

Consumer confidence and stock returns

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Abstract

Consumer confidence predicts economic activity, but does it 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 paper.

We study the consumer confidence measures of the University of Michigan and the Conference Board and find that high consumer confidence is generally followed by low returns. There are statistically significant relationships between some components of consumer confidence and subsequent Nasdaq and small cap returns. But the relationship between consumer confidence and subsequent S&P 500 returns is not statistically significant.

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 increases in consumer confidence. Consumer confidence also goes up and down with the sentiment of individual investors; increases in consumer confidence are accompanied by statistically significant increases in bullishness of individual investors.

Consumer Confidence and Stock Returns

“Consumer confidence has fallen the most since terrorists attacked New York and Washington...” said The New York Times (2002). “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.” (p. B5)

“Stocks continued their recent decline yesterday,” continued the New York Times, quoting Stephen Stanley, an economist at Greenwich Capital Markets in Greenwich, Conn. “There is a heightened risk that the troubles in the stock market will bleed over into the real economy.” (p. B5). The ups and downs of consumer confidence and the S&P 500 Index from January 1989 through July 2002 are presented in Figure 1.

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 paper.

We find that high consumer confidence is generally followed by low returns. There are statistically significant relationships between some components of consumer confidence and subsequent Nasdaq and small cap stock returns. But the relationship between consumer confidence and subsequent S&P 500 returns is not statistically significant.

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 increases in consumer confidence. Consumer confidence also goes up and down with the sentiment of individual investors; increases in consumer confidence are accompanied by

statistically significant increases in bullishness of individual investors. However, while there is a positive relationship between changes in consumer confidence and changes in the sentiment of writers of investment newsletters, that relationship is not statistically significant.

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. For example, Throop (1992) noted that consumer confidence plunged in August 1991, following Iraq's invasion into Kuwait, beyond anything that could be predicted from economic conditions. Bram and Ludvigson (1998) described the University of Michigan and Conference Board indexes and found that each contributes to the prediction of consumption.

The Michigan survey is conducted monthly since 1978 and the Conference Board survey is conducted monthly since 1977. The indexes of consumer confidence are determined by answers to five questions that are part of broader surveys. Each Michigan survey contains approximately 50 core questions which track consumer attitudes and expectations. The sample is designed to represent all US households and it contains a minimum of 500 respondents, interviewed by telephone. The Conference Board survey is also designed to represent all US households. Survey questionnaires are mailed to 5,000 households and results are based on approximately 3,500 responses. Both the Michigan and Conference Board surveys are conducted during an entire month so responses represent, on average, consumer confidence at the middle of a month.

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 of the Conference Board survey are about present business conditions in the respondents' areas and about the quantity of available jobs. The present conditions questions of 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 (See Table 1). The overall consumer confidence index combines the expectations and the present conditions components.

We compare the Michigan and Conference Board measures of consumer confidence to two measures of investor sentiment, one by Investor's Intelligence (II) and the other by the American Association of Individual Investors (AAII). II classifies newsletter writers as bullish, bearish, or waiting for a correction, by their forecasts of the stock market. It has been calculating a weekly index of the sentiment since 1964. We calculate the II sentiment index of a given month by averaging the weekly proportion of bullish newsletter writers during the weeks of the month, averaging the weekly proportion of bearish newsletter writers, and finding the ratio of bullish newsletter writers to the sum of the bullish and bearish newsletter writers.

The American Association of Individual Investors (AAII) conducts a weekly sentiment survey among 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 as we calculate the II measure. The two investment sentiment measures, like the two consumer confidence measures, are centered in the middle of each 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 move together. But the two surveys ask different questions and the movements of the two measures are not identical. Hilsenrath (2001) reported that the Conference Board index of consumer confidence fell sharply in October 2001 while the University of Michigan index increased slightly. Hilsenrath noted 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 since the September 11th 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 that of the Conference Board (See Table 2). The correlation coefficient is 0.54. The correlation between changes in the expectations component of the two confidence measures is somewhat higher, at 0.56, but the correlation between the changes in the present conditions component of the two is lower, at 0.30.

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 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 0.40.

Consumer confidence moves with investor sentiment

The American Association of Individual Investors (AII) 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 AII 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 AII measure of investor sentiment and changes in each of the two overall measures of consumer confidence. (See Table 3a)

The positive relationship between changes in consumer confidence and changes in individual investor sentiment might come 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) found 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 AII 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 although the opposite is true for the relationship with the components of the Conference Board. The relationship between changes in the AII measure of investment sentiment and changes in the present conditions component of the Conference Board is not statistically significant.

Writers of investment newsletters are engaged in the stock market more intensively than individual investors although, as Fisher and Statman (2000) reported, there is a positive and statistically significant relationship between changes of their stock-market sentiment. We find that the relationship between consumer confidence and the sentiment of newsletter writers is much weaker than its relationship with the sentiment of individual investors. There is a positive relationship between changes in consumer confidence and changes in the sentiment of newsletter writers but that relationship is statistically significant only in the case of the Conference Board expectations component.

Confidence moves with stock returns

Otoo (1999) noted 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 to high income since the stock market is a leading indicator to the economy. Still, changes in wealth, including stock market wealth, are likely to affect consumer confidence less than changes in income since change 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 of an increase in wealth are similarly spent. Lettau and Ludvigson (2001) 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 one percent of the growth of labor income, it accounts for as much as 85 percent of the growth of wealth.

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

We find that consumer confidence increases with S&P 500 Index returns. (See Table 4a). 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. The relationship between S&P 500 Index and the present conditions component of consumer confidence is positive as well but not always statistically significant. Otoo (1999) found similar relationships in regressions where stocks are represented by the Wilshire 5000 Index.

Lee, Shleifer and Thaler (1991) hypothesized 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. However, we find no special focus of consumers on small stocks. The relationship between changes in consumer confidence and returns of small stocks is no stronger than their relationship with S&P 500 Index stocks. (See Table 4c)

The Economist (2001) reported that some economists place particular blame on Nasdaq for the decline in consumer confidence in 2000-2001. However, we find that the relationship between changes in consumer confidence and Nasdaq returns is no stronger than their relationship with S&P 500 stock returns or small stock returns. (See Table 4b)

Stock market news was prominent in the late 1990s and investors seemed to follow it more closely than before. However, consumer confidence did not follow stock returns any closer in 1995-2000 than in the earlier period. Chow tests reveal that the response of consumer confidence to stock returns was *lower* in the late 1990s than in the earlier period although the difference between the responses in the two periods is statistically significant only for the relationship between Nasdaq returns and the Michigan consumer confidence. The difference between the sensitivity of consumer confidence to stock returns during the late 1990s and the earlier period is likely due to the extraordinary stock returns during the late 1990s. Changes in consumer confidence are small relative to such large returns. (See Table 5)

Consumer confidence predicts some stock returns

Fisher and Statman (2000) found 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 following calendar month.

We find that consumer confidence predicts some returns. In particular, consumer confidence predicts Nasdaq and small cap stock returns. There is a negative and statistically significant relationship between the level of the expectations component of the Conference Board consumer confidence in one month and Nasdaq and small cap stocks in the following month. (See Table 6b and 6c) However, consumer confidence is not a reliable predictor of S&P 500 stock returns. While there is a negative relationship between the level of the expectations component of both the Michigan and the Conference Board consumer confidence measures of one month and S&P 500 stock returns in the following month, that relationship is not statistically significant. (See Table 6a)

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 (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 has some ability to predict the stock market. There is a negative relationship between the level of consumer confidence in one month and stock returns in the following month although that relationship is statistically significant only for Nasdaq and small cap stocks, not for S&P 500 stocks.

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 (AAII). We find that consumers grow confident 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.

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Table 1: The Michigan and Conference Board Surveys.

Michigan Survey	Conference Board Survey
PRESENT CONDITIONS QUESTIONS	PRESENT CONDITIONS QUESTIONS
Q1) 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}	Q1) How would you rate present general business conditions in your area? {good/normal/bad}
Q2) 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}	Q2) What would you say about available jobs in your area right now? {plentiful/not so many/hard to get}
EXPECTATIONS QUESTIONS	EXPECTATIONS QUESTIONS
Q3) 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}	Q3) Six months from now, do you think business conditions in your area will be {better/same/worse}?
Q4) 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}	Q4) Six months from now, do you think there will be {more/same/fewer} jobs available in your area?
Q5) 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}	Q5) How would you guess your total family income to be six months from now? {higher/same/lower}

Source: Bram and Ludvigson (1998).

Table 2: The relationship between monthly changes in the consumer confidence measures of the University of Michigan and the Conference Board¹

Correlation Coefficient	CB	CBP	CBE	UM	UMP	UME
Monthly change in the Conference Board (overall) consumer confidence (percent) [CB]	1.00	0.68**	0.93**	0.54**	0.37**	0.50**
Monthly change in the Conference Board present conditions component of consumer confidence (percent) [CBP]		1.00	0.40**	0.28**	0.30**	0.19**
Monthly change in the Conference Board expectations component of consumer confidence (percent) [CBE]			1.00	0.56**	0.34**	0.56**
Monthly change in the University of Michigan (overall) consumer confidence (percent) [UM]				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

¹The University of Michigan data are from January 1978 through December 2000 and the Conference Board data are from May 1977 through December 2000.

** Statistically significant at the 0.01 level.

Table 3a: The relationship between monthly changes in consumer confidence and contemporaneous monthly changes in American Association of Individual Investors (AII) investor sentiment.¹

Dependent Variable	Independent Variable - Monthly Changes in AII investor sentiment (percent)		Adjusted R ²
	Slope		
	Coefficient	t-stat	
Monthly changes in the overall consumer confidence (percent)			
University of Michigan	0.06	3.66**	0.07
Conference Board	0.08	2.69**	0.04
Monthly changes in the present conditions component of consumer confidence (percent)			
University of Michigan ²	0.05	3.53**	0.12
Conference Board ²	0.03	1.03	0.04
Monthly changes in the expectations component of consumer confidence (percent)			
University of Michigan	0.08	3.17**	0.04
Conference Board	0.11	2.96**	0.04

Table 3b: The relationship between monthly changes in consumer confidence and contemporaneous monthly changes in Investors Intelligence (II) investment newsletter writers' sentiment.¹

Dependent Variable	Independent Variable - Monthly changes in II sentiment (percent)		Adjusted R ²
	Slope		
	Coefficient	t-stat	
Monthly changes in the overall consumer confidence (percent)			
University of Michigan	0.03	1.41	0.00
Conference Board	0.04	1.53	0.00
Monthly changes in the present conditions component of consumer confidence (percent)			
University of Michigan ²	0.02	1.01	0.03
Conference Board ²	-0.01	-0.16	0.05
Monthly changes in the expectations component of consumer confidence (percent)			
University of Michigan	0.04	1.63	0.01
Conference Board	0.11	3.38**	0.03

¹The University of Michigan data are from January 1978 through December 2000, the Conference Board data are from May 1977 through December 2000, the American Association of Individual Investors (AII) data from July 1987 through December 2000, and the Investor Intelligence (II) data are from May 1977 through December 2000. Monthly stock returns are from the 15th of one calendar month to the 14th of the following on.

² adjusted for serial correlation using AR(1)

* Statistically significant at the 0.05 level, ** Statistically significant at the 0.01 level

Table 4a: The relationship between monthly changes in consumer confidence and contemporaneous monthly S&P 500 stock returns¹

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	5.59**	0.10
Conference Board	0.38	4.14**	0.05
Monthly change in the present conditions component of consumer confidence (percent)			
University of Michigan ²	0.21	3.58**	0.07
Conference Board ²	0.12	1.15	0.06
Monthly change in the expectations component of consumer confidence (percent)			
University of Michigan	0.50	5.79**	0.11
Conference Board	0.53	4.82**	0.07

Table 4b: The relationship between monthly changes in consumer confidence and 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	0.33	5.38**	0.09
Conference Board	0.40	4.51**	0.06
Monthly change in the present conditions component of consumer confidence (percent)			
University of Michigan ²	0.18	3.22**	0.06
Conference Board ²	0.19	1.79	0.06
Monthly change in the expectations component of consumer confidence (percent)			
University of Michigan	0.49	5.86**	0.11
Conference Board	0.57	5.37**	0.09

¹The University of Michigan data are from January 1978 through December 2000, the Conference Board data are from May 1977 through December 2000. Monthly stock returns are from the 15th of one calendar month to the 14th of the following one. Small cap stock returns are computed as the mean of the bottom three deciles of CRSP 1-10 stocks.

² adjusted for serial correlation using AR(1)

* Statistically significant at the 0.05 level, ** Statistically significant at the 0.01 level

4c: The relationship between monthly changes in consumer confidence and contemporaneous Nasdaq stock returns.

Dependent Variable	Slope		Adjusted R ²
	Coefficient	t-stat	
Monthly change in the overall consumer confidence (percent)			
University of Michigan	0.23	5.32**	0.09
Conference Board	0.25	3.98**	0.05
Monthly change in the present conditions component of consumer confidence (percent)			
University of Michigan ²	0.13	3.31**	0.06
Conference Board ²	0.12	1.64	0.06
Monthly change in the expectations component of consumer confidence (percent)			
University of Michigan	0.32	5.51**	0.10
Conference Board	0.33	4.48**	0.06

Table 5: The relationship between monthly changes in consumer confidence and contemporaneous stock returns¹:
A comparison of the 1995-2000 period to the earlier one.

a: S&P 500 stocks

Dependent Variable	Independent Variable - Monthly S&P 500 returns				Adjusted R ²		F-Stat
	Slope						
	Coefficient		t-stat		Before 1995	1995-2000	Chow breakpoint test
	Before 1995	1995-2000	Before 1995	1995-2000			
Change in the overall consumer confidence (percent)							
University of Michigan	0.46	0.16	5.66**	2.14*	0.12	0.15	2.27
Conference Board	0.38	0.34	3.22**	3.29**	0.06	0.14	0.10
Change in the present conditions component of consumer confidence (percent)							
University of Michigan	0.29	-0.02	3.82**	-0.34	0.08	0.20	2.19
Conference Board	0.06	0.25	0.40	2.56**	0.07	0.15	1.78
Change in the expectations component of consumer confidence (percent)							
University of Michigan	0.64	0.29	5.85**	2.67**	0.13	0.12	1.84
Conference Board	0.56	0.44	3.96**	3.10**	0.07	0.12	0.45

b: Nasdaq stocks

Dependent Variable	Independent Variable - Monthly NASDAQ returns				Adjusted R ²		F-Stat
	Slope						
	Coefficient		t-stat		Before 1995	1995-2000	Chow breakpoint test
	Before 1995	1995-2000	Before 1995	1995-2000			
Change in the overall consumer confidence (percent)							
University of Michigan	0.37	0.08	6.13**	2.21*	0.14	0.15	5.14**
Conference Board	0.32	0.13	3.52**	2.28*	0.07	0.08	1.49
Change in the present conditions component of consumer confidence (percent)							
University of Michigan	0.23	-0.03	4.24**	-0.77	0.09	0.21	4.05*
Conference Board	0.11	0.10	1.00	1.92	0.07	0.11	1.49
Change in the expectations component of consumer confidence (percent)							
University of Michigan	0.5	0.16	6.30**	2.93**	0.14	0.14	4.15*
Conference Board	0.46	0.16	4.34**	2.04*	0.08	0.05	2.70

c: Small cap stocks

Dependent Variable	Independent Variable - Monthly small cap returns				Adjusted R ²		F-Stat
	Slope						
	Coefficient		t-stat		Before 1995	1995-2000	Chow breakpoint test
	Before 1995	1995-2000	Before 1995	1995-2000			
Change in the overall consumer confidence (percent)							
University of Michigan	0.40	0.16	5.23**	2.08*	0.10	0.14	1.08
Conference Board	0.42	0.33	3.73**	3.10**	0.08	0.13	0.09
Change in the present conditions component of consumer confidence (percent)							
University of Michigan	0.23	0.01	3.21**	0.15	0.06	0.20	1.32
Conference Board	0.18	0.17	1.31	1.73	0.07	0.10	1.57
Change in the expectations component of consumer confidence (percent)							
University of Michigan	0.58	0.27	5.67**	2.42*	0.12	0.11	1.00
Conference Board	0.58	0.50	4.36**	3.52**	0.09	0.15	0.16

¹The University of Michigan data are from January 1978 through December 2000 and the Conference Board data are from May 1977 through December 2000. Small cap stock returns are computed as the mean of the bottom three deciles of CRSP 1-10 stocks. All estimates have been adjusted for time series correlation using AR(1)

* Statistically significant at the 0.05 level, ** Statistically significant at the 0.01 level

Table 6a: The relationship between the level of consumer confidence in one month and S&P 500 stock returns in the following calendar month.¹

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	0.00	-0.48	0.00
Conference Board	0.00	-0.67	0.00
	Level of the present conditions component of consumer confidence		
University of Michigan	0.00	-0.44	0.00
Conference Board	0.00	-0.16	0.00
	Level of the expectations component of consumer confidence		
University of Michigan	0.00	-0.46	0.00
Conference Board	0.00	-1.46	0.00

Table 6b: The relationship between the level of consumer confidence and in one month Nasdaq stock returns in the following calendar month.

Dependent Variable - Nasdaq stock returns	Independent Variable		Adjusted R ²
	Slope		
	Coefficient	t-stat	
	Level of the overall consumer confidence		
University of Michigan	0.00	-1.32	0.00
Conference Board	0.00	-1.24	0.00
	Level of the present conditions component of consumer		
University of Michigan	0.00	-1.22	0.00
Conference Board	0.00	-0.55	0.00
	Level of the expectations component of consumer confidence		
University of Michigan	0.00	-1.28	0.00
Conference Board	0.00	-2.20*	0.01

Table 6c: The relationship between the level of consumer confidence in one and small cap stock returns in the following calendar month.

Dependent Variable - Small cap stock returns	Independent Variable		Adjusted R ²
	Slope		
	Coefficient	t-stat	
	Level of the overall consumer confidence		
University of Michigan	0.00	-1.31	0.00
Conference Board	0.00	-1.34	0.00
	Level of the present conditions component of consumer		
University of Michigan	0.00	-1.29	0.00
Conference Board	0.00	-0.74	0.00
	Level of the expectations component of consumer confidence		
University of Michigan	0.00	-1.22	0.00
Conference Board	0.00	-2.09*	0.01

¹The University of Michigan data are from January 1978 through December 2000, the Conference Board data are from May 1977 through December 2000. 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

Figure 1: Consumer confidence and the S&P 500 Index, Jan 1989-July 2002

