Andreas Krause

Definition of market efficiency

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Slide 2 of 6

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Slide 3 of 6

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Asset values are derived from the future income they generate

$$\blacktriangleright P_t = \sum_{\tau=0}^{+\infty} \frac{\mathsf{E}[D_{t+\tau}]}{\mathsf{E}[D_{t+\tau}]}$$

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Slide 3 of 6

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Slide 3 of 6

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Slide 3 of 6

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Slide 3 of 6

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Slide 4 of 6

$$\blacktriangleright \operatorname{Cov}\left[\frac{\mathsf{E}[P_{t+1}|\Omega_t]}{P_t}, \frac{\mathsf{E}[P_{t+2}|\Omega_t]}{\mathsf{E}[P_{t+1}|\Omega_t]}\right] = \mathsf{E}\left[\frac{\mathsf{E}[P_{t+1}|\Omega_t]}{P_t} \frac{\mathsf{E}[P_{t+2}|\Omega_t]}{\mathsf{E}[P_{t+1}|\Omega_t]}\right] - \frac{\mathsf{E}[P_{t+1}|\Omega_t]}{P_t} \frac{\mathsf{E}[P_{t+2}|\Omega_t]}{\mathsf{E}[P_{t+1}|\Omega_t]}$$

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Slide 4 of 6

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Slide 4 of 6

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Slide 4 of 6

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 \Rightarrow Returns are serially uncorrelated

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Slide 4 of 6

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Slide 5 of 6

If returns are uncorrelated, they will fluctuate randomly around the expected return

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Slide 6 of 6

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Slide 6 of 6

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Slide 6 of 6

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Slide 6 of 6



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