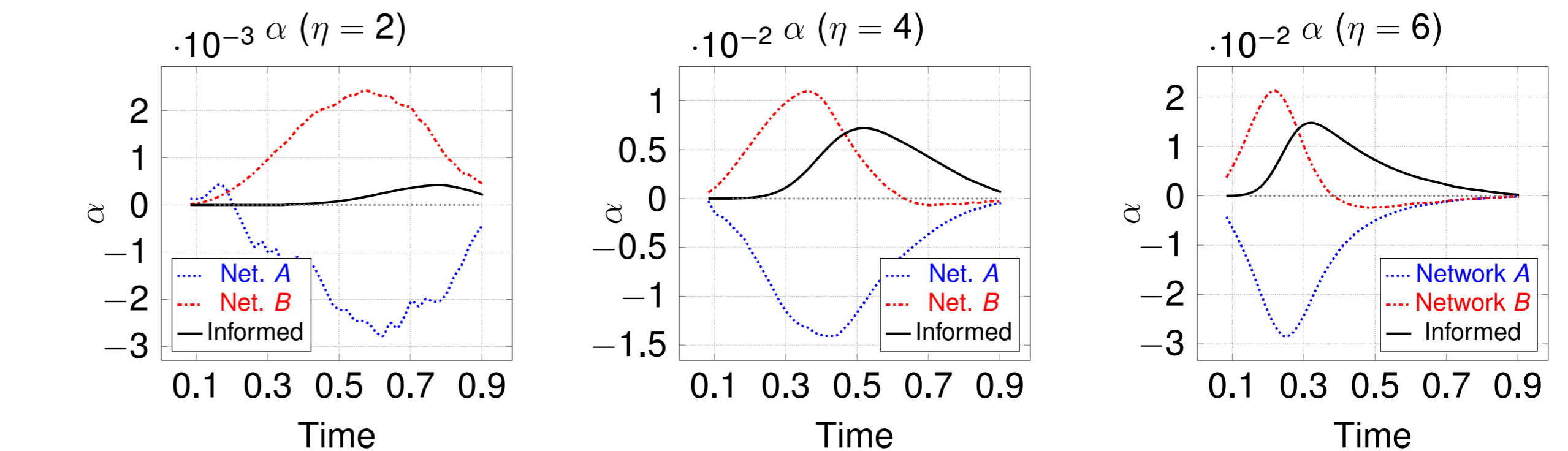


RESULT # 1: PERFORMANCE IS NON-PERSISTENT

Managers with good ideas make large dollar gains

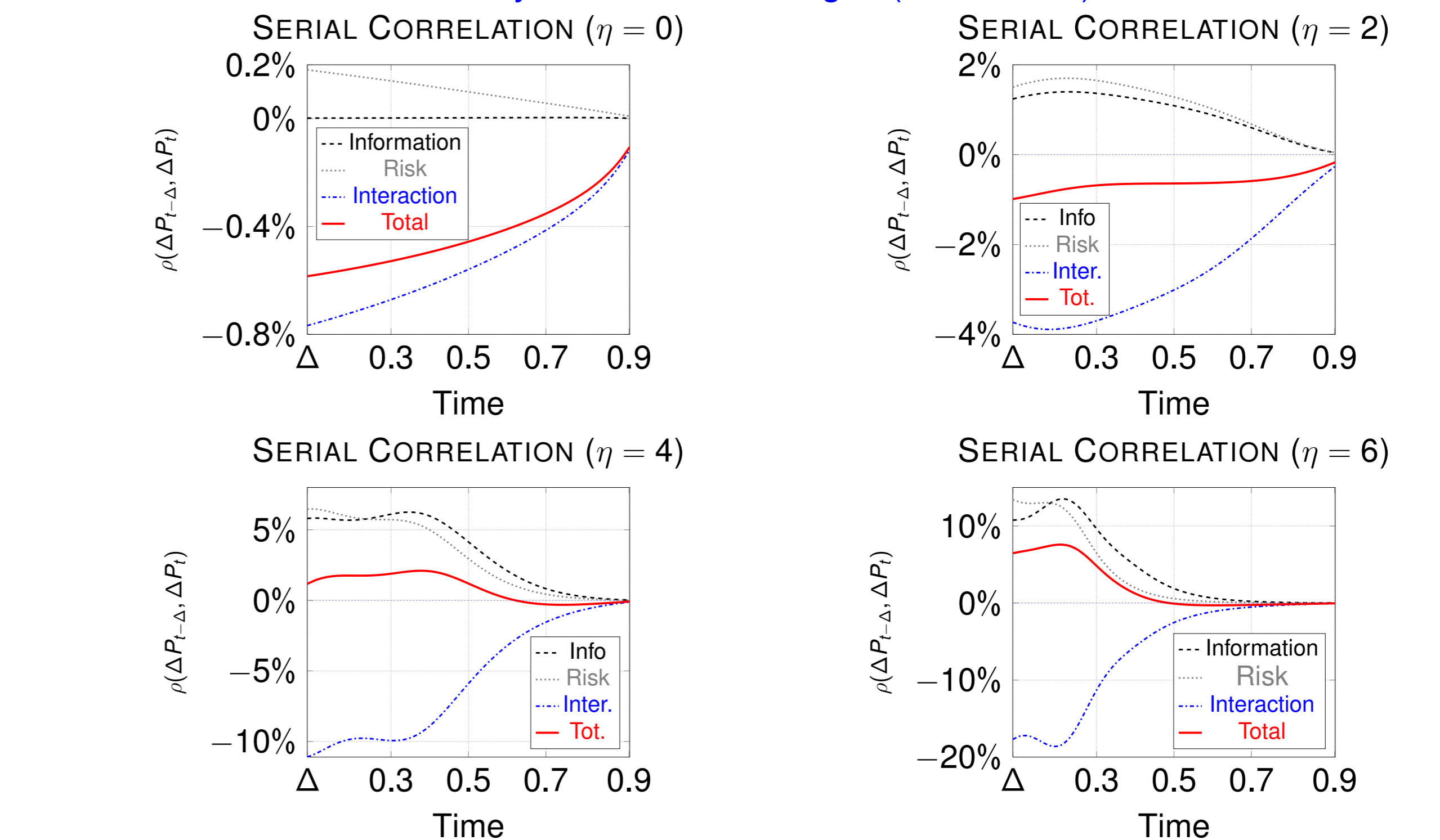


and yet their alpha quickly becomes insignificant...



RESULT # 2: MOMENTUM IN STOCK RETURNS

As social interactions intensify, momentum emerges (the red line)



RESULT # 3: TREND-CHASING

For most managers, trend-chasing becomes sooner or later an optimal strategy

