

The Augmented Misery Index

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The original misery index, a combination of the inflation rate and the unemployment rate, was created by Arthur Okun just after the first oil crisis of the 1970s and was popularized by Jimmy Carter during his presidential campaign in 1976. As Okun's label suggests, when the misery index is larger, people feel worse off. In June 2008, Carsten Hoegh at Credit Suisse added the annual change in house prices to the original misery index to create, in his terminology, an "enhanced misery index."¹ It seems obvious that when house prices fall, most people feel worse. Falling prices often presage a weak economy, and older Americans especially look to home and retirement-account values as the bedrock of their personal economic security.

We started our analysis from these insights, but we initially took a broader look at asset values than Hoegh, including not only home-price changes but also share-price changes; moreover, we focused on half-year changes, not annual changes as Hoegh did. Subsequently we dropped the share-price component, as we had found it had little correlation with presidential approval ratings.

Table 1 shows semiannual time series data—extending from 1964 H1 to 2008 H1—for each component of our augmented misery index. For the S&P500 index, we calculated percent changes over each six-month period. To construct our housing price index, we spliced the US Census Bureau's housing price index, covering the years 1964 to 1986, with the S&P/Case-Shiller index for the years 1987 to 2008. The percent changes shown in table 1 are calculated by comparing the average housing price index for the current half-year to the immediately preceding half-year.² Since rising home and share prices are generally regarded as a good thing, the signs are reversed when these components are added to the augmented misery index. In other words, if house prices rise by 3 percent, a figure of minus 3 enters into the calculation of the augmented misery index.

To assess its utility, we tested our augmented misery index against two measures of popular discontent: the semiannual presidential approval ratings and semiannual levels of the University of Michigan/Reuters Consumer Sentiment Index, also shown in table 1.

¹ See "Enhanced Misery Index," June 10, 2008, available at <http://bigpicture.typepad.com> (accessed on November 3, 2008).

² Note that, for misery index purposes, the not-seasonally adjusted consumer price index (CPI) is calculated on an annualized basis, whereas the house price and S&P indexes are calculated over just six months. The unemployment rate is a six-month average (January–June, July–December).

Presidential Approval Ratings

Many noneconomic factors clearly affect approval ratings—the success of military operations, the tenor of Washington politics, the communications skills of the president. However, a substantial body of research indicates that economic factors heavily influence public perceptions of the president—he gets the blame for bad times and the credit for good times.³

After some statistical mining, we concluded that movements in the S&P500 index are not useful in understanding the political outlook: an augmented index that includes changes both in housing prices and the S&P500 index performed less well (as measured by R-squared) in explaining presidential approval than an augmented index that includes only housing prices. As for housing prices, in most years (but not in 2007 and 2008) they are correlated with the consumer price index (CPI). In misery-index language, this means that rising housing prices to some extent offset the “pain” from rising prices at the checkout counter, as measured by the CPI.

Figure 1 compares the original and augmented misery indexes. The figure shows that the augmented misery index has moved in a pattern similar to the original misery index but with larger fluctuations. For the most recent half-year period in particular, the augmented misery index has soared, reflecting the huge decline in housing prices.

Tables 2 and 3 show the regression-equation coefficients and their statistical significance (as measured by the t-statistic) for the original and augmented indexes in explaining presidential approval (the dependent variable).⁴ For the whole period of 1964 to 2008, Okun’s original misery index does a better job of explaining presidential approval (as measured by the R-squared value) than our augmented misery index, in which CPI changes, the unemployment rate, and housing-price changes are all given equal weight.⁵ However, housing values are more important to Americans today than they were in earlier decades. In 1975, the ratio between the value of real estate owned by US households and disposable personal income was 1.19; in 1985 the ratio was 1.50; and in 2007 the ratio was 1.96.⁶ To reflect this evolution, we split the sample into two parts and ran the regression equations separately for 1964 to 1985, and 1986 to 2008. Tables 4 and 5 report the results: the original misery index performs better in explaining presidential approval in the first period, but the augmented index performs better in the second.

³ For example, Jimmy Carter won the presidential election against Gerald Ford in 1976. While campaigning, he often referred to the misery index, claiming that no man responsible for giving the nation a bad misery index was fit to even run for president. Ironically, at the end of Carter’s presidency, the misery index reached an all-time high of about 22 percent and he lost the election to Ronald Reagan. See Ed Lanski, “Return of Misery Index,” *American Thinker*, June 7, 2008, available at www.americanthinker.com (accessed on November 3, 2008). In their recent book, Dolan, Frendreis, and Tatalovich (2007) contend that the major reason for the huge decline in the popularity of President George W. Bush is the poor performance of the US economy.

⁴ Statistical significance is measured by the t-statistic. The larger the t-statistic, the more reliably it can be asserted that the true value of the coefficient in question is not zero. A t-statistic value of less than 2.0 indicates a low level of statistical significance for the estimated coefficient.

⁵ In other words, values for the three components, as shown in table 1, are added together to construct the index, with the sign reversed for housing-price changes.

⁶ In 1975, the total value of real estate owned by households was \$1,414 billion and disposable personal income was \$1,187 billion; in 1985, the total value of real estate was \$4,658 billion and disposable personal income was \$3,109 billion; and in 2007, the total value of real estate was \$19,976 billion and disposable personal income was \$10,171 billion (Federal Reserve 2008).

Figure 2 compares the *inverse* of presidential approval rating over the entire period with the augmented misery index. Visual inspection reveals a somewhat closer correlation in recent years.

Figure 3 compares monthly values for the augmented misery indexes with the *inverse* of monthly presidential approval ratings for the period of 2007 to 2008. The augmented misery index has moved upwards, and the presidential approval rating has persistently declined since January 2007. Since August 2007, the augmented misery index has spiked, reflecting a sharp decline in housing prices. Recent months have seen very low approval ratings for President George W. Bush, which reflect popular concerns over the financial crisis. Not surprisingly, as financial skies have darkened and the odds of recession have risen, Republican presidential candidate John McCain's election chances have also dropped.⁷

Consumer Sentiment

We expanded our analysis by looking at another index of popular discontent, the consumer sentiment index released by the University of Michigan and Reuters, one of the most popular measures of US consumer confidence.⁸ We ran regression equations to test the utility of the original and augmented misery indexes in explaining semiannual consumer sentiment index levels (the dependant variable).

Tables 6 and 7 show that for the whole period the original misery index explains consumer sentiment better than the augmented index (as measured by R-squared values). However, as seen in tables 8 and 9, when the statistical analysis is split into two periods, 1964–1985 and 1986–2008, the augmented misery index performs better in explaining consumer sentiment in the second period, while the original misery index does better in the first period.

Figure 4 compares the *inverse* of the consumer sentiment index over the entire period with the augmented misery index.

Figure 5 compares monthly values for the augmented misery indexes with the *inverse* of the monthly consumer sentiment index for the period of 2007 to 2008. The augmented misery index has moved upwards, and the consumer sentiment index has generally declined since January 2007; following a small revival in July, August, and September 2008, it dropped sharply in October 2008.

As a matter of interest we find, not surprisingly, that the consumer sentiment index is positively correlated with presidential approval ratings, but the correlation is rather low, shown by an R-squared value of only 0.22 (table 10).

We experimented with a version of the augmented misery index that includes share prices as well as housing prices. In this version, changes in the S&P500 index were given half the weight of changes in housing prices (together these two asset values were given equal weight as unemployment and inflation). We found that in the more recent period, an augmented misery index including share

⁷ See the Washington Post–ABC News Polls available at http://www.washingtonpost.com/wp-srv/politics/documents/postpoll_102108.html (accessed on November 3, 2008).

⁸ Another popular measure is the consumer confidence index released by the Conference Board. Ludvigson (2004) shows a very strong correlation between the consumer confidence index and the consumer sentiment index (see his figure 1).

prices performed very slightly better in explaining the consumer sentiment index than an augmented misery index that does not include share prices. This may reflect the fact that share values have become more important to Americans. In 1975, the ratio of the total value of corporate equities, mutual fund shares, and pension fund reserves owned by US households to disposable personal income was 0.92; in 1985 the ratio was 1.14; in 1995 the ratio was 2.11; and in 2007 the ratio was 2.34.⁹

Conclusions

Based on this analysis, we reach the following conclusions:

- Over the entire period, a one-point increase in the original misery index is associated with a 1.17-point decline in presidential approval. The decline is virtually the same in the subperiod of 1986 to 2008 (1.19 points), but the statistical significance is much lower.
- Over the entire period, a one-point increase in the augmented misery index is associated with a 0.88-point decline in presidential approval. The decline is somewhat smaller in the subperiod of 1986 to 2008 (0.70 points), but the statistical significance is greater than for the original misery index.
- Over the entire period, a one-point increase in the original misery index is associated with a 2.34-point decline in the consumer sentiment index. The decline is similar in the more recent subperiod of 1986 to 2008 (1.91 points), but the statistical significance is much lower.
- Over the entire period, a one-point increase in the augmented misery index is associated with a 1.61-point decline in the consumer sentiment index. The decline is somewhat smaller in the subperiod of 1986 to 2008 (1.03 points), but the statistical significance is greater than for the original misery index.

References

Dolan, Chris J., John P. Frensdreis, and Raymond Tatalovich. 2007. *The Presidency and Economic Policy*. Lanham, MD: Rowman & Littlefield.

Federal Reserve. 2008. *Flow of Funds Accounts of the United States: Annual Flows and Outstandings, September 18, 2008*. Available at www.federalreserve.gov (accessed on November 3, 2008).

Ludvigson, Sydney C. 2004. Consumer Confidence and Consumer Spending. *Journal of Economic Perspectives* 18, no. 2 (Spring).

⁹ For more details, see Federal Reserve (2008).

Table 1 Original and augmented misery index

		Consumer price index (CPI) ^a (A)	Unemployment rate ^b (B)	Original misery index	Asset prices		Augmented misery index ((A)+(B)-(C))	Presidential approval ^e	Consumer sentiment index ^f
					Percent change in S&P500 index ^c	Percent change in housing index ^d (C)			
1964	H1	0.6	5.3	5.9	8.9	-0.3	6.2	75.6	99.0
	H2	1.2	5.0	6.2	3.7	2.3	3.9	69.5	100.3
1965	H1	2.6	4.8	7.4	-0.7	0.6	6.8	68.3	103.7
	H2	1.2	4.2	5.4	9.9	1.7	3.8	63.7	103.2
1966	H1	3.8	3.9	7.7	-8.3	2.2	5.5	53.9	97.9
	H2	3.0	3.7	6.7	-5.2	1.6	5.1	47.6	89.8
1967	H1	2.4	3.8	6.2	12.8	1.8	4.4	46.4	95.0
	H2	3.6	3.9	7.5	6.4	0.8	6.7	41.4	95.0
1968	H1	4.8	3.7	8.5	3.2	4.1	4.3	42.9	94.8
	H2	4.6	3.5	8.1	4.3	1.7	6.3	40.0	92.1
1969	H1	6.2	3.4	9.6	-5.9	5.8	3.8	60.8	94.9
	H2	6.0	3.6	9.6	-5.8	2.3	7.3	60.1	83.1
1970	H1	5.8	4.5	10.3	-21.0	1.6	8.7	58.0	76.8
	H2	5.2	5.5	10.7	26.7	-0.4	11.1	55.3	75.0
1971	H1	4.0	5.9	9.9	7.1	4.0	5.9	49.4	79.2
	H2	2.4	6.0	8.4	3.4	3.4	5.0	50.0	82.1
1972	H1	3.0	5.7	8.7	4.9	2.9	5.9	56.9	90.7
	H2	3.8	5.5	9.3	10.2	3.8	5.5	55.0	93.0
1973	H1	8.0	4.9	12.9	-11.7	3.9	9.1	50.7	79.5
	H2	9.0	4.8	13.8	-6.4	6.1	7.7	30.1	74.3
1974	H1	12.2	5.2	17.4	-11.8	4.2	13.2	26.0	67.0
	H2	11.8	6.1	17.9	-20.3	4.7	13.2	49.1	62.0
1975	H1	6.6	8.6	15.2	38.8	5.9	9.2	42.4	65.2
	H2	7.0	8.4	15.4	-5.3	3.0	12.4	44.6	75.7
1976	H1	4.6	7.7	12.3	15.6	4.4	7.8	47.8	84.0
	H2	5.0	7.8	12.8	3.0	5.5	7.3	66.0	88.4
1977	H1	8.6	7.3	15.9	-6.5	6.4	9.5	66.6	88.7
	H2	4.6	6.8	11.4	-5.4	6.5	4.9	57.4	86.7
1978	H1	10.0	6.2	16.2	0.5	6.4	9.8	45.2	81.9
	H2	7.6	6.0	13.6	0.6	8.1	5.5	45.7	77.0
1979	H1	13.6	5.8	19.4	7.1	7.3	12.0	36.5	69.1
	H2	12.2	5.9	18.1	4.9	6.3	11.8	35.9	63.0
1980	H1	15.6	6.8	22.4	5.8	4.5	17.9	42.8	59.0
	H2	8.8	7.5	16.3	18.8	3.6	12.8	37.0	70.0
1981	H1	10.0	7.4	17.4	-3.4	5.6	11.8	61.4	71.1
	H2	7.6	7.8	15.4	-6.6	1.1	14.3	53.8	70.3
1982	H1	6.4	9.1	15.5	-10.6	2.5	13.0	44.8	66.4
	H2	1.2	10.3	11.5	28.3	-1.6	13.1	41.3	69.6
1983	H1	3.8	10.3	14.1	19.2	2.1	11.9	41.6	83.4
	H2	3.6	9.0	12.6	-1.6	1.6	10.9	47.5	91.4
1984	H1	4.8	7.7	12.5	-7.1	2.0	10.5	54.0	98.1
	H2	3.0	7.4	10.4	9.2	2.6	7.8	57.4	97.0
1985	H1	4.4	7.3	11.7	14.7	-0.1	11.8	58.3	94.4
	H2	3.2	7.1	10.3	10.1	0.1	10.2	62.4	92.0
1986	H1	0.4	7.1	7.5	18.7	2.8	4.7	63.5	96.2
	H2	1.8	6.9	8.7	-3.5	2.3	6.4	56.0	93.4
1987	H1	5.4	6.4	11.8	25.5	-2.8	14.6	47.8	91.2
	H2	3.4	5.9	9.3	-18.7	7.0	2.3	48.8	90.2
1988	H1	4.6	5.6	10.2	10.7	3.9	6.3	49.8	93.0
	H2	4.2	5.4	9.6	1.5	6.6	3.0	54.7	94.5
1989	H1	6.0	5.2	11.2	14.5	4.0	7.2	60.7	93.4
	H2	3.2	5.3	8.5	11.1	3.4	5.1	67.7	92.2
1990	H1	6.0	5.3	11.3	1.3	-0.1	11.4	69.9	91.1
	H2	6.0	5.9	11.9	-7.8	-1.4	13.3	64.0	72.1
1991	H1	3.2	6.7	9.9	12.4	-4.2	14.1	78.6	77.9
	H2	2.8	7.0	9.8	12.4	1.3	8.5	62.9	77.3
1992	H1	3.4	7.5	10.9	-2.1	-1.3	12.1	40.5	74.9
	H2	2.4	7.5	9.9	6.8	-0.1	10.0	40.2	79.7
1993	H1	3.6	7.1	10.7	3.4	-1.7	12.4	49.3	84.9

Table 1 Original and augmented misery index, continued

	H2	2.0	6.7	8.7	3.5	0.1	8.6	47.2	80.7
1994	H1	3.0	6.4	9.4	-4.8	-0.2	9.6	52.1	92.6
	H2	2.2	5.8	8.0	3.4	1.7	6.3	43.7	91.9
1995	H1	3.8	5.6	9.4	18.6	-1.0	10.4	47.4	93.0
	H2	1.4	5.6	7.0	13.1	0.7	6.3	48.4	91.5
1996	H1	4.2	5.5	9.7	8.9	-0.3	10.1	51.9	91.0
	H2	2.4	5.3	7.7	10.5	1.8	5.9	56.5	96.2
1997	H1	2.2	5.1	7.3	19.5	0.7	6.6	58.0	101.0
	H2	1.2	4.8	6.0	9.6	3.6	2.3	58.7	105.4
1998	H1	2.2	4.5	6.7	16.8	3.5	3.2	63.8	107.4
	H2	1.2	4.5	5.7	8.4	5.7	0.0	63.4	101.9
1999	H1	2.8	4.3	7.1	11.7	3.2	3.9	61.2	106.1
	H2	2.6	4.2	6.8	7.0	6.4	0.4	58.9	105.6
2000	H1	4.8	4.0	8.8	-1.0	5.0	3.7	60.4	109.5
	H2	1.8	4.0	5.8	-9.2	6.5	-0.7	59.9	105.7
2001	H1	4.6	4.3	8.9	-7.3	4.6	4.3	56.3	91.7
	H2	-1.4	5.2	3.8	-6.2	4.4	-0.6	80.3	86.9
2002	H1	3.6	5.8	9.4	-13.8	3.2	6.1	73.9	93.6
	H2	1.2	5.8	7.0	-11.1	7.4	-0.4	63.5	85.6
2003	H1	3.0	6.0	9.0	10.8	4.1	4.9	62.3	84.7
	H2	0.6	6.0	6.6	14.1	6.3	0.3	53.2	90.7
2004	H1	5.8	5.7	11.5	2.6	7.2	4.2	48.9	95.7
	H2	0.6	5.4	6.0	6.2	8.8	-2.8	49.4	94.8
2005	H1	4.4	5.2	9.6	-1.7	6.7	2.8	48.2	92.2
	H2	2.4	5.0	7.4	4.8	8.2	-0.8	41.7	85.0
2006	H1	6.2	4.7	10.9	1.8	3.3	7.6	37.7	86.4
	H2	-1.0	4.5	3.5	11.7	0.5	3.1	37.8	88.3
2007	H1	6.4	4.5	10.9	6.0	-2.2	13.1	33.6	89.6
	H2	1.6	4.8	6.4	-2.3	-3.8	10.2	32.3	81.6
2008	H1	8.4	5.1	13.5	-12.8	-10.7	24.2	29.7	70.3

a. Annualized, based on not seasonally adjusted monthly six-month percent change data from Bureau of Labor Statistics, available at www.bls.gov (accessed on November 3, 2008).

b. Based on seasonally adjusted monthly unemployment data from Bureau of Labor Statistics, available at www.bls.gov (accessed on November 3, 2008).

c. Calculated six-month percent change, based on monthly S&P500 data from Yahoo Finance, available at <http://finance.yahoo.com> (accessed on November 3, 2008).

d. Calculated percent changes by comparing the average housing price index for the current half-year to the immediately preceding half-year, based on US Census Bureau, "New Residential Sales," available at www.census.gov (accessed on November 3, 2008) for the years 1964 to 1986; S&P/Case-Shiller, "Home Price Indices," available at www.standardandpoors.com (accessed on November 3, 2008) for the years 1987 to 2008.

e. Averaged results from several polls conducted over each six-month period, based on data from Roper Center Public Opinion Archives, "Presidential Approval Ratings," available at www.ropercenter.uconn.edu (accessed on November 3, 2008).

f. Averaged every two quarters except for 2008 H1, which is a four-month average (January-April 2008). Data from Reuters/University of Michigan, "Surveys of Consumers," available at www.sca.isr.umich.edu (accessed on November 3, 2008).

Table 2 Presidential approval and original misery index, whole period (1964H1–2008H1)

Dependent variable(Y): Presidential approval
Independent variable (X): Original misery index

Regression statistics	
Multiple R	0.38
R squared	0.14
Adjusted R squared	0.14
Standard error	10.51
Observations	89.00

	Coefficients	Standard error	t stat
Intercept	64.64	3.34	19.34
X variable 1	-1.17	0.31	-3.84

Table 3 Presidential approval and augmented misery index, whole period (1964H1-2008H1)

Dependent variable(Y): Presidential approval
Independent variable (X): Augmented misery index

Regression statistics	
Multiple R	0.36
R squared	0.13
Adjusted R squared	0.12
Standard error	10.62
Observations	89.00

	Coefficients	Standard error	t stat
Intercept	59.12	2.17	27.27
X variable 1	-0.88	0.25	-3.55

Table 4 Presidential approval and original misery index, each period

4.1 1964H1–1985H2

Dependent variable(Y): Presidential approval
Independent variable (X): Original misery index

Regression statistics	
Multiple R	0.47
R squared	0.22
Adjusted R squared	0.20
Standard error	9.69
Observations	44.00

	Coefficients	Standard error	t stat
Intercept	65.90	4.56	14.45
X variable 1	-1.25	0.36	-3.46

4.2 1986H1–2008H1

Dependent variable(Y): Presidential approval
Independent variable (X): Original misery index

Regression statistics	
Multiple R	0.22
R squared	0.05
Adjusted R squared	0.03
Standard error	11.47
Observations	45.00

	Coefficients	Standard error	t stat
Intercept	64.37	7.07	9.11
X variable 1	-1.19	0.79	-1.50

Table 5 Presidential approval and augmented misery index, each period

5.1 1964H1–1985H2

Dependent variable(Y): Presidential approval

Independent variable (X): Augmented misery index

Regression statistics	
Multiple R	0.37
R squared	0.14
Adjusted R squared	0.12
Standard error	10.19
Observations	44.00

	Coefficients	Standard error	t stat
Intercept	61.22	4.22	14.50
X variable 1	-1.17	0.45	-2.62

5.2 1986H1–2008H1

Dependent variable(Y): Presidential approval

Independent variable (X): Augmented misery index

Regression statistics	
Multiple R	0.32
R squared	0.10
Adjusted R squared	0.08
Standard error	11.16
Observations	45.00

	Coefficients	Standard error	t stat
Intercept	58.54	2.62	22.35
X variable 1	-0.70	0.32	-2.19

Table 6 Consumer sentiment index and original misery index, whole period (1964H1-2008H1)

Dependent variable: Consumer sentiment index

Independent variable: Original misery index

Regression statistics	
Multiple R	0.74
R squared	0.55
Adjusted R squared	0.55
Standard error	7.76
Observations	89.00

	Coefficients	Standard error	t stat
Intercept	111.38	2.47	45.16
X variable 1	-2.34	0.23	-10.37

Table 7 Consumer sentiment index and augmented misery index, whole period (1964H1-2008H1)

Dependent variable: Consumer sentiment index

Independent variable: Augmented misery index

Regression statistics	
Multiple R	0.64
R squared	0.41
Adjusted R squared	0.41
Standard error	8.88
Observations	89.00

	Coefficients	Standard error	t stat
Intercept	99.41	1.81	54.88
X variable 1	-1.61	0.21	-7.85

Table 8 Consumer sentiment index and original misery index, each period

8.1 1964H1–1985H2

Dependent variable: Consumer sentiment index

Independent variable: Original misery index

Regression statistics	
Multiple R	0.82
R squared	0.67
Adjusted R squared	0.66
Standard error	7.23
Observations	44.00

	Coefficients	Standard error	t stat
Intercept	113.17	3.40	33.27
X variable 1	-2.48	0.27	-9.24

8.2 1986H1–2008H1

Dependent variable: Consumer sentiment index

Independent variable: Original misery index

Regression statistics	
Multiple R	0.45
R squared	0.20
Adjusted R squared	0.18
Standard error	8.33
Observations	45.00

	Coefficients	Standard error	t stat
Intercept	107.55	5.14	20.93
X variable 1	-1.91	0.58	-3.31

Table 9 Consumer sentiment index and augmented misery index, each period

9.1 1964H1–1985H2

Dependent variable: Consumer sentiment index

Independent variable: Augmented misery index

Regression statistics	
Multiple R	0.72
R squared	0.52
Adjusted R squared	0.51
Standard error	8.73
Observations	44.00

	Coefficients	Standard error	t stat
Intercept	106.05	3.62	29.32
X variable 1	-2.59	0.38	-6.73

9.2 1986H1–2008H1

Dependent variable: Consumer sentiment index

Independent variable: Augmented misery index

Regression statistics	
Multiple R	0.59
R squared	0.35
Adjusted R squared	0.33
Standard error	7.55
Observations	45.00

	Coefficients	Standard error	t stat
Intercept	97.59	1.77	55.09
X variable 1	-1.03	0.22	-4.78

Table 10 Presidential approval and consumer sentiment index, whole period (1964H1-2008H1)

Dependent variable: Presidential approval

Independent variable: Consumer sentiment index

Regression statistics	
Multiple R	0.47
R squared	0.22
Adjusted R squared	0.21
Standard error	10.07
Observations	89.00

	Coefficients	Standard error	t stat
Intercept	12.76	8.19	1.56
X variable 1	0.46	0.09	4.90

Figure 1 Original and augmented misery indexes

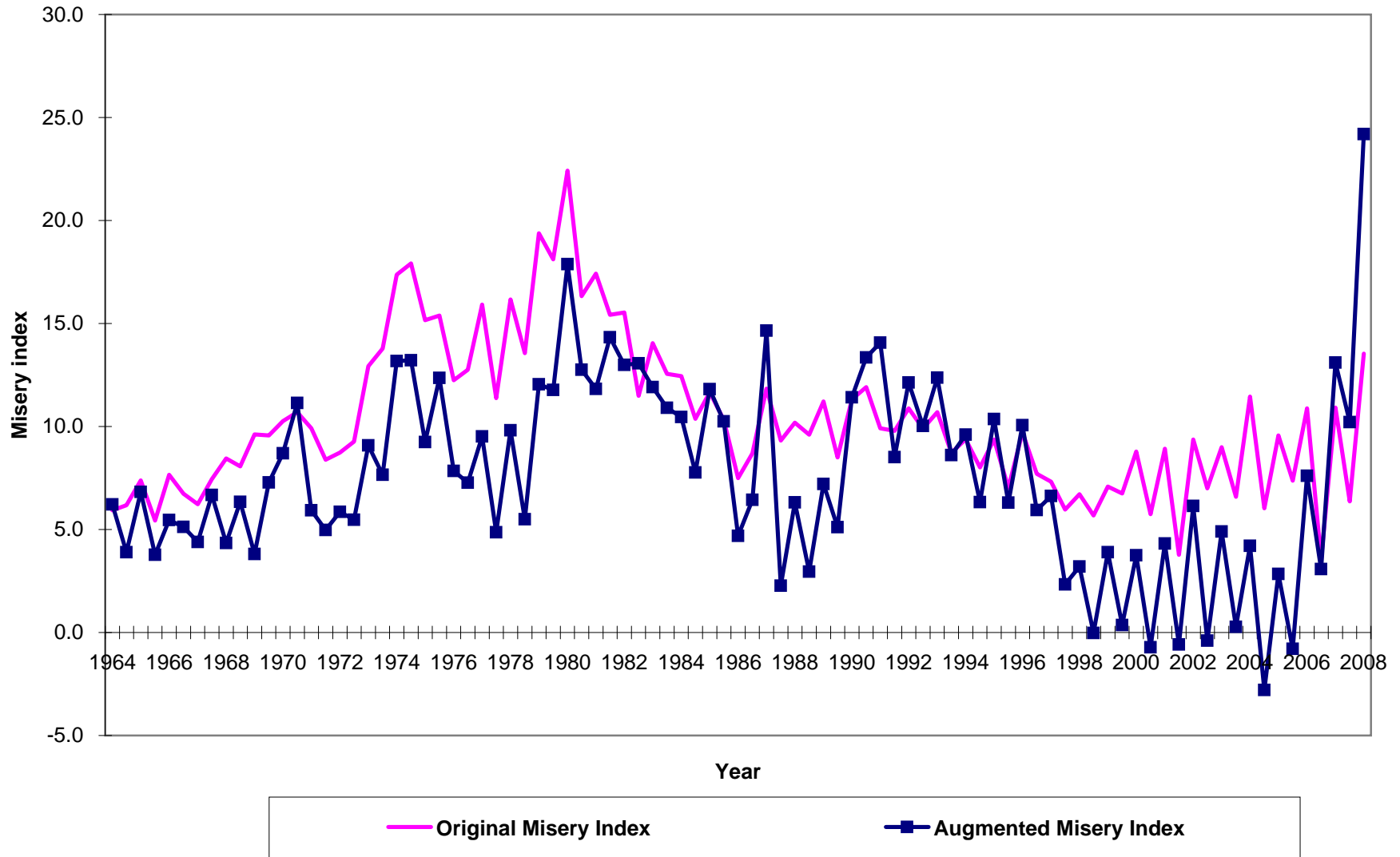


Figure 2 Augmented misery index and inverse presidential approval

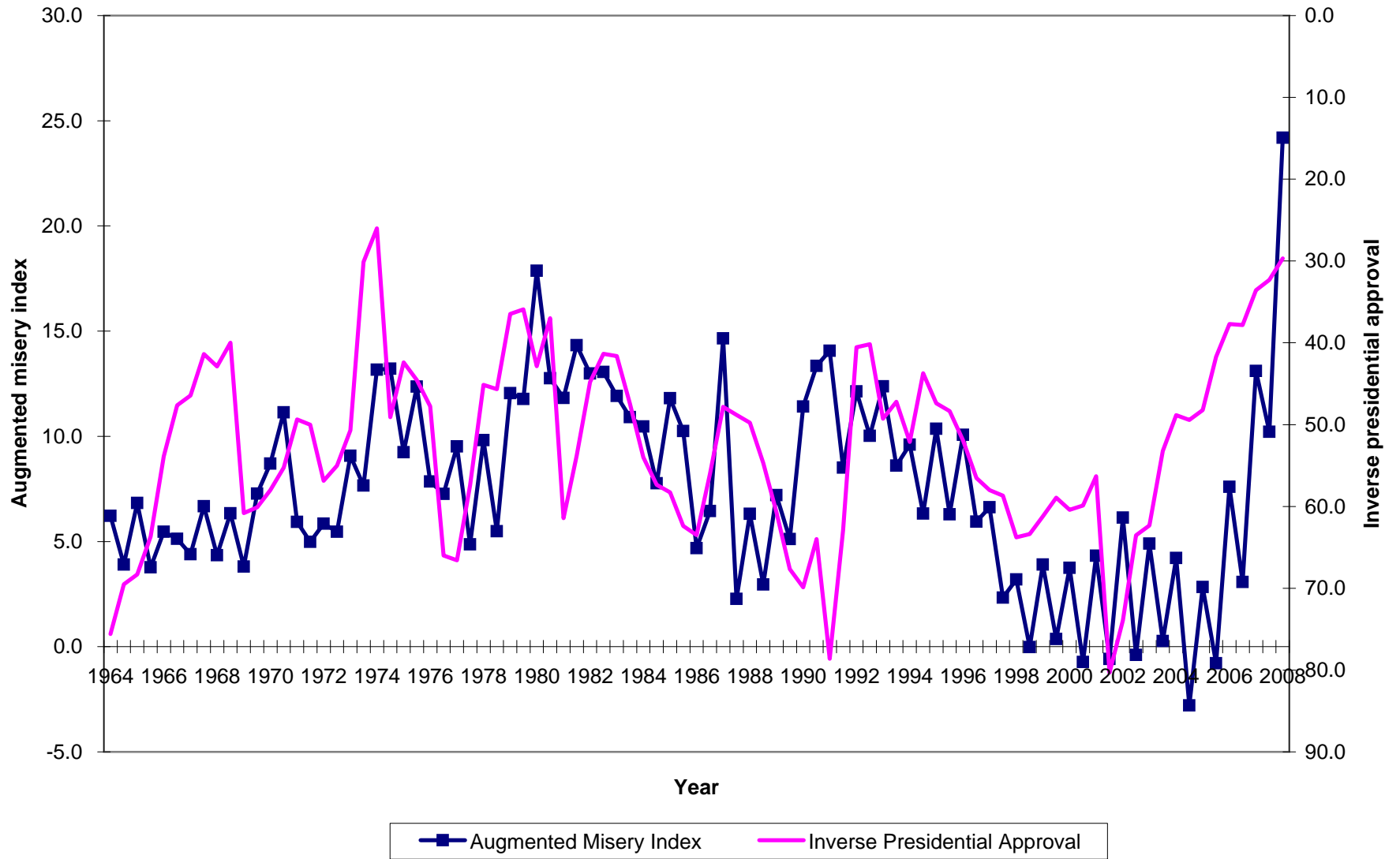


Figure 3 Inverse presidential approval, inverse McCain rates, and augmented misery index

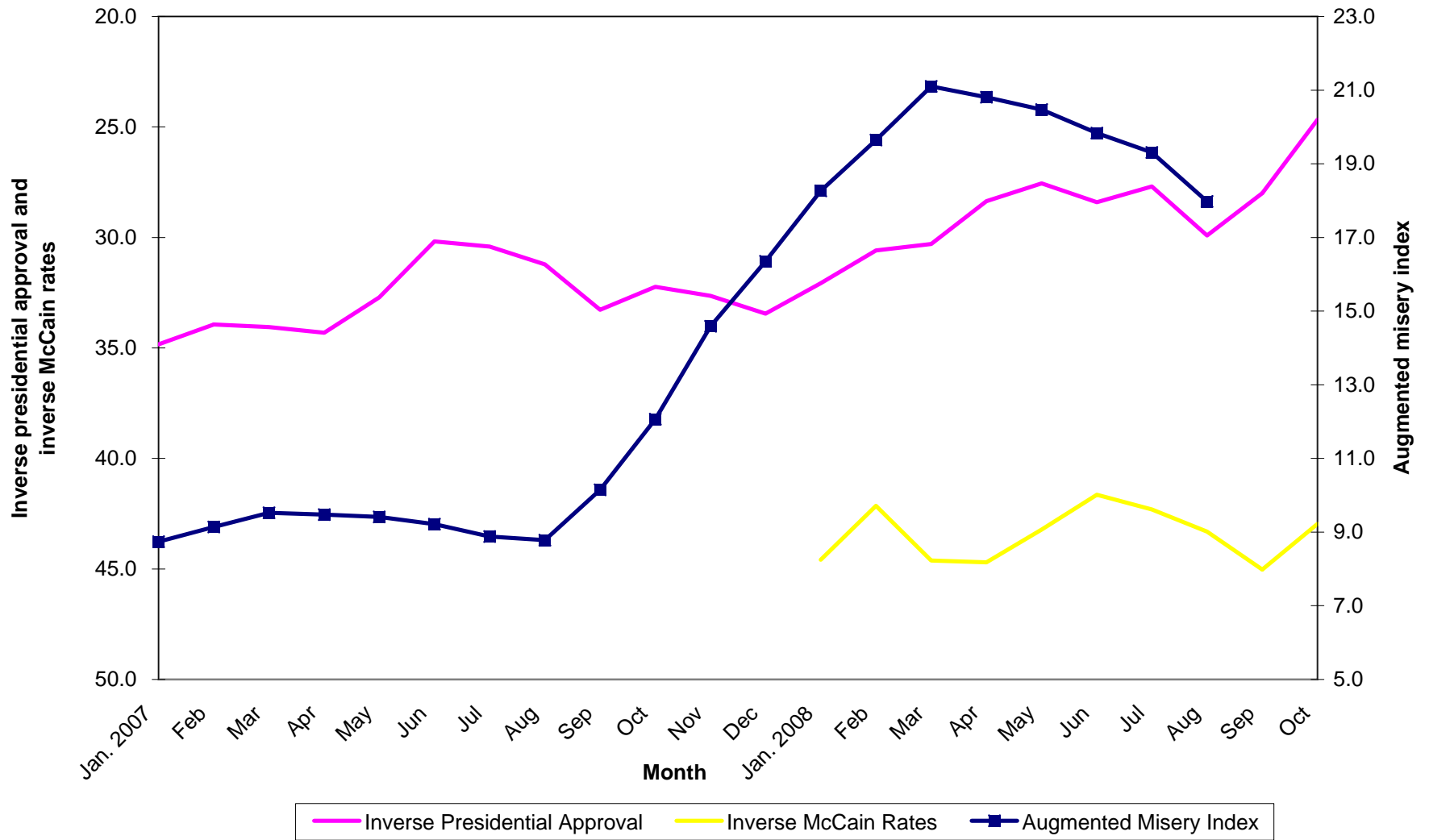


Figure 4 Augmented misery index and inverse consumer sentiment index

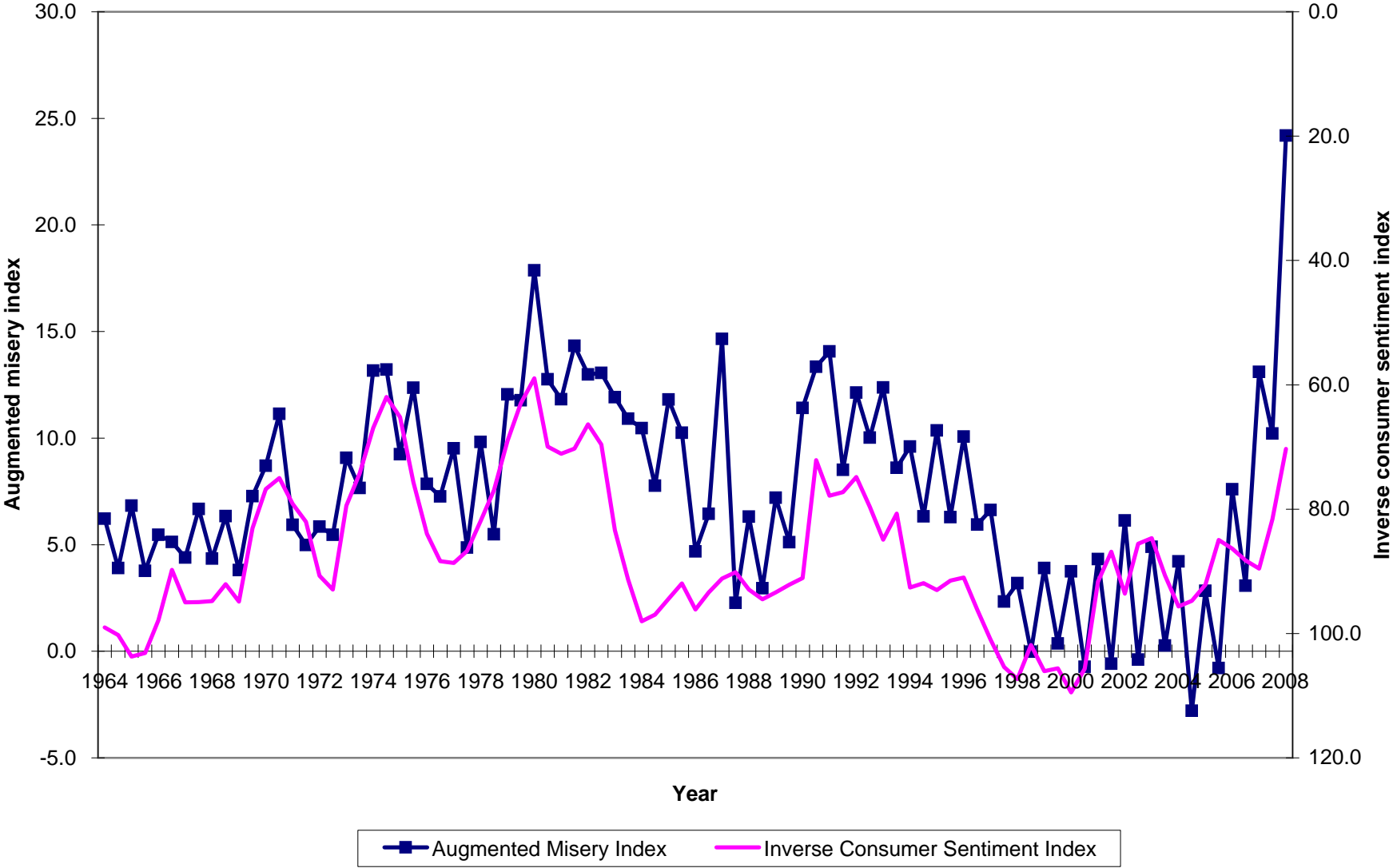


Figure 5 Augmented misery index and inverse consumer sentiment index

