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How different are smokers? An analysis based on personal finances☆

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ABSTRACT

We study the association between smoking status and individual decisions, focusing on outcomes in the domain of personal finance. The study draws information on demographic variables, various financial outcomes including individual credit scores, time and risk preferences, and personality traits, from both population data and experimental data. The results suggest that smokers make poor decisions and experience worse outcomes with personal finances vis-à-vis non-smokers. This relationship is robust to controlling for a myriad of variables, including characteristics that are known to be correlated with smoking. Thus, smoking status contains more precise information about individuals that are not fully captured by available noisy economic and psychological measures. Since available estimates of personality traits have substantial measurement error, smoking status may effectively capture residual information.

1. Introduction

There is ample evidence in the literature to support the view that smokers are different from non-smokers along multiple inherent characteristics that are relevant for economic decisions, such as time preference, risk preference, and impulsivity.[3] There is also evidence to suggest that smokers are different from non-smokers when viewed through the lens of the widely used Five Factor Model of Personality (Terracciano and Costa, 2004; Malouff et al., 2006). Based on these observations, some researchers have linked smoking directly to risky behaviors, such as taking jobs with a greater chance of injury or a greater potential for job loss (Hersch and Pickton, 1995; Hersch and Viscusi, 1990, 2001). Others have gone as far as to use smoking

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[3] For example, Fuchs (1982) found that time preference is positively correlated with years of smoking. A number of studies in experimental psychology (e.g., Bickel et al., 1999; Mitchell, 1999; Reynolds, 2006) similarly conclude that smokers discount future values at a higher rate than non-smokers or former smokers. Khwaja et al. (2007) report that those who are more impulsive and plan less for the future are more likely to smoke. In a more recent study Scharff and Viscusi (2011) conclude smokers have higher rates of time preference with respect to years of life. Barsky et al. (1997), using data from the Health and Retirement Study, conclude that "individuals who have ever smoked are more risk tolerant than those who never smoked and those who smoke now are more risk tolerant than those who do not smoke now" (p. 551).

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status as an instrument with regard to human capital investments (Fersterer and Winter-Ebmer, 2003) and sorting into jobs with high chances of separation (Green and Heywood, 2011). However, to our knowledge, little or no attention has paid in the literature to understand whether the association between smoking and decision making runs through these known differences, or smoking itself contains additional information that makes it a valuable proxy for decision-making. In this paper, we look for such evidence by analyzing the association between smoking status and decisions and outcomes in the domain of personal finance.

Our goal here is not to establish a causal link running from smoking status to individuals' behaviors in the domain of finance. Rather, we aim to determine whether the association between these two decisions are the manifestation of the differences between smokers and non-smokers in terms of a standard set of measurable characteristics (e.g., time preference, propensity toward risks, and/or major personality traits), as has been suggested by the literature, or whether smoking status contains valuable information about individuals that are not fully captured by standard economic and psychological measures. If the latter is true, then indeed smoking status should be taken seriously as a as a proxy for unobserved factors that lead to poor decisions and is a valuable right-hand side control variable in such applications.

For the purpose of our investigation, we use information contained in two very different data sets containing information on demographics, preference and personality traits of smokers and non-smokers, together with information on individuals' personal finance outcomes. Our focus on personal finance is not arbitrary. In the personal finance domain, individual decisions have a much larger role to play than in a job environment where additional factors such as health costs considerations, health externalities, and even a priori beliefs and attitudes of employers and co-workers toward smokers are likely to influence outcomes. In addition, there exist theory-based guidelines predicting how individual characteristics are likely to show up in personal finance decisions and outcomes.[4] Keeping these in mind, we examine the association between financial outcomes and smoking status by first looking at a set of data that is drawn from a large-scale behavioral economics field study with 1069 trainee truck drivers, combined with information about the behavior of subjects on the job for up to 2 years. A primary advantage of these data are that they provide us with an opportunity to match smoking status with the actual outcome of financial decisions through credit scores (FICO-98 purchased from the Fair Isaac Corporation). Credit scores are based on a wide array of factors including individuals' payment habits, default histories, the frequencies of loan applications and approval rates, the credit use as a percentage of available credit, etc. In addition to providing a broad proxy for personal financial decisions, the data on truck drivers contain information which presents us with a rare opportunity to take the analysis beyond the conceptual framework of classical decision theory, which relies primarily on the differences in risk preferences and discount rates, to a broader conceptual framework offered by personality theory. Personality theory offers five (not necessarily orthogonal) broad dimensions governing human behavior that may also influence smoking and economic decision-making. These are neuroticism, extraversion, openness/intellect, agreeableness and conscientiousness. There is strong evidence that these personality traits perform equally, if not better, than socioeconomic status and IQ in predicting various life outcomes such as mortality, divorce and marital stability, educational and occupational attainments (Roberts et al., 2007; Burks et al., 2009; Almlund et al., 2011; Becker et al., 2012).

Using these experimental data, we find that smoking is negatively correlated with willingness to delay rewards and conscientiousness. It is also positively correlated with willingness to take risks. These traits are also correlated with credit score. Naturally, we consider a model where latent variables, which measure these traits and preferences, affect both credit risk and smoking. Controlling for these variables does not exhaust the explanatory power of smoking status and there remains strong evidence that the residual information in smoking status is significant and substantial in predicting poor credit score. This could be due to the failures of survey based estimates in capturing true preferences and personality traits. Alternately, it could be the case that smoking status may contain unexplored information on individuals that is not fully captured by standard economic and psychological measures. In either case, the results suggest that observed smoking behavior can be potentially useful to predict financial decision making if no or only imperfect measures of the deep determinants of financial decision making are available.

We supplement the above results on the basis of voluntarily disclosed information about smoking status and financial behaviors of individuals as reported in the National Longitudinal Survey of Youth (NLSY79). To our knowledge, this is the first attempt to use population survey data in linking smoking status to financial outcomes. Our analysis relates smoking to being denied credit, which is a proxy for poor financial health. We also test whether smoking is related to an unequivocally shortsighted and risky financial decision—missing a payment on a credit card or other bills. We also test whether smoking is related to carrying maximum balances on credits cards, as well as ultimately filing for bankruptcy. The evidence is again highly suggestive that smokers are different than non-smokers in terms of financial outcomes and financial decisions. This result remains robust after controlling for factors affecting both financial decisions and the decision to smoke.

[4] For example, an individual with a higher time discount factor and/or a higher tolerance toward risk will optimally choose a higher consumption path and will assign higher weight to current consumption, the effect of which is likely to be picked up by a higher use of available credit and/or by a lower debt repayment rate and a high debt-income ratio. The same outcome will transpire due to the lack of future planning or due to impulsive behavior toward consumption, as indicated in applications of the quasi-hyperbolic model of discounting. Collectively, these behaviors can be detrimental to perceived creditworthiness of the individual. In fact there is recent evidence (Arya and Shweta, 2010) based on exploratory surveys that individuals' credit scores are correlated with measures of impulsivity and time preference.