

**The Effects of Income Losses and Gains on Happiness:  
Do Temporary Trends Matter?  
An Exploratory Note**

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**Research Note**

**Abstract**

A major challenge in the research on happiness is estimating the effects of income. In part this is because people seem to evaluate money in ways that are not always consistent with economists' assumptions about rationality. We rely on the permanent income hypothesis (PIH) – which asserts that individuals have some sense of their future income and choose a level of consumption that reflects both current and future income – to explore the link between income and happiness. Using panel data from Russia, we estimate the effects of both average (proxy for permanent) income for the period and deviations from that average on happiness. We find that average income has a larger effect on happiness than does transitory income, which is broadly consistent with the PIH perspective. In addition, though, respondents evaluated the effects of transitory losses and gains differently. For those who had income gains, the greater the gain, the larger the effects on happiness. For those who suffered, losses, the amount of the loss had no additional negative effects on happiness in addition to the effect of losing per se. Our results are suggestive, but data which covers a longer period of time is necessary for a fuller exploration.

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## **The Effects of Income Losses and Gains on Happiness: Do Temporary Trends Matter?**

A major objective of the recent flurry of studies by economists of happiness or subjective well being is to develop a more accurate or at least more comprehensive “social welfare function” – a function that assesses the costs and benefits to society of various policy options. Lacking the ability to measure or compare levels of well-being across people, economists have used various proxies for happiness, the most common one being consumption. More recently, though, the availability of survey data including information on well-being has increased, as has the willingness of many economists to utilize data based on subjective questions - recognizing that a large margin of error must be accounted for.<sup>2</sup> An increasing number of papers in economics replace happiness proxies with data on happiness itself, and thus attempt to get a clearer picture of policy tradeoffs in terms of the reported well-being of individuals.<sup>3</sup>

An important empirical challenge in this literature has been to estimate the effect of income on happiness. Within societies, it has been shown that individuals’ happiness increases with income, although at higher levels of income relative differences are often as important as absolute ones in explaining changes in happiness. Wealthy countries, too, tend to have higher happiness scores than poor countries, although this effect is unclear above a certain level of income, and it has been established that countries like the US and Japan can undergo several-fold increases in income with no increase in over-all happiness.<sup>4</sup> It has also been documented that individuals can experience great increases in income only to find that their happiness, after being temporarily elevated, returns to its previous level.<sup>5</sup> Experiments with monetary punishments and rewards suggest that people can value money in ways that are not consistent with economists’ assumptions about rationality.<sup>6</sup>

This note reports on exploratory efforts to improve upon estimates of the relationship between income and happiness. It borrows one page from the macroeconomics playbook (the permanent income hypothesis framework) and draws on evidence of unexpected relationships between income and happiness from the behavioral economics research. The results are not yet satisfactory but suggest directions for future work.

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<sup>2</sup> For a discussion of the problems associated with survey data, see Bertrand, Marianne, and Sendhil Mullainathan. 2001. “Do People Mean What they Say? Implications for Subjective Survey Data.” Cambridge, Mass.: National Bureau of Economic Research.

<sup>3</sup> Two noteworthy examples are Justin Wolfers, “Is Business Cycle Volatility Costly? Evidence From Surveys of Subjective Well-being,” NBER Working Paper 9619, April 2003, and Rafael di Tella, Robert J. MacCulloch, and Andrew J. Oswald, “Preferences over Inflation and Unemployment: Evidence from Surveys of Happiness,” *American Economic Review*, 91(1) March 2001 335-341.

<sup>4</sup> Klingemann (2000) and Veenhoven (1997) document cross-country effects of income on average happiness; Easterlin (1974) and (1995) observes long-term average stability of happiness levels despite income leaps.

<sup>5</sup> See, for example, Robert Cummins and Bob Nistico (2000), “Personal Income and Subjective Well Being: A Review”, *Journal of Happiness Studies*, Vol.1, pp.133-158

<sup>6</sup> See, for example, Daniel Kahneman and Amos Tversky, *Choices, Values, and Frames* (New York: Russell Sage, 2000).

The classic permanent income hypothesis (PIH) asserts that individuals can see some distance into the future and choose a level of consumption that reflects both their current and future income. It was developed [in the 1960s] as a way of explaining why temporary fiscal measures will have limited effects on aggregate economic activity: forward looking consumers view a one-time tax refund as a modest adjustment to the total income they will receive over decades, and thus will scarcely change their consumption patterns. By contrast, permanent changes in tax rates represent more profound changes in lifetime income, and thus will have large immediate effects on consumption. Economists have devoted extensive attention to assessing the validity of the PIH by observing how consumption patterns react to permanent and temporary income changes.<sup>7</sup>

We do not address the fundamental macroeconomic contention of the PIH, which is that transitory fiscal shocks will have small effects on consumption. Instead, our aim is to determine whether the PIH framework of transitory and permanent income could be used to improve our understanding of the link between income and happiness. We expect happiness to respond in different ways to permanent and transitory income shifts, just as, under the PIH, consumption responds in different ways to permanent and transitory income shifts. We leave open the possibility, however, that the relationship between income and happiness is not solely determined by consumption. If it were, then it would not be necessary to estimate the direct link between income and happiness. We could instead extrapolate the effects of income on happiness by understanding the PIH link between income and consumption and an additional link between consumption and happiness. We hypothesize, however, that the cognitive benefits of income extend beyond those conferred by consumption, and thus that the link between income and happiness is worth examining on its own.

Current consumption is just one of the pathways through which income leads to happiness. The most obvious of these other pathways is saving – the difference between income and consumption. It is possible to imagine a number of ways in which people's happiness would be affected by saving. On the one extreme, all of the happiness from saving could be deferred until the money is actually withdrawn and spent; in other words, savings would confer no happiness in addition to the happiness from consumption.<sup>8</sup> On the other extreme, all of the happiness from earning and saving \$100 might come immediately: a person may feel a surge of good feeling when she stows the money away and, having already mentally accounted for this good fortune, is unmoved when she later withdraws it and spends it.

In between these extremes one can imagine a number of scenarios in which the happiness from saving is spread out over the time between the money is earned and spent. The happiness from the expected future consumption may be spread out evenly over the waiting period (a pattern similar to the PIH relationship between consumption and future income), or the happiness from this expected future consumption may increase as the time of consumption nears (as might be deduced from a discounting framework in which imminent events matter more than distant

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<sup>7</sup> For an overview of this research, see Martin Browning and Thomas F. Crossley, "The Life-Cycle Model of Consumption and Saving," *Journal of Economic Perspectives*, Volume 15, Number 3, Summer 2001, pp. 3-22.

<sup>8</sup> This is a scenario where, as described above, we need only know the PIH relationship between income and consumption and the relationship between consumption and happiness to deduce the relationship between income and happiness.

ones), or these smooth happiness trajectories are blended with one-time spikes at the points where the money is saved and spent. The point is that because people can save, happiness, consumption, and income may be correlated across time in complicated ways that make it difficult to extrapolate the income-happiness relationship from the PIH relationship between income and consumption.

Two other pathways between income and happiness are worth mentioning. One is status: income bequeaths status on individuals by allowing them to purchase status symbols, but a person's level of income itself may affect happiness if she thinks of the number on her paycheck – and its relationship to that of her peers – as one of the features of her life that contribute to her well-being. Another pathway between income and happiness that has been demonstrated experimentally relates to how the income is acquired. People have been observed to prefer unexpected one-time windfalls over earned increases in income, even when the value of the monetary gain is exactly the same. It must be the case that human emotions draw value from a number of important non-monetary aspects of the windfall, such as the surprise of receiving it and the feeling of receiving something without working for it.

Another important way in which happiness results may differ from PIH studies of income and consumption is that happiness scores tend to depend on people's expectations, which change constantly. People's expectations quickly adjust to income changes, such that the pay raise that made an individual elated three months ago now is taken for granted and the individual has returned to a baseline happiness level. This sort of phenomenon, along with the normal amount of noise and error in analyzing subjective survey results, tend to cloud the many efforts to draw empirical relationships between income and happiness.<sup>9</sup>

## Data and Preliminary Results

With this framework and these limitations in mind, we conducted a number of preliminary tests on two waves of Russian panel data from 1995 and 2000.<sup>10</sup> While the PIH literature has developed a number of fairly sophisticated methods of distinguishing permanent from transitory income,<sup>11</sup> we begin our exploration with a very simple one: we define permanent

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<sup>9</sup> For an excellent summary article of these sorts of findings, see Richard Easterlin, "Income and Happiness: Towards a Unified Theory", *The Economic Journal*, Vol. 11, No.473, July 2001.

<sup>10</sup> These data are from the Russian Longitudinal Monitoring Survey (RLMS), which can be downloaded from [www.cpc.unc.edu/projects/rlms](http://www.cpc.unc.edu/projects/rlms). For a much more detailed analysis of happiness in Russia and Latin America as well as a review of the recent literatures, see Carol Graham and Stefano Pettinato, *Happiness and Hardship: Opportunity and Insecurity in New Market Economies* (Washington, D.C.: The Brookings Institution Press, 2002). For a detailed analysis of the panel, see Carol Graham, Andrew Eggers, and Sandip Sukhtankar, "Does Happiness Pay? An Exploration Based on Panel Data from Russia", under review at the *Journal of Economic Behavior and Organization*, April 2003.

<sup>11</sup> For two examples of sophisticated approaches to modeling permanent and transitory income, see Christopher D. Carroll, "How Does Future Income Affect Current Consumption?" *The Quarterly Journal of Economics*, Volume 109, Issue 1 (Feb., 1994), 111-147, and Robert E. Hall and Frederic S. Mishkin, "The Sensitivity of Consumption to Transitory Income: Estimates from Panel Data on Households," *Econometrica*, Volume 50, Issue 2 (Mar., 1982), 461-482. A natural experiment approach is taken by John Shea, "Union Contracts and the Life-Cycle/Permanent-Income Hypothesis," *The American Economic Review*, Volume 85, Issue 1 (Mar., 1995), 186-200.

income as the average income over the two periods and transitory income as the deviation from that average. We use log income as the basis for both calculations.

In our first set of tests, on a pooled sample with two observations on each of about 5000 people, we added our proxies for permanent and transitory income to a list of standard independent variables. The regression is done using ordered logit. The sign on each of the coefficients indicates whether the independent variable tends to produce higher or lower happiness, and the magnitude can be expressed as a measure of the marginal increase or decrease in the probability of having chosen a given level of happiness (1, 2, 3, 4, or 5). In future versions of this research, we will provide more complete interpretative tables, but at this stage it is quite plausible to interpret the coefficients as analogous to those in OLS results.<sup>12</sup>

The first column of Table 1 lists the results for the whole sample. Our proxy for permanent income appears to have a larger effect on happiness than does transitory income, which is broadly consistent with the PIH perspective. This is the core piece of evidence that a PIH framework does help understand the relationship between income and happiness. In order to simply express the magnitude of this difference, we ran an OLS estimate with the same specifications, allowing us to compare the values of the coefficients.<sup>13</sup> We then get coefficients of .31 for average income and .1 for deviations from the average. This suggests that a 100% increase in average income would yield an average increase of .31 points on the happiness scale, while a 100% increase in transitory income would yield an increase of .1 points on the scale.<sup>14</sup>

If we continue on this line of research, it would be useful to more closely compare this result with PIH estimates. One useful question would be, “is the relative dependence of happiness on permanent as opposed to transitory income greater or less than the relative dependence of consumption on permanent as opposed to transitory income?” We might expect that happiness would be less dependent on permanent income because individuals will gain happiness from the savings that come from income but do not (by definition) contribute to current consumption. In order to meaningfully compare our results with PIH results, though, we would need much more complete data, to which we would need to carefully apply specific PIH frameworks rather than this preliminary format.

While there are clearly many shortcomings of our PIH framework, a particularly relevant one for happiness studies is that it makes no allowance for the difference between gains and losses: we make no distinction between someone in the first period whose transitory income is negative and positive in the second period, and someone in the second period whose transitory is negative after being positive in the first. Yet the first person’s income is on a positive trajectory and the second’s is on a negative trajectory. Based on intuition and the findings of behavioral economics, we expect that the effects of transitory income on happiness would differ between losers and gainers for at least two reasons.

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<sup>12</sup> Because happiness is measured as a categorical variable, ordered logit is the correct econometric approach. In theory, the coefficients on ordered logit equations – because they capture probabilities rather than a continuous value – cannot be compared to each other. In practice, when we compare the results of ordered logit and OLS on the same equations, we get almost identical results and coefficient values.

<sup>13</sup> Comparing values across coefficients with ordered logits is significantly more complicated than with OLS.

<sup>14</sup> OLS results available from the authors.

First, it is likely that our permanent income proxy (average income over the two periods) does not approximate people's income expectations, and that instead they expect to receive the same income in the second period as in the first (expectations of a random walk for income) or perhaps greater income in the second period than in the first. Thus in the second period people with negative transitory income are more likely to have fallen below their expectations (and to be unhappy) than those with positive transitory income. The same can not be said for people in the first period, where, if expectations are really based on past income, we have no evidence of what their expectations might be. Second, behavioral economics research has shown that people feel the pain of losses more than they feel the joy of monetarily equivalent gains. (This result also emerges from a convex utility function.) Both of these factors suggest that separating the effect of transitory income on the happiness of income losers and gainers could improve our estimates.

In columns (b) and (c) of Table 1, we separately estimate the model for winners and losers and do find a different effect of transitory income on happiness – but not in the way that we had expected. We supposed that, because losses are more painful than gains are pleasant, the coefficient for the losers would be higher, but in fact it is smaller and statistically insignificant.

The puzzle continued when we estimated the same model with person fixed effects (OLS), which allows for a different base level of happiness for each person (an important allowance given evidence of the stability of individuals' happiness scores).<sup>15</sup> Here all constant variables, such as gender and minority status but also including our proxy for permanent income, are dropped. [note – age should be dropped too; there must be errors in it since the first difference should be 5 for everyone.] For the full sample, as shown in Table 2 column (a), the effect of transitory income on happiness levels is positive and strongly significant. Broken down into separate regressions for winners and losers, though, the effect becomes totally insignificant for both. In other words, looking at both losers and winners, respondents are not measurably happier in the year when they are receiving more income than in the year when they are receiving less.

We decided to further pursue this puzzle by looking directly at the relationship between changes in income and changes in happiness, a slightly more intuitive setting than the pooled data provided. Table 3 presents the results of a bare-bones regression which contains the kernel of our current resolution of this puzzle. As expected, column (a) shows that changes in income have positive effects on changes in happiness. Column (b), which includes the addition of a variable interacting income change and loss of income, reveals that this marginal effect is not significantly different for gainers than for losers (despite our intuition, explained above, that the effect of losses would be greater than the effect of gains). Column (c), which includes a dummy variable for losing income (regardless of the amount), suggests that the effect of experiencing a loss (regardless of its size) overwhelms the differential effect of the size of the loss itself. In other words, once we separate out gainers and losers, we gain no further information about the change in happiness that they experienced by observing the amount of income that they gained or lost. However, we do find that those who lose income in general experience a decline in happiness.

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<sup>15</sup> See Cummins and Nistico (2000).

We then repeated the same set of regressions, but with a number of control variables included, both those for static variables, such as gender and racial status, and for changes in health, marital, employment, and education status, as well as in smoking and drinking behavior. Again, in column (c) we find a strong and significant negative coefficient on our loss dummy, and insignificant signs on the variables measuring the degree of loss or gain experienced (although the effect of gains on changes in happiness was significant at the 10% level).

Finally, we repeated these regressions while splitting the sample into income gainers and losers (Table 4). Once again, we find that for income losers, the change in income variable has no additional significant effects on changes in happiness, while for the gainers, changes in income were significant and positive (at the 10% level). These results suggest that respondents evaluate income gains in a more nuanced or sophisticated way than they do losses. Perhaps people who gain income were more likely to consider that income gain as something that they valued and devoted more attention to comparing their gain with gains made by other people. People who lost income, by contrast, may have been more likely to be accept the loss as a one-shot negative shock, and not to dwell on the extent of their loss. In other words, losers were trying not to cry over spilt milk (or, more accurately, measure the amount spilt), while gainers were more interested in – and happy – counting their gains.

### **Concluding Thoughts**

Regardless of how we interpret respondents' unexpected treatment of income gains and losses, the important overarching conclusion is that our findings seem to support the value of a PIH framework in evaluating the link between income and happiness in that our proxy for permanent income has more consistent effects for both gainers and losers than does transitory income. At the same time, it appears that the anomalies of behavioral economics do matter in looking at the income/happiness link, in that it appears that people value losses and gains differently, and that losses per se have a strong and negative effect on well being that is not necessarily in proportion to the amount of the loss. All of this suggests that the PIH framework could be a useful framework for further study of income and happiness.

It is important to note that all of our findings must be taken with caution due to a number of factors: the volatile economic context in Russia during this period, the difficulties that a major devaluation poses to measuring the relationship between income and subjective well being (given the very different effects of the shock on people depending on what currency their assets were held in, for example), and the suspect nature of some of the income data (people reporting no income despite the fact that pensions and unemployment payments are meant to be included, people with jobs reporting no income, etc.).<sup>16</sup> In addition, as noted above, our PIH framework is merely a sketch of what should be a much more nuanced approach to distinguishing the effects of permanent and temporary income on happiness.

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<sup>16</sup> We have speculated that some of this is due to error in the survey, some is due to respondents' attempts to hide income obtained from illegal activities, and some is due to the fact that the subsistence economy is extremely strong in Russia, particularly in food production. Russians — and this includes not only rural residents but also middle-class urban professionals such as scientists, doctors, and military officers — produce an astounding 50 percent of the nation's meat supply and 80 percent of all vegetables and fruits on their family garden plots. For detail, see Clifford Gaddy and Carol Graham, "Why Argentina '02 is not Russia '98", *The Globalist*, 21 February 2002.

This was an exploratory note, and our findings suggest that there are several avenues for research which could contribute to our understanding of the differential effects of permanent and temporary income on happiness. In particular, we found that respondents seem to evaluate the effects of losses and gains on their well being quite differently, with the amount of the gains mattering to the amount of the increase in happiness, but not the amount of the loss (to the decrease) in addition to losing *per se*. A deeper exploration, however, will require a better measure of permanent income. Our current measure is based on two observations over a five year period, which is the best available proxy, given the data. Ideally, though, we need more than two observations and a longer period of time.<sup>17</sup> Data from a country other than Russia would also be preferable, as the highly volatile economic context in Russia makes it difficult to estimate permanent income even if data were available for a longer period of time. At this juncture, we feel that our findings are provocative enough to merit further exploration.

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<sup>17</sup> Even if we use more observations – which are available for some of the respondents in the panel – within that five year period, the time lag between observations is insufficient. In other words, income earned or gained in one year could still be used for consumption in the next, thus making it difficult to distinguish between the effects of income in  $t_0$  and consumption in  $t_1$  on happiness in  $t_1$ , for example.



Table 1: The effects of happiness on income

Dependent Variable: Happiness score (ordered logit)

Independent variables	a (all)		b (losers)		c (winners)	
	coef	t	coef	t	coef	t
age	-0.0760	-10.02	-0.0838	-7.92	-0.0678	-6.18
age^2	0.0008	9.92	0.0009	7.76	0.0007	6.20
male	0.1432	3.58	0.1750	3.18	0.1052	1.80
married	0.0644	1.39	0.1171	1.85	0.0202	0.29
education level	0.0224	2.00	0.0191	1.26	0.0196	1.16
minority	0.2530	4.98	0.5015	6.96	0.0122	0.17
student	0.3130	3.22	0.2461	1.76	0.3420	2.51
retired	-0.3170	-4.62	-0.2799	-3.12	-0.3984	-3.71
housewife	0.1075	1.08	0.3141	2.26	-0.1189	-0.83
unemployed	-0.4297	-5.74	-0.4506	-4.30	-0.4365	-4.06
selfemployed	0.6414	3.66	0.6612	2.70	0.5616	2.24
health index	0.3716	4.37	0.3295	2.88	0.4114	3.22
average income* (permanent income)	<b>0.5657</b>	<b>19.04</b>	<b>0.5886</b>	<b>13.83</b>	<b>0.5502</b>	<b>13.10</b>
deviation from average** (transitory income)	<b>0.1827</b>	<b>4.77</b>	<b>0.0121</b>	<b>0.23</b>	<b>0.3603</b>	<b>6.42</b>
number of observations	9575		5128		4447	
pseudo R-squared	0.0343		0.0362		0.0366	

Pooled dataset -- each individual has a 1995 and a 2000 observation.

\*average income is the average of log equivalence 1995 income and log equivalence 2000 income.

\*\* deviation from average is the difference between current log equivalence income and average income.

Table 2: The effects of happiness on income, person fixed effects  
 Dependent Variable: Happiness score (panel OLS, fixed effects)

Independent variables	a (all)		b (losers)		c (winners)	
	coef	t	coef	t	coef	t
age	-0.0062	-0.41	-0.0335	-1.53	0.0195	0.77
age^2	0.0003	2.19	0.0004	1.78	0.0003	1.37
married	0.1304	2.29	0.1781	2.46	0.0304	0.33
education level	0.0014	0.08	0.0120	0.49	-0.0098	-0.35
student	0.1023	1.02	-0.0528	-0.34	0.2246	1.66
retired	-0.1408	-2.18	-0.1254	-1.57	-0.1250	-1.14
housewife	-0.1253	-1.52	-0.0973	-0.84	-0.1340	-1.13
unemployed	-0.1682	-2.82	-0.2433	-2.91	-0.0867	-1.01
selfemployed	0.0969	0.69	0.0736	0.43	0.1576	0.66
health index	-0.0003	0.00	-0.0672	-0.72	0.0626	0.62
deviation from average* (transitory income)	<b>0.1130</b>	<b>5.89</b>	<b>0.0346</b>	<b>0.95</b>	<b>0.0520</b>	<b>1.33</b>
constant	1.7272	4.26	2.8593	4.48	0.7257	1.03
number of observations	9575		5128		4447	
R-squared (within)	0.0171		0.0103		0.0346	

Pooled dataset -- each individual has a 1995 and a 2000 observation.

\* deviation from average is the difference between current log equivalence income and average log equivalence income.

Table 3 Simple first-difference style regression

Dependent Variable: Change in happiness from 1995 to 2000

Independent variables	<b>a</b>		<b>b</b>		<b>c</b>	
	coef	z	coef	z	coef	z
age	0.0156	1.70	0.0156	1.70	0.0157	1.71
age^2	-0.0001	-1.49	-0.0001	-1.50	-0.0001	-1.46
change in log eq. income, 1995-2000	<b>0.1698</b>	<b>6.26</b>	<b>0.1492</b>	<b>3.17</b>	<b>0.0391</b>	<b>0.73</b>
loss	*	*	*	*	<b>-0.3176</b>	<b>-4.20</b>
change in log eq. income, 1995-2000*loss	*	*	<b>0.0409</b>	<b>0.54</b>	<b>0.0415</b>	<b>0.54</b>
number of observations	4463		4463		4463	
pseudo R-squared	0.0029		0.0030		0.0042	

\* omitted

Table 4 First-difference style regression, separate for winners and losers  
 Dependent Variable: Change in happiness from 1995 to 2000

		<b>a (losers)</b>		<b>b (winners)</b>	
		coef	z	coef	z
<b>static variables</b>	age	-0.0663	-2.00	0.0025	0.07
	age^2	0.0007	1.96	-0.0001	-0.15
	male	0.0169	0.11	-0.0023	-0.01
	minority	-0.0448	-0.26	-0.0968	-0.53
<b>changes in continuous variables</b>	change in log equivalence income	<b>0.0222</b>	<b>0.26</b>	<b>0.1871</b>	<b>1.92</b>
	change in education level	0.0480	0.70	0.0139	0.18
	change in health index	0.1905	0.86	-0.1002	-0.42
	change in level of drinking	0.0064	0.15	-0.0168	-0.33
<b>changes in status variables: marriage</b> (omitted group: remained single)	got married	-0.5596	-1.13	-0.2775	-0.66
	got divorced	-0.5413	-2.41	-0.4904	-1.61
	stayed married	-0.0809	-0.48	-0.2793	-1.55
<b>employment</b> (omitted: remained unemployed)	got employed	-0.2053	-0.47	0.4344	0.88
	got unemployed	-0.7691	-1.91	0.6198	1.21
	stayed employed	0.0492	0.15	0.8271	1.94
<b>smoking</b> (omitted: remained a non-smoker)	quit smoking	0.6203	1.88	-0.5206	-1.35
	started smoking	0.3073	1.05	0.1778	0.58
	kept smoking	-0.1037	-0.68	0.1006	0.57
<b>schooling</b> (omitted: remained a non-student)	entered school	**	**	**	**
	left school	-0.8716	-1.74	-0.6977	-1.35
	stayed in school	-0.2738	-0.39	-1.0913	-1.20
<b>retirement</b> (omitted: remained a non-retiree)	became retired	-0.1047	-0.45	0.0626	0.20
	came out of retirement	0.7702	1.19	-0.3001	-0.41
	stayed retired	-0.1096	-0.42	0.1448	0.43
observations		930		743	
pseudo R squared		0.0109		0.0072	

\* omitted

\*\* dropped -- no such observations