Econ 219B
Psychology and Economics: Applications
(Lecture 12)

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Outline

1. Attention to the Salient

2. Attention to the Long-Term Future

3. Attention: Summary

4. Welfare Response to Biases

5. Media and Politicians

1 Attention to the Salient

Terry Odean

2 Attention to the Long-Term Future

- DellaVigna and Pollet (2003)
- Substantial cohort size fluctuations over the 20th century
- Consumers at different ages purchase different goods
- Changes in cohort size $\Longrightarrow$ predictable changes in profits for different goods
- How do investors react to these forecastable shifts?

- **Life cycle of consumption**
  - baby clothes
  - toys
  - bicycles
  - motorcycles
  - automobiles
  - life insurance
  - drugs
  - nursing homes

- **Example.** Large cohort born in 2004

- Positive demand shift for school buses in 2010 $\Longrightarrow$ Revenue increases in 2010

- Profits (earnings) for bus manufacturers?
  - Perfect Competition. Abnormal profits do not change in 2010
  - Imperfect Competition. Increased earnings in 2010

- How do investors react?

  1. Attentive investors:

     - Stock prices adjust in 2004
     - No forecastability of returns using demographic shifts

  2. Investors inattentive to future shifts:

     - Price does not adjust until 2010
     - Predictable stock returns using contemporaneous demand growth

  3. Investors attentive up to 5 years

     - Price does not adjust until 2005
     - Predictable stock returns using consumption growth 5 years ahead

- Results:

  1. Demographic shifts 5 to 10 years ahead can forecast industry-level stock returns

  2. Yearly portfolio returns of 5 to 10 percent

  3. Inattention of investors to information beyond approx. 5 years

  4. Evidence on analyst horizon: Earning forecasts beyond 3 years exist for only 10% of companies (IBES)

- Where else long-term future matters?

  – Job choices

  – Construction of new plant...

Table 10: Predictability of Stock Returns Using Demographic Changes

	Dependent variable: Beta-Adjusted Log Industry Stock Returns					
	Demographic Industries			All Industries		
	(1)	(2)	(3)	(7)	(8)	(9)
Constant	-0.0489	0.1139	0.1617	-0.0394	0.1271	0.1229
	(0.0298)	(0.0755)	(0.0554)***	(0.0293)	(0.0836)	(0.0720)*
Forecasted annualized demand growth between *t* and *t+5*	-2.0824	-2.0187	-3.2459	-1.9954	-1.5751	-1.4739
	(2.2462)	(2.6404)	(2.6327)	(2.4191)	(2.7516)	(1.9994)
Forecasted annualized demand growth between *t+5* and *t+10*	5.6818	5.8781	5.3486	4.7958	4.6478	3.4049
	(2.3039)**	(2.9910)*	(2.8852)*	(2.2978)**	(3.3267)	(1.9103)*
Industry Fixed Effects		X	X		X	X
Year Fixed Effects			X			X
Clustering by Year	X	X	X	X	X	X
R^2	0.0124	0.0362	0.2707	0.0060	0.0286	0.0145
N	*N = 809*	*N = 809*	*N = 809*	*N = 2161*	*N = 2161*	*N = 2161*

Notes: Columns 1 through 12 report the coefficients of OLS regressions of log yearly beta-adjusted industry stock returns at t+1 (Table 6) on the forecasted annualized demand growth due to demographics (Table 4). The forecasts are made using information available as of year t-1. The industry betas for year t are obtained regressing monthly industry returns on market returns for the 48 months prior to year t. The coefficients on the forecasted annual demand growth are normalized by the number of years of the forecast (5 for both coefficients). The coefficient indicates the typical increase for the annual industry abnormal log stock return due to an annualized one percentage point increase in consumption due to demographics over the years 0 to 5 (or 5 to 10). The subset, "Demographic Industries", denotes the 20 industries in Table 4 with the highest within-industry standard deviation of 1-year consumption growth due to demographics. Robust standard errors clustered by year in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 11. Predictability of Stock Market Returns and Industry Concentration

	Dependent Variable: Beta-Adjusted Log Industry Stock Returns at *t+1*						
	C-4 above median			C-4 below median			All industries
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	-0.0655 (0.0445)	0.1006 (0.0830)	0.0874 (0.0819)	-0.0325 (0.0332)	-0.1004 (0.0785)	-0.2422 (0.0750)***	-0.02 (0.0343)
Forecasted annualized demand growth between *t* and *t+5*	-2.4259 (3.3231)	-1.1324 (3.7758)	-0.0537 (4.8284)	-0.8806 (2.8128)	-1.7419 (3.0366)	-1.349 (2.8279)	2.3257 (3.7504)
Forecasted annualized demand growth between *t+5* and *t+10*	7.7342 (4.0789)*	6.7608 (4.8396)	2.1029 (5.0673)	2.6769 (2.2668)	3.5693 (2.9461)	0.2046 (3.0067)	-2.7272 (3.0176)
C-4 * (Forecasted annualized demand growth between *t* and *t+5)*							-14.1878 (10.0214)
C-4 * (Forecasted annualized demand growth between *t+5* and *t+10)*							26.0341 (11.2365)**
Concentration C-4							-0.0944 (0.0917)
Industry Fixed Effects		X	X		X	X	
Year Fixed Effects			X			X	
Clustering by Year	X	X	X	X	X	X	X
R^2	0.0142	0.0503	0.2314	0.0022	0.0258	0.2559	0.0112
N	*N = 642*	*N = 642*	*N = 642*	*N = 667*	*N = 667*	*N = 667*	*N = 1309*

Notes: Columns 1 through 9 report the coefficients of OLS regressions of log yearly beta-adjusted industry stock returns at *t+1* (Table 6) on the forecasted annualized demand growth due to demographics between t and t+5 and between *t+5* and *t+10* (Table 4). The forecast is made using information available as of year *t-1*. The industry betas for year t are obtained regressing monthly industry returns on market returns for the 48 months previous to year t. The coefficients on the forecasted annual demand growth are normalized by the number of years of the forecast, 5. The coefficient indicates the increase in log industry abnormal stock return due to an annualized one percentage point increase in consumption due to demographics. Columns 1 through 3 report the results for the subsample of industries with concentration-ratio 4 higher than .31. Columns 4 through 6 report the results for the subsample of industries with concentration-ratio 4 lower than or equal to .31. Columns 7 through 9 report the results for the whole sample of industries for the years subsequent to the first measure of concentration (usually, 1947). Details on the concentration ratio measure are in Table 7 and in the text. Robust standard errors
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 12. Predictability of Returns and Investor Horizon

	Dependent Variable: Beta-Adjusted Log Industry Stock Returns at *t+1*							
	Demographic Industries							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	-0.0309	-0.0278	-0.0482	-0.0472	-0.0521	-0.0573	-0.0586	-0.0383
	(0.028)	(0.027)	(0.0281)*	(0.0277)*	(0.0276)*	(0.0278)**	(0.0278)**	-0.0314
Forecasted demand growth between t+h and t+h+1	1.354	2.0816	4.3543	3.9855	0.3423	-0.4441	-2.8515	-1.9746
	(1.618)	(1.888)	(1.2340)***	(1.2424)***	(1.577)	(1.703)	(2.116)	(1.964)
Forecasted demand growth between t+h-3 and t+h	-0.8917	2.5814	-1.0795	1.4895	5.0982	5.8307	4.1846	1.7997
	(2.230)	(2.087)	(1.965)	(1.983)	(2.3659)**	(1.8085)***	-2.5254	-2.8603
Forecasted demand growth between t+h-4 and t+h-3	1.0334	-3.2254	-0.3213	-2.079	-1.8216	-1.3017	2.5913	4.6876
	(1.596)	(1.3805)**	(1.992)	(1.313)	(1.436)	(1.396)	(1.4073)*	(1.3442)***
Horizon (h)	3	4	5	6	7	8	9	10
R-squared	0.0026	0.0086	0.0118	0.0161	0.0133	0.0146	0.0146	0.0152
N	*N = 809*	*N = 809*	*N = 809*	*N = 809*	*N = 809*	*N = 809*	*N = 809*	*N = 809*

Notes: Columns 1 through 8 report the coefficients of OLS regressions of log yearly beta-adjusted industry stock returns at *t+1* (Table 6) on the forecasted annualized demand growth due to demographics between *t+h* and *t+1+h* for different horizons. All forecasts are constructed using information available as of year *t-1*. The industry betas for year *t* are obtained regressing monthly industry returns on market returns for the 48 months previous to year *t*. The coefficients on the forecasted annual demand growth are normalized by the number of years of the forecast. The coefficient represents the average increase of the log industry abnormal stock return due to an annualized one percentage point increase in consumption due to demographics. Robust standard errors clustered by year in parentheses.

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Figure 4: Return Predictability Coefficient for Demand Growth Forecasts at Different Horizons

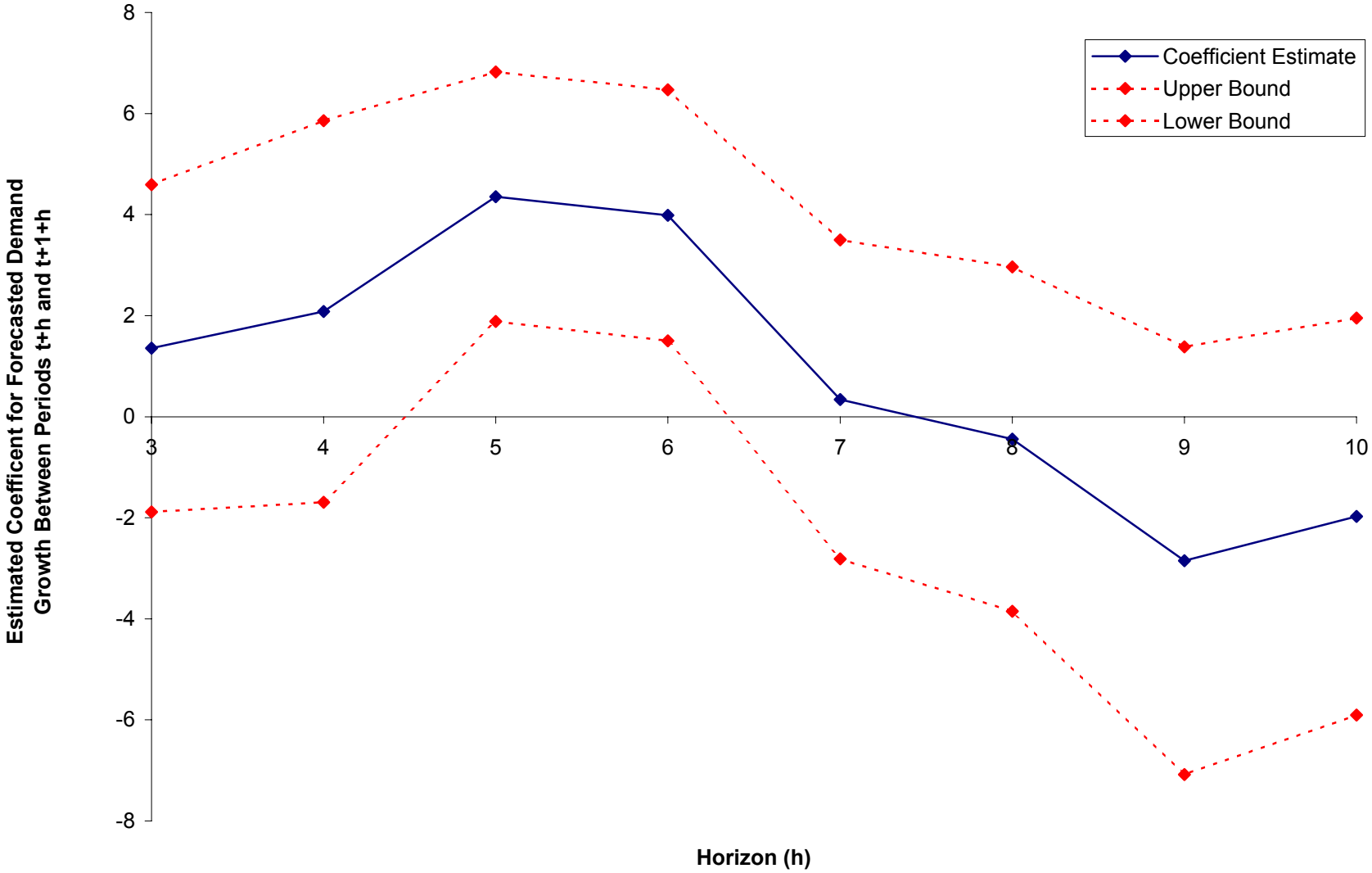

Table 13: Performance of the Zero-Investment Portfolio For Demographic Industries

	Dependent variable: Monthly Return on the Zero-Investment Portfolio					
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.0557 (0.0189)***	0.0556 (0.0191)***	0.0567 (0.0209)***	0.0837 (0.0273)***	0.0828 (0.0288)***	0.0816 (0.0318)**
VW Index Excess Return (VWRF)	-0.1263 (0.0501)**	-0.1034 (0.0537)*	-0.1045 (0.0537)*	-0.1103 (0.0700)	-0.0720 (0.0847)	-0.0712 (0.0864)
Size Factor Return (SMB)		-0.1020 (0.0537)	-0.1030 (0.0734)		-0.1403 (0.0902)	-0.1411 (0.0919)
Value Factor Return (HML)		-0.0132 (0.0715)	0.0108 (0.0704)		-0.0466 (0.0991)	-0.0486 (0.1065)
Momentum Factor Return (UMD)			-0.0086 (0.0675)			-0.0085 (0.0806)
Year >= 1975				X	X	X
R^2	0.0139	0.0173	0.0174	0.0097	0.0191	0.0192
N	*N = 780*	*N = 780*	*N = 780*	*N = 336*	*N = 336*	*N = 336*

Notes: Columns 1 through 9 report the coefficients of OLS regressions of the zero-investment portfolio monthly returns on different sets of monthly benchmark factors. The zero-investment portfolio is long industries with high predicted long-term demand growth and short industries with low predicted long-term demand growth. VWRF is the return on the CRSP value-weighted stock index minus the 1-month treasury rate. SMB and HML are the returns on the Fama-French factor-mimicking portfolios for size and book-to-market, respectively. UMD is the return on the factor-mimicking portfolio for momentum. For Columns 7 through 9 the classification of companies into industries only uses Standard Industry Classification (SIC) codes instead of SIC codes in conjunction with the authors' company by-company classfication using historical information. The constant has been annualized to make its interpretation more straightforward. Heteroskedasticity and autocorrelation consistent standard errors are calculated using the Newey-West estimator with 6 lags (in parentheses).

* significant at 10%; ** significant at 5%; *** significant at 1%

3 Attention: Summary

- Attention as limited resource:
  - Satisficing choice (Simon, 1955)
  - Heuristics for solving complex problems (Gabaix and Laibson, 2002; Gabaix et al., 2003)

- In a world with a plethora of stimuli, which ones do agents attend to?

- Psychology: Salient stimuli (Fiske and Taylor, 1991)

- Successful stategy on attention papers:
  - Do not attempt general model

  - Focus on specific deviation

- We have focused on:
  - Inattention to indirect effects (input)
  - Inattention to non-salient (rather: Attention to salient)
  - Inattention to long-term events

- Research agenda:
  - Which other obvious deviations? (Geographically distant? Visually salient? Slow changes?)
  - Take outside financial markets

4 Welfare Response to Biases

- David Owens

- General idea:
  - Leverage biases to help biased agents
  - Do not hurt unbiased agents

- Research agenda:
  - Identify biases (persuasion? reference dependence?)
  - Design contract/institution
  - Offer to agents

- Ex.: Idea for self-control (Sarah):
  - Form group of peers – pay fee
  - Give rewards for health club attendance

– Everyone in group loses if attendance too low

– Idea: use self-control + embarassment

5 Media and Politicians

- Media deliver informatio:
  - TV
  - Radio
  - Newspapers
  - Internet
- Media content is fairly easily available
- First: Look at the effect of media information on political behavior