Sociodemographic Status, Somatic Complaints, and Economic Expectations

by

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Quantitative Methods in the Social Sciences, Columbia University, 2007

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Abstract

Several studies have shown that economic expectations vary by sociodemographic factors, but few studies have explored the intervening mechanisms behind sociodemographic factors–economic expectations relationships and the boundary effects of the sociodemographic factors on economic expectations. This study investigated the mediating effects of somatic complaints on the relatioinship betIen sociodemographic factors (i.e. age, gender, income, education) and economic expectations (i.e. income expectation and price expectation), and the moderating effects of gender on the relationship of income with somatic complaints and economic expectations. Regression analysis was used to analyze data collected from the Survey of Economic Expectations (SEE). This study used SEE data which include 3,297 labor force participants interviewed from the ninth wave to fifteenth wave. The results revealed that somatic complaints partially mediated the relationships of sociodemographic variables with economic expectations and that gender moderated the relationships of income with somatic complaints, income expectation. Males' income was more significantly associated with somatic complaints and lowest income expectation than females'. The theoretical and practical implications of the research were discussed.

Key words: Sociodemographic status, age, gender, income, education, somatic complaints, economic expectations.

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Introduction

Due to the changeable nature of the environment, since 1996, economic expectation has become a focus of media attention in the United States. In 1996, the public discourse started to show concerns for future economics. For instance, *the Economist* on April 6th provided its own perspective on ‘‘Learning to Cope’’ with economic insecurity, *Business Week* on March 11th ran a cover story to ‘‘Economic Anxiety”, and *New York Times* from March 3rd to March 9th had a weeklong series on ‘‘The Downsizing of America.” Also, the policy proposals intended to decrease economic uncertainty. For example, the Kassebaum-Kennedy bill (S.R. 1028) improved the portability of health insurance, and the ‘‘American Workers Economic Security Act’’ lowered taxes on corporations that ‘‘treat workers fairly’’ and restrained corporate mergers and acquisitions, among other provisions (Kennedy, 1996).

Since then, the federal government has invested substantially in the development of statistics to understand the current status of the population but not to understand the public expectation of the population. For instance, the Current Population Survey, the Panel Study of Income Dynamics, and the Survey of Income and Program Participation describe much about the outcomes that individuals actually experience, but little about the outcomes they expect to experience in the future. A number of private survey organizations do regularly investigate economic expectations and report derived measures of economic insecurity. The University of Michigan Survey Research Center (SRC), for example, elicits expectations in its Survey of Consumer Attitudes and reports a derived Index of Consumer Sentiment (Curtin, 1982).

In addition to Survey of Consumer Attitudes conducted by SRC, the Survey of Economic Expectations (SEE) is a new endeavor to examine how Americans perceive their near-term futures. SEE is conducted as a periodic module in WISCON, a national continuous telephone survey undertaken by the University of Wisconsin Survey Center (UWSC) at the University of Wisconsin—Madison. In SEE, respondents' near-term economic expectations are measured through their responses to questions. In this study, I included two types of economic expectations in SEE: income expectation and price expectation.

The purpose of the present study was twofold. First, I explored the intervening mechanisms behind sociodemographic factors–economic expectations relationships. If labors' sociodemographic characteristics, such as age, gender, income, and educational levels, are different, why exactly should these variables affect economic expectations? I examined one specific mediator—somatic complaints—reasoning that labors' sociodemographic characteristics contribute to differences in somatic complaints which affect economic expectations. Finally, I studied the boundary effects of income on somatic complaints and economic expectations by looking at the role of gender. I proposed that males' income is more associated with somatic complaints and economic expectations than females' income. Figure 1 shows the frame of this study.

Insert Figure 1 here

The subsequent section of this article evaluates whether demographic and socioeconomic variables are determinants of economic expectations, develops arguments for the mediation effects of somatic complaints on the relationships between sociodemographic characteristics and

economic expectations, and examines the moderating effects of gender on the relationship of income with somatic complaints and economic expectations.

Sociodemographic Variables and Economic Expectations

In the past, professional forecasts of economic activity typically extrapolate from recent observations of economic outcomes. However, during the past half-century, national surveys have regularly collected data on individuals' expectations of future economic outcomes (Dominitz 1998; Dominitz, 2001). Dominitz (2001) argued that these individuals' subject expectations are used to forecast economic activity better than are econometric models.

Individuals' expectation measures have also been used to monitor the welfare of the population. For instance, Curtin (1982) argued that economic expectation surveys track changes in "pessimism." Suppose pessimism may be taken to correspond to the central tendency of the subjective distribution of future household utility. In the context of a risk-averse population of consumers engaged in expected utility maximization, social welfare may then be thought to be reduced whenever there is ceteris paribus increase in pessimism.

Pessimism about futural outcomes also affects current household behavior. For example, wage expectations influence occupational and inter-temporal labor supply decisions (Becker, 1964) as well as consumption and savings decisions (Friedman, 1957). Empirical economic research typically assume the process of expectations formation in order to infer expectations from data on realizations. (e.g. Carroll, 1992) Direct elicitation of expectations can replace such assumptions with data in the estimation of behavioral models. For instance, Lancaster and Chesher (1983) examine the relationship between earning expectation and reservation wages with the aid of survey reports; Das and van Soest (1999), tested the rationality of income expectations using Dutch household-level data; Souleles (2004) analyzed the rationality of

expectations from a US household-level panel data-set over a relatively long time horizon.

In the present study, I included two types of individuals' expectations of future economic outcomes: income expectation and price expectation (i.e. prices in general will go up, go down, or stay where they are now?), which are similar to income expectation and inflation expectation elicited by the University of Michigan's Surveys of Consumers (Curtin, 1982).

Therefore, two types of economic expectations are the subjective estimate of one-year-ahead income and price, but I used the maximum and minimum of expectation as proxy indicators for the central tendency of expectation of income since there is no item which measures subjective central tendency of one-year-ahead income. Thus, in the present study, there are three indicators of economic expectations: lowest income expectation, highest income expectation, and price expectation.

Sociodemographic Factors as Independent Variables

Sociodemographic variables have gradually become important in economic perception and development (Dohmen, Falk, Huffman, & Sunde, 2006). For example, Leiser and Drori (2005) examined the relationship between inflation perception and occupational differences. They found that teachers and students most agreed that the price of a product is determined by a result of supply and demand between sellers and consumers whereas housekeepers most reported that the price of a product is determined by the computed result on the basis of the costs and the investment of the relevant companies. Similarly, economists or policy makers need to be aware of the effects of sociodemographic factors, such as age, gender, income, and education on economic expectations. The economic policy making will be aided by investigating the effect of sociodemographic factors on economic expectations.

While there have been numerous surveys on the relationship of sociodemographic factors

with income expectation and price expectation, no general theory has been developed. Thus, the present study discusses the influence of sociodemographic factors on economic expectations. The rationale for each of the proposed relationships follows:

Age

Career stage theory explains a possible positive relation between age and economic expectation (Gruneberg, 1976; Kacmar, & Ferris, 1989). Upper levels of management within a corporation are generally not available to younger employees. Thus, the older employee typically have more confidence in their work. Compared to younger employees, they anticipate more near-term income and ignore the inflation of prices. Some surveys supported this explanation. Survey Assessment of Vietnamese Youth (Vietnam Ministry of Health et al., 2005) indicated that adults anticipated their life, family, and income better than adolescents. Bryan and Venkatu (2001) found that younger (18 to 25 years) respondents reported inflation expectation higher than their middle-aged counterparts. Also, Palmqvist and Stromberg (2004) reported that inflation expectation is highest in the youngest group (16–24 years). Based on the preceding discussion, I propose that age is positively associated with income expectation but negatively associated with price expectation.

Gender

Several surveys have indicated that females are more pessimistic about future economics than males (Solomon, & Pait, 1980; Hojat, Gonnella, Erdmann, Rattner, Veloski, Glaser, & Xu, 2000; Bryan and Venkatu, 2001; Palmqvist and Stromberg, 2004). Moreover, females have a lower income expectation and higher inflation expectation than males. With respect to income expectation, Solomon and Pait (1980) found that students in dental school, women in their senior year anticipated less income than their male classmates. Hojat, Gonnella, Erdmann, Rattner,

Veloski, Glaser, and Xu (2000) reported that women generally expected 23% less income than men. As for inflation (price) expectation, Bryan and Venkatu (2001) found that women's inflation expectation was higher than men's. Similarly, Palmqvist and Stromberg (2004) proposed that females' average inflation expectation was higher than males' by 0.91 percentage point. Therefore, I assume that compared to females, males have a higher income expectation and a lower price expectation.

Income

Several studies have shown that people with higher income are happier than those with lower income (Di Tella, MacCulloch, & Oswald, 2001; Frey, & Stutzer, 2000; Blanchflower, & Oswald, 2000). Specifically, Hayo and Seifert (2003) proposed that persons with a relatively higher income reported greater economic well-being. In terms of expected income, Das and van Soest (1999) discovered that the dispersion in realized income changes was associated with that in expected income changes. As for inflation (price) expectation, Bryan and Venkatu (2001) found that respondents in the lowest income quintile (the bottom 20 percent of all incomes) reported inflation which was twice as high as respondents in the highest income quintile. Similarly, Palmqvist and Stromberg (2004) proposed that the average inflation expectation of the highest income group is less than that of the lowest income group by 0.79 percentage points. Thus, I argue that people with higher income have a higher income expectation and lower price expectation than those with lower income.

Education

In general, persons with a relatively higher educational attainment report greater economic well-being (Hayo, & Seifert, 2003). Concerning income expectation, people develop their income expectations according to the levels of educational attainment (Esselman, &Yu, 1982).

Higher levels of educational attainment are associated with the high levels of income expectations. With regard to inflation (price) expectation, Bryan and Venkatu (2001) found that, controlling for other demographic factors, respondents with less than a high school education tend to predict about 1 percent more inflation per year than respondents with more than a high school education. Similarly, Palmqvist and Stromberg (2004) reported that people with a tertiary education tend to have a lower inflation expectation than those with only a basic education. Based on the preceding discussion, I assume that people with higher educational levels have a higher income expectation and a lower price expectation than those with lower educational levels.

The Mediating Role of Somatic complaints

Besides examining the magnitude of the sociodemographic factors-economic factors linkage, I am interested in exploring the causal mechanisms that might underlie the relationship. Why do sociodemographic factors influence economic expectations? One possibility lies in the domain of somatic complaints—one type of depressive symptoms (Radloff, 1977)—refer that people chronically and persistently complain of varied physical symptoms that have no identifiable physical origin (e.g. bothered by things, appetite poor, trouble concentrating, felt everything an effort, sleep restless, talked less than usual, and could not get going). In Radloff's survey, about 85% of people who reported high levels of somatic complaints are found to have depression after an in-depth structured interview with a psychiatrist.

In this study, the antecedents of somatic complaints are sociodemographic factors: age, gender, income, and education. I discuss the relationship between somatic complaints and each factor of socio-demographics in the following sections.

Age

Studies commonly held that aging is associated with increased levels of depression (Blazer, Hughes, & George, 1987; Charles, Reynolds, & Gatz, 2001; Turner & Noh, 1988). Some perspectives suggest that older adults are more reactive to depression than younger adults. Repetition of depression activation may cause sensitization. Moreover, changes in the aging brain may alter the way people process emotion, especially negative affect. The structures in the brain that mediate the experience of negative emotion (e.g. the amygdala and limbic system) become more sensitive as people age (Adamec, 1990; Panksepp & Miller, 1996). These neuro-physiological changes increase activation of negative affect when a stimulus, such as stress, is encountered. Thus, reactivity to depression increases as people grow older due to a lifetime of repeated activations of the neural systems that mediate negative affect.

However, not all findings are consistent with this belief, with studies reporting trends that have shown a decrease in anxiety, depression, and distress across age groups (Jorm, 2000). Another set of perspectives suggests that the same process—repeated activation of negative affect—may actually decrease reactivity in older adulthood. In other words, older adults are less reactive to negative affect than younger adults. Diehl, Coyle, and Labouvie-Vief (1996) found that older adults displayed greater emotional control than did younger adults when dealing with stressors. This indicates that as people age, they may cope with depression better and perhaps even become less reactive to depression. These findings are consistent with a growing body of literature suggesting that people regulate their emotions more effectively with age. Lawton (1996) and Schulz (1982) suggested that repetition of negative affect states over many years might decrease the likelihood of triggering such states in the future. Such increases in the threshold for

experiencing negative affect due to repeated activation are known as ‘‘dampening’’ effects (Diener, Colvin, Pavot, & Allman, 1991). Since the evidence regarding age-related differences and changes in the occurrence of depression remains inconsistent, I predict that age is either positively or negatively associated with the levels of somatic complaints.

Gender

Numerous studies have revealed that females consistently report somatic symptoms more frequently than men (Hammond, 1964; Wool & Barsky, 1994). From a psychosocial perspective, Jackson, Chamberlin, and Kroenke (2003) argued that women are more sensitive to setting they perceive as stressful and to a larger extent than men develop multiple complaints as a consequence of psychosocial factors. They found that women had lower satisfaction scores and were particularly critical of their physicians' bedside manner and the time spent with their clinician and thereby this may lead to a mood or anxiety disorder, which endorses a greater number of somatic symptoms. From a physiological perspective, Jackson et al. argued that both sexes are not equally likely to experience troublesome symptoms. They found that women were more likely to report 13 of 15 common physical symptoms as currently bothersome, and that these gender differences persisted even after researchers controlled for the higher comorbidity of depressive and anxiety disorders in women. A number of empirical studies have also shown that females complain of physical symptoms more frequently than males (Achenbach, 1991; Pennebaker, & Watson, 1991; Klepp, Aas, Maeland, & Alsaker, 1996; Kim, Uchiyama, Liu, Shibui, Ohida, Ogihara, & Okawa, 2001; Hetland, Torsheim, & Aarø, 2002; Tang, Wu, & Tang, 2007). Therefore, I propose that men report less somatic complaints than women.

Income

Wadsworth and Achenbach’s (2005) social causation hypothesis provides theoretical

grounding for a relationship between income and somatic complaints. Their hypothesis posits that people with low socioeconomic status (SES) develop psychological problems because they live with adversity. Studies of exposure to adverse life circumstances have showed that high levels of environmental stress can produce psychopathological responses, such as depression (Mollica, McInnes, Poole, & Tor, 1998). Poverty is one such adverse life circumstance, which may directly cause psychological problems or may activate a diathesis (genetic or otherwise). Elevated incidence rates of disorders among people living in poverty are interpreted as supporting the social causation hypothesis (Murphy, Oliver, Monson, & Sobol, 1991). Also, a number of mental health studies have shown that low wages lead to depression (Ettner, 1996; Brown, & Bifulco, 1990; Hamilton, Merrigan, & Dufresne, 1997; Zimmerman, & Katon, 2005). Therefore, I expect that people with higher income report less somatic complaints than those with lower income.

Education

Education has been shown in numerous studies not only to foster good physical and mental health (Kaplan, Pamuk, Lynch, Cohen, & Balfour, 1996; House, 2002), but also to contribute to differences on depression levels (Stice, & Moore, 2005; Weiss, Francis, Senf, Heist, & Hargraves, 2006; Francis, Weiss, Senf, Heist, & Hargraves, 2007). Guth's (2000) found people without a high school degree were significantly more depressed than those with a high school degree. Francis et al. (2007) argued that literacy skills lead to higher sense of self-efficacy and thereby this contributes to lower levels of depression. Therefore, I predict that people with higher educational levels report less somatic complaints than those with lower educational levels.

The Relationship Between Somatic Complaints and Economic Expectations

Beck (1967, 1976) proposed that depressed people have negative views of the future because they are inaccurate in their negative views. Beck developed the depressive bias hypothesis that as depressive symptoms increase in severity, judgments become more negatively biased. Under this hypothesis, people with the highest levels of depressive symptoms are expected to exhibit substantial bias and unrealistic pessimism (Beck, 1967, 1976). Several studies were consistent with his hypothesis. Peterson, and Seligman's (1984) investigation revealed that depressed people had a more pessimistic explanatory style compared to people who are not depressed; Beck, Riskind, Brown, and Steer's study (1988) indicated that depressed people reported more hopelessness than people who not depressed; Hill, Oei, and Hill's (1989) investigation showed that people with higher levels of depression had more negative automatic thoughts and dysfunctional attitudes than people without depression; Gotlib, Krasnoperova, Yue, and Joormann (2004) reported that depressed people processed negative information more thoroughly and efficiently than people who are not depressed. Based on the above studies, I infer that people reporting more somatic complaints tend to form negative economic expectations. That is, people reporting more somatic complaints have a lower income expectation and higher price expectation than people reporting less somatic complaints. Thus, I hypothesize:

> *Hypothesis 1:* Somatic complaints mediate the relationship between sociodemographic characteristics and economic expectations.

Gender as a Moderator of the Effects of Income

Several studies have shown that women are less concerned about financial incentives than their male counterparts (Stamps and Boley Cruz, 1994). Sansone and Harackiewicz (1996)

offered a possible explanation to support these studies: Women and men differ in their “self regulation model.” That is, women and men differ in the goals they wish to achieve from a particular vocation and their career choices are likely to depend in large part on their expectation that their objectives will be met. Therefore, motivation and vocational goals, then, appear to follow different patterns for women and men (Mitchell, 1984; Morgan, Isaac, & Sansone, 2001). When choosing a career, women value interpersonal goals—such as self-determination, helping people, or working in a pleasant environment—more highly than other types of goals (Morgan, Isaac, & Sansone, 2001; Morgan & Sansone, 1995; Strough, Berg, & Sansone, 1996). Men's goals appear, however, to be more in line with models of extrinsic motivation; hence, they aspire to such things as a good income or high bonus (Eccles, 1994).

Numerous studies have also shown gender differences in job characteristic importance. Salaries or other extrinsic rewards are more important to males than females (Beutell & Brenner, 1986; Dick & Rallis, 1991; Major & Konar, 1984; Marini, Fan, Finley, & Beutel, 1996). For instance, males were found to give higher ratings to job security than females (Beutell & Brenner, 1986; Todisco, Hayes, & Farnill, 1995). However, interesting work or other non-monetary rewards are more important to females than males (Beutell & Brenner, 1986; Major & Konar, 1984; Marini, Fan, Finley, & Beutel, 1996; Martin, 1989; Thacker, 1995; Todisco, Hayes, & Farnill, 1995). For instance, females were found to give significantly higher ratings than males to decision freedom (Beutell & Brenner, 1986), frequent feedback (Beutell & Brenner, 1986; Browne, 1997; Martin, 1989), high status (Beutell & Brenner, 1986; Marini et al., 1996), friendly co-workers (Beutell & Brenner, 1986), friendly supervisors (Marini et al., 1996; Martin, 1989), important work (Beutell & Brenner, 1986; Marini et al., 1996), and family accommodations (Heckert, Droste, Adams, Griffin, Roberts, Mueller, & Wallis, 2001; Jackson et al., 1992;

Redman, Saltman, Straton, Young, & Paul, 1994).

Along these lines, I propose that, for males, the relationships of income with somatic complaints and economic expectations are relatively strong. On the contrary, for females, the relationships of income with somatic complaints and economic expectations are relatively weak. I borrow Sansone and Harackiewicz's (1996) model of "self-regulation" to explain this proposition. My rationale is as follows: According to Sansone and Harackiewicz's (1996) self-regulation model, women and men differ in motivation and vocational goals, and thereby they follow different patterns. Moreover, women value interpersonal goals, and men, however, emphasize extrinsic rewards. Hence, extrinsic rewards, such a good income, exert greater influence on males compared to females. I predict that the effects of income on somatic complaints and economic expectation are relatively stronger for males. On the contrary, the effects of income on somatic complaints and economic expectation are relatively weaker for females. Therefore, I hypothesize the following:

> *Hypothesis 2: There is an interaction of gender and income on somatic complaints. Compared to females, income of males would be more negatively related to somatic complaints.*
>
> *Hypothesis 3: There is an interaction of gender and income on economic expectations. Compared to females, income of males would be more significantly related to economic expectations.*

Methods

Data

To conduct these analyses, I used data from the Survey of Economic Expectations (SEE), a periodic module in WISCON, a continuous national telephone survey conducted by the

University of Wisconsin Survey Center (UWSC). The survey was designed to collect rich, detailed data on numerous dimensions of economic expectations. The SEE module elicited expectations of significant personal events. In all waves of SEE, respondents were asked to report expectations for income and the movement of price. In the 9-15 wave of SEE, respondents were asked to report their weekly behavior frequency of somatic complaints. The study now has sixteen waves of data, but for the purpose of the present study, I used only data from ninth wave to fifteenth wave.

The main features of sampling procedures were as follows. The WISCON interviewers attempted to contact with a sample of telephone numbers purchased by UWSC from Nielsen Media Research. The sample was representative of currently working residential telephone numbers in the continental United States, including both listed and non-listed numbers. Nielsen updated the sample three times a year. It has been estimated that approximately five-seven percent of United States households do not have telephones and so were not represented in the sample. When a telephone number was called, it was first determined whether or not a working residential telephone number had been reached. Each such number was then screened to verify that it is associated with a household located in the continental United States and containing at least one household resident age 18 or older. If so, the numbers of males and females age 18 and older were ascertained. One person was then selected from among the eligible adult household members. Only the selected person could be interviewed, no substitutions being allowed. Hence the respondent-selection probability varied across households, with adults living in single-adult households being drawn with higher probability than adults living in multiple-adult households.

The WISCON interviewers called about 40 telephone numbers per day and found, on average, that about 20 of these numbers either were not in service or were at business locations.

Among the remaining 20 or so numbers, they obtained an interview at slightly over 10 households, on average. Thus the effective response rate (the ratio of interviews to potential residential phone numbers called) was over 50 percent. Non-response was fairly evenly divided between refusals to be interviewed and cases in which ten phone calls made over several weeks found the appropriate respondent to be not at home or otherwise unable to complete the interview.

The SEE module in this study was included during the periods May-July 1998, June-August 1998, November 1998-February 1999, July-November 1999, February-May 2000, September 2000-March 2001, and January-May 2002. Each of these periods corresponds to a wave of the SEE. The total number of completed interviews is 3297. Of the 3297 samples, Table 1 presents the valid number and percentage of each variable. The figures in table 1 shows that the variable “Income” has the most missing values (the number of missing values=770).

Insert Tables 1 here

Measures

The descriptive statistics, reliability estimates, and correlation coefficients of this study measures are shown in Table 2. The Cronbach’s alpha coefficient for somatic complaints scale was above the acceptable level of .70 (Nunnally, 1978).

Insert Tables 2 here

Predictors

The analysis focuses on individual-level factors. Among the individual-level predictors, I include two dichotomous variables, gender and education. The gender measure equals to one if the participants are females and zero if they are male. The education measure equals to one if the participants have a high school degree or more and zero if they have less education than this.

I also included three continuous variables. First, income measures one's own total income before taxes in the past 12 months. Income ranges from 8 dollars to 3,100,000 dollars. Second, age measures one's age at his or her last birthday. Age ranged from 18 years old to 98 years old. Third, a seven-item somatic complaints scale (Radloff, 1977), one dimension of the Center for Epidemiologic Studies Depression Scale (CES-D Scale), measures the behavioral frequency (i.e. the number of days during the past week) of somatic complaints during the past week. A sample item is: "On how many days during the past week was your sleep restless?" (All items are presented in appendix.) The average number of days ranged from 0 day to 7 days. More days indicate a higher degree of somatic complaints.

Outcomes

I examined several economic expectation outcomes. The first is a measure of the participants' expectation of the lowest amount that their own total income in the next 12 months before taxed. The participants were asked to report their lowest amount of total income (before taxed) in the next 12 months. This variable ranged from 0 to 1,000 in thousands of dollars. The second is a measure of the participants' expectation of the highest amount that their own total income in the next 12 months before taxed. The participants were asked to report their highest amount of total income (before taxed) in the next 12 months. This variable ranged from 0 to 9,000 in thousands of dollars. The third is a measure of the participants' expectation of price

movement. The item is “During the next 12 months do you think that prices in general will go up, go down, or stay where they are now?” This measure equals to one if participants expect that prices will go up, zero if participants expect that prices will stay where they are now, and minus one if participants expect that prices will go down.

Results

In the results (See Table 3 Below), age had a significant relationship in the expected direction with variables for lowest income expectation, price expectation, and somatic complaints. Gender was significantly related, in the expected direction, with lowest income expectation, highest income expectation, price expectation, and somatic complaints. Income had a significant relationship in the expected direction with variables for lowest income expectation, and somatic complaints. Education was significantly related, in the expected direction, with lowest income expectation, price expectation, and somatic complaints.

Insert Table 3 here

Hypothesis 1 was partially supported (See Tables 4 and 5 Below). I tested the mediated models proposed in Hypothesis 1 using the mediated regression procedure outlined by Baron and Kenny (1986). First, the independent variable should be significantly related to the mediator variables. To keep the data complete, I use only the participants without missing values for each variable in a mediated model. The first regression models of Tables 4 and 5 6 confirm that this condition was met. Second, the independent variable should be related to the dependent variable. The second regression models of Tables 4, 5 and 6 confirm that this condition was partially met. Three betas did not meet this condition. Age ($\beta = -0.004$, $p > .10$) and education

(β = 0.011, $p > .10$) are not significantly related to highestincome expectation (See Table 4 below); income (β = -0.031, $p > .10$) is not significantly related to price expectation (See Table 5 below). Therefore, Hypothesis were partially supported. Third, the mediating variables should be related to the dependent variable with the independent variable included as a predictor in the regression analysis. The third regression models of Tables 4 and 5 confirm that this condition was met. If these conditions hold, at least partial mediation is present. If the independent variable has a non-significant beta weight in the third step, then complete mediation is present. The second and third regression models of Tables 4 and 5 indicate the magnitude of the mediating effects (i.e. the change in the betas of independent variables). The results of the change in betas are as follows (only including betas which met Baron and Kenny's three conditions): The betas of age changed from 0.069 ($p < .001$) to 0.054 ($p < .01$) for lowest income expectation, and from -0.052 ($p < .05$) to -0.040 ($p < .05$) for price expectation; the betas of gender changed from -0.139 ($p < .001$) to -0.129 ($p < .001$) for lowest income expectation, from -0.045 ($p < .05$) to -0.041 $p < .05$) for highest income expectation, and from 0.081 ($p < .001$) to 0.074 ($p < .001$) for price expectation; the betas of income changed from 0.517 ($p < .001$) to 0.510 ($p < .001$) for lowest income expectation, and from 0.308 ($p < .001$) to 0.305 ($p < .001$) for highest income expectation; the betas of education changed from 0.068 ($p < .001$) to 0.048 ($p < .01$) for lowest income expectation, and from -0.053 ($p < .01$) to -0.039 ($p < .10$) for price expectation. These results suggested that somatic complaints partially mediated the relationship of age, education, gender, and income with three economic expectations. Therefore, the results were mostly consistent with Hypothesis 1.

Insert Tables 4 and 5 here

Hypothesis 2 was supported and Hypothesis 3 was partially supported (See Table 6 below). To test Hypotheses 2 and 3, I first assessed the statistical significance of the interaction terms (See Table 6 below). When a term was significant, I then analyzed the form of the interaction by splitting the sample based on gender and running separate regression equations for males and females, as recommended by Aiken and West (1992) (See Table 6 below). Hypotheses 2 and 3 proposed that gender would moderate the relationship of income with somatic complaints and economic expectations. As shown in Table 6 below, there are significant effects of the Income × Gender interaction on the dependent variables of somatic complaints (β = .109, $p < .05$), and lowest income expectation (β = -0.883, $p < .001$). Second, I interpreted this interaction by comparing the regression weights (simple slopes) of income of males with those of females. As predicted, males' income was more significantly related to somatic complaints (β = -0.111, $p < .001$) and lowest income expectation (β = .698, $p < .001$) (see Tables 7 below); females' income was less significantly related to somatic complaints (β = -0.058, $p < .05$) and lowest income expectation (β = .533, $p < .001$) (see Table 7 below). This suggests that gender caused the difference in the relationship of income with somatic complaints, and lowest income expectation. Therefore, Hypothesis 2 was supported and Hypothesis 3 was partially supported.

Insert Tables 6 and 7 here

Discussion

As noted at the outset, the effects of siocodemographic factors on economic expectations have been well documented. Nevertheless, less attention has been given to the theoretical

mechanisms that explain the influence of sociodemographic factors. One potential causal mechanism is somatic complaints—a type of depressive symptoms. With that in mind, the present study made two primary theoretical contributions. First, by examining somatic complaints as a mediator of the effects of sociodemographic factors, I began to explore exactly how and why sociodemographic factors act as predictors of economic expectations. Given that the sociodemographic factors–economic expectations relationship remains relatively untested, explaining any significant relationships is critical. Second, by exploring the moderating effects of gender on the relationship of income with somatic complaints and economic expectations, I found that the effects of income on outcome variables (i.e. somatic complaints and lowest income expectation) are relatively stronger when participants are male. (These interaction effects were examined by looking at the regression weights (simple slopes) of both genders at one standard deviation above and below the mean score of income, as recommended by Aiken and West (1992). See Figures 2 and 3 below) Given that the income-somatic complaints and income-economic expectations relationships remain relatively unclear, explaining the moderating effects of gender on the above relationships help researchers to understand the contingent effects of income on somatic complaints and economic expectations.

It is important to note that personal income was the primary predictor of income expectation rather than price expectation. The insignificant relationship between personal income and price expectation may be due to the differences between income and price. Current price perception rather than current personal income predicts expectation of price fluctuation. The second reason may be that females are less concerned about monetary incentives than males. Thus, the difference between income and price and gender bring about the weak effect of income on price expectation.

One could argue that the maximum and minimum expectations of income are distinguishable. In this study, age and education significantly predicted lowest income expectation rather than highest income expectation. That is, older adults or people with a high school degree have higher minimum income expectation than younger adults or people without a high school degree. On the contrary, older adults or people with a high school degree have similar levels of maximum income expectation to younger adults or people without a high school degree. Also, the partially supported results of the interacting effects between income and gender differentiate the lowest income expectation from highest income expectation. The significant interacting effects appear in lowest income expectation, but not in highest income expectation. Therefore, chances are good that the maximum and minimum value of expectation represent two different dimensions of subjective expectation.

From a practitioner's standpoint, my study has two important implications for economic policy. First, by exploring the mediating effects of somatic complaints on the connection between sociodemographic factors and economic expectations, the government understand people's attitude toward economic development on the basis of personal characteristics, and thereby this will help government predict future wage outcomes or make a long-term monetary policy. Policy makers should develop medical policies that decrease depressive symptoms to raise individuals' economic expectation. Among persons with certain personal characteristics (e.g. females with lower income and lower educational attainment) and with pessimism about future economics, people's pessimism lessens as their somatic complaints have been improved by these medical policies. Second, by studying the moderating effects of gender on the relationship of income with somatic complaints and economic expectations, leaders or managers can adopt different reward policies for males and females to improve their levels of depression or

economic expectations. Specifically, for women, it is relatively important to give interpersonal-oriented support; on the contrary, for men, it is relatively critical to give monetary-related rewards.

Additional Analysis

According to the results in this study, age is negatively correlated with somatic complaints (one type of depressive symptoms). However, a number of studies argued that age is positively related to depression (Blazer, Hughes, & George, 1987; Charles, Reynolds, & Gatz, 2001; Turner & Noh, 1988). Due to these inconsistent findings of age effects, some scholars hold that there is a u-shaped relationship of age with risk aversion or depression. For instance, Beekman, Copeland, and Prince (1999) and Snowdon (2001) reviewed an extensive number of epidemiological studies and concluded that the prevalence of depression appeared to decrease with age but peaked in late old age. Also, Nguyen and Zonderman (2006) pointed out that there were significant age-related increases in somatic symptoms only after approximately 70 years of age. Based on these findings, I propose that there is a u-shaped relationship between age and somatic complaints.

I tested the additional hypotheses using multiple regression analysis. In the regression models, I also entered four variables (age, gender, income, and education) to control their influence on dependent variables.

In the results, all additional hypotheses were supported (See Table 8 below). That is, age had a significant u-shaped relationship with somatic complaints ($\beta = 0.542$, $p < .001$). The predicted turning point of age on somatic complaints is 64 years old and the predicted minimum value of somatic complaints is 1.051 (See Figure 4 below). Thus, the result supported my additional hypothesis.

Insert Table 8 and Figure 4 here

Study Limitations and Future Research Directions

This study has several limitations that need to be addressed. First, all of the data was obtained from self-report survey questions. Thus, this study may have a problem of common-method variance (i.e., variance attributable to the measurement method rather than to the constructs that the measures represent) (Podsakoff, BacKenzie, & Podsakoff, 2003). Second, the sample had many missing values in certain variables (e.g. income), increasing the bias of the results. Third, the data in this study were collected by phone interview, but approximately 5-7 percent of United States households do not have telephones, decreasing sample representativeness; future research should include samples without telephones. The final limitation is that I did not measure the future economic performance (e.g. one-year-ahead income). Many studies have proposed "self-fulfilling prophecy" which is a prediction that, being made, actually becomes true (Merton, 1948; Jussim, 1986; Murray, Holmes, & Griffin, 1996; Madon, Jussim, & Eccles, 1997). Thus, there may be a strong correlation between individuals' expectations and future economic performance. Therefore, it would be fruitful for researchers to obtain a more objective measure of future economic performance to explore a relationship among sociodemographic factors, somatic complaints, and one-year-ahead economic performance.

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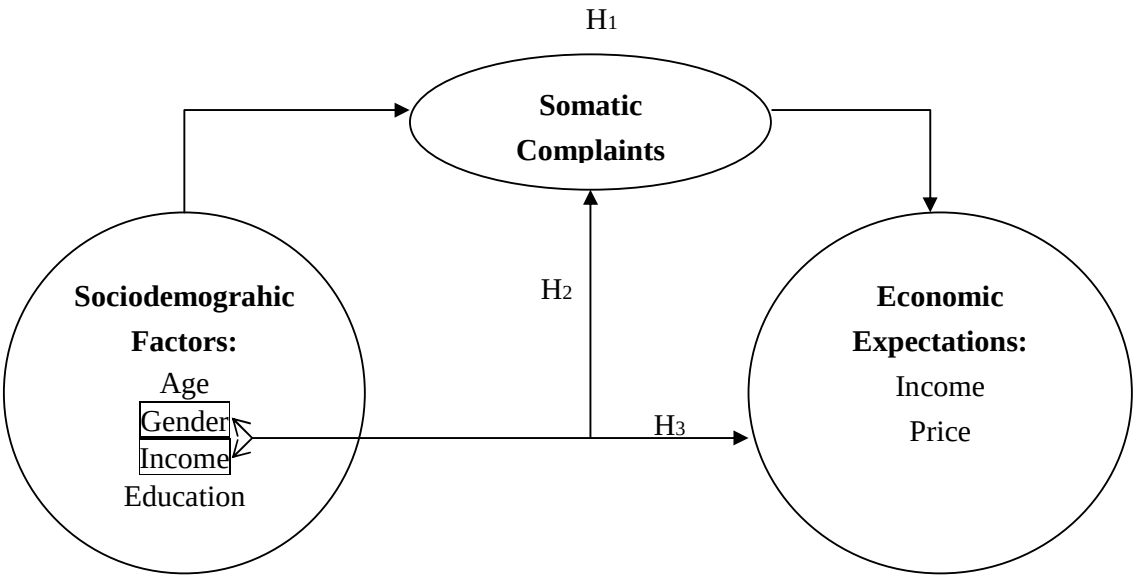
Figure 1: Research Frame



Note: "H" refers to "Hypothesis."

Figure 2: Interaction of Gender and Income on Somatic Complaints

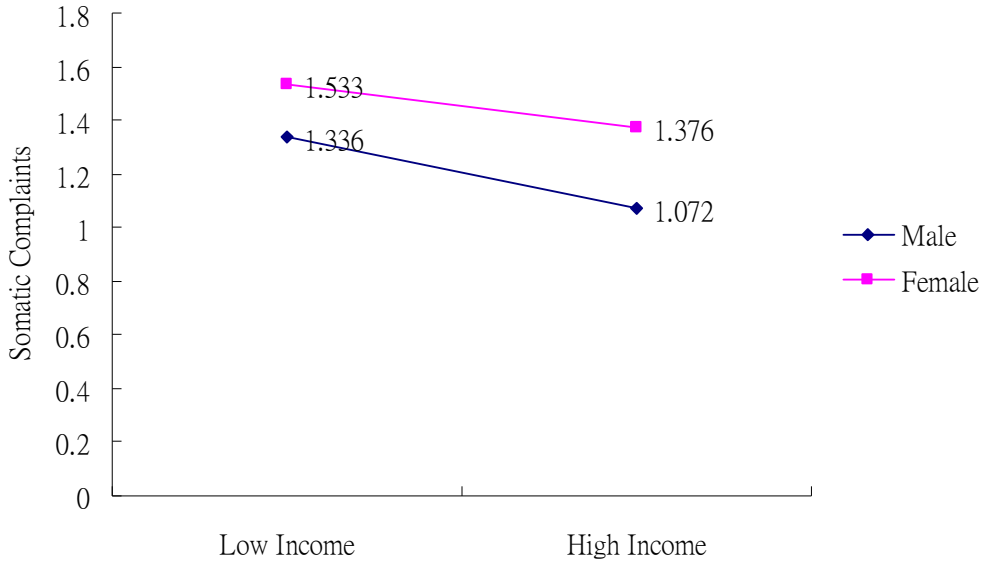


Figure 3: Interaction of Gender and Income on lowest Income Expectation

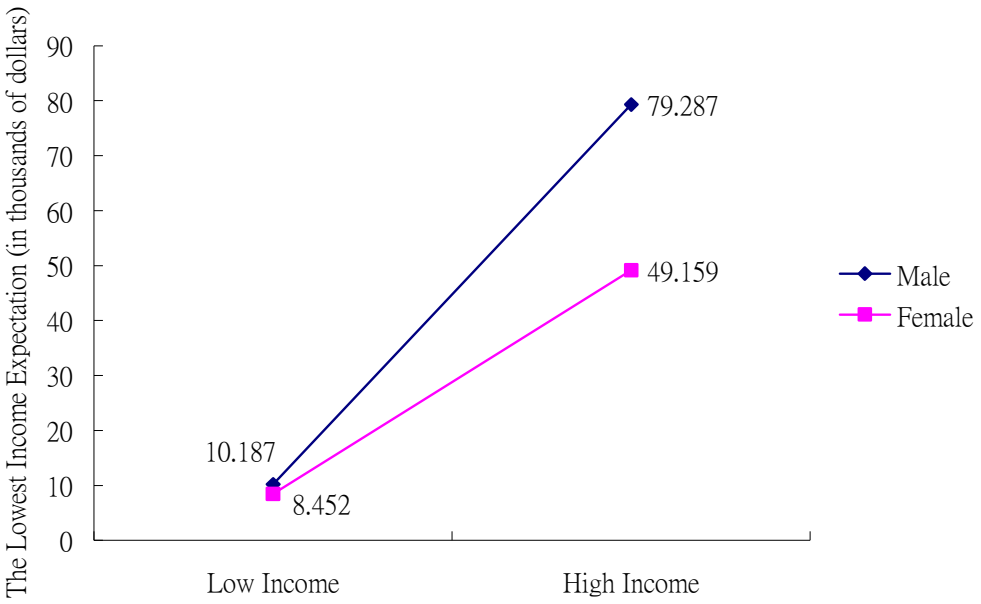


Figure 4: The predicted function of age and age^2: Somatic Complaints Expectation as a Dependent Variable

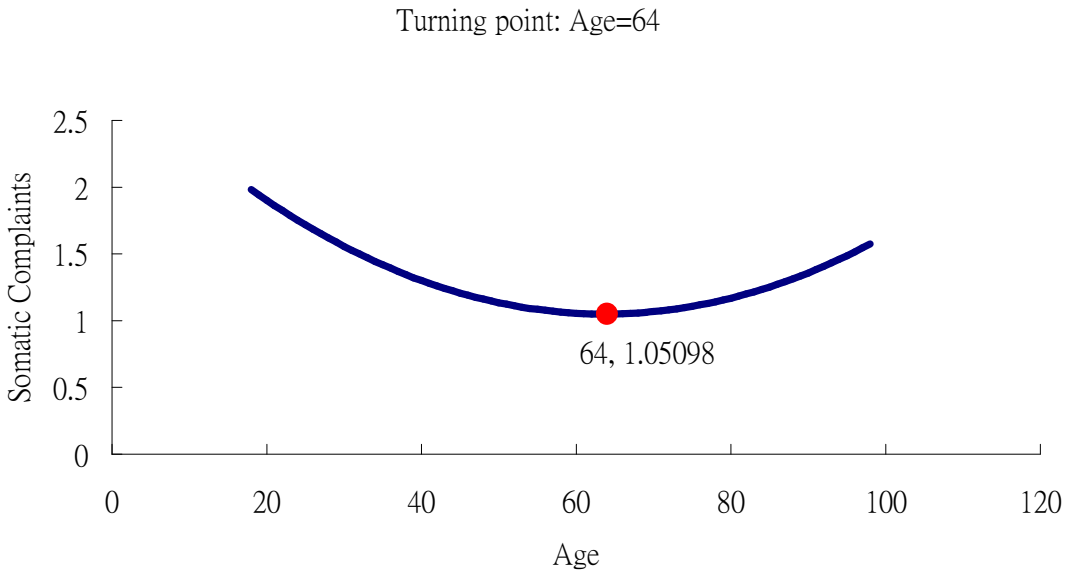


Table 1: The Size and Valid Percentage of Samples

Variables	N	Percent
Age		
Valid	3226	97.85
Missing Values	71	2.15
Education		
Having a high school degree	2997	90.90
Not having a high school degree	291	8.83
Missing Values	9	.27
Gender		
Male	1502	45.56
Female	1794	54.41
Missing Values	1	0.03
Income		
Valid	2527	76.65
Missing Values	770	23.35
Somatic complaints		
Valid	3161	95.88
Missing Values	136	4.12
Lowest Income expectation		
Valid	2563	77.74
Missing Values	734	22.26
Highest Income expectation		
Valid	2601	78.89
Missing Values	696	21.11
Price expectation		
Valid	3247	98.48
Missing Values	50	1.52

Table 2: Means, Standard Deviations, Scale Reliabilities, and Correlations

	Variable	Mean	SD	1	2	3	4	5	6	7	8
1	Age	46.108	16.905	--							
2	Gender	.544	.498	0.059**	--						
3	Income	37031.621	81399.411	0.013	-0.084**	--					
4	Education	.911	.284	-0.039*	-0.026	0.075**	--				
5	Somatic Complaints	1.333	1.303	-0.143**	0.088**	-0.095**	-0.223**	(.776)			
6	Lowest Income Expectation	35.442	47.545	0.073**	-0.164**	0.536**	0.076**	-0.171**	--		
7	Highest Income Expectation	63.165	274.817	-0.002	-0.075**	0.312**	0.037	-0.075**	0.246**	--	
8	Price expectation	.686	.523	-0.034	0.058**	-0.043*	-0.044*	0.088**	-0.071**	-0.038	--

Note: 1. *. Correlation is significant at the 0.05 level (2-tailed); **. Correlation is significant at the 0.01 level (2-tailed)

2. Scale reliabilities are on the diagonal.

3. For education, participants without high school degree=0, those with a high school degree=1; for Gender, Male=0, Female=1.

4. Survey Questions are presented in the appendix.

Table 3: Multiple Regression Models

Dependent Variables	Lowest Income Expectation	Highest Income Expectation	Price Expectation	Somatic Complaints
Adjusted R Sq	0.313	0.098	0.011	0.086
R Sq change	0.314***	0.100***	0.013***	0.088***
F	258.268***	63.260***	7.933***	58.697***
Df	4	4	4	4
N	2257	2293	2482	2439
Variable	**Beta**	**Beta**	**Beta**	**Beta**
Age	0.064***	-0.005	-0.053***	-0.171***
Gender	-0.139***	-0.044*	0.076***	0.097***
Income	0.517***	0.308***	-0.031	-0.069***
Education	0.073***	0.011	-0.053**	-0.206***

*+ p < 0.10, * p < 0.05, ** p< 0.01, *** p< 0.001*

Table 4: Mediated Regression Models: Lowest and Highest Income Expectation as a Dependent Variables

Dependent Variables	(I) Somatic Complaints	(II) Lowest Income Expectation	(III) Lowest Income Expectation	(I) Somatic Complaints	(II) Highest Income Expectation	(III) Highest Income Expectation
Adjusted R Sq	0.092	0.312	0.320	0.087	0.098	0.099
R Sq change	0.091***	0.314***	0.007***	0.088***	0.099***	0.001+
F	56.040***	251.680***	208.303***	54.000***	61.696***	50.105***
Df	4	4	5	4	4	5
N	2207	2207	2207	2239	2239	2239
Variable	**Beta**	**Beta**	**Beta**	**Beta**	**Beta**	**Beta**
Age	-0.161***	0.069***	0.054**	-0.165***	-0.004	-0.011
Gender	0.111***	-0.139***	-0.129***	0.101***	-0.045*	-0.041*
Income	-0.077***	0.517***	0.510***	-0.077***	0.308***	0.305***
Education	-0.212***	0.068***	0.048**	-0.206***	0.011	0.002
Somatic Complaints			-0.091***			-0.039+

*+ p < 0.10, * p < 0.05, ** p< 0.01, *** p< 0.001*

Table 5: Mediated Regression Models: Price Expectation as a Dependent Variable

Dependent Variables	**(I) Somatic Complaints**	**(II) Price Expectation**	**(III) Price Expectation**
Adjusted R Sq	0.087	0.012	0.015
R Sq change	0.088***	0.013***	0.004**
F	58.385***	8.140***	8.524***
Df	4	4	5
N	2415	2412	2412
Variable	**Beta**	**Beta**	**Beta**
Age	-0.172***	-0.052*	-0.040*
Gender	0.098***	0.081***	0.074***
Income	-0.070***	-0.031	-0.027
Education	-0.205***	-0.053**	-0.039+
Somatic Complaints			0.067**

*+ p < 0.10, * p < 0.05, ** p< 0.01, *** p< 0.001*

Table 6: Moderated Regression Models

Dependent Variables	**Somatic Complaints**	**Lowest Income Expectation**	**Lowest Income Expectation**	**Price Expectation**
Adjusted R Sq	.088	.441	0.098	0.011
R Sq change of Interaction Term	.002*	0.128***	0.000	0.000
F	48.120***	356.628***	50.636***	6.414***
Df	5	5	7	5
N	2439	2257	2293	2482
Variable	**Beta**	**Beta**	**Beta**	**Beta**
Age	-0.168***	0.036*	-0.006	-0.052**
Gender	0.067**	0.111***	-0.038	0.069**
Income	-0.167***	1.308***	0.329***	-0.056
Education	-0.203***	0.050**	0.011	-0.052**
Gender*Income	0.109*	-0.883***	-0.023	0.028

*+ p < 0.10, * p < 0.05, ** p< 0.01, *** p< 0.001*

Table 7: Multiple Regression Models By Gender: Somatic Complaints, Lowest Income Expectation, and Highest Income Expectation as Dependent Variables

Dependent Variables	Somatic Complaints (Male)	Somatic Complaints (Female)	Lowest Income Expectation (Male)	Lowest Income Expectation (Female)
Adjusted R Sq	0.094	0.068	0.499	0.297
R Sq change	0.096***	0.071***	0.500***	0.299***
F	41.677***	31.821***	374.456***	160.322***
Df	3	3	3	3
N	1180	1259	1126	1131
Variable	**Beta**	**Beta**	**Beta**	**Beta**
Age	-0.160***	-0.176***	0.044*	0.032
Income	-0.111***	-0.058*	0.698***	0.533***
Education	-0.213***	-0.198***	0.018	0.094***

*+ p < 0.10, * p < 0.05, ** p< 0.01, *** p< 0.001*

Table 8: Multiple Regression Models: Age^2 as an Independent Variable

Dependent Variables	Somatic Complaints
Adjusted R Sq	0.097
R Sq change	0.099***
F	53.357***
Df	5
N	2439
Variable	**Beta**
Age	-0.703***
Gender	0.093***
Income	-0.059***
Education	-0.193***
Age*Age	0.542***

*+ p < 0.10, * p < 0.05, ** p< 0.01, *** p< 0.001*

Appendix

Age

Answer categories are the values of age. Scores on the measure range from 18 to 98.

What was your age at your last birthday?

Gender

Answer categories are female (1) and male (0). Scores on the measure range from 0 to 1. Interviewers entered the sex of the person they were interviewing.

Income

Answer categories are the values of income. Scores on the measure range from 8 to 3,100,000.

And, just roughly, what was your own total income, from all sources, in the past 12 months, before taxes?

Education

Answer categories are yes (1) and no (0). Scores on the measure range from 0 to 1.

Do you have a high school diploma?

Somatic Complaints

Answer categories are none (0), one day (1), two days (2), three days (3), four days (4), five days (5), six days (6), and seven days (7). For these items, Cronbach's alpha is 0.776. The average scores on the measure range from 0 to 7.

Now I'm going to read a list of the ways you might have felt or behaved during the past week. Please tell me how many days you have felt this way.

1. On how many days during the past week did you feel bothered by things that usually don't bother you?

2. On how many days during the past week did you not feel like eating; your appetite was poor?

3. On how many days during the past week did you have trouble keeping your mind on what you were doing?

4. On how many days during the past week did you feel that everything you did was an effort?

5. On how many days during the past week was your sleep restless?

6. On how many days during the past week did you talk less than usual?

7. On how many days during the past week did you feel you could not get going?

Income Expectation

Answer categories are the values of lowest or highest income expectation. Scores on the measure of lowest income expectation range from 0 to 1,000; scores on the measure of highest income expectation range from 0 to 9,000 (in thousands of dollars).

Now I would like to ask you some questions about your own (personal) income prospects in the next 12 months.

1. What do you think is the lowest amount that your own total income, from all sources, could possibly be in the next 12 months, before taxes?

2. What do you think is the highest amount that your own total income, from all sources, could possibly be in the next 12 months, before taxes?

Price expectation

Answer categories are down (-1), stay where they are now (0), and up (1). Scores on the measure range from -1 to 1.

During the next 12 months do you think that prices in general will go up, go down, or stay where they are now?