Does migration to the US cause people to smoke? Evidence corrected for selection bias

by Dean R. Lillard[a,b] and Rebekka Christopoulou[a]

[a]Cornell University, [b]DIW-Berlin

Abstract

We examine smoking decisions of people who migrate to the US and explore whether and how these differ from non-migrants. With a unique combination of retrospective smoking data from US and country of origin surveys we describe individual smoking trajectories over the life-course. We exploit these data to identify immigrant smoking behavior before they migrated and compare it to non-migrants' behavior. To correct for bias due to selective immigration, we instrument the migration decision using economic conditions during puberty and early adulthood and parents' country of birth. We explicitly test and find evidence to support the healthy migrant hypothesis - those who choose to migrate are healthier than those who don't. We also find that migration causes people to smoke. Correcting for selection bias, migrants are more likely to start to smoke and more likely to smoke in any given year of life than are observationally similar non-migrants.

Extended Abstract

Nearly 1 million new legal immigrants arrive in the US each year, seeking a better life for themselves and their families (Martin and Midgely 2010). Migration comes with the prospect of easier access to employment, higher earnings, attainment of education and skills, and generally improved economic well-being. It also comes at a high cost. Migration often involves a demanding journey, disruption of family life, and a spectrum of difficulties associated with establishing a life in a new environment and competing in a new labor market. Thus, not everyone selects to migrate. Research has shown that immigrants systematically differ from those who do not migrate in terms of education (Borjas 1987, 1995; Feliciano 2005; Chiquiar and Hanson 2005), networks in the host country (McKenzie and Rapaport 2010), or other unobservable skills (Dostie and Léger 2009).

In this paper, we ask whether migrants systematically differ from non migrants in how they invest in their health, as reflected in their smoking behavior. We contribute evidence on the "healthy immigrant" (HI) hypothesis which states that healthy people select to migrate because they are more able to move, to

manage the difficulties and stress of transition, and to undertake physically demanding work in the destination country. As a result of this selection, immigrants are reportedly healthier upon arrival to the host countries in comparison to the native population. Although several studies have attempted to test this hypothesis (Newbold and Danforth 2003; McDonald and Kennedy 2004; Newbold 2005; Akresh and Frank 2008; Lu 2008), the results based on international migration flows have been mixed and restricted by a number of data problems.

Specifically, most studies observe immigrant health only after arrival to the host country, which can be positively biased because of health screening done by immigration authorities before granting entry permission. Further, studies often compare the health of immigrants to that of the local population instead of the population in the home country (e.g. McDonald and Kennedy 2004; Newbold 2005). Their findings can be affected by health disparities among the two reference populations that could be due to cultural factors related to better health outcomes. In addition, many studies rely on self-reported health assessments (e.g. Newbold 2005; Akresh and Frank 2008), which can be largely determined by cultural perception of the presence and severity of illness, or can be subject to under-utilization of health services in the source country that would diagnose existing medical conditions. Finally, none of the studies that compare health outcome by migration status explicitly corrects for self-selection to migration.

Compared to the existing literature, we offer a superior test of the HI hypothesis because of four unique features of our data. First, we use retrospective smoking data that allow us to observe the health behavior of immigrants over their whole life-course; i.e. both prior to and after they migrated. Second, our data measure life-course smoking not only of migrants but also of residents of the country of origin; a feature we use to compare smoking outcomes of migrants to that of non-migrants in the country of origin. Third, we use a health behavior (smoking) that is reliably measured and that significantly affects health and later-life mortality. Lastly and importantly, we use information on the country of origin of immigrants' parents and collect data on regional unemployment rates for each year of the observed life-course. We treat these variables as instruments to correct for immigrant self-selection under the hypothesis that the

migration probability to the US varies with country of origin and with economic conditions during puberty and early adulthood.

Our empirical strategy is as follows. First, we use the US Current Population Survey (CPS) to identify first-generation immigrants in the US. Over the period 1995-2007 the CPS asks respondents about their country of birth and the time of entry in the US. The home countries with the biggest number of observations (immigrants) are: Canada, China, Germany, Mexico, Russia, and the UK. Second, we use rich survey data on individuals in each of these origin countries (i.e., nonmovers). These surveys are: the National Population Health Survey (NPHS) for Canada; the Health and Nutrition Survey (CHNS) for China; the German Socio-Economic Panel (GSOEP) for Germany; the National Addiction Survey (ENA) and Health and Aging Study (MHAS) for Mexico; the Russia Longitudinal Monitoring Survey (RLMS) for Russia; and the British Household Panel Survey (BHPS) for the UK.

All of these surveys ask respondents to report whether they ever smoked regularly and whether they currently smoke. They also collect information about the timing of smoking initiation and, if relevant, cessation. With this data, we are able to reconstruct the smoking trajectories of every respondent over the life-course, assuming that s/he smoked continuously between the time of smoking initiation and cessation if an ex-smoker, or between the time of initiation and the survey year if a smoker. Specifically, for every respondent in each country we construct a smoking status indicator which equals 1 in any year the individual smokes and 0 otherwise. Thus, our data consist of seven country-specific panels of individuals and years of age.

We combine the US data with the source country data to test whether - all else equal – those who immigrate to the US smoke less than those who remain behind. In particular, we ask whether relative to non migrants, migrants are more or less likely to start smoking, are more likely to currently smoke, and are more likely to smoke at any given year of their life-course. To address the issue of selective migration we use instrumental variables methods as well as a variety of matching techniques (nearest neighbor, mahalanobis, kernel, coarsened exact matching etc.).

We find that migrants are more likely to start smoking and are more likely to smoke at any year of life than non migrants. This positive effect is robust across the different estimators we use. In fact, we find that the positive effect of migration on smoking is higher when we correct for immigrant self-selection than when we do not. This evidence implies that the selection effect on immigrant smoking behavior is negative and, thus, it is consistent with the HI hypothesis. However, our evidence also suggests that, absent the healthy migrant effect, migration is a significant causal factor of the smoking habit.

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