Discussion of

First Impressions: "System 1" Thinking and Stock Returns

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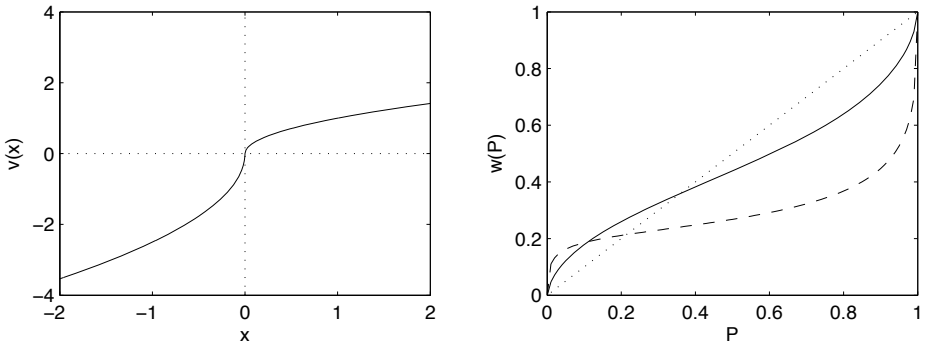
December 2013

Investor psychology and asset pricing: Doubts

Wachter (2002, JME) discussion of Zin (2002, JME):

"Stanley Zin raises an important concern [...] behavioral models leave room for **multiple degrees of freedom** *in the utility function. Taken to an extreme, this approach could reduce structural modeling to a* **tautological**, *data-fitting exercise. One might argue that psychological evidence itself restricts the parameters. There may be truth to this argument, but the wealth of (sometimes)* **contradictory psychological evidence** *[...] leaves it open to doubt."*

Tversky and Kahneman: value function and probability weights



Main results

- High $TK \approx$ high average past returns, high positive extreme returns, absence of negative extreme returns
- Prediction: high TK = high System-1 investor demand = low future return
- Findings consistent with this prediction
- Impressive: Similar results in most countries in a large international sample
- Stronger for smaller, volatile, low priced, illiquid stocks
- Some overlap with one-month reversal and long-term reversal effect

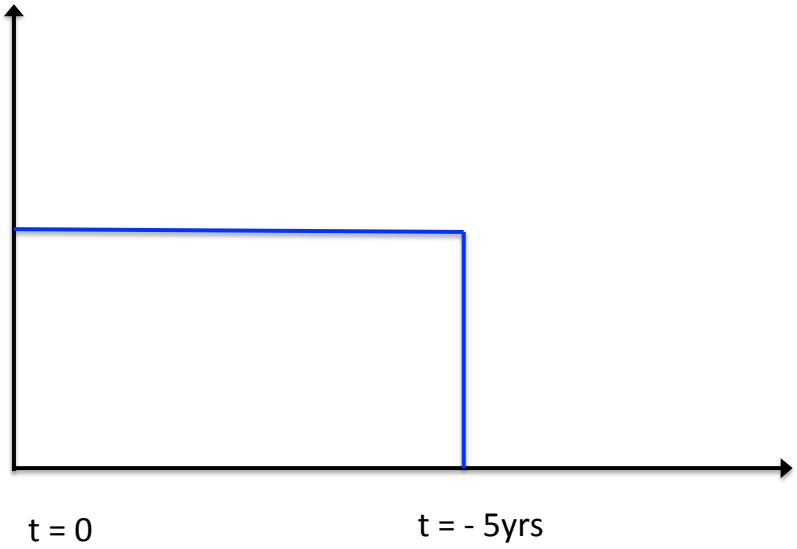
Outline of comments

1. Connecting beliefs about gains and losses with historical realizations
2. Role of last (few) month(s) returns
3. Return comovement of stocks with similar *TK*

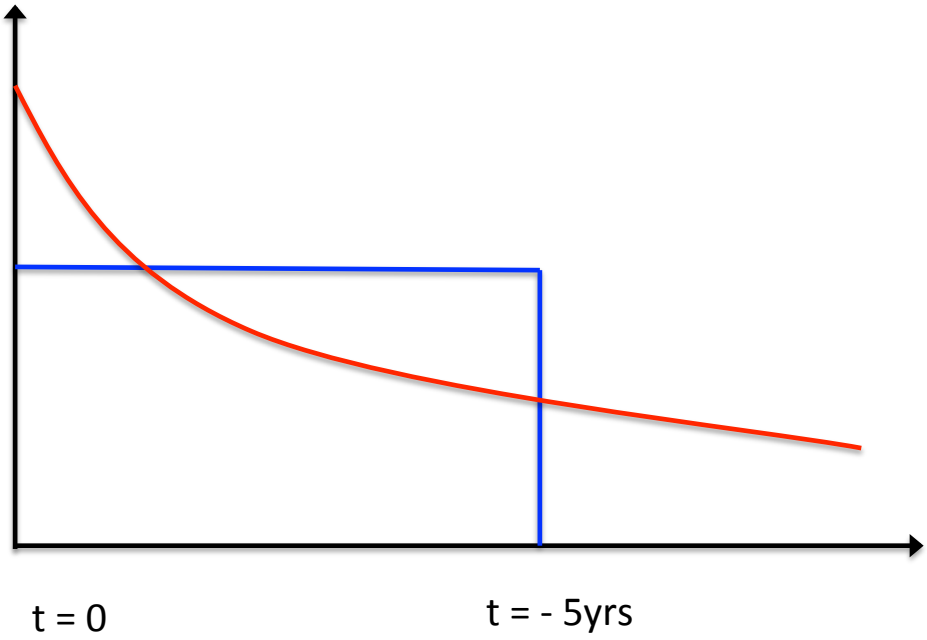
Connecting beliefs with historical realizations

- Experimental applications of prospect theory: Gain/loss distribution known
- Earlier applications of prospect theory in asset pricing: Rational expectations, i.e., agent knows objective distribution (incl. its parameters) – tension with idea of "heuristics" in decision making
- This paper: "System 1" thinking – people infer future distribution from historical data summary
- My interpretation: Reflects investors (boundedly rational) attempts at learning from past data – not necessarily "System 1"

Connecting beliefs with historical realizations



Connecting beliefs with historical realizations



Connecting beliefs with historical realizations

- Consider weighting function with parameter(s) θ
  - Window length in current framework (5 years)
  - Alternative weighting schemes: e.g. exponentially decaying weights
- It would be useful to pin down θ by fitting to *retail* portfolio holdings microdata: Let y_{it} be portfolio weight of stock i. Estimate θ by fitting

$$y_{it} = a + bTK_{it}(\theta) + e_{it} \qquad (1)$$

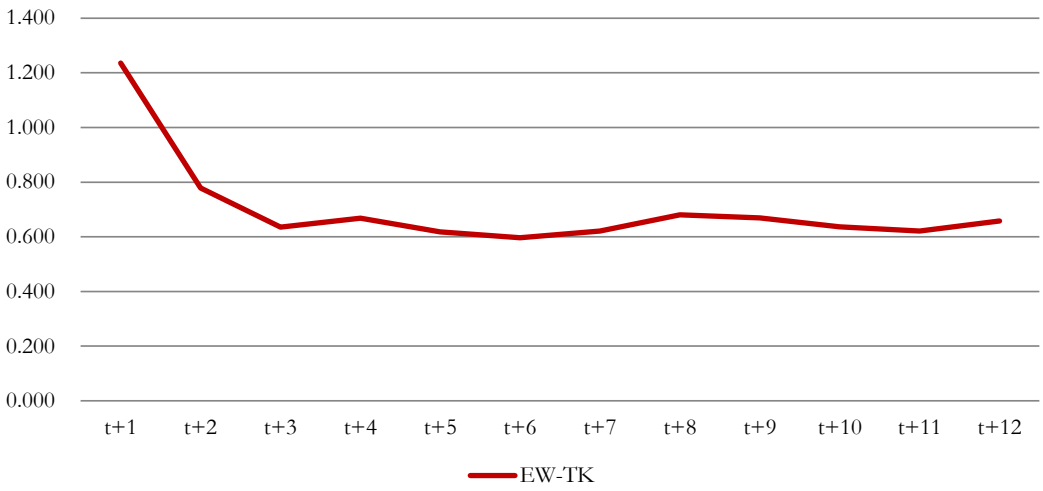
- In this way, θ is not a free parameter anymore in the asset pricing analysis
- Could do similar analysis at the aggregate stock market level
  - Use $TK(\theta)$ to explain household portfolio equity share and estimate θ, similar to Malmendier and Nagel (2011)
  - Use $TK(\theta)$ to predict stock market returns

Role of last (few) month(s) returns

Puzzling: Last month return seems to matter a lot, even though TK, based on 5-year rolling windows, should be very persistent.

		TK	
		EW	VW
Sub-periods	1931/07-1963/06	**1.252**	**0.459**
		(4.346)	(1.89)
	1963/07-2010/12	**1.211**	**0.634**
		(5.34)	(2.81)
Skip one month		**0.779**	**0.299**
		(4.58)	(1.86)

Role of last (few) month(s) returns



Role of last (few) month(s) returns

- How can highly persistent predictor produce (partly) short-run predictability?
- Example: Suppose returns follow an MA(1) process

$$r_{t+1} = e_{t+1} - \rho e_t \tag{2}$$

- Consider simplified example with historical means instead of TK:

$$\mathrm{Cov}\left(r_{t+1}, \frac{1}{k}\sum_{i=0}^{k-1} e_{t-i}\right) < 0 \tag{3}$$

while

$$\mathrm{Cov}\left(r_{t+2}, \frac{1}{k}\sum_{i=0}^{k-1} e_{t-i}\right) = 0 \tag{4}$$

- Gets back to weighting issue: Perhaps last few months carry higher weight in people's minds?

Return comovement of stocks with similar TK

- TK long-short portfolio is quite volatile with moderate Sharpe Ratio (ann. 0.60), comparable to value premium
- This volatility limits "arbitrage": Tilting portfolio away from High-TK towards low-TK is risky.
- Source of volatility: Somehow, correlated stocks must end up in same portfolio
  - High TK = stocks that went up during the same 5-yr time period $\rightarrow$ similar common factor loadings
  - But tail observations matter a lot for TK, not obvious why stock with extremely positive return in, say, month t-1 is correlated with one that had extreme positive return in, say, month t-12