Perceptions of Economic Vulnerability:
First Evidence from the Survey of Economic Expectations

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Abstract

This report uses data from the authors' national Survey of Economic Expectations to describe how, during 1994, working Americans with health insurance perceived the risk of near-term deterioration in their economic status. Perceived economic vulnerability is measured through responses to questions eliciting subjective probabilities of loss of health insurance, of burglary, and of job loss. We find that respondents tend to rank burglary as the most likely of the three events, followed by job loss, and then loss of health insurance. The perceived risk of crime victimization is much higher than the realized rate of victimization. Male and female respondents have similar risk perceptions but blacks have much greater perceived vulnerability than do whites.

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1.   INTRODUCTION

The United States has invested substantially in the development of statistics that monitor the current status of its population, but not in statistics that monitor how Americans perceive their futures. Major national surveys such as the Current Population Survey, the Survey of Income and Program Participation, and the Panel Study of Income Dynamics describe the outcomes that individuals actually experience, but not the outcomes they expect to experience in the future.

We have recently initiated a national Survey of Economic Expectations (SEE) in an effort to learn how Americans perceive their near-term futures. SEE is a periodic module in WISCON, a national continuous telephone survey conducted by the Letters and Science Survey Center at the University of Wisconsin–Madison (see Winsborough 1987). The first version of SEE, administered during 1993, elicited respondents' one-year-ahead expectations of income, earnings, and employment. Dominitz and Manski (1994) analyze the income expectations data collected there (also see Dominitz [1994]).

This report uses the version of SEE administered during 1994 to describe how working Americans perceive the risk of near-term deterioration in their economic status. We measure respondents' perceived economic vulnerability through their responses to questions eliciting subjective probabilities of three events:

Health Insurance: "What do you think is the percent chance (what are the chances out of 100) that you will have health insurance coverage 12 months from now?"

Burglary: "What do you think is the percent chance (what are the chances out of 100) that

someone will break into (or somehow illegally enter) your home and steal something during the

next twelve months?"

Job Loss: "What do you think is the percent chance that you will lose your job during the next

twelve months?"

All respondents are asked the first two questions, and those currently working are asked the third.[1]

The data analyzed here were collected in the periods April 1994 through July 1994 and

November 1994 through January 1995. We focus attention on the 769 respondents aged 18–64 who

stated at the time of the interview that they were working and, moreover, had health insurance.[2] In

terms of their current economic status, nonelderly adults with jobs and health insurance may be thought

of as the relatively well-off core of the American population. Being well-off at a point in time does

not, however, imply that one is secure.

Table 1 reports the demographic and schooling characteristics of the respondents. Tables 2

through 5 report the detailed findings on expectations. The reader should be aware that each table refers

to two distinct probability distributions. First, each respondent has one-year-ahead *subjective*

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[1]The use of probabilistic questions to elicit individuals' expectations has been recommended by Juster (1966), Manski (1990), and Fischhoff (1994), each of whom concludes that probabilistic questions should yield more informative responses than do the qualitative-expectations questions traditionally asked in surveys. Some empirical studies using probabilistic questions to elicit economic expectations include Juster 1966; Guiso, Jappelli, and Terlizzese 1992; and Dominitz and Manski 1994a, 1994b. Some empirical studies using probabilistic questions to elicit risk perceptions include Quadrel, Fischhoff, and Davis 1993; and Hurd and McGarry 1995.

[2]The WISCON interviewers obtain a telephone interview from slightly over 50 percent of the households with whom contact is attempted. Of the 778 respondents in the group examined here (i.e., those aged 18–64, working, and having health insurance), 769 gave usable responses to the three questions on economic vulnerability.

TABLE 1

Characteristics of the Respondents

	Full Sample	Employed Respondents with Health Insurance (aged 18 through 64)
All	1451	769
Male	632	381
Age 18–34	230	162
Age 35–49	207	158
Age 50–64	104	61
Age 65+	86	—
High school or less	175	77
Some college	236	163
Bachelor's degree or more	214	138
White	518	312
Black	40	25
Female	819	388
Age 18–34	252	156
Age 35–49	247	161
Age 50–64	158	71
Age 65+	155	—
High school or less	258	87
Some college	344	178
Bachelor's degree or more	215	122
White	679	315
Black	68	37

probabilities, say (p_1, p_2, p_3), of no health insurance, burglary, and job loss respectively.[3] Second, there

is an *empirical distribution* of these subjective probabilities across the respondents. The empirical

distribution gives the fraction of the respondents with specific values of the subjective probabilities.

Section 2 presents the main findings. Section 3 considers the accuracy of the reported

expectations. Section 4 gives conclusions.

2.   FINDINGS

2.1.   The Empirical Distribution of Risk Perceptions

For each of the three events, Table 2 gives the complete empirical distribution of the subjective

probabilities elicited from the 769 respondents. The top row of Table 3 (labeled "All") summarizes

these data by giving the empirical mean and several empirical quantiles.

We find that respondents tend to rank burglary as the most likely of the three events, then job

loss, and then loss of health insurance. For burglary, the empirical mean and median (i.e., .50 quantile)

subjective probabilities are .17 and .10. For job loss, they are .14 and .05. For loss of health insurance,

they are .09 and .00.

Observe that each empirical mean is much larger than the corresponding empirical median.

This reflects the skew of the empirical distributions. Table 2 shows that, in each case, a majority of the

respondents place negligible or quite small subjective probability on the event, but some respondents

think the event moderately or even very likely to occur.

The several quantiles given in the top row of Table 3 provide another perspective on the

heterogeneity of risk perceptions. Consider, for example, the perceived risk of job loss. At least 25

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[3]The question on health insurance elicits a respondent's subjective probability that he or she will
have health insurance coverage twelve months after the interview. The entries in the tables are for the
implied subjective probability that a respondent will not have health insurance (i.e., one minus the
response to the question posed).

TABLE 2
Empirical Distribution of the Responses of Employed Respondents with Health Insurance

Percent Chance	No Health Insurance	Victim of Burglary	Job Loss
0	403	97	286
1	28	39	41
2	36	55	50
3	1	13	7
4	2	4	0
5	63	133	92
6–9	0	4	3
10	80	129	86
11–14	1	0	0
15	6	16	13
16–19	0	0	0
20	52	98	55
21–24	1	0	0
25	18	25	8
26–29	0	0	0
30	8	31	16
31–34	0	0	0
35	1	2	2
36–39	0	0	0
40	7	13	3
41–44	0	0	0
45	0	4	3
46–49	0	0	0
50	47	82	51
51–54	0	0	0
55	0	0	0
56–59	0	0	0
60	1	4	6
61–64	0	0	0
65	0	1	3
66–69	1	0	0
70	2	2	6
71–74	0	0	0
75	2	4	6
76–79	0	0	0
80	1	5	6
81–84	0	0	0
85	1	2	2
86–89	0	0	0
90	2	2	3
91–94	0	0	0
95	1	0	2
96–99	1	1	4
100	3	3	15
All	769	769	769

TABLE 3

**Empirical Means and Quantiles of the Subjective Probabilities of Employed Respondents
with Health Insurance**

	No Health Insurance				Victim of Burglary				Job Loss			
	mean	quantile			mean	quantile			mean	quantile		
		.25	.50	.75		.25	.50	.75		.25	.50	.75
All	.09	.00	.00	.10	.17	.03	.10	.20	.14	.00	.05	.15
Male	.09	.00	.01	.10	.16	.02	.10	.20	.15	.00	.05	.15
Age 18–34	.09	.00	.01	.10	.15	.02	.10	.20	.14	.00	.03	.15
Age 35–49	.09	.00	.00	.10	.16	.05	.10	.20	.15	.00	.05	.20
Age 50–64	.08	.00	.00	.05	.17	.02	.10	.20	.13	.00	.00	.10
HS or less	.13	.00	.04	.20	.24	.05	.15	.35	.20	.00	.05	.30
Some college	.11	.00	.01	.10	.18	.05	.10	.25	.15	.00	.05	.20
BA or more	.05	.00	.00	.05	.10	.02	.05	.10	.09	.00	.03	.10
White	.08	.00	.01	.10	.15	.03	.10	.20	.13	.00	.03	.10
Black	.24	.00	.05	.50	.37	.10	.40	.50	.22	.00	.10	.50
Female	.09	.00	.00	.10	.17	.03	.10	.20	.14	.00	.02	.20
Age 18–34	.10	.00	.02	.15	.19	.05	.10	.30	.17	.00	.05	.20
Age 35–49	.08	.00	.00	.10	.16	.03	.10	.20	.13	.00	.02	.15
Age 50–64	.08	.00	.00	.05	.14	.00	.05	.20	.12	.00	.01	.10
HS or less	.08	.00	.00	.10	.16	.02	.10	.20	.13	.00	.02	.20
Some college	.10	.00	.00	.10	.18	.03	.10	.30	.14	.00	.05	.20
BA or more	.08	.00	.00	.10	.16	.05	.10	.20	.14	.00	.03	.15
White	.09	.00	.00	.10	.16	.03	.10	.20	.13	.00	.02	.15
Black	.12	.00	.00	.20	.25	.05	.20	.50	.21	.02	.10	.40

percent of the respondents (the .25 quantile) see themselves as facing zero chance of losing their jobs in the next year. At least 50 percent of the respondents (the .50 quantile or median) see themselves as facing no more than a .05 chance of job loss. But some do not feel so secure. The entry for the .75 quantile shows that at least 25 percent of respondents see themselves as facing a .15 chance or more of job loss in the next year. Other quantiles may be derived from Table 2.

2.2. The Concentration of Vulnerability

Considering the three events one at a time does not reveal the extent to which vulnerability is concentrated within the population. Table 3 shows that the empirical median values of respondents' subjective probabilities of the three events are (.00, .10, .05), and the empirical .75 quantiles are (.10, .20, .15). To measure the concentration of vulnerability, we report in Table 4 the fraction $F(p_1 \leq .00, p_2 \leq .10, p_3 \leq .05)$ of respondents whose subjective probabilities all lie at or below their respective empirical medians. We refer to these respondents as *relatively secure*. We report the fraction $F(p_1 > .00, p_2 > .10, p_3 > .05)$ of respondents whose subjective probabilities all exceed their empirical medians. We refer to this group as *relatively vulnerable*. We also compute the fraction $F(p_1 > .10, p_2 > .20, p_3 > .15)$ of respondents whose subjective probabilities all exceed their empirical .75 quantiles. We refer to this group as *highly vulnerable*.

We find that .28 of all respondents are relatively secure and .14 are relatively vulnerable, leaving .58 in the intermediate group who are neither secure nor vulnerable. The fraction of highly vulnerable respondents is .05.

These results indicate that persons with a high subjective probability of one event tend also to have high subjective probabilities of the other events. If p_1, p_2, and p_3 were statistically independent of one another, the fraction relatively secure would be .20, the fraction relatively vulnerable would be

TABLE 4

Concentration of Vulnerability: Employed Respondents with Health Insurance

	Relatively Secure	Intermediate	Relatively Vulnerable	Highly Vulnerable
All	.28	.58	.14	.05
Male	.26	.59	.15	.05
Age 18–34	.23	.63	.14	.05
Age 35–49	.23	.59	.18	.06
Age 50–64	.41	.48	.11	.05
High school or less	.22	.52	.26	.12
Some college	.23	.60	.17	.04
BA degree or more	.32	.60	.08	.03
White	.26	.60	.14	.04
Black	.20	.40	.40	.28
Female	.29	.58	.13	.05
Age 18–34	.22	.59	.19	.07
Age 35–49	.32	.59	.09	.05
Age 50–64	.35	.57	.08	.03
High school or less	.30	.56	.14	.05
Some college	.25	.62	.13	.08
BA degree or more	.34	.54	.12	.02
White	.30	.58	.12	.04
Black	.24	.52	.24	.16

Definitions

"relatively secure" = fraction of respondents whose subjective probabilities of the three events all lie at or below the corresponding empirical medians.

"intermediate" = fraction of respondents who are neither secure nor vulnerable.

"relatively vulnerable" = fraction of respondents whose subjective probabilities of the three events all exceed the corresponding empirical medians.

"highly vulnerable" = fraction of respondents whose subjective probabilities of the three events all exceed the corresponding empirical .75 quantiles.

.07, and the fraction highly vulnerable would be .01.[4] Instead, we find these fractions to be .28, .14,

and .05. These substantially larger values indicate that p_1, p_2, and p_3 are not statistically independent

but rather are positively associated within the sample of respondents.

2.3.   <u>Variation in Risk Perceptions with Demographic and Schooling Characteristics</u>

How do risk perceptions vary with respondents' demographic and schooling characteristics?

Tables 3 and 4 show that male and female respondents have essentially the same overall empirical

distributions of risk perceptions but different patterns by schooling and age. Among females, perceived

vulnerability to all three risks varies little with schooling. Perceived vulnerability to loss of health

insurance does not vary with age. Vulnerability to burglary and loss of job decline somewhat with age.

Among males, perceived vulnerability varies little with age, but declines markedly with

schooling. Whether the event be loss of health insurance, burglary, or loss of job, the subjective

probabilities of male respondents with a bachelor's degree tend to be less than half the magnitudes of

those with no more than a high school diploma. Among male respondents with a bachelor's degree,

only .03 are highly vulnerable. Among those with no more than a high school diploma, .12 are highly

vulnerable.

Tables 3 and 4 show that white and black respondents have very different empirical

distributions of risk perceptions. The sample is composed primarily of white respondents and all the

patterns that have been discussed thus far without regard to race persist when attention is restricted to

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[4]Let $j = 1, 2, 3$. If the empirical distribution of p_j were continuous, half of all respondents would
have p_j less than the empirical median and half would have p_j greater than the empirical median. A
quarter would have p_j greater than the empirical .75 quantile. Hence, under the statistical independence
assumption, the fractions relatively secure and relatively vulnerable would each be $(.5)^3 = .125$, and the
fraction highly vulnerable would be $(.25)^3 = .016$. Because the empirical distributions are discrete with
some mass at their medians and .75 quantiles, these fractions turn out to have the values .20, .07, and
.01.

the white subsample. The 62 black respondents, however, show much greater perceived vulnerability than do the whites.

The racial pattern is apparent among both males and females but is particularly strong among males. Whether the event be loss of health insurance, burglary, or loss of job, black male respondents have subjective probabilities two to five times as high as do white male respondents. Fully .28 of black males are highly vulnerable. The figure for white males is .04.

3.   THE ACCURACY OF ELICITED RISK PERCEPTIONS

In two distinct senses, we would like to determine the accuracy of the risk perceptions that we elicit from respondents. First, we would like to know how well the elicited subjective probabilities measure what respondents really think about their risks of loss of health insurance, burglary, and job loss in the next year. Second, we would like to know how objectively accurate are respondents' risk perceptions.

3.1.   Subjective Accuracy

We cannot offer any really satisfying way to assess accuracy in the first sense. Every effort to interpret responses to subjective questions runs up against the generic problem that a researcher cannot directly observe a respondent's thinking. Because responses to subjective questions cannot be validated directly, the most that one can do is judge whether the observed responses seem internally reasonable and consistent with observed behaviors of the respondents.

We have no evidence regarding consistency with observed behavior. The WISCON survey does not question respondents about their consumption/savings choices, job search activities, or other behaviors that should be related to risk perceptions. In the future, we hope to add such questions to the SEE module.

We do judge the pattern of responses to be reasonable. The findings presented in Section 2 make sense to us—the positive intrarespondent association among the subjective probabilities of the three events, the broad similarity of the risk perceptions of males and females, the patterns of vulnerability by age and schooling, and the substantial difference in vulnerability between whites and blacks.

A common concern in the interpretation of survey data is that respondents may provide perfunctory answers to questions. There is no definitive way to assess the seriousness with which respondents answer our questions, but we can look for response patterns that may indicate a lack of care. In particular, we can examine the extent of bunching of responses at round numbers.

Table 2 gives the frequency with which different values of the subjective probabilities are reported. A fear commonly expressed by researchers skeptical of probability elicitation is that respondents will concentrate their responses on the values 0, 50, and 100 percent. We do not find excessive bunching at these values. Respondents generally seem to round their responses only to the nearest multiple of five.

3.2.   Objective Accuracy

Perhaps the cleanest way to assess the objective accuracy of elicited expectations is to re-interview respondents a year later, learn about their experiences during the year, and compare the realized events with the expectations elicited a year earlier. Such comparisons are straightforward if one is willing to assume that realized events are statistically independent across respondents. In this vein, Dominitz (1995) uses a one-year follow-up to the 1993 version of SEE to assess the objective accuracy of respondents' earnings expectations.

Respondents to the 1994 version of SEE have not been recontacted, and so we cannot use this approach to assess the objective accuracy of their elicited risk perceptions. We can, however, assess

objective accuracy by looking backward rather than forward. In addition to eliciting expectations, we asked all 1994 SEE respondents these questions:

> *Realized Health Insurance*: "Do you have any health insurance coverage?"

> *Realized Burglary*: "During the past twelve months, did anyone break into or somehow illegally get into your home and steal something?"

We also asked all SEE respondents a pair of expectations and realizations questions about a different type of crime victimization:

> *Robbery*: "What do you think is the percent chance (what are the chances out of 100) that someone will take something directly from you by using force—such as a stickup, mugging, or threat—during the next twelve months?"

> *Realized Robbery*: "During the past twelve months, did anyone take something directly from you by using force—such as a stickup, mugging, or threat?"

Suppose that the process generating health insurance, burglary, and robbery events is time-stationary and that realizations are statistically independent across respondents. Subject to these assumptions, we can assess the objective accuracy of elicited risk perceptions by comparing empirical mean subjective probabilities with corresponding realized rates of occurrence. Table 5 presents this comparison using the full sample of 1451 SEE respondents. We use the full sample rather than the subsample of employed respondents with health insurance because, by definition, the subsample includes only persons who currently have health insurance.[5]

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[5]We would like also to assess the accuracy of job-loss expectations but are unable to do so. The survey instrument does not contain an appropriate realized event with which to compare expectations.

TABLE 5

Realizations and Expectations: Full Sample

| | No Health Insurance | | Victim of Burglary | | Victim of Robbery | |
	Now	Expected a Year from Now	In Past Year	Expected in Coming Year	In Past Year	Expected in Coming Year
All	.13	.15	.04	.17	.01	.16
Male	.14	.14	.05	.16	.01	.14
Age 18–34	.22	.18	.05	.16	.00	.14
Age 35–49	.13	.14	.04	.16	.01	.14
Age 50–64	.10	.09	.04	.17	.01	.13
Age 65+	.02	.10	.06	.14	.00	.13
High school or less	.21	.21	.05	.22	.00	.18
Some college	.14	.16	.05	.16	.01	.15
BA degree or more	.08	.08	.04	.11	.01	.09
White	.12	.13	.04	.14	.01	.12
Black	.20	.28	.08	.34	.00	.25
Female	.12	.15	.04	.17	.01	.18
Age 18–34	.16	.17	.06	.19	.02	.20
Age 35–49	.15	.16	.04	.17	.00	.17
Age 50–64	.13	.16	.03	.17	.01	.17
Age 65+	.01	.08	.02	.15	.00	.15
High school or less	.15	.17	.04	.16	.00	.17
Some college	.13	.16	.04	.18	.02	.19
BA degree or more	.07	.10	.04	.17	.01	.17
White	.10	.14	.03	.17	.01	.16
Black	.24	.20	.07	.21	.01	.24

The findings are striking. Realizations and expectations of no health insurance match up quite closely.[6] Yet realized rates of crime victimization are far below mean expectations. In the case of burglary, .04 of all respondents report that they were victims in the past year, but the mean subjective probability of being burglarized in the next year is .17. In the case of robbery, .01 of all respondents report that they were victims in the past year, but the mean subjective probability of being robbed in the next year is .16. Discrepancies of this general magnitude show up across the board, in every demographic and schooling group.

We can offer no compelling rationale for the immense discrepancy between realized rates of crime victimization and near-term expectations of victimization. Our findings seem to corroborate the conventional wisdom that Americans perceive crime to be far more prevalent than it actually is (see Bursik and Grasmick, chapter 4).

4.   CONCLUSION

This report has presented evidence on American perceptions of personal economic vulnerability during 1994. Accumulation of data from subsequent administrations of the Survey of Economic Expectations will eventually permit us to examine how expectations of economic misfortune vary over time. We anticipate that study of these time-series data will help us to understand how changes in the real economy affect individuals' expectations for their futures and, conversely, how expectations affect the real economy.

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[6]The one substantial discrepancy occurs among respondents aged 65 and over. Only .02 of the males and .01 of the females report that they currently have no health insurance, but the mean subjective probabilities of having no insurance next year are .10 for males and .08 for females. We speculate that the health care debate of 1994 may have caused some elderly persons to question the continuation of the federal Medicare program that currently covers them all.

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