

**Planning for the future**

Matthew Wyble

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Professor Frank Stafford

## Introduction

*“He who fails to plan, plans to fail.”*

For Project 3, I explored and analyzed both the causes and effects of planning for the future. In order to determine these outcomes, my analysis looked at a variety of variables from the early 1970's that serve as rough metrics for the focus individuals put on planning for their futures. To consider the effects planning has on various aspects of a person's life, my analysis controls for many of the additional factors that impact the ending result, such as wage, gender, and income level. In order to further bolster this analysis, I used data that is causal when related to planning (gender, race, age, etc.) in order to determine the underlying motivations these agents had in using their chosen level planning. Factors such as genetic predisposition due to background effects are good examples of these obviously causal relationships.

When taken together, these analyses provide some insight into individuals' motivations for planning and the payoffs they experience from doing so. The intent of this project is to provide insight into individuals' rationality, their ability to plan, and the efficacy of their plans from a long-term perspective when exogenous factors are controlled for. My hypothesis for this project is that those who focus on planning should lead to objectively better outcomes on average than those who do not, because they will be more rational in their long term decision making and utility maximization.

## Methods

For this study, I used data from the Panel Study of Income Dynamics (PSID) from a number of years. As a proxy for the importance placed on planning, I used a set of variables that asked respondents if they often planned ahead consistently or if they lived life day by day.

This question was asked between 1968-1972 and 1975 (variables V296, V771, V1438, V2149, V2744, and V4089, respectively.) I used responses given to a question regarding views of the future that was asked between 1968 to 1972 (variables V308, V783, V1450, V2161, V2755.) This question asked the heads of the household how thought about the future and planned. Their answers were reported on a 5 point scale, with 1 signifying that the respondent “Think[s] a lot about things that might happen” and 5 signifying that the respondent “Usually just take[s] things as they come.” The values of 2, 3, and 4 represented a middle ground of ascending spontaneity acceptance. The respondents who did not answer the planning question (signified by a value of 9) were omitted for the purposes of these analyses after being shown to have no statistically predictive power and small size (less than 1% of the sample.) The remaining variables were used to make a single dummy variable which was given a value of 1 for responses 1, 2, and 3 and a value of 0 for responses 4 and 5 in the case of both the variables relating to philosophy towards planning and amount of time spent planning (see the section labeled “Self reported planning as a proxy for actual planning” for a discussion of the effectiveness and potential issues of this approach.)

I used a composite of the planning response values for all 6 years to determine what factors affected their planning. Furthermore, I also examined individual annual responses separately in the context of a number of potential “event variables” to see if agents were likely to change their planning tactic after a major event such as a birth or death in the family. Finally, I used the findings from these analyses to determine what effects planning had on an individual’s future with respect to various timeframes and numerous aspects of the respondent’s life: marriage, parenthood, retirement, health, income, and quality of life were

some of the many factors considered. The results of these analyses, their interrelationships, and their relationship to individuals' focus on planning for the future are all analyzed and interpreted.

## **Results and Discussion**

This project explored planning's effect on a number of variables as mentioned above. The following is an overview of the interpretable results this project discovered in relation to the efficacy of planning. The results and their interpretations appear in terms of the interrelationships between answers in various years to questions regarding planning, the correlation between self-reported focus on planning and actual planning, factors that influence individuals' tendency to plan, and finally the effect that various levels of planning have on other variables—in other words, how planning more or less affected the respondents' lives.

### **Planning over time**

In order to determine how people's planning habits and self reported foci change over time, I examined all five years (1968-1972) of future focus data combined with the six years of data (1968-1972, 1975) on planning tactics. As mentioned above, both data sets were divided into dummy variables representing focus on planning and the future.

Unsurprisingly, these variables exhibited strong correlation, both across individual time periods as well as over time periods both within and across variables. In other words, those who "take life as it comes" were far more likely to plan less and live day by day than those that plan for the future and "plan ahead" regularly. The relationships between the planning variables are indicated in the chart below, where the correlations between years are listed.

	PLAN68	PLAN69	PLAN70	PLAN71	PLAN72	PLAN75
PLAN68	1					
PLAN69	.4970	1				
PLAN70	.4717	.4933	1			
PLAN71	.4725	.4323	.5378	1		
PLAN72	.4062	.4660	.5045	.5505	1	
PLAN75	.315	.3547	.3613	.4047	.4125	1

The correlation is stronger between responses that are close together chronologically, but there is significant positive correlation present for every relationship—in other words, those who say they plan ahead are much more likely to give the same response in the future. While not particularly insightful independent of additional analysis, the relative constancy of philosophy towards planning validates the usage of single response sets as representative of an individual’s planning strategy (or lack thereof.) For the majority of my analysis, I used self reported planning tactics in 1972 (V2744) transformed into a dummy variable as described above. Cases where different variables or methods were used are noted whenever necessary.

### **Self reported planning as a proxy for actual planning**

One obvious concern with using self-reported planning statistics is whether or not the responses have a strong positive correlation with actual focus on planning done by an individual. In other words, it could be possible that respondents overestimate their own planning ability—a twist on the old adage that “it is a wise man that knows himself a fool.” In order to explore this further, I looked at respondent’s predictions and how they lined up with actual future outcomes based on their self reported planning style.

An alternative but also viable explanation for such a difference in planning could involve the economic concept of bounded rationality. Originally conceived by economist Herbert Simon, bounded rationality refers to the diminishing (or vanishing) marginal returns of planning

farther into the future due to imperfect forecasting and random events. Unlike simple macroeconomic models, the act of planning itself requires time and resources that may be better utilized by other pursuits. Given this, it could be that the “most rational” agents would be those that plan only to a certain point, instead of sacrificing utility by planning farther into the future than is efficient.

The first variable I considered to determining the validity of self-reported planning was projected retirement age. I created a new variable for retirement years by combining responses from a 1978 question about self predicted age of retirement (V5951) with the respondent’s age in 1972 (V2542), adding six years to account for the time gap between the questions. Based on this, I created a new variable for the projected year that respondents thought they would retire, and compared it to actual year of retirement reported in 1995 (ER5071) for both those that were classified as being heavier planners in 1972 and those who claimed to live more day to day.

I regressed actual retirement year on predicted retirement year for both those that self reported as planning more<sup>1</sup> as well as those that reported planning less.<sup>2</sup> As expected, the standard errors of those who planned more were much smaller—roughly one half the size of those who reported living for the moment. Another way to consider this is to look at the average differences between actual and predicted retirement age. On average, those who planned more were 2.02 years off in their predicted and actual retirement year, while those who planned less were 2.17 years off. While this is not an extremely large difference, it is statistically significant at the 5% level. It may be that other factors at play cause it to be an

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<sup>1</sup> Appendix: Retirement prediction for plan ahead

<sup>2</sup> Appendix: Retirement prediction if plan day by day

underestimate of the actual difference—namely, that those who planned more may have been more responsive to random changes in macroeconomic or individual conditions, and may therefore be willing to adapt at times when those who planned less would not. Regardless, those that planned were more accurate when estimating when they would retire than were those that planned less, as my hypothesis predicted.

Another test that serves as a strong validation of the efficacy of planning and its correlation with self-reported planning is the link between the predicted number of children given by a head of household and the actual number of children the household has in the future. In order to examine this, I compared the projected number of children in 1972 to the actual total number of children as of 1984. Even when age and other factors had been taken into account, regressions on the responses of those who planned more had significantly greater predictive power and lower standard error than of those who were not as future focused.<sup>3</sup> Not surprisingly, this was especially true among women, who have a greater control over the reproductive process. However, even in the gender nonspecific data, as the attached log shows, the standard error was 0.0724097 for those who planned more, and 0.100317 for those who planned less, a clear difference in accuracy between the two groups.

These are some of the many tests that show the predictive accuracy of those that plan more into the future. In each case, those who live day-to-day have significantly higher deviations from the predicted output than do those who plan. One interesting question from this is the planning causality involved—are those who report planning ahead simply better at forecasting their own actions, or do they instead have an above-average discipline in

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<sup>3</sup> Appendix: Projected children

conforming to their predictions? This point is certainly both interesting and statistically difficult to determine. However, it is not central to this project's analysis of the planning variable. The important point is that all analyzed prediction data validates the use of self reported planning focus as a strong proxy for actual planning focus.

### **Causes of planning**

In order to look at planning more in-depth, it is helpful to determine some of the psychological and economic factors that determine how individuals look at the future. There are three main areas for this portion of the study: macroeconomic and political changes, background and demographics, and specific events. This project analyzed each in turn, starting with macroeconomic and political changes.

#### Macroeconomic and political changes

For this area of the project, I decided to look at how people's planning attitudes shift in aggregate with changing times. Do people plan more during a recession, when war is imminent, in an election year, etcetera? Unfortunately, the limited time series (only 6 years of responses) makes some of these questions difficult to answer with a reasonable degree of statistical significance. However, some strong inferences can still be drawn.

In order to determine how individuals' perception of the economy might affect how they plan, this project used data from the Consumer Sentiment index (CSI) (run, of course, by the University of Michigan.) For the purposes of this analysis I looked at data from 1966 to 1972. The unit-less measure of consumer confidence was collected quarterly at the time. I generated a new variable by averaging the responses of each quarter in order to create an average of consumer confidence by year. I also generated a new variable on the change in

consumer confidence from the previous year. Finally, I created a variable containing all responses to questions of planning for the entire five year period.

Subsequently, I ran a regression of reported planning style on one year, two year, and current year CSI values.<sup>4</sup> As you can see from the attached regression result, the one year lagged value of consumer confidence is statistically significant at the 5% level, and is positively correlated with planning behavior, even when other pertinent factors had been accounted for. Current consumer confidence has surprisingly little effect on current planning behavior, which suggests that individual agents take time to modify their behavior in a shifting marketplace and are reacting to the results of the previous year in their current planning strategy. It appears that a higher CSI index value in the previous year encourages more planning. In a stronger market, individuals are able to spend more time forecasting and planning their actions, such as those dealing with financial investing or saving for college. The reverse often has the opposite effect—during an economic downturn, individuals have less time and resources to focus on the future due to their more immediate concerns.

It is interesting that the change from the previous year has a strong negative relationship to planning percentage. The economic intuition to this is not immediately obvious. However, there are some reasons why this might occur: one could imagine that individuals having recently experienced a more challenging economic market may be wary and more cautious in the following year, even if market conditions have improved dramatically since then.

A similar effect occurs with inflation and planning variables. Using historic data from the Bureau of Labor Statistics I measured the effect of inflation and lagged inflation on tendency to

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<sup>4</sup> Appendix: Consumer confidence

plan. When regressed separately against planning tendency, these factors are relatively significant; however when used in conjunction as in the attached log, they are both statistically insignificant at the 5% level.<sup>5</sup>

As can be seen in the attached, inflation is positively correlated with planning. Higher inflation during the time that the respondents answered the question about planning made it more likely that they planned more. There are some basic macroeconomic intuitions for this: inflation tends to be higher in times of high GDP growth, which could also cause people to plan ahead more. Also, it could be that an influx of money into the stock and bond markets by those consumers eager to invest in order to prepare for the future lowered the interest rates, creating lower costs of capital and larger economic investment and growth.

The effect of the previous year's inflation is also statistically significant when considering time spent planning in the current year. This is not surprising—consumers in a year after a year of high inflation would be more likely to focus on the present because they have just experienced a year where the real value of money dropped rapidly. In such situations, future returns become less appealing because the real value of money in the future (given sustained inflation at the same rate) would be lower.

These two examples both underscore the same point: effects from the previous year shake consumers' confidence or future outlook and make it more likely that respondents spend less time planning for the future. When future prospects seem poor, individuals are less likely to plan for the future. Furthermore, times of poor economic performance create situations where more immediate needs may trump those of planning for the future—it is certainly more

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<sup>5</sup> Appendix: Inflation

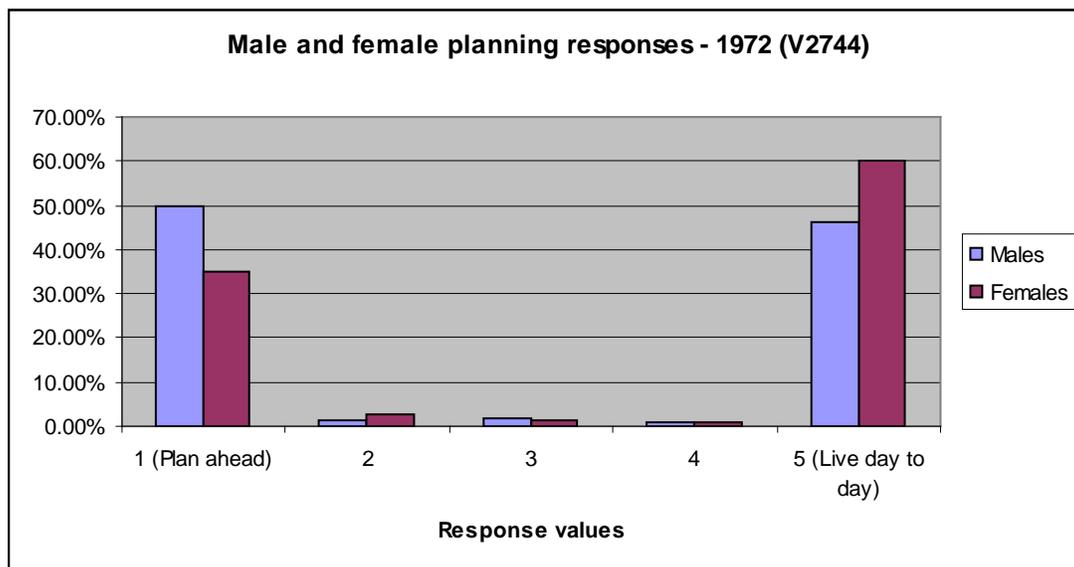
difficult to plan for the future when one is struggling to make enough money to cover food and shelter.

### Background and demographics

Another area that I hypothesized would be significant were the effects of demographics and specifics of origin on planning behavior. For this project I focused on gender, race, age, family background, and other factors in an effort to determine what factors had significant influence on respondents' tendency to plan. The first area I considered was gender.

#### *Gender*

In order to consider the effects of gender on planning, I created a percentage breakdown of each gender and how they responded to question V2744, self reported planning. In the following graph, the values from 1 to 5 signify expanding levels of spontaneity. In other words, those who reported a 1 plan ahead and those who reported a 5 live day by day.



As you can see from this graph, females were significantly more likely to respond that they lived more day to day than males were. While it is true that females in this sample made

less money than the males on average, this relationship holds even when considerations of income are taken into account. Men are significantly more likely to report planning ahead at any reasonable level of significance.

#### *Risk avoidance*

One area that can be shown to influence planning behavior significantly is feelings towards risk. Those who are more risk averse also plan more often. This is in line with microeconomic concepts of insurance—planning is in a sense a form of personal insurance. The “payment” is the increased time and energy required to plan ahead, and the payoff is that future consumption and wealth can be smoothed out as a result. It is not hard to imagine that more risk averse people would find the marginal utility of spending an additional unit of time or effort on planning more and would therefore plan ahead more than would someone who is risk neutral or even risk loving. Unsurprisingly, this relationship holds in the data.<sup>6</sup> Using V397, a metric for risk avoidance based off responses to a number of questions in 1968, it is clear that being more risk averse is strongly correlated with planning more often.

#### *Childhood home*

The area where one spent their childhood was another factor that I hypothesized would be a significant factor influencing planning strategy. My hypothesis was that those that grew up in a fast-paced urban environment would plan more than those who were from a rural or farm environment. In order to test this, I ran regressions on a series of dummy variables created from V312, a variable that asks the respondents the urbanity of the area where they grew up. These dummy variables were then regressed against planning. However, no

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<sup>6</sup> Appendix: Risk aversion

statistically significant variables were found—it appears that those from urban areas are just as likely as those from rural areas to plan ahead. A similar test using the Beale-Ross Rural-Urban Continuum Code which ranks urbanity based on a specified metric was also performed.<sup>7</sup> This also produced similarly uncorrelated results—apparently neither the childhood home nor the current population setting of the respondent affect how they plan for the future.

### *Race*

Race is also a potential factor that could affect how a person plans. This project uses a set of dummy variables based upon of the original variable (V2828) that corresponds to various racial identifications. Regressing against these variables creates no statistically significant relationship. However, regressing on planning with only the dummy variable of white or nonwhite produced a statistically significant value. This has some intuition behind it—the dummy variable serves as a measure of the responses of whites and nonwhites in the population. Those identified as white were far more likely to plan ahead than their nonwhite counterparts, even when age, region, and income have all been accounted for.<sup>8</sup>

### *Age*

I took a look at age as a metric and used it in conjunction with V1942 in order to determine the affects of age on planning. The null hypothesis that age has a positive affect on planning ahead is rejected at the 1% significance level, and it seems clear that as one gets older, one does focus more on day-to-day activities.<sup>9</sup>

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<sup>7</sup> Appendix: Urbanity

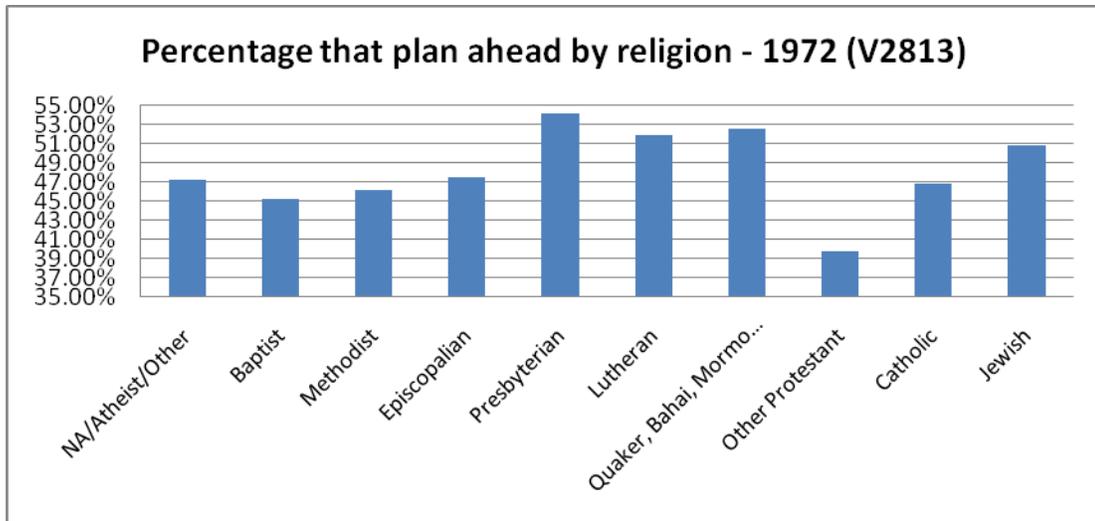
<sup>8</sup> Appendix: White or nonwhite

<sup>9</sup> Appendix: Age and planning

As you can see, there is a strong, statistically significant negative correlation between age and time spent planning. In other words, those that are older tend to live more day-by-day than those that are younger. This holds over the entire sample—running separate regressions for different age brackets (18-30, 31-40, 41-50, 51-60, 61-70, 71+) yielded similar results across the board. I found this result interesting, considering the common belief that the young are not as concerned about the future—this result strongly contradicts the commonly held belief that youth do not actively consider and plan for their future. There may also be some survivor bias that diminishes the strength of the relationship—perhaps those who are more methodical in their planning live longer as a result.

### Religion

Another area that had strong significance in determining planning was the respondent's religion. As you can see in the graph below, Presbyterians were nearly 15% more likely to plan than were non-denominational Protestants. This could have something to do with the each religion's different theology. For example, some faiths stress trusting in their deity and this may affect the planning habits of members of different religions or denominations. In addition, some socioeconomic trends in various denomination membership could also affect these responses.



There is also reason to think that religion itself might not be a completely causal variable with respect to planning. For instance, those who plan more may find that the social network available through some of these organizations advantageous for non-religious reasons. In addition, a version of Pascal's Wager may be in effect—perhaps those that plan more often would be attracted to some religions because their planning goes so far as to extend into the afterlife.<sup>10</sup>

#### *Military veteran status*

Since the responses to this question occurred during the Vietnam War and during a time when military veterans from the Korean War and World War II were middle aged, the proportion of war veterans in the respondent sample was significant, 31.97% of all respondents. Using the 1972 responses to whether or not the respondent was a military veteran (V2825), I regressed their planning tendencies on veteran status and gender (age was shown to be statistically insignificant.) As you can see in the attached regression, both factors were

<sup>10</sup> [http://en.wikipedia.org/wiki/Pascal's\\_Wager](http://en.wikipedia.org/wiki/Pascal's_Wager)

statistically significant at any reasonable significance level.<sup>11</sup> While the gender statistic remained similar to that of previous regressions, veteran status was also positively correlated. In other words, those who were veterans were significantly more like to plan ahead, even after the effects of age, gender, and other variables had been accounted for.

This finding, while not completely surprising, does lead to some interesting results. As mentioned later, self reported planning tendency has strong positive correlation to individuals' savings rate—the more you plan, the more you save. With proportionally fewer armed services veterans today, it seems plausible that the overall drop in average personal savings rates may have occurred, at least in part, because fewer citizens have been through the sort of traumatic experiences that war brought over 30 years ago. It makes some intuitive sense that such trying experiences might make a person more sober and cautious in the future and therefore more likely to plan ahead, even though notable exceptions such as veterans who have suffered from Post-Traumatic Stress Disorder have also occurred.

### **Effects of planning**

Having considered the validity and causes of a person's desire to plan, the final aspect of study for this project is the effect that planning has on an individual's current and future life, actions, and circumstances. In order to provide some clarity, this project is organized into major thematic sections with subsections for analyses of different portions of the data. The main areas considered are success and money, family, and health and wellness.

### **Success and money**

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<sup>11</sup> Appendix: Veteran

When considering how planning affected long-term financial success, I hypothesized that in most cases, those who planned more would be more successful since they would be less myopic and more likely to look at the long term effects of their actions instead of merely the short term gain or loss. While effects that would suggest this sort of success were sometimes observed, at times additional planning had little (or even negative) influence on future outcomes. For this portion of the analysis I focused on retirement age, pension level, and housing debt, and their relationships to self-reported practices of planning ahead.

### *Retirement*

In order to analyze retirement age and how it is affected by planning, I created a set of dummy variables for the age, sex, and retirement status (retired or still working) of the respondents in 1980. In order to slightly increase the time distance between questions, I used responses to a 1971 question about planning (V2161.) For all employment status observations, I excluded all options except retired and working (i.e. student, housewife, etc.) in order to control for my desired statistic. The attached results show that even when controlling for age, one's self-reported future-looking status is statistically significant in determining the age at which one will retire.<sup>12</sup>

There are some interesting results from the regression of retirement age on planning strategy. Age, planning, and sex are all statistically significant to the 1% level. Retirement and age have an obvious effect: as age increases, individuals are more likely to be retired. The effects of sex and focus on planning are even more interesting. Being male significantly increases the likelihood that one will still be working later in life. This may be because of early

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<sup>12</sup> Appendix: Retirement age

retirement by mothers. Planning focus has an unexpected effect on retirement: those who reported being more focused on the future were less likely to be retired. It seems unlikely that this is the result of poor planning, but rather those who plan more clearly for the future were also more likely to work for more years in order to save for a comfortable retirement and to ensure their financial security. They have a level of risk aversion greater than that of those who plan less and might retire earlier and with less money and financial security.

### *Pensions*

Pensions are an indispensable portion of retirement income for many Americans. Therefore, this project hypothesized that individuals who planned more would see significantly greater pension amounts. To analyze this, the amount of the respondent's yearly pension earnings in 1992 (V22045) was regressed on using age, sex, and planning level.<sup>13</sup> The null that planning had no or little effect on pension size was rejected at the 5% significance level, with those that reported planning ahead having pension payments of \$2,163.72 more per year than those who lived day by day, even when age and gender had been taken into. This certainly ties into the preceding analysis of working longer if one plans more, but it also has a significantly positive effect when the extra time spent working is accounted for.

### *Loan to value ratios*

Given the current subprime crisis, the topic of planning and loan-to-value ratios is especially important. One common characterization of those who are now defaulting on these types of mortgages is that those who applied for and achieved these mortgages were unable to pay them off, in part, because they failed to look ahead at the future value of their assets. This

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<sup>13</sup> Appendix: Pension amounts

assertion is not strongly backed up by tests relating to planning to loan to value ratios. After considering many different factors, there was not sufficient evidence to reject the null of no effect, even at the 10% significance level.<sup>14</sup>

### Family

Another large area of interest is how planning more affects familial interaction. While it does look like some financial success and security comes with planning more, it is not immediately obvious that similar results will appear in more emotional, qualitative topics that often permeate considerations of family life. For this area of analysis, I considered topics of marital success and reproduction rates.

#### *Marital success*

Marital success as a function of planning is obviously difficult to determine quantitatively. How does one define a successful marriage? As an admittedly rough proxy for this, I used the number of marriages the head of household had had by 1985. The rationale for this is that those who have been married more often would also have been divorced more often as well (I assumed that the probability of being widowed was uncorrelated with the effects of planning.) My hypothesis that those who planned more would have significantly lower divorce rates was not shown to have statistical significance.<sup>15</sup>

As you can also see from the attached results, the number of individuals in the sample that had been married more than 2 times was only 121, which was little more than 3% of the 3999 sample observations.<sup>16</sup> However, this relative infrequency could theoretically lead to

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<sup>14</sup> Appendix: Loan to value ratio

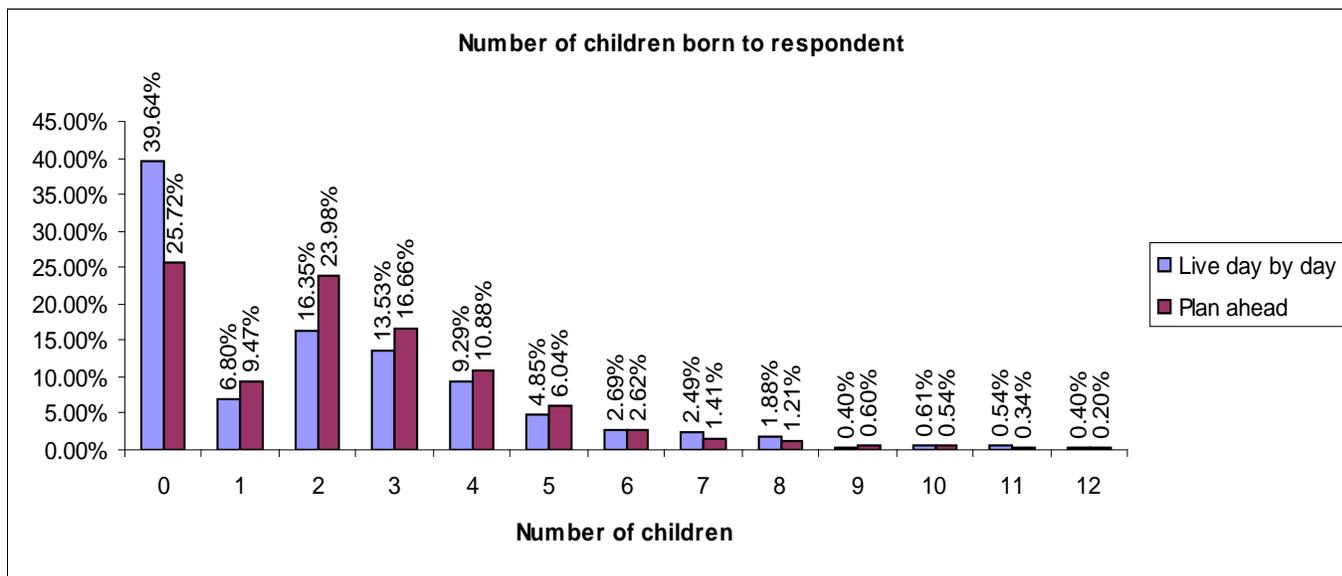
<sup>15</sup> Appendix: Divorce frequency

<sup>16</sup> Appendix: Divorce frequency distribution

some problems with such regressions, but the outcomes were similar even when all respondents claiming more than two spouses were removed. In both cases, linear and quadratic regressions returned values indicating that planning had no statistically significant effect on divorce rates, even when accounting for other potential variables (age, income, gender, etc.). It seems that we are less capable of planning matters of the heart than matters of the pocketbook.

*Number of children*

To continue in the familial trend, I also looked at the effect of planning methodology on the number of children that the male head of household had fathered by 1985 (V11844.) These data points were gathered into the two side-by-side histograms shown below. Families with more than 12 children were truncated (less than .5% of the sample) to increase the graph readability.



These graphs reveal some clear trends: those who plan tend to have more children, even after age and marital status are controlled for. The most compelling statistic here is

clearly the disparity between those having zero or two children. This is counterbalanced with the smaller difference in proportions of those having one or three children. Perhaps those who plan more carefully are able to fulfill at least one part of the American Dream: two kids.

Obviously, there are more than just one or two factors that can be used to more accurately determine the number of children likely to be born to any head of household, but this chart represents at least a portion of the difference that is caused by differing planning strategies among households.

Another consideration is the effect of children on planning—having a child could make the new parent more forward looking than they had previously been. New concerns such as saving for college and considering the child’s future become more important than they had been previously. This statistic almost certainly has causal effects on each other: having a child affects one’s planning habits, and planning affects the number of children one has.

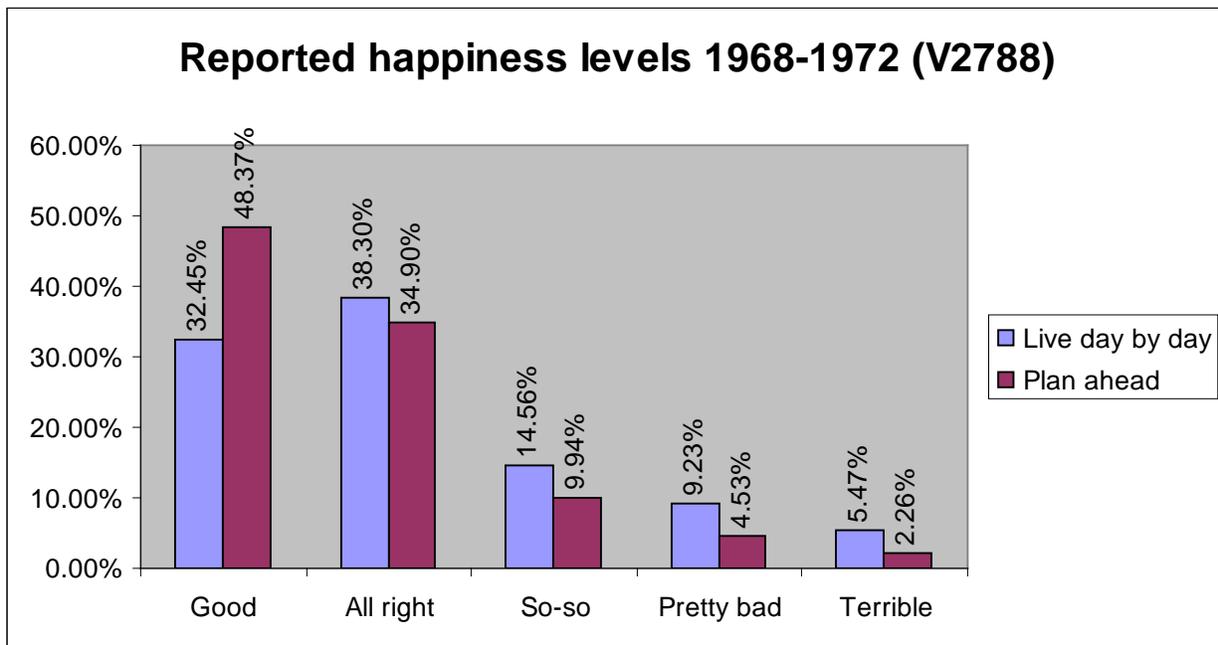
### Health and wellness

The final area of planning’s effects that this analysis explored was the effects of planning on health and wellness. In order to consider this, I looked at metrics of quality of life, physical attributes, smoking habits, and overall health.

### *Quality of life*

Rational, utility—maximizing agents in an economy should only plan if it served their own interests. In other words, additional time and energy spent planning should serve to make the planner happier in the long run. In order to test this theory, I looked at planners and non-planners and their self-reported satisfaction over the five year period from 1968 to 1972 using variable V2788. Following the theme of reporting throughout this project, I eliminated the

small number of responses where the interviewee refused to answer, leaving only five potential responses (1-Good, 2-All right, 3-So-so, 4-Somewhat bad, 5-Terrible.) Histograms representing these findings were then created. The responses of those that plan less are on the left and the responses of those that plan more are on the right, with the x axis representing lower satisfaction levels as the values increase.



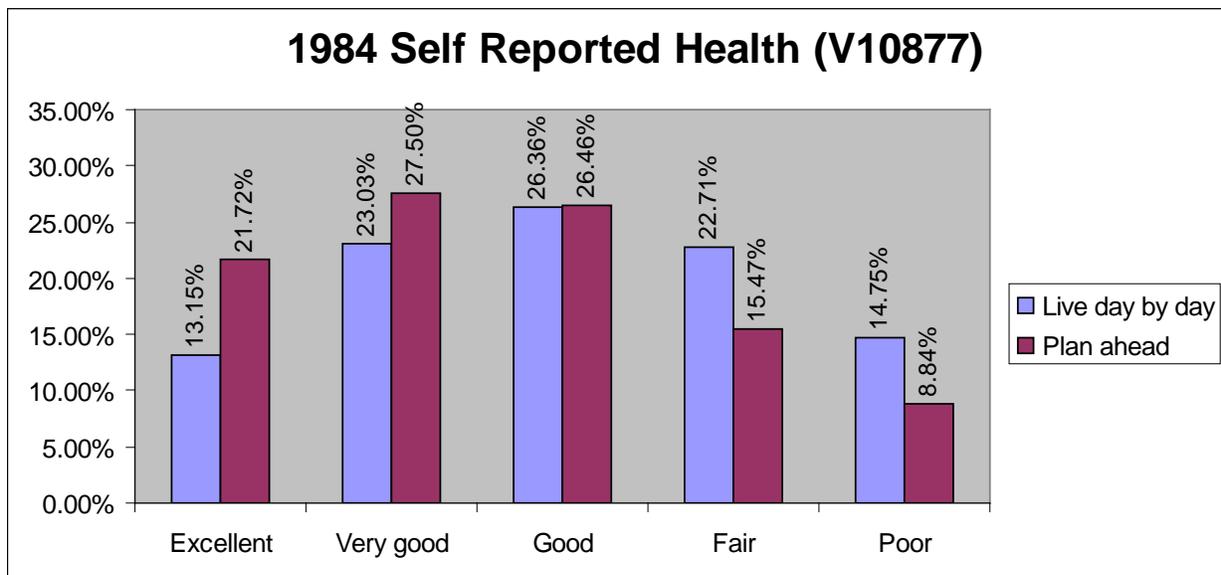
As you can see from the table, planning more raises the proportion of those who indicated the highest level of satisfaction by roughly 16%. However, those who plan less report being modestly pleased with the five year period more often than heavy planners. The differences in proportion of those dissatisfied also saw significant disparities between the two planning styles, with those living day by day being much more likely to have low levels of satisfaction.

There are several reasons why this statistic might shift for those who plan more often. Spending more time planning might allow people to achieve greater success and consumption

levels. However, this comes at the price of additional time spent planning and the potentially higher stress levels of those who do not adopt a *laissez-faire* attitude towards the future. Still, there is a significantly higher proportion of happy people among those who plan more, even when relevant variables had been accounted for. Furthermore, planning greatly reduces the probability of having an exceptionally bad five year period, which agrees with the project’s early analysis of planning as a type of insurance.

*Physical health*

In order to consider personal health, I looked at the self reported health for respondents in 1984 (V10877) and compared their responses to their earlier self assessment of the importance they place on planning. Their health was reported on a 5 point scale of descending wellness (1-Excellent, 2-Very Good, 3-Good, 4-Fair, 5-Poor.) Non-response amounts (8-Don’t Know and 9-NA) were less than 0.001% of the respondent pool and were consequently removed.



The results for this analysis were perhaps the starkest, even when income level, age, and sex had been accounted for. People who plan more were significantly more likely to report excellent health. What is most interesting is that the shift came from the “Fair” and “Poor”. This indicates that planning allows people to avoid the most dire health problems. It is likely that a combination of behavioral differences and more proliferate and higher quality health insurance (and higher income) among those who plan contributed significantly to this avoidance of poor health levels.

### *Weight*

Another area that I considered was the effect of planning on weight in 1980 when regressed against age, planning ability, and sex. While age and sex were obviously strong predictors of weight, planning had no statistically significant effect.<sup>17</sup> It seems that, as with their average marriage failure rates, serious planners do not transfer their forward-looking mindset to their own dietary habits.

### *Smoking*

The final area that I considered was the effect of planning on smoking cigarettes. To study this behavior, I looked at two main variables which were collected in 1986: whether or not the respondent smokes (V13441), and if they do smoke how many cigarettes they smoke a day (13442.) I regressed each of these individually on planning (1972 value), sex, and age. As can be seen in the attached regression, whether or not the respondent smokes, planning ahead is statistically significant and decreases the probability that one smokes by roughly 9%.<sup>18</sup>

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<sup>17</sup> Appendix: Weight

<sup>18</sup> Appendix: Smoker?

Interestingly, neither gender nor age had a statistically significant impact on whether or not an individual smoked.

The second area of analysis was the number of cigarettes smoked per day. Running a regression on these values produced very different results.<sup>19</sup> In this case, both age and sex are statistically significant factors in determining smoking frequency. Furthermore, planning ahead is not statistically significant, even at the 10% significance level. It seems that although planning does decrease the likelihood that one will smoke, it does not have a significant effect on the number of cigarettes smoked if an individual has a habit.

### **Conclusions**

When considering data on planning, basic economic theory would suggest that those who are forward looking tend to achieve higher levels of utility than those who are more myopic in their outlook. It is clear that self reported planning attitude is a strong indicator of actual planning methodology. This correlation can be used to determine the efficacy of individual's planning in their own lives as well as being useful in studying those events and circumstances that cause individuals to plan more.

It is clear that difficult events in individuals' lives make it more likely that they will plan in the future—the effects of lagged inflation, consumer confidence, military service, and more all show this. Additionally, factors such as age, gender, and race have significant effects on how people plan. However, factors such as current environment (physical, political, and economic) have varying and often insignificant effects on planning strategy.

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<sup>19</sup> Appendix: Cigarettes per day (if smoker)

There are many areas wherein those that plan more tend to be rewarded in the future—better paying jobs, larger pensions, a healthier body, and a higher quality of life are all likely outcomes of planning more. However, while there are also some areas in which planning has the sort of positive effect that one would expect, there are also some where no discernible pattern or relationship could be surmised. This is especially true among the more personal, emotional, and harder to quantify statistics like marriage, wellness, and personal happiness for which a numerical value is difficult to determine. However, those who plan are far more likely to achieve financial security and avoid many of the larger pitfalls encountered by those who simply live day by day, even as their planning intensity gradually declines with age.

## Appendix

### 1. Retirement prediction

. reg RetYear PredRetire

Source	SS	df	MS	Number of obs = 167		
Model	11.1047924	1	11.1047924	F( 1, 50) =	0.52	
Residual	1062.81828	165	21.2563657	Prob > F =	0.4732	
Total	1073.92308	166	21.0573152	R-squared =	0.0103	
				Adj R-squared =	-0.0095	
				Root MSE =	4.6105	

RetYear	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
PredRetire	.0575493	.0796212	0.72	0.473	-.1023747	.2174732
_cons	1872.497	158.3664	11.82	0.000	1554.409	2190.585

### 2. Retirement prediction if plan day by day

. reg RetYear PredRetire

Source	SS	df	MS	Number of obs = 128		
Model	37.1713995	1	37.1713995	F( 1, 10) =	1.67	
Residual	223.078601	126	22.3078601	Prob > F =	0.2258	
Total	260.25	127	23.6590909	R-squared =	0.1428	
				Adj R-squared =	0.0571	
				Root MSE =	4.7231	

RetYear	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
PredRetire	.2056509	.1593144	1.29	0.226	-.1493238	.5606256
_cons	1578.522	317.0254	4.98	0.001	872.1453	2284.898

### 3. Projected children

. reg ProjChild TotalChild

Source	SS	df	MS	Number of obs = 153		
Model	75.9273054	1	75.9273054	F( 1, 151) =	38.78	
Residual	295.654394	151	1.95797612	Prob > F =	0.0000	
Total	371.581699	152	2.44461644	R-squared =	0.2043	
				Adj R-squared =	0.1991	
				Root MSE =	1.3993	

ProjChild	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
TotalChild	.6246977	.100317	6.23	0.000	.4264914	.8229039
_cons	-.888874	.2983168	-2.98	0.003	-1.478288	-.2994599

### 4. Consumer confidence

. probit PLAN CS1lag2yr CS1lag1yr CS1lag0yr male age

Iteration 0: log likelihood = -12204.254  
 Iteration 1: log likelihood = -11812.486  
 Iteration 2: log likelihood = -11811.928  
 Iteration 3: log likelihood = -11811.928

Probit regression

Number of obs = 17936

```

Log likelihood = -11811.928
LR chi2(5) = 784.65
Prob > chi2 = 0.0000
Pseudo R2 = 0.0321

```

PLAN	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
CS1lag2yr	.0017313	.0024032	0.72	0.471	-.0029789 .0064415
CS1lag1yr	.0047785	.0023483	2.03	0.042	.0001759 .0093811
CS1lag0yr	.0001059	.002099	0.05	0.960	-.004008 .0042198
male	.1807979	.0220631	8.19	0.000	.1375549 .2240409
age	-.0162532	.0006586	-24.68	0.000	-.0175439 -.0149624
_cons	-.134538	.2298162	-0.59	0.558	-.5849696 .3158936

. mfx

Marginal effects after probit  
y = Pr(PLAN) (predict)  
= .41717786

variable	dy/dx	Std. Err.	z	P> z	[95% C. I.]	X
CS1lag2yr	.0006757	.00094	0.72	0.471	-.001163 .002514	88.7137
CS1lag1yr	.0018651	.00092	2.03	0.042	.000069 .003662	86.0667
CS1lag0yr	.0000413	.00082	0.05	0.960	-.001564 .001647	86.0384
male*	.0698067	.00841	8.30	0.000	.053329 .086285	.730207
age	-.0063438	.00026	-24.70	0.000	-.006847 -.005841	48.0256

(\*) dy/dx is for discrete change of dummy variable from 0 to 1

## 5. Inflation

```
. probit PLAN male age INF2yrlag INF1yrlag INF0yrlag
```

```

Iteration 0: log likelihood = -12204.254
Iteration 1: log likelihood = -11812.173
Iteration 2: log likelihood = -11811.618
Iteration 3: log likelihood = -11811.618

```

```

Probit regression
Log likelihood = -11811.618
Number of obs = 17936
LR chi2(5) = 785.27
Prob > chi2 = 0.0000
Pseudo R2 = 0.0322

```

PLAN	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
male	.1811272	.0220632	8.21	0.000	.137884 .2243703
age	-.0162157	.0006582	-24.64	0.000	-.0175058 -.0149256
INF2yrlag	.0217083	.0281683	0.77	0.441	-.0335006 .0769171
INF1yrlag	-.0592338	.0274949	-2.15	0.031	-.1131228 -.0053448
INF0yrlag	.0581194	.0326201	1.78	0.075	-.0058149 .1220536
_cons	.3481245	.1622639	2.15	0.032	.030093 .6661559

. mfx

Marginal effects after probit  
y = Pr(PLAN) (predict)  
= .4171858

variable	dy/dx	Std. Err.	z	P> z	[95% C. I.]	X
male*	.0699326	.00841	8.32	0.000	.053455 .08641	.730207
age	-.0063292	.00026	-24.66	0.000	-.006832 -.005826	48.0256
INF2yr~g	.0084731	.01099	0.77	0.441	-.013076 .030022	4.40159
INF1yr~g	-.0231199	.01073	-2.15	0.031	-.044154 -.002086	4.58881
INF0yr~g	.0226849	.01273	1.78	0.075	-.00227 .047639	4.56898

(\*) dy/dx is for discrete change of dummy variable from 0 to 1

## 6. Risk aversion

. reg PLAN72 RiskAverse

Source	SS	df	MS			
Model	68.0734378	1	68.0734378	Number of obs =	5636	
Residual	1335.73831	5634	.237085252	F( 1, 5634) =	287.13	
				Prob > F =	0.0000	
				R-squared =	0.0485	
				Adj R-squared =	0.0483	
				Root MSE =	.48691	
Total	1403.81175	5635	.249123646			

PLAN72	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
RiskAverse	.066285	.0039118	16.94	0.000	.0586163	.0739536
_cons	.1458032	.0236022	6.18	0.000	.0995338	.1920725

## 7. Urbanity

. reg PLAN72 Urbanity

Source	SS	df	MS			
Model	.15503763	1	.15503763	Number of obs =	2966	
Residual	741.343614	2964	.250115929	F( 1, 2964) =	0.62	
				Prob > F =	0.4312	
				R-squared =	0.0002	
				Adj R-squared =	-0.0001	
				Root MSE =	.50012	
Total	741.498651	2965	.250083862			

PLAN72	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Urbanity	.0027617	.0035078	0.79	0.431	-.0041162	.0096396
_cons	.4911992	.0151381	32.45	0.000	.4615169	.5208815

## 8. White or nonwhite

. reg PLAN72 WHITE

Source	SS	df	MS			
Model	60.4336605	1	60.4336605	Number of obs =	9520	
Residual	2319.38105	9518	.243683657	F( 1, 9518) =	248.00	
				Prob > F =	0.0000	
				R-squared =	0.0254	
				Adj R-squared =	0.0253	
				Root MSE =	.49364	
Total	2379.81471	9519	.250006798			

PLAN72	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
WHITE	.1593591	.0101193	15.75	0.000	.1395231	.1791951
_cons	.4150382	.0071944	57.69	0.000	.4009357	.4291408

## 9. Age and planning

. reg PLAN72 AGE

Source	SS	df	MS			
Model	16.2055823	1	16.2055823	Number of obs =	2010	
Residual	477.49392	2008	.237795777	F( 1, 2008) =	68.15	
				Prob > F =	0.0000	
				R-squared =	0.0328	
				Adj R-squared =	0.0323	
				Root MSE =	.48764	
Total	493.699502	2009	.245743904			

PREDICT	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	

AGE	-.006061	.0007342	-8.26	0.000	-.0075009	-.0046212
_cons	.6885665	.0327183	21.05	0.000	.6244012	.7527319

### 11. Veteran

. reg PLAN72 SEX VETERAN

Source	SS	df	MS	Number of obs = 9345		
Model	47.7628462	2	23.8814231	F( 2, 9342)	=	97.50
Residual	2288.18087	9342	.244934796	Prob > F	=	0.0000
				R-squared	=	0.0204
				Adj R-squared	=	0.0202
Total	2335.94371	9344	.249993976	Root MSE	=	.49491

PLAN72	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
SEX	.12928	.013056	9.90	0.000	.1036873	.1548726
VETERAN	.0681401	.0112836	6.04	0.000	.0460218	.0902585
_cons	.368986	.0109026	33.84	0.000	.3476145	.3903576

### 12. Retirement age

. reg WORKING AGE PLAN71 SEX

Source	SS	df	MS	Number of obs = 2010		
Model	183.096635	3	61.0322118	F( 3, 2006)	=	681.49
Residual	179.652121	2006	.089557388	Prob > F	=	0.0000
				R-squared	=	0.5047
				Adj R-squared	=	0.5040
Total	362.748756	2009	.18056185	Root MSE	=	.29926

WORKING	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
AGE	-.0198246	.0004643	-42.70	0.000	-.0207352	-.018914
PREDICT	.0381604	.0137018	2.79	0.005	.0112891	.0650316
SEX	.0529048	.0178122	2.97	0.003	.0179724	.0878372
_cons	1.536708	.0283598	54.19	0.000	1.48109	1.592326

### 13. Pension amounts

. reg PENSIONAMT AGE SEX PLAN72

Source	SS	df	MS	Number of obs = 395		
Model	3.0847e+09	3	1.0282e+09	F( 3, 391)	=	13.88
Residual	2.8966e+10	391	74082365.5	Prob > F	=	0.0000
				R-squared	=	0.0962
				Adj R-squared	=	0.0893
Total	3.2051e+10	394	81347350.8	Root MSE	=	8607.1

PENSIONAMT	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
AGE	-255.1682	49.41443	-5.16	0.000	-352.3195	-158.017
SEX	1359.187	1147.43	1.18	0.237	-896.7169	3615.091
PLAN72	2767.549	880.2047	3.14	0.002	1037.023	4498.075
_cons	14848.79	2729.841	5.44	0.000	9481.786	20215.79

### 14. Loan to value ratio

. reg LTV2001 PLAN72

Source	SS	df	MS	Number of obs = 5049		
				F( 1, 5047)	=	2.65

Model	1571.65524	1	1571.65524	Prob > F	=	0.1037
Residual	2994639.72	5047	593.35045	R-squared	=	0.0005
				Adj R-squared	=	0.0003
Total	2996211.38	5048	593.544251	Root MSE	=	24.359

LTV2001	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
PLAN72	-1.11953	.6878798	-1.63	0.104	-2.468073 .2290135
_cons	.5533618	.5057218	1.09	0.274	-.4380724 1.544796

### 15. Divorce frequency

. reg NumberDiv AGE PREDICT SEX

Source	SS	df	MS	Number of obs =	1681
Model	17.4832829	3	5.82776097	F( 3, 1677) =	15.95
Residual	612.80821	1677	.365419326	Prob > F	= 0.0000
Total	630.291493	1680	.375173508	R-squared	= 0.0277
				Adj R-squared	= 0.0260
				Root MSE	= .6045

NumberDiv	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
AGE	.0060869	.0010899	5.58	0.000	.0039492 .0082245
PREDICT	.0342176	.0301859	1.13	0.257	-.0249884 .0934237
SEX	.2051189	.0404544	5.07	0.000	.1257725 .2844654
_cons	.7735831	.0655046	11.81	0.000	.6451038 .9020624

### 16. Divorce frequency distribution

. ta NumberDiv

MARRIAGES-H EAD	Freq.	Percent	Cum.
0	380	10.93	10.93
1	2,421	69.61	80.53
2	577	16.59	97.12
3	84	2.42	99.54
4	9	0.26	99.80
5	5	0.14	99.94
6	1	0.03	99.97
7	1	0.03	100.00
Total	3,478	100.00	

### 17. Weight

. reg WEIGHT PREDICT SEX AGE

Source	SS	df	MS	Number of obs =	1608
Model	191656.381	3	63885.4604	F( 3, 1604) =	72.33
Residual	1416731.22	1604	883.248891	Prob > F	= 0.0000
Total	1608387.6	1607	1000.86347	R-squared	= 0.1192
				Adj R-squared	= 0.1175
				Root MSE	= 29.72

WEIGHT	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
PREDICT	-1.984909	1.517749	-1.31	0.191	-4.961888 .9920699
SEX	21.7628	2.041863	10.66	0.000	17.7578 25.7678
AGE	-.4362757	.0556512	-7.84	0.000	-.5454325 -.327119
_cons	177.238	3.319538	53.39	0.000	170.7269 183.7491

### 18. Smoker?

. reg SMOKER PLAN72 AGE SEX

Source	SS	df	MS			
Model	10.041783	3	3.347261	Number of obs =	5054	
Residual	1186.20673	5050	.234892422	F( 3, 5050) =	14.25	
Total	1196.24852	5053	.236740256	Prob > F =	0.0000	
				R-squared =	0.0084	
				Adj R-squared =	0.0078	
				Root MSE =	.48466	

SMOKER	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
PLAN72	-.0875354	.0139026	-6.30	0.000	-.1147905	-.0602803
AGE	.0000882	.0004157	0.21	0.832	-.0007268	.0009033
SEX	-.0079215	.0154221	-0.51	0.608	-.0381555	.0223124
_cons	.6579694	.0236727	27.79	0.000	.6115606	.7043781

### 19 Cigarettes per day (if smoker)

. reg CIGS PLAN72 AGE SEX

Source	SS	df	MS			
Model	9547.86132	3	3182.62044	Number of obs =	888	
Residual	139207.81	884	157.474898	F( 3, 884) =	20.21	
Total	148755.671	887	167.706506	Prob > F =	0.0000	
				R-squared =	0.0642	
				Adj R-squared =	0.0610	
				Root MSE =	12.549	

CIGS	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
PLAN72	-1.27657	.8541798	-1.49	0.135	-2.953027	.3998865
AGE	-.1399897	.0352391	-3.97	0.000	-.2091518	-.0708277
SEX	6.658058	1.059884	6.28	0.000	4.577876	8.73824
_cons	21.79	1.680515	12.97	0.000	18.49173	25.08826