Consumer Confidence and Stock Returns

What sentiment tells us.

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From the *New York Times* in July 2002: "Consumer confidence has fallen the most since terrorists attacked New York and Washington...." "The University of Michigan said its preliminary index of consumer sentiment for July sank to 86.5, an eight-month low, from 92.4 in June."

"Stocks continued their recent decline yesterday," the article continues, quoting Stephen Stanley, an economist at Greenwich Capital Markets in Greenwich, Connecticut. "There is a heightened risk that the troubles in the stock market will bleed over into the real economy."

We know that consumer confidence predicts economic activity. Consumer confidence is a component of the Index of Leading Economic Indicators, and it predicts household expenditures. But does consumer confidence also predict stock returns? Do stock returns affect consumer confidence? And what is the relationship between consumer confidence and investor sentiment? These are the questions we answer in this article.

We find that increases in consumer confidence about the economy are accompanied by statistically significant increases in the bullishness of individual investors about the stock market, as if individual investors are unaware that the stock market is a leading indicator of the economy. Institutional investors, however, seem aware of the role of the stock market as a leading indicator of the economy. We find no statistically significant relationship between changes in consumer confidence and changes in the sentiment of institutional investors.

We find that consumer confidence goes up and

down with stock returns; high stock returns, whether S&P 500, Nasdaq, or small-cap, are accompanied by statistically significant rises in consumer confidence. We also find that high consumer confidence is generally followed by low returns. There are statistically significant relationships between consumer confidence and subsequent S&P 500, Nasdaq, and small-cap stock returns.

The ups and downs of consumer confidence and the S&P 500 index from January 1989 through December 2002 are plotted in Exhibit 1.

SURVEYS OF CONSUMER CONFIDENCE AND INVESTOR SENTIMENT

The University of Michigan's Consumer Confidence Index and the Conference Board Consumer Confidence Index are measures of public confidence in the current state of the economy and its future. Consumer confidence generally moves in line with economic variables such as interest rates, inflation, and unemployment, but sometimes it diverges from them. Throop [1992], for example, notes that consumer confidence plunged in August 1991, following Iraq's invasion of Kuwait, beyond anything that could have been predicted from economic conditions. Bram and Ludvigson [1998] describe the University of Michigan and Conference Board indexes and find that each contributes to the prediction of consumption.

The Michigan survey has been conducted monthly since 1978 and the Conference Board survey monthly since 1977. The indexes of consumer confidence are determined by answers to five questions that are part of broader surveys. Both the Michigan and the Conference Board surveys are conducted over an entire month, so responses represent, on average, consumer confidence in the middle of a month.

Each Michigan survey includes approximately 50 core questions that are designed to track consumer attitudes and expectations. The sample, designed to represent all U.S. households, surveys a minimum of 500 respondents, interviewed by telephone. The Conference Board survey is also designed to represent all U.S. households. Survey questionnaires are mailed to 5,000 households, and results are based on approximately 3,500 responses.

Three questions in each survey ask about consumer expectations. The Conference Board survey asks about expected changes in business conditions, job availability, and respondents' income in the next six months. The Michigan survey asks about expected changes in respondents' financial situation in the next year and about expected economic conditions in the next year and in the next five years.

The two other questions in each survey ask respondents for their assessment of "present conditions," the term coined by Bram and Ludvigson [1998] for the current conditions component of the Michigan survey and the present situation component of the Conference Board survey. The present conditions questions in the Conference Board survey are about present business conditions in the respondents' areas and about the quantity of available jobs. The present conditions questions in the Michigan survey are about improvements or deteriorations of respondents' financial situation since the previous year and about the wisdom of buying major household goods now.

The overall consumer confidence index combines the expectations and the present conditions components. Exhibit 2 reports the questions.

We compare the Michigan and the Conference Board measures of consumer confidence in the economy to two measures of investor sentiment about the stock market, one of individual investors and the other of institutional investors.

The American Association of Individual Investors (AAII) has conducted a weekly sentiment survey of its members since 1987. The AAII asks respondents to classify themselves as bullish, bearish, or neutral. We calculate the AAII sentiment index of a given month by averaging the weekly proportion of bullish investors during the weeks of the month, averaging the weekly proportion of bearish investors, and finding the ratio of bullish investors to the sum of the bullish and bearish investors. This investor sentiment measure, like the two consumer confidence measures, is centered at the middle of each month.
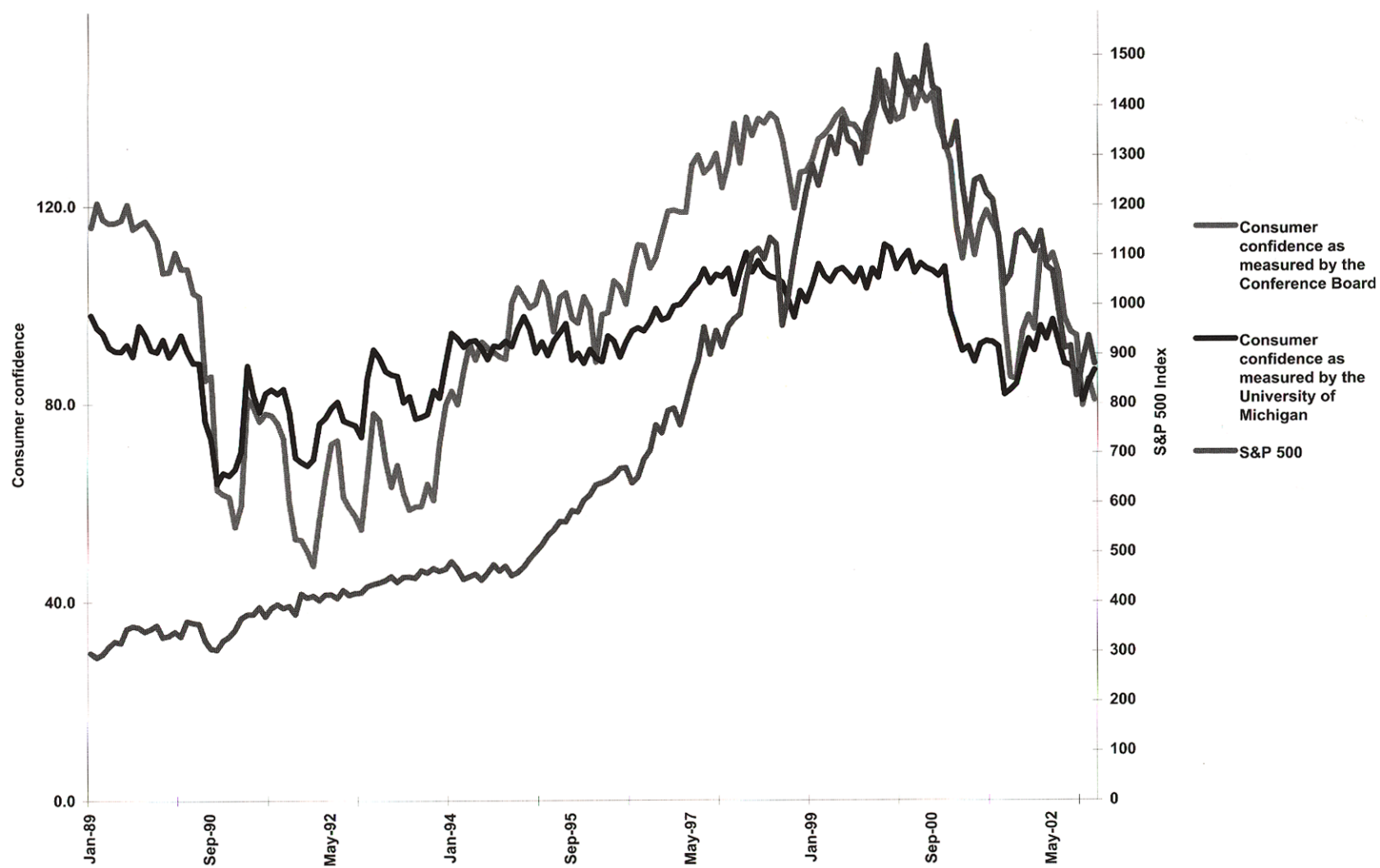
Merrill Lynch has surveyed the sentiment of Wall Street sell-side strategists at the end of each month since September 1985. Merrill Lynch defines the sentiment of Wall Street strategists as the mean allocation to stocks in their recommended portfolios. We calculate the sentiment of Wall Street strategists at the middle of each month as the mean of their sentiment at the end of the month and their sentiment at the end of the previous month.

MEASURES OF CONSUMER CONFIDENCE MOVE TOGETHER

The Michigan and Conference Board surveys measure the confidence of the same population of consumers, so it is not surprising that their measures of confidence

EXHIBIT 1

Consumer Confidence and the S&P 500 Index—1989–2002

EXHIBIT 2
Michigan and Conference Board Surveys

Michigan Survey	Conference Board Survey
Present Conditions Questions	Present Conditions Questions
1. Do you think now is a good time for people to buy major household items? {good time to buy/uncertain, depends/bad time to buy}	1. How would you rate present general business conditions in your area? {good/normal/bad}
2. Would you say that you (and your family living there) are better off or worse off financially than you were a year ago? {better/same/worse}	2. What would you say about available jobs in your area right now? {plentiful/not so many/hard to get}
Expectations Questions	Expectations Questions
3. Now, turning to business conditions in the country as a whole—do you think that during the next twelve months, we'll have good times financially or bad times or what? {good times/uncertain/bad times}	3. Six months from now, do you think business conditions in your area will be {better/same/worse}?
4. Looking ahead, which would you say is more likely—that in the country as a whole we'll have continuous good times during the next five years or so or that we'll have periods of widespread unemployment or depression, or what? {good times/uncertain/bad times}	4. Six months from now, do you think there will be {more/same/fewer} jobs available in your area?
5. Now looking ahead—do you think that a year from now, you (and your family living there) will be better off financially, or worse off, or just about the same as now? {better/same/worse}	5. How would you guess your total family income to be six months from now? {higher/same/lower}

Source: Bram and Ludvigson [1998].

move together. But the two surveys ask different questions, and the movements of the two measures are not identical. Hilsenrath [2001] reports that the Conference Board index of consumer confidence fell sharply in October 2001, while the University of Michigan index increased slightly. Hilsenrath notes that the disparity between the two measures might be related to the heavy focus of the Conference Board's index on consumer perceptions of the job market, which deteriorated markedly following the September 11, 2001, terrorist attacks.

We find a positive and statistically significant relationship between monthly changes (percent) in the overall confidence index of the University of Michigan and the index of the Conference Board (*see Exhibit 3*). The correlation coefficient is 0.55. The correlation between changes in the expectations component of the two confidence measures is somewhat higher, at 0.57, but the correlation between the changes in the present conditions component of the two is lower, at 0.31.

Consumers tend to be confident about the future when they are confident about the present. We find a positive and statistically significant relationship between changes in the expectations component and changes in the present conditions component of each of the two measures of confidence. The correlation between the changes in expectations component and changes in the present conditions components of the University of Michigan survey is 0.44, and the correlation between the two components in the Conference Board survey is 0.41.

Consumer Confidence Moves With Investor Sentiment

The American Association of Individual Investors draws from a population similar to the population of the University of Michigan and the Conference Board; individuals are investors in one survey and consumers in the two others. But the surveys ask different questions. The

Exhibit 3

Relationship Between Consumer Confidence Measures of the University of Michigan and the Conference Board

Correlation Coefficient	% Change in CBT	% Change in CBP	% Change in CBE	% Change in UMT	% Change in UMP	% Change in UME
Monthly change in Conference Board consumer confidence (percent) [CBT]	1.00	0.69	0.93	0.55	0.38	0.52
Monthly change in the Conference Board present conditions component of consumer confidence (percent) [CBP]		1.00	0.41	0.29	0.31	0.21
Monthly change in the Conference Board expectations component of consumer confidence (percent) [CBE]			1.00	0.57	0.35	0.57
Monthly change in University of Michigan consumer confidence (percent) [UMT]				1.00	0.74	0.93
Monthly change in the University of Michigan present conditions component of consumer confidence (percent) [UMP]					1.00	0.44
Monthly change in the University of Michigan expectations component of consumer confidence (percent) [UME]						1.00

Source: Wharton Research Data Services, data from 2/1978 through 12/2002.

AAII asks for forecasts of the stock market, while the University of Michigan and the Conference Board ask for assessments of the present condition of the economy and forecasts of its future.

There is no reason to expect forecasts of the economy to parallel forecasts of the stock market since stock prices tend to move earlier, in anticipation of changes in the economy. Nevertheless, we find a positive and statistically significant relationship between changes in the AAII measure of investor sentiment and changes in each of the two overall measures of consumer confidence (*see Exhibit 4A*).

The positive relationship between changes in consumer confidence and changes in individual investor sentiment might occur because investors fail to understand the forward-looking and discounting nature of the stock market. This is also the likely cognitive process that underlies the positive relationship between investor assessment of companies and stocks. Shefrin and Statman [1995] find that investors rank companies and stocks as if they believe that good stocks are stocks of good companies, unaware of the discounting mechanism of the market.

The relationship between changes in the AAII measure of investor sentiment and changes in consumer confidence is stronger for the present conditions component of the University of Michigan than for the expectations component, but the opposite is true for the relationship with the components of the Conference Board. The relationship between changes in the AAII measure of invest- ment sentiment and changes in the present conditions component of the Conference Board is not statistically significant.

Wall Street strategists are investment professionals who understand the world of investments better than individual investors, although, as we report in Fisher and Statman [2000], the sentiment of both can be used as a contrary indicator. Still, we find that Wall Street strategists form their sentiment as if they understand that the stock market is a leading indicator of the economy. We find no statistically significant relationship between changes in the sentiment of Wall Street strategists and changes in consumer confidence (*see Exhibit 4A*).

Confidence Moves With Stock Returns

Otoo [1999] notes that high stock returns can lead to increases in consumer confidence for two reasons. First, high stock returns bring wealth, boosting consumer confidence. Second, high stock returns are a leading indicator of high income since the stock market is a leading indicator of the economy. Still, changes in wealth, including stock market wealth, are likely to affect consumer confidence less than changes in income because changes in wealth affect consumption much less than changes in income.

Ludvigson and Steindel [1999] found that roughly 70 cents of every dollar of an increase in income is spent soon after it is earned, but only five cents of every dollar

Exhibit 4A

Relationship Between Monthly Changes in Consumer Confidence and Contemporaneous Monthly Changes in AAII Investor Sentiment

Dependent Variable	Independent Variable - Changes in Monthly AAII investor sentiment (percent)		Adjusted R²
	Slope		
	Coefficient	t-stat	
Monthly changes in the overall consumer confidence (percent)			
University of Michigan	0.073	4.53**	0.096
Conference Board	0.070	2.55*	0.029
Monthly changes in the present conditions component of consumer confidence (percent)			
University of Michigan†	0.056	4.05**	0.128
Conference Board†	0.031	1.24	0.048
Monthly changes in the expectations component of consumer confidence (percent)			
University of Michigan	0.09	3.90**	0.07
Conference Board	0.09	2.68**	0.03

University of Michigan data are from January 1978 through December 2002. The Conference Board data are from May 1977 through December 2002. The American Association of Individual Investors (AAII) data are from July 1987 through December 2002.

†*Adjusted for time series correlation using AR(1) function.*

**Statistically significant at the 0.05 level.*

***Statistically significant at the 0.01 level.*

Exhibit 4B

Relationship Between Monthly Changes in Consumer Confidence and Contemporaneous Monthly Changes in Merrill Lynch Index of Wall Street Strategists' Sentiment

Dependent Variable	Independent Variable - Change in Wall Street Strategists' sentiment (percent)		Adjusted R²
	Slope		
	Coefficient	t-stat	
Monthly changes in the overall consumer confidence (percent)			
University of Michigan	-0.024	-0.554	0.235
Conference Board	0.027	1.074	0.239
Monthly changes in the present conditions component of consumer confidence (percent)			
University of Michigan	-0.089	-1.675	0.245
Conference Board	-0.006	-0.216	0.234
Monthly changes in the expectations component of consumer confidence (percent)			
University of Michigan	0.001	0.025	0.234
Conference Board	0.024	1.204	0.240

Wall Street Strategists' sentiment data are from October 1985 through December 2002. There is no statistically significant relationship between changes in consumer confidence and changes in Wall Street Strategists' sentiment.

of an increase in wealth is similarly spent. Lettau and Ludvigson [2003] pin the vast difference between the propensity to consume from income and from wealth on the large transitory component of wealth; stock prices often go down soon after they go up. While transitory variation accounts for less than 1% of the growth of labor income, it accounts for as much as 85% of the growth of wealth.

The confidence surveys are conducted throughout a month, so monthly index numbers are centered at the middle of each month. We calculate the change in the confidence index as the percentage change from one month to the next one. We calculate stock returns similarly, from the middle of one month to the middle of the next one.

We find that consumer confidence increases with S&P 500 index returns (see Exhibit 5A). There is a positive and statistically significant relationship between S&P 500 index returns and changes in consumer confidence, and the relationship between S&P 500 index returns and changes in the expectations component of consumer confidence is especially strong. Otoo [1999] finds similar relationships in regressions that represent stocks by the Wilshire 5000 index.

Lee, Shleifer, and Thaler [1991] hypothesize that individual investors follow small stocks more closely than they follow large stocks, such as those in the S&P 500 index. They find support for their hypothesis in a study of closed-end funds, and we also find some support for their hypothesis here. The relationship between changes in consumer confidence and returns of small stocks is generally stronger than the relationship with S&P 500 index stocks, but not by much (see Exhibit 5B).

An article in The Economist reports that some economists place particular blame on Nasdaq for the decline in consumer confidence in 2000-2001 (see "Confidence Tricks" [2001]). We find, however, that the relationship between changes in consumer confidence and Nasdaq returns is no stronger than the relationships with S&P 500 stock returns or small-stock returns (see Exhibit 4C).

Stock market news was prominent during 1995-2002, and investors seemed to follow it more closely than before, but consumer confidence did not follow stock returns any more closely in 1995-2002 than in the earlier period. Chow tests reveal that response measures of consumer confidence to stock returns were generally *lower* in 1995-2002 than in the earlier period.

The difference between the sensitivity of consumer confidence to stock returns during 1995-2002 and the ear-

lier period is likely due to the extraordinary gains in stock prices from 1995 to early 2000 and the extraordinary losses from that time to the end of 2002. Changes in consumer confidence are small relative to such large gains and losses (see Exhibit 6).

Consumer Confidence Predicts Some Stock Returns

In Fisher and Statman [2000], we find that the sentiment of investors can be useful in tactical asset allocation decisions since there is a negative and statistically significant relationship between the sentiment of investors, both individual and institutional, and subsequent stock returns. Can consumer confidence serve a similar tactical asset allocation role?

Consumer confidence figures are available by the end of each calendar month, and we examine their ability to predict returns in the next calendar month and the next 6 and 12 months. We find negative relationships between the level of consumer confidence in one month and returns in the next month and next 6 and 12 months, but not all the relationships are statistically significant (see Exhibits 7, 8, and 9).

CONCLUSION

"A rise in durable-goods orders in December and an increase in consumer confidence in January have added to the likelihood that Federal Reserve policy makers, who meet today, have finished cutting interest rates for now," wrote Dooren in 2002. Consumer confidence predicts the economy. But does it predict the stock market?

We study the consumer confidence measures of the Conference Board and the University of Michigan, and find that consumer confidence predicts the stock market. There is a negative relationship between the level of consumer confidence in one month and stock returns in the next month and next 6 and 12 months.

While there is a negative relationship between consumer confidence and future stock returns, there is a positive and statistically significant relationship between changes in consumer confidence and contemporaneous stock returns; high stock returns boost consumer confidence.

Many consumers are also investors, and some of the people who are surveyed as investors by the Conference Board and the University of Michigan might be surveyed as investors by the American Association of Individual Investors. We find that consumers grow con-

EXHIBIT 5

Relationships Between Monthly Changes in Consumer Confidence and Three Measures

A. Relationship with Contemporaneous Monthly S&P 500 Stock Returns

| Dependent Variable | Independent Variable - Monthly S&P 500 Returns | | Adjusted R^2 |
| | Slope | | |
	Coefficient	t-stat	
Monthly change in the overall consumer confidence (percent)			
University of Michigan	0.35	5.97**	0.10
Conference Board	0.45	5.26**	0.08
Monthly change in the present conditions component of consumer confidence (percent)			
University of Michigan[†]	0.19	3.52**	0.06
Conference Board[†]	0.25	2.47*	0.07
Monthly change in the expectations component of consumer confidence (percent)			
University of Michigan	0.51	6.46**	0.12
Conference Board	0.58	5.57**	0.09

B. Relationship with Contemporaneous Small-Cap Stock Returns

| Dependent Variable | Independent Variable - Monthly Small-Cap Returns | | Adjusted R^2 |
| | Slope | | |
	Coefficient	t-stat	
Monthly change in the overall consumer confidence (percent)			
University of Michigan	0.32	6.44**	0.12
Conference Board	0.40	5.36**	0.08
Monthly change in the present conditions component of consumer confidence (percent)			
University of Michigan[†]	0.19	4.14**	0.07
Conference Board[†]	0.22	2.51*	0.07
Monthly change in the expectations component of consumer confidence (percent)			
University of Michigan	0.46	6.73**	0.13
Conference Board	0.52	5.75**	0.09

C. Relationship with Contemporaneous Nasdaq Stock Returns

| Dependent Variable | Independent Variable - Monthly Nasdaq Returns | | Adjusted R^2 |
| | Slope | | |
	Coefficient	t-stat	
Monthly change in the overall consumer confidence (percent)			
University of Michigan	0.23	5.87**	0.10
Conference Board	0.27	4.74**	0.07
Monthly change in the present conditions component of consumer confidence (percent)			
University of Michigan[†]	0.13	3.63**	0.06
Conference Board[†]	0.18	2.65**	0.08
Monthly change in the expectations component of consumer confidence (percent)			
University of Michigan	0.33	6.18**	0.11
Conference Board	0.34	4.90**	0.07

Small-cap stock returns are computed as the mean of the bottom three deciles of CRSP 1-10 stocks.

Monthly returns are from the 15th of one calendar month to the 14th of the next month.

[†]*Adjusted for time series correlation using AR(1) function.*

*Statistically significant at the 0.05 level.

**Statistically significant at the 0.01 level.

EXHIBIT 6
Relationships Between Monthly Changes in Consumer Confidence and Contemporaneous Stock Returns—1995-2002 Period and Before 1995

A. S&P 500 Returns

Dependent Variable	Independent Variable - S&P 500 Returns						Chow breakpoint test F-stat
	Slope				Adjusted R^2		
	Coefficient		t-stat				
	Before 1995	1995-2002	Before 1995	1995-2002	Before 1995	1995-2002	
Change in the overall consumer confidence (percent)							
University of Michigan	0.40	0.28	4.94**	4.10**	0.10	0.16	0.69
Conference Board	0.46	0.45	3.88**	4.12**	0.06	0.14	0.10
Change in the present conditions component of consumer confidence (percent)							
University of Michigan†	0.24	0.10	3.16**	1.70	0.05	0.15	0.95
Conference Board†	0.17	0.42	1.22	4.00**	0.07	0.14	1.16
Change in the expectations component of consumer confidence (percent)							
University of Michigan	0.58	0.41	5.30**	4.29**	0.12	0.16	0.64
Conference Board	0.63	0.48	4.63**	3.16**	0.09	0.09	0.25

B. Nasdaq Returns

Dependent Variable	Independent Variable - Nasdaq composite returns						Chow breakpoint test F-stat
	Slope				Adjusted R^2		
	Coefficient		t-stat				
	Before 1995	1995-2002	Before 1995	1995-2002	Before 1995	1995-2002	
Change in the overall consumer confidence (percent)							
University of Michigan	0.33	0.14	5.43**	3.89**	0.12	0.14	3.42
Conference Board	0.36	0.19	4.05**	3.00**	0.07	0.08	1.25
Change in the present conditions component of consumer confidence (percent)							
University of Michigan†	0.21	0.04	3.91**	1.27	0.08	0.13	2.51
Conference Board†	0.17	0.18	1.58	2.99**	0.07	0.08	0.61
Change in the expectations component of consumer confidence (percent)							
University of Michigan	0.45	0.21	5.57**	4.18**	0.13	0.15	3.11
Conference Board	0.49	0.19	4.74**	2.25*	0.09	0.04	2.32

C. Small-Cap Returns

Dependent Variable	Independent Variable - Small-Cap returns						Chow breakpoint test F-stat
	Slope				Adjusted R^2		
	Coefficient		t-stat				
	Before 1995	1995-2002	Before 1995	1995-2002	Before 1995	1995-2002	
Change in the overall consumer confidence (percent)							
University of Michigan	0.38	0.23	5.52**	4.03**	0.13	0.15	1.36
Conference Board	0.42	0.36	4.11**	3.87**	0.07	0.13	0.15
Change in the present conditions component of consumer confidence (percent)							
University of Michigan†	0.25	0.08	3.88**	1.58	0.08	0.14	1.32
Conference Board†	0.17	0.30	1.38	3.41**	0.07	0.10	0.83
Change in the expectations component of consumer confidence (percent)							
University of Michigan	0.54	0.34	5.73**	4.20**	0.14	0.15	1.27
Conference Board	0.58	0.40	4.87**	3.15**	0.10	0.09	0.47

†Adjusted for time series correlation using AR(1) function.

* Statistically significant at the 0.05 level.

** Statistically significant at the 0.01 level

All Post-95 University of Michigan data have been adjusted for time series correlation.

Exhibit 7

Relationships Between Level of Consumer Confidence and Three Measures One Month Later

A. Relationship Between Level of Consumer Confidence in One Month and S&P 500 Stock Returns in the Next Calendar Month

Dependent Variable - S&P 500 Stock Returns	Independent Variable - Slope		Adjusted R^2
	Coefficient	t-stat	
	Level of the overall consumer confidence		
University of Michigan	0.000	-1.13	0.00
Conference Board	0.000	-1.30	0.00

	Level of the present conditions component of consumer confidence		
University of Michigan	0.000	-0.90	0.00
Conference Board	0.000	-0.86	0.00

	Level of the expectations component of consumer confidence		
University of Michigan	0.000	-1.20	0.00
Conference Board	0.000	-1.67	0.01

B. Relationship Between Level of Consumer Confidence in One Month and Nasdaq Stock Returns in the Next Calendar Month

Dependent Variable - Nasdaq stock returns	Independent Variable Slope		Adjusted R^2
	Coefficient	t-stat	
	Level of the overall consumer confidence		
University of Michigan	-0.001	-1.66	0.01
Conference Board	0.000	-1.62	0.01

	Level of the present conditions component of consumer confidence		
University of Michigan	0.000	-1.37	0.00
Conference Board	0.000	-1.01	0.00

	Level of the expectations component of consumer confidence		
University of Michigan	0.000	-1.73	0.01
Conference Board	-0.001	-2.21*	0.01

C. Relationship Between Level of Consumer Confidence in One Month and Small-Cap Stock Returns in the Next Calendar Month

Dependent Variable - Small-cap stock returns	Independent Variable Slope		Adjusted R^2
	Coefficient	t-stat	
	Level of the overall consumer confidence		
University of Michigan	0.000	-2.15*	0.01
Conference Board	0.000	-2.12*	0.01

	Level of the present conditions component of consumer confidence		
University of Michigan	0.000	-1.98*	0.01
Conference Board	0.000	-1.45	0.00

	Level of the expectations component of consumer confidence		
University of Michigan	0.000	-2.12*	0.01
Conference Board	-0.001	-2.62**	0.02

Small-cap stock returns are computed as the mean of the bottom three deciles of CRSP 1-10 stocks.

Monthly returns are from the 15th of one calendar month to the 14th of the next month.

Statistically significant at the 0.05 level.

**Statistically significant at the 0.01 level.*

EXHIBIT 8
Relationships Between Level of Consumer Confidence and Three Measures 6 Months Later

A. Relationship Between Level of Consumer Confidence in One Month and S&P 500 Stock Returns in the Next 6 Calendar Months

Dependent Variable - S&P 500 Stock Returns	Independent Variable -		Adjusted R^2
	Slope		
	Coefficient	t-stat	
	Level of the overall consumer confidence		
University of Michigan	-0.003	-2.70 **	0.67
Conference Board	-0.001	-2.17 *	0.66

	Level of the present conditions component of consumer confidence		
University of Michigan	-0.002	-2.23 *	0.67
Conference Board	0.000	-1.28	0.66

	Level of the expectations component of consumer confidence		
University of Michigan	-0.002	-2.52 *	0.67
Conference Board	-0.001	-2.32 *	0.66

B. Relationship Between Level of Consumer Confidence in One Month and Nasdaq Stock Returns in the Next 6 Calendar Months

Dependent Variable - Nasdaq stock returns	Independent Variable		Adjusted R^2
	Slope		
	Coefficient	t-stat	
	Level of the overall consumer confidence		
University of Michigan	-0.005	-3.33 **	0.75
Conference Board	-0.002	-2.08 *	0.74

	Level of the present conditions component of consumer confidence		
University of Michigan	-0.004	-2.94 **	0.74
Conference Board	-0.001	-1.09	0.74

	Level of the expectations component of consumer confidence		
University of Michigan	-0.003	-2.92 **	0.74
Conference Board	-0.002	-2.29 *	0.74

C. Relationship Between Level of Consumer Confidence in One Month and Small-Cap Stock Returns in the Next 6 Calendar Months

Dependent Variable - Small-cap stock returns	Independent Variable		Adjusted R^2
	Slope		
	Coefficient	t-stat	
	Level of the overall consumer confidence		
University of Michigan	-0.004	-3.63 **	0.70
Conference Board	-0.002	-2.90 **	0.69

	Level of the present conditions component of consumer confidence		
University of Michigan	-0.003	-3.10 **	0.69
Conference Board	-0.001	-1.77	0.68

	Level of the expectations component of consumer confidence		
University of Michigan	-0.003	-3.30 **	0.69
Conference Board	-0.002	-3.02 **	0.69

Small-cap stock returns are computed as the mean of the bottom three deciles of CRSP 1-10 stocks.

Statistically significant at the 0.05 level.

**Statistically significant at the 0.01 level.*

All have been adjusted for time series correlations using AR(1) functions.

EXHIBIT 9
Relationships Between Level of Consumer Confidence and Three Measures 12 Months Later

A. Relationship Between Level of Consumer Confidence in One Month and S&P 500 Stock Returns in the Next 12 Calendar Months

Dependent Variable - S&P 500 Stock Returns	Independent Variable		Adjusted R²
	Slope		
	Coefficient	t-stat	
Level of the overall consumer confidence			
University of Michigan	-0.004	-3.13 **	0.82
Conference Board	-0.001	-0.80	0.82

	Level of the present conditions component of consumer confidence		
University of Michigan	-0.002	-1.94	0.82
Conference Board	0.000	-0.21	0.82

	Level of the expectations component of consumer confidence		
University of Michigan	-0.003	-3.13 **	0.82
Conference Board	-0.001	-1.01	0.82

B. Relationship Between Level of Consumer Confidence in One Month and Nasdaq Stock Returns in the Next 12 Calendar Months

Dependent Variable - Nasdaq stock returns	Independent Variable		Adjusted R²
	Slope		
	Coefficient	t-stat	
Level of the overall consumer confidence			
University of Michigan	-0.006	-3.64 **	0.84
Conference Board	-0.002	-1.76	0.84

	Level of the present conditions component of consumer confidence		
University of Michigan	-0.005	-3.07 **	0.84
Conference Board	-0.001	-0.71	0.83

	Level of the expectations component of consumer confidence		
University of Michigan	-0.004	-3.17 **	0.84
Conference Board	-0.002	-2.03 *	0.84

C. Relationship Between Level of Consumer Confidence in One Month and Small-Cap Stock Returns in the Next 12 Calendar Months

Dependent Variable - Small cap stock returns	Independent Variable		Adjusted R²
	Slope		
	Coefficient	t-stat	
Level of the overall consumer confidence			
University of Michigan	-0.005	-3.98 **	0.81
Conference Board	-0.001	-1.63	0.79

	Level of the present conditions component of consumer confidence		
University of Michigan	-0.004	-2.96 **	0.80
Conference Board	-0.001	-0.89	0.79

	Level of the expectations component of consumer confidence		
University of Michigan	-0.004	-3.73 **	0.81
Conference Board	-0.001	-1.71	0.79

Small-cap stock returns are computed as the mean of the bottom three deciles of CRSP 1-10 stocks.

*Statistically significant at the 0.05 level.

**Statistically significant at the 0.01 level.

All have been adjusted for time series correlations using AR(1) functions.

fident as investors grow bullish. There is a positive and statistically significant relationship between changes in consumer confidence and changes in the sentiment of individual investors.

Institutional investors are different from individual investors. We find no consistent relationship between changes in consumer confidence and changes in the sentiment of Wall Street strategists.

ENDNOTE

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