Discussion of:

Gone Fishin': Seasonality and Speculative Trading in Asset Prices

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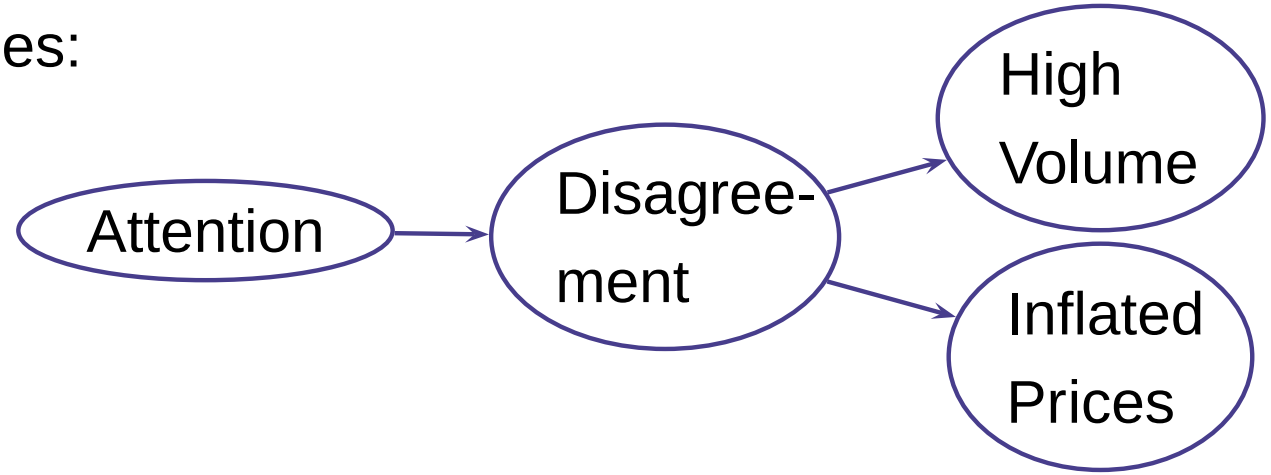
Motivation

- The premia associated with liquidity can be large.
  - *e.g.*, Tech/Internet stocks in the “bubble” period had both high turnover and high valuations.
    - The popular press argued (at least *ex-post*) that both turnover and prices both a result of intense “speculation.”
- This paper argues that *disagreement* is at least partly responsible for the link between turnover and returns.
  - Further, it argues that an interesting test of this hypothesis is the seasonal comovement of liquidity and prices.

Disagreement

- Many recent papers have explored the idea that overconfidence + disagreement + short sale constraints pushes up asset prices (Miller (1977)).
- HY argue that this is one mechanism driving volume and prices:



- HY argue that in summer there is less attention & disagreement, and hence lower volume & less inflated prices.

Hong & Yu Findings

- HY test this hypothesis by examining turnover and valuation ratios (P/S and P/B) in summer and non-summer months.
- HY find that, for more “speculative” stocks, there is:
  - *Lower turnover in summer months.*
  - *Lower valuation ratios in summer.*
- However, valuation ratios are *not* good mispricing measures
  - We don’t test asset-pricing models with valuation ratios – we test return implications.
    - Changes in valuation ratios can be associated with other factors that could have seasonal variation.

Hong & Yu Findings (2)

- However, HY do investigate returns, and in fact find strong evidence that returns of more “speculative” stocks are lower in the summer.
- Because I think returns are the right variable to investigate, I’m going to:
  - Examine the robustness HY’s empirical findings on return seasonality.
  - Examine the consistency of these empirical finding with their model implications.

HY Findings - Return Seasonality

- Table 3c. compares the returns of dot-com stocks and other stocks over the 1992-2003 period:

	Return difference between dot-com and rest of Mkt	t-stat
Buy at end of Feb, Sell at end of Aug	-1.96%	(-0.42)
Buy at end of Aug, Sell at end of Feb	42.03%	(3.52)
Difference-in-Difference	-43.98%	(-4.02)

Empirical Findings - Return Seasonality

- Table 9d. compares the returns of speculative US stocks (high residual turnover) and other stocks (1961-2003)(?):

	Ret diff btwn speculative and other stocks	t-stat
Buy at end of Feb, Sell at end of Aug	-4.49%	(-5.71)
Buy at end of Aug, Sell at end of Feb	0.28%	(0.32)
Difference-in-Difference	-4.77%	(-6.47)

Alternative Turnover Measure

- As a robustness test, I examined an alternative portfolio based on modified turnover:
  - Calculate the stock's turnover divided the median turnover of stocks on that exchange (NYSE, AMEX or NASDAQ) in that month.
  - Average this measure over the preceding 12 months.
  - Go long the top 20%, short the bottom 20% of modifed turnover stocks.
- The mean return of this portfolio is -0.60%/month ($t = -2.4$).
- Also, in tests, I define summer as June-August (the 3rd quarter), rather than March-August.

Alternative Turnover Portfolio Results

- For NYSE stocks only:

	α	β_{Sum}
Coef.	0.07	-0.85
t-stat	(0.3)	(-2.3)

- For NASDAQ stocks only:

	α	β_{Sum}
Coef.	0.07	-1.27
t-stat	(0.3)	(-2.8)

Empirical Findings

Regression on Monthly Dummies – All Stocks – 1963-2004

	α	β_{Feb}	β_{Mar}	β_{Apr}	β_{May}	β_{Jun}
Coef.	0.51	-1.78	-1.67	-1.63	-1.47	-1.63
t-stat	(0.6)	(-1.4)	(-1.3)	(-1.3)	(-1.2)	(-1.3)
	β_{Jul}	β_{Aug}	β_{Sep}	β_{Oct}	β_{Nov}	β_{Dec}
Coef.	-2.82	-0.77	-1.62	-1.20	1.08	0.24
t-stat	(-2.3)	(-0.6)	(-1.3)	(-1.0)	(0.9)	(0.2)

Empirical Findings

Regression on Monthly Dummies – NYSE Stocks Only - 1963-2004

	α	β_{Feb}	β_{Mar}	β_{Apr}	β_{May}	β_{Jun}
Coef.	0.70	-0.86	-0.34	-0.62	-1.08	-2.18
t-stat	(1.1)	(-1.0)	(-0.4)	(-0.7)	(-1.2)	(-2.5)
	β_{Jul}	β_{Aug}	β_{Sep}	β_{Oct}	β_{Nov}	β_{Dec}
Coef.	-2.09	-0.26	-1.39	-1.66	0.20	-0.62
t-stat	(-2.4)	(-0.3)	(-1.6)	(-1.9)	(0.2)	(-0.7)

Empirical Findings

Regression on Monthly Dummies – NASDAQ Only - 1984-2004

	α	β_{Feb}	β_{Mar}	β_{Apr}	β_{May}	β_{Jun}
Coef.	1.82	-3.82	-4.83	-4.11	-2.98	-3.24
t-stat	(1.0)	(-1.5)	(-1.9)	(-1.7)	(-1.2)	(-1.3)
	β_{Jul}	β_{Aug}	β_{Sep}	β_{Oct}	β_{Nov}	β_{Dec}
Coef.	-5.85	-2.52	-4.41	-1.85	0.17	-0.91
t-stat	(-2.4)	(-1.0)	(-1.8)	(-0.7)	(0.1)	(-0.4)

Disagreement Sorted Portfolios

- I also form a high-minus-low disagreement portfolio based on individual analyst forecasts.
  - Data is from Anna Scherbina – based on Diether, Malloy, and Scherbina (2002) & Sadka and Scherbina (2005) measure.
- The mean return of this portfolio is -1.14%/month ($t = -5.9$).
- Regression results are consistent with turnover-based portfolio results:

	α	β_{Sum}
Coef.	-0.84	-0.89
t-stat	(-3.6)	(-2.2)

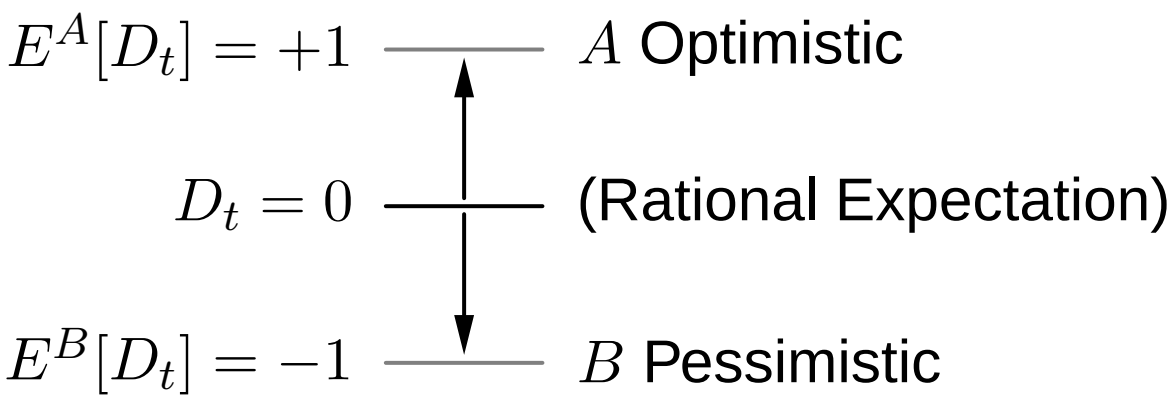
  - Regressions on monthly dummies are also (roughly) consistent.

The Model

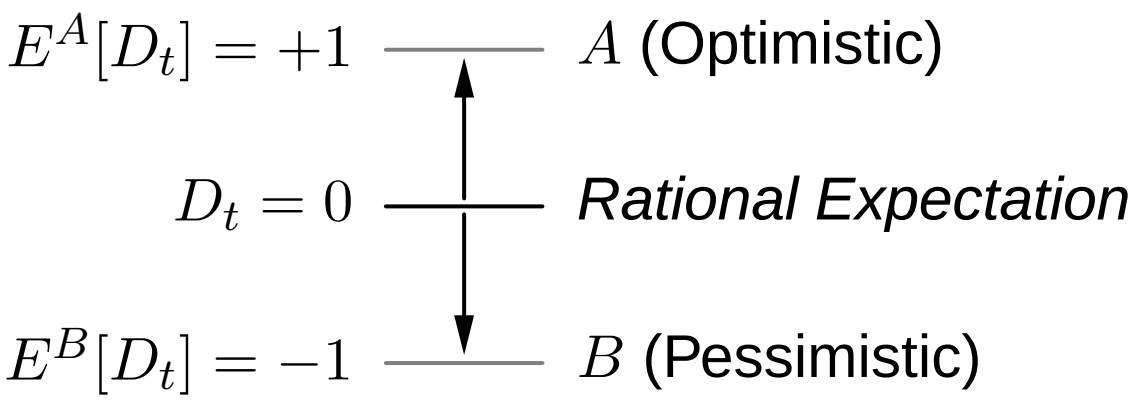
- The model HY develop uses the structure developed in:
  - Harrison and Kreps (1978), Scheinkman and Xiong (2003)
- Features:
  - Disagreement based on irrational overconfidence.
  - Prices greater most optimistic investor's valuation.
  - Volume accompanies changes in disagreement.
- Basic Setup:
  - Single stock paying quarterly dividends
  - True $E[D_t] = 0 \forall t$.
  - Two overconfident, risk-neutral groups A and B.
  - No short sales allowed.

The Model (Simplified)

- Suppose that the true $D_t = 0$.
- At the start of quarter t, groups A and B receive offsetting signals of $+1$ or -1 about D_t
- A and B belive their signals are infinite precision, so:



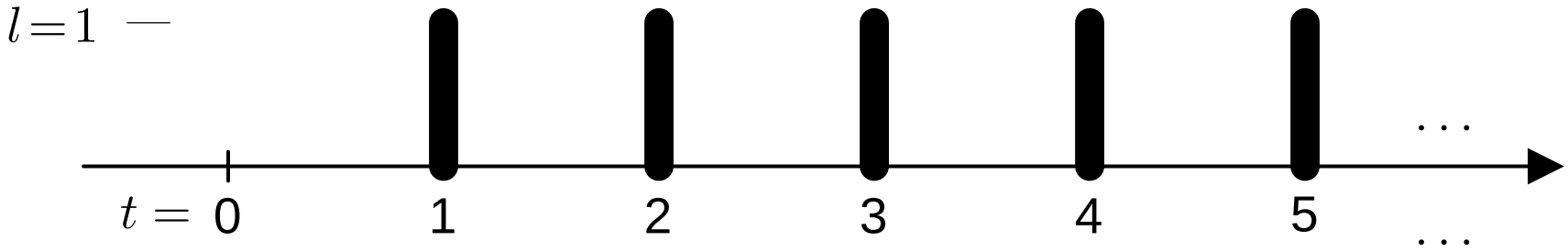
Simplified Disagreement Model



- Since A ignores B's signal, and B can't short, the price of this dividend will be $1.
- Since B can sell the dividend to A for $1, B will also value the dividend at $1,
  - However, B will always sell the security to an A prior to the realization of the dividend.

Stock Valuation

- With quarterly dividends, equal uncertainty, and $r_q = 0.01$:

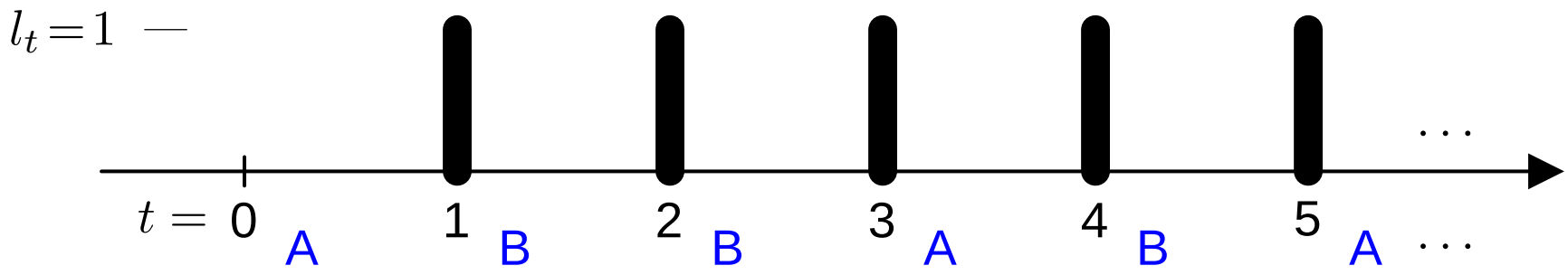


- Because A's and B's rationally anticipate future disagreement, the price of the asset at $t = 0$ will be:

$$P_0 = \frac{1}{0.01} = \boxed{100}$$

  - Note that $P_t = 0$ at all t, so returns are 1% below r_f.

Trading/Turnover



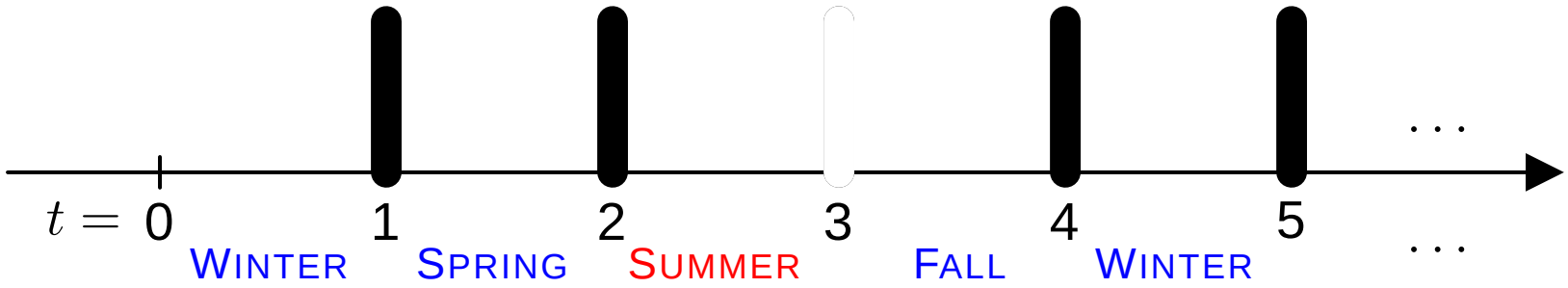
- The high valuation group (A or B) will always hold the asset when the uncertainty about the dividend is resolved.
  - Because all investors rationally anticipate future disagreement, investors are indifferent about holding the asset when signals are received.
- Thus, there will be large volume between periods of resolution of uncertainty.

Return Timing

- What is responsible for the low returns?
  - Disagreement, or lack thereof, or the arrival of new signals don't cause low returns.
    - In the model, because the disagreement is anticipated, the price doesn't change when the signal is received.
  - The resolution of uncertainty associated with the dividend announcement causes the low returns.
    - The (overconfident) agents holding the security are surprised when the zero dividend is announced, and the price falls by $1.

Seasonality

- In the HY model, agents don't receive signals in the summer quarter, so they agree that $D_{\text{Summer}} = 0$:



- Investors that hold the security over the summer don't (incorrectly) anticipate a $1 dividend.
  - There is no surprise when $D_{\text{Summer}} = 0$ is announced.
    - $\Rightarrow r(\text{Summer}) = 1\%$.
  - Over other quarters, $r_t = 1\% - \left(\frac{\$1}{P_{t-1}}\right) \approx -0.33\%$.

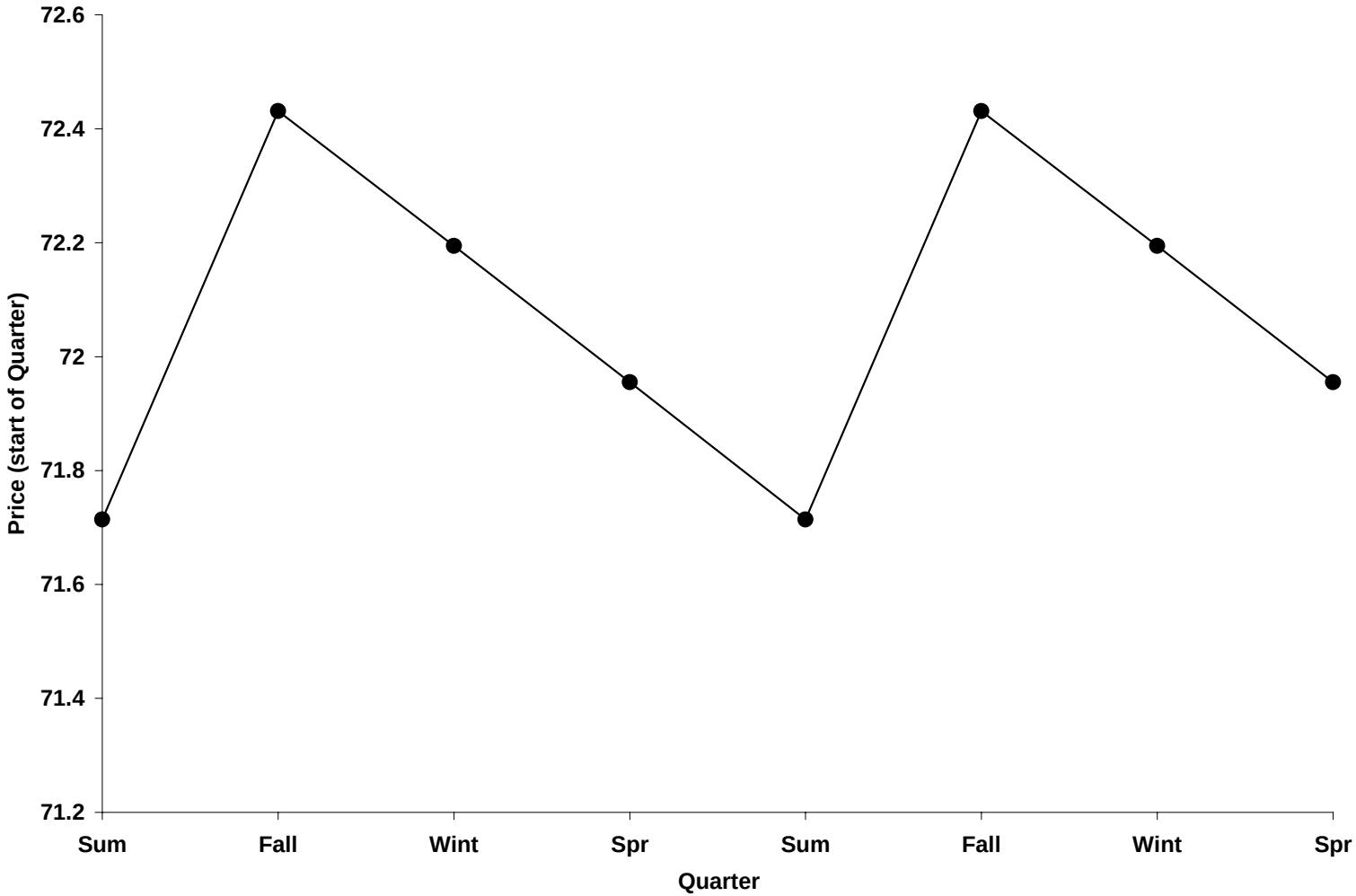
Seasonality - Model Prediction

- This theoretical implication (of *high* summer returns) is inconsistent with the empirical findings in the paper
  - Empirically, we see *low* returns in the summer
- Note that this return pattern is precisely the implication of the HY model.
  - HY (equation A.10) states that:

$$P_{\text{summer}} < P_{\text{spring}} < P_{\text{winter}} < P_{\text{fall}}$$

    where P_{summer} *denotes the price at the beginning of the summer.*
  - A plot of these prices looks like:

HY Model Prediction – Prices



Alternative Models?

- It seems like disagreement, at least as modeled here, can't be responsible for the price/returns patterns in the data.
  - Within this framework, you would need to argue that *more* information is released in summer than in non-summer months.
- Alternatives models might be:
  - Changes in disagreement are (consistently) not anticipated.
  - Investors bail out of the market in the summer, pushing down prices.
    - This "demand shock" is unanticipated by the market.

References

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