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# The heterogeneity in immigrants unhealthy assimilation

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## Abstract

Immigrants upon their arrival in the United States are in better health condition with respect to their American counterpart however such advantage erodes over time. In this paper, we study the heterogeneity of such unhealthy behaviours assimilation among different arrival cohorts. We focus our analysis on binge drinking and cigarette consumption as a proxy for unhealthy behaviour assimilation by immigrants. Regarding binge drinking we show that more recent immigrant cohorts arrive with a higher probability of being binge drinker and experience a faster "unhealthy assimilation" in terms of increased consumption of alcohol and an increase in the probability of starting to drink over guideline on a daily basis. Such assimilation is less pronounced for smoking habits, in fact both earlier and later arrival cohorts report lower smoking rates. However, such health advantage is decreasing with time spent in the US.

**Keywords:** health immigration effects, unhealthy assimilation

**JEL-Classification:** J15, I10

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# 1 Introduction

Although immigrants in the United States are still relatively small in absolute term, representing roughly 12.5% of the entire population (Grieco et al., 2012), they are growing far more rapidly than the native-born population. In fact according to Kandel (2011) *"between 2000 and 2008, the foreign born contributed 30% of the total U.S. population increase and almost all of the prime 25-54 working age group increase"*. This large and increasing presence of immigrants highlights the importance of monitoring, among other measures, their health condition. A large immigrant population may increase the pressure to the health care system, since as currently designed, such system might not be able to face the new and evolved health care needs of refugees and immigrants, in terms of (re-)emerging of new diseases and specific need connected to their different cultural heritage and habits. (Borjas and Hilton, 1995, Romero-Ortuno, 2004).

Apart from health outcomes economics literature has long been interest in analysing the extend of immigrants' economic assimilation, especially how and when immigrants converges to natives' wage level. Borjas (1995, 1985) showed that accounting for the presence of cohort fixed effects substantially reduces the rate of economic assimilation and more recent immigrants had relatively lower earnings upon entry than earlier cohorts do. Furthermore, Borjas (2015) showed that there are cohort effects in both wage levels and in wage assimilation, such that more recent cohorts exhibit lower economic assimilation. Such empirical methodology could be easily applied for health convergences analysis.

Regarding health status of immigrants there is a wide spread public view such that immigrants are frequently blamed to raise health care costs and to represents an increased burden on the health care system and on native taxpayers. However, empirical evidence shows that immigrants, upon arriving in the US, are younger and healthier than their American counterparts and less likely to utilize health care (Goldman et al., 2006). Such pattern is conventionally defined as "health immigrant effect". Interestingly upon their arrival immigrants are healthier than both their population of origin and natives in the host countries, but their health deteriorates with time spent in the hosting country (Akbulut-Yuksel and Kugler, 2016, Antecol and Bedard, 2006). For example, (Akbulut-Yuksel and Kugler, 2016) show that even if immigrant children inherit a prominent fraction of their health status (e.g. body weight, asthma, depression) from their parents, however the longer they remain in the US the more they look like native children. These paradoxical facts are observed across several countries and across numerous health indicators (Antecol and Bedard, 2006, Kennedy et al., 2006). The existing literature provides evidence that the relative advantage that immigrants exhibit upon arriving is due to self-selection and socio-cultural protection (Antecol and Bedard, 2006, Jass and Massey, 2004, McDonald and Kennedy, 2004, Riosmena et al., 2013). Unfortunately we still know very little about the process of unhealthy assimilation and its heterogeneity across different immigrant cohorts. Shedding light on such pattern is crucial to evaluate the costs and benefits of migration, and, in particular, its impact on health care. Yet, the mechanisms underlying immigrant health trajectories is not fully understood.

One of the few papers that examined immigrant health assimilation and its possible heterogeneity across different arrival cohorts is Giuntella and Stella (2016), by applying an empirical methodology similar to the wage convergence literature (Borjas, 2015). In their paper Giuntella and Stella (2016) focused their analysis

on the spread of obesity among US immigrants. We intend to build upon such contributions to analyze the health immigrant effects in US of drinking and smoking habits and provide evidence that the "health immigrant effect" might not be homogeneous.

As in Giuntella and Stella (2016) to do so we use data from the public version of the Integrated Health Interview Survey (IHIS) from 1989-2014, to study cohort differences in the assimilation of binge drinking and cigarettes consumption among immigrants over time living in the US. We find that there are indeed cohort effects for alcohol consumption, with more recent cohorts having relatively higher rates of drinking habits and daily drinks consumes upon arrival. In addition to this there also exist cohort effects in the rate of binge drinking assimilation, with more recent cohorts having higher rate of assimilation compared to earlier ones. The results show that such assimilation increased for cohorts arriving in the 1990s. Before 1990, immigrant could expect an increases in their relative binge drinking status of approximately 3 – 4%, during the first 10 years in the US; while such assimilation effect increased to 5% for immigrants who arrived after the 1990, with a more pronounced increased for male and Hispanic immigrants. In terms of number of drinks later cohorts exhibit a higher daily consumption of alcoholic beverages, however the rate of assimilation was higher for cohorts arriving in the first half of the 1990s. Such results point out to a pattern such that, on average, immigrants tend to have a higher probability of becoming binge drinker the longer they stay in the US, however still consuming less drinks than natives. The results on smoking habits point to an interesting pattern which contradicts the "health immigrant effect". Immigrants maintained and actually increased their relative advantages in terms of lower smoking rates and daily cigarettes consumption once they arrive in the US, however such advantage is eroding with time since their convergence rate in the first 10 years are negative but decreasing for cohorts arriving in the 1990 and 2000. Immigrant in the 1990s could expect a decrease in their relative smoking status of approximately 6 – 8%, during the first 10 years in the US, however such divergence rate more than halved (2%) for immigrants who arrived after the 2000. Such rate of assimilation are especially pronounced for Hispanic and male immigrants.

## 2 Data

We collected individual-level data from the Integrated Health Interview Survey (IHIS), which is a harmonized set of data for over 50 years (1963-2014) of the National Health Interview Survey (NHIS). Such long-running is the main features of such dataset, which allow researchers to study long-term pattern in health status and care among American. In this paper we used a sub-set of the IHIS going from 1989 to 2014, when the information on number of years spent in the US was collected. Following similar literature (Antecol and Bedard, 2006, Borjas, 2015, Giuntella and Stella, 2016) and to ensure the representativeness of such sample we restricted the observations to individual aged 25-65 years and who migrated to the US after the age of 18 years. We consider several dependant variables. The first two are two dummy variable coded one if the individual is a smoker or a binge drinker. Following the guidelines from the National Institute of Alcohol Abuse and Alcoholism (NIAAA) binge drinking is defined as "... a pattern of drinking that brings

blood alcohol concentration (BAC) levels to 0.08 g/dL; this typically occurs after 4 drinks for women and 5 drinks for men". So, a binge drinker is a men consuming more than 5 drinks a day, or a woman consuming more than 4 drinks. The other two variables are continuous variable measuring the number of cigarettes and alcoholic beverages<sup>1</sup> that the individual is consuming on a daily basis<sup>2</sup>. We excluded from the sample any observation with missing data for drinking, smoking, age, years since migration, year of arrival, years of education and current employment and marital status. After such restriction we have a final sample consisting of: 669,445 US natives (548,853 White people, 23,753 Hispanics and 99,226 Black people) and 42,558 immigrants (27,330 White people, 23,420 Hispanics and 4,142 Black people).

[Table 1 about here.]

[Table 2 about here.]

In Table 1 and 2 we report the descriptive statics for our final sample divided for men and women and stratified by ethnicity and citizenship. Natives men and women have higher education attainment (13.3 years of education) with respect to immigrants (12 years); they are more likely to be married (63% for natives versus 62% for immigrants); natives are also more likely to work (especially women). Regarding drinking habits the rate of binge drinking is slightly higher for immigrants with respect to natives (11% versus 10%), mostly due to white immigrants binge drinker (13% versus 10%); however natives women have a higher probability of being binge drinker than immigrants (6% versus 2.5% and 1.2 drinks versus 0.6), such difference is more pronounced for Hispanic ethnicity (10% versus 3%). The striking finding is that native men and women have a greater chance of being smoker than their immigrant counterparts (30% versus 20% for men; 24% versus 9% for women). If we compare the number of cigarettes daily consumed native men and women consumes a striking higher number of cigarettes with respect to natives (5 cigarettes versus 2 for men; 3 versus less than 1 for women). From Table 1 and 2 it is easy to see that such relationship are the same for all ethnic group considered.

### 3 Empirical Framework

The aim of this paper is to investigate cohorts' differences in the level of immigrant drinking and smoking habits upon arrival in the US and in the rate of growth of immigrant assimilation. To do so we employ a linear probability model similar to Borjas (2015), Giuntella and Stella (2016) which allows for the presence of cohort differences in the rate of unhealthy assimilation, by allowing cohorts' differences in assimilation.

Following the empirical methodology from Borjas (2015), Giuntella and Stella (2016), our model is the following

$$B_i = \delta A_i + \gamma C_i + \theta(A_i \cdot C_i) + \beta X_i + \epsilon_i \quad (1)$$

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<sup>1</sup>Alcoholic beverages include liquor, beer, wine, wine coolers, and any other type of alcoholic beverage

<sup>2</sup>Since the IHIS codebook exercise caution in interpreting very high values for drinking habits we dropped any observation reporting more than 20 drinks per day, as they may have misunderstood the question (e.g., they may have given a response related to the number of days that they drank or related to a different reference period, such as the number of drinks per year).

where the unit of observation is individual  $i$  aged 25-64 years at time of the IHIS interview.  $B_i$  represents the outcome/behaviour of interest,  $X_i$  is a vector of control variables including age (introduced as a third-order polynomial) interacted with a variable indicating whether the person is foreign- or native<sup>3</sup>;  $A_i$  is linear variable indicating the number of years the immigrant has lived in the U.S. (equal to 0 for natives);  $C_i$  is a vector of dummy variables identifying immigrant arrival cohorts (i.e. cohort fixed effects), with the omitted category given by comparable natives. Following the novelty introduced by Giuntella and Stella (2016) in (1) we include the factor  $A_i \cdot C_i$ , which represents the interaction between the linear term of the years-since-migration and each cohorts fixed effects. Such term allows us to control for the fact that each arrival cohort is allowed to have its own growth path regarding  $B_i$ . In this way we can examine the differential assimilation pattern that the different immigrant-arrival cohorts exhibit.

In equation (1) the  $\delta$  coefficient represents the effect of assimilation on the specific health behavior of interest, while the  $\gamma$  coefficient indicates whether upon their arrival in the US immigrants were more or less likely to engage in unhealthy behaviours with respect to otherwise similar native<sup>4</sup>.

As in Borjas (2015) in addition to the regression analysis we also report the relative unhealthy behaviour growth rates in the first 10 years after immigration<sup>5</sup>. Such analysis is intended to illustrate the trends in the rate of unhealthy assimilation, by computing the extend to which the health gap between natives and immigrants narrowed over the first decade in the US<sup>6</sup>. We estimate (1) separately by gender and race<sup>7</sup>.

## 4 Result

We estimate equation (1) using ordinary least squares (OLS) estimation of the linear probability model using the pooled data from the whole sample. We also estimated the average marginal effect from a Probit regression, yielding similar results. Such results are available upon request. Tables 3 to 6 present the results for the various model using different dependant variables. The upper part (panel (a)) of each table presents the immigrant arrival cohort fixed effects identifying cohort differences in alcohol and smoking status between immigrants at the time of their entry and comparable American natives. The lower part (panel (b)), instead, provides the interactions between cohort fixed effect and the number of years since migration. This analysis is developed following Borjas (2015), the interactions are meant to describe the amount of unhealthy convergence across different immigrant cohorts over their first 10 years in the US.

We estimate equation (1) for the whole sample (columns (1)), dividing by gender (columns (2) for male

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<sup>3</sup>This is the same set of controls used by Giuntella and Stella (2016) and Borjas (2015) in their analysis.

<sup>4</sup>Since the immigrant's year of arrival is defined as the difference between the survey year and the years since migration to the US. However, given that the years since migration, in the IHIS dataset is reported as a categorical variable with five intervals (i.e. 0-1, 1-4, 5-9, 10-14 and 15+), to construct a continuous variable for the year of arrival, we used the mid point for each interval of years since migration. The interval 15+ is coded as 29 years.

<sup>5</sup>The 10-year growth in the relative incidence of unhealthy behaviours of immigrants is calculated by computing immigrant and native incidence rates both at the time of entry, assuming it occurred at 25 years old and 10 years later.

<sup>6</sup>To construct these interactions, we follow Borjas (2015).

<sup>7</sup>Similarly to Antecol and Bedard (2006), Giuntella and Stella (2016) the entire sample exceed the sum of white, Hispanic and black sample, because it contains all other origins (e.g. Asian, Other Whites)

and (3) women) and ethnic origin (columns (4) for Hispanic people, (5) for White people and (6) for Black people). In this way we can analyze the rate of assimilation of a given immigrant sub-group over their native counterpart, with no base group set. We will present the results for the sample as a whole and, if present, we will describe different patters for different gender or ethnic origins<sup>8</sup>.

[Table 3 about here.]

[Table 4 about here.]

Table 3 presents the results on the probability of being a binge drinker, the cohort effects are uniform, significantly negative and become smaller for more recent arrival cohorts. These results support the presence of the healthy immigrant effect, with recent cohorts having a higher probability of being binge drinker than the earlier ones. The initial entry level of binge drinking of immigrants who arrived before 2000 was 8% lower than that of natives, while the initial entry level of immigrant arriving between 2005 and 2014 is 6% lower than that of natives. In general, similar patterns are found by gender and ethnic groups, with the only exception of women and Black (columns (3) and (6)) which actually saw an opposite pattern. While for male immigrant and Hispanic (columns (2) and (4)), by far the largest immigrant ethnic group in the US, the entry level declines from 11% to 5% and from 3% to less than 1% (although not statistically significant) respectively. In panel (b) of table 3, the rate of assimilation from the whole sample (column 1) shows that the estimated coefficient are positive, increasing and significant. The coefficient increase with more recent arrival cohorts. The rate of assimilation significantly increases for cohorts arrived after 1995. Before 1995 immigrants could expect an increases in their relative binge drinking rate of 3 to 5 percentage point the first ten years in the US. Immigrant arrived after 1995, instead, could expect an increase of almost 5 percentage point. The trend of assimilation of the entire sample is driven mostly by the rate of assimilation of Hispanic and male (column (2) and (4)), for which the increase is particularly pronounced.

Table 4 presents the results for the number of alcoholic drinks daily consumed. On average immigrant arrived after 2000 consumed a little bit more than half a drink less per day than natives, while from 1985 to 1990 they consumed almost a full drink less. In general the results are similar to the one for binge drinking although the assimilation rates actually decreased for later cohorts, especially from 1995 onwards, when the increases in binge drinking assimilation was higher. This results point out to the fact that later cohorts are more prone to become binge drinker although they tend to consume less alcoholic beverages with respect to natives. Such pattern could be easily reconciled with the slower economic assimilation that later cohorts have which is limiting their possibility to consume higher doses of alcoholic beverages.

[Table 5 about here.]

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<sup>8</sup>We also estimated the same regression including controls for years of education, marital and employment status, and the yield the similar results, since the inclusion of such control might better represent the different economic context in which immigrants live. Years of education has a protective effect reducing the rate of consumption of alcohol and cigarettes. Such results are available upon request.

[Table 6 about here.]

Table 5 presents the results for smoking rate. In the upper part we notice that later immigrant cohorts are actually less likely to smoke, particularly after 1995. The initial entry level of smoking rate of immigrants who arrived before 1995 was 7% lower than that of natives, while the initial entry level of immigrant arriving between 1995 and 2014 increased to 16%. In general, similar patterns are found by gender and ethnic groups, with the only exception of Black people (column (5)) which actually saw an opposite pattern, with a slight decrease after 1995 (from 9% to 7%). However, from the lower panel of Table 5 we notice that the assimilation rates are negative and significant. This means that immigrants are actually diverging from natives' smoking rates over time, but at a decreasing rate. The rate of assimilation significantly decreased for cohorts arrived after 2000, prior to that time, immigrants could expect to have a decrease in their relative smoking rate of more than 10 percentage point on average in the first ten years in the US. Immigrant arrived after 2000, instead, could expect a sharp reduction in this rate to less than 1 percentage point. The trend of assimilation of the entire sample is driven mostly by the rate of assimilation of Hispanic and male (columns (2) and (4)), for which the increase is particularly pronounced, and who actually turned their assimilation rate positive after 2000. Therefore later immigrant cohorts arrive with lower smoking rates, but as they spent time in the US, especially if they are male and/or Hispanic, the probability of maintaining such health advantages erodes.

Table 5 presents the results for the number of cigarettes daily consumed. On average immigrant arrived after 2000 consumed 2 cigarettes less than their American counterpart, while before that time less than one cigarette of difference. In general the results are similar to the one for smoking, with a sharp change in the assimilation rates after 2000, similarly to the one for smoking rates, especially for male and Hispanic (columns (2) and (4)).

## 5 Conclusion

American immigrants upon their arrival are healthier than their natives counterpart but, as they spend time in the US, such initial health advantage erodes (i.e. healthy immigrant effects). Several studies documented such effects for various health outcomes, however little is known about how immigrants assimilate health while they live in the US and the heterogeneity of such assimilation rate.

To shed some light on this assimilation effect, we study immigrant long-term trend of assimilation of binge drinking and smoking habits from American native. To do so we use data from the Integrated Health Interview Survey (1989-2014). We find that not only there are cohort differences in alcohol consumption and smoking rates of immigrants once they arrive in the US, but also in their assimilation of such behaviors as time passes. Recent cohorts exhibit lower differences in drinking habits with respect to natives and faster assimilation of native habits. While for smoking recent cohorts report lower smoking habits, however such advantage seems to be decreasing with time spent in the US, both in terms of smoking rates and number of cigarettes. Especially Hispanic and male immigrants are the one in greater risk of assimilating unhealthy



behaviors.

Unfortunately due to limitation in the data (e.g. country of migration, area of migration, reference peers) we can only speculate on the specific drivers behind these patterns. One possible explanation is related to social norms and peers effects toward which immigrants are exposed once they arrive in the US, with this effect being more pronounced among second-generation immigrants (Ali and Dwyer, 2009, Gaviria and Raphael, 2001, Powell et al., 2005). Another possible explanation is related to increases in drinking and smoking rates in the country of origin, since such unhealthy behaviours are still two of the major causes of death all over the World (OECD, 2015). Another possible explanation is the slower economic assimilation that new immigrants experience (Borjas, 2015), causing them to be at higher risk of experiencing unhealthy behaviors. There is indeeds space for future research in the direction of such assimilation in order to promote ways to sustain healthy behaviors among immigrant and their descendants.

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Table 1: Summary statistics for men, by nativity and ethnic origin

	All Origin		Hispanic		White		Black	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Native mean	Immigrant mean	Native mean	Immigrant mean	Native mean	Immigrant mean	Native mean	Immigrant mean
Binge Dr.	0.10	0.11	0.19	0.16	0.10	0.13	0.07	0.05
Smoking	0.28	0.19	0.26	0.20	0.27	0.21	0.32	0.14
N. of drinks (Daily)	1.87	1.89	2.77	2.30	1.92	2.12	1.55	1.35
N. of cigarettes (Daily)	4.71	1.98	2.69	1.79	4.90	2.16	3.82	1.43
Age	44.00	43.93	40.39	43.47	44.08	44.36	44.05	44.63
Married	0.57	0.65	0.50	0.65	0.60	0.65	0.40	0.54
Education (Years)	13.54	12.24	12.87	10.30	13.66	11.41	12.78	13.21
Employed	0.81	0.82	0.80	0.82	0.83	0.82	0.70	0.82
Before 1970		0.04		0.04		0.04		0.03
1970-80		0.21		0.21		0.23		0.20
1980-85		0.18		0.17		0.18		0.20
1985-90		0.06		0.07		0.06		0.06
1990-95		0.11		0.11		0.11		0.10
1995-00		0.19		0.20		0.19		0.20
2000-05		0.13		0.14		0.13		0.13
2005-14		0.08		0.05		0.06		0.07
Less than 1 year		0.02		0.02		0.02		0.01
1-5		0.17		0.15		0.15		0.15
5-9		0.21		0.22		0.20		0.22
10-14		0.18		0.20		0.18		0.20
15+		0.42		0.41		0.44		0.41
Observations	146923	17847	9357	9740	122266	11438	20282	1763

Table 2: Summary statistics for women, by nativity and ethnic origin

	All Origin		Hispanic		White		Black	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Native mean	Immigrant mean	Native mean	Immigrant mean	Native mean	Immigrant mean	Native mean	Immigrant mean
Binge Dr.	0.06	0.03	0.10	0.03	0.06	0.03	0.04	0.02
Smoking	0.24	0.09	0.19	0.09	0.24	0.11	0.24	0.05
N. of drinks (Daily)	1.18	0.66	1.49	0.65	1.23	0.74	0.92	0.57
N. of cigarettes (Daily)	3.32	0.81	1.65	0.67	3.55	1.02	2.44	0.39
Age	43.75	44.39	39.97	43.95	44.05	44.80	42.90	44.85
Married	0.53	0.59	0.45	0.56	0.60	0.58	0.27	0.42
Education (Years)	13.53	11.91	12.77	10.37	13.67	11.25	12.97	12.60
Employed	0.69	0.57	0.67	0.52	0.70	0.54	0.65	0.70
Before 1970		0.04		0.04		0.05		0.04
1970-80		0.22		0.23		0.24		0.21
1980-85		0.18		0.16		0.18		0.19
1985-90		0.07		0.08		0.06		0.06
1990-95		0.12		0.13		0.12		0.11
1995-00		0.18		0.19		0.18		0.18
2000-05		0.13		0.13		0.13		0.13
2005-14		0.07		0.04		0.05		0.07
Less than 1 year		0.02		0.01		0.01		0.02
1-5		0.15		0.13		0.13		0.14
5-9		0.22		0.23		0.22		0.22
10-14		0.19		0.20		0.19		0.20
15+		0.43		0.42		0.45		0.42
Observations	171890	21630	12714	12105	135552	13997	31205	2048

Table 3: Linear probability model model allowing for cohort effects in binge drinking

	All Origin			Hispanic	White	Black
	(1) All	(2) Male	(3) Female	(4) All	(5) All	(6) All
(a) Cohort Effects:						
1985-90	-0.0797*** (0.00860)	-0.114*** (0.0161)	-0.0530*** (0.00494)	-0.0461*** (0.00407)	-0.0685*** (0.0104)	-0.0440** (0.0115)
1990-95	-0.0870*** (0.00891)	-0.0786** (0.0161)	-0.0884*** (0.00547)	-0.0950*** (0.00394)	-0.101*** (0.0107)	-0.0284* (0.0101)
1995-00	-0.0787*** (0.00907)	-0.0727** (0.0167)	-0.0920*** (0.00565)	-0.0633*** (0.00399)	-0.0675*** (0.0106)	-0.0369** (0.00925)
2000-05	-0.0738*** (0.00920)	-0.0613** (0.0170)	-0.0974*** (0.00567)	-0.0344*** (0.00411)	-0.0612*** (0.0107)	-0.0282* (0.00999)
2005-14	-0.0604*** (0.00904)	-0.0507* (0.0169)	-0.0830*** (0.00558)	-0.00853 (0.00451)	-0.00186 (0.0108)	-0.0517*** (0.0101)
(b) Relative growth in the first 10 years:						
1985-1990 arrivals	0.0338*** (0.0023)	0.0878*** (0.0015)	0.0057 (0.3055)	0.00142 (0.8311)	0.0459*** (0.0055)	0.0004 (0.2587)
1990-1995 arrivals	0.040*** (0.0033)	0.0484*** (0.0305)	0.0292*** (0.0007)	0.0322*** (0.0005)	0.0604*** (0.0012)	0.005 (0.6717)
1995-2000 arrivals	0.0429*** (0.0024)	0.0549** (0.0191)	0.0366*** (0.0002)	0.0159** (0.0187)	0.0475*** (0.0044)	0.103 (0.3686)
after 2000 arrivals	0.0463*** (0.0015)	0.0674*** (0.0073)	0.0408*** (0.0000)	0.0376*** (0.0002)	0.0563*** (0.0019)	0.0116 (0.4201)
Observations	358276	164761	193515	43914	283245	55294

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 4: Linear probability model model allowing for cohort effects in number of drinks

	All Origin			Hispanic	White	Black
	(1) All	(2) Male	(3) Female	(4) All	(5) All	(6) All
(a) Cohort Effects:						
1985-90	-0.697*** (0.0631)	-0.433** (0.108)	-0.993*** (0.0653)	-0.760*** (0.0582)	-0.623*** (0.0508)	-1.020*** (0.0871)
1990-95	-0.882*** (0.0654)	-0.594*** (0.106)	-1.023*** (0.0702)	-1.061*** (0.0530)	-0.968*** (0.0494)	-0.624*** (0.0824)
1995-00	-0.722*** (0.0667)	-0.481** (0.109)	-1.065*** (0.0719)	-0.825*** (0.0498)	-0.649*** (0.0485)	-0.296** (0.0758)
2000-05	-0.625*** (0.0677)	-0.378** (0.111)	-1.027*** (0.0722)	-0.556*** (0.0499)	-0.523*** (0.0492)	-0.391** (0.0828)
2005-14	-0.543*** (0.0666)	-0.413** (0.110)	-0.866*** (0.0706)	-0.0298 (0.0493)	-0.187** (0.0494)	-0.358** (0.0801)
(b) Relative growth in the first 10 years:						
1985-1990 arrivals	0.122 (0.1236)	0.088 (0.5110)	0.231** (0.0124)	0.0504 (0.5694)	0.216** (0.0125)	0.439*** (0.0023)
1990-1995 arrivals	0.236** (0.0111)	0.194 (0.1582)	0.209** (0.0212)	0.222** (0.0215)	0.409*** (0.0002)	0.0857 (0.4077)
1995-2000 arrivals	0.181** (0.0357)	0.140 (0.2979)	0.301*** (0.0032)	0.147* (0.0850)	0.224*** (0.0062)	0.0357 (0.7099)
after 2000 arrivals	0.175** (0.0543)	0.183** (0.0203)	0.265*** (0.0068)	0.0573 (0.4769)	0.227*** (0.0000)	0.247** (0.0446)
Observations	358034	164553	193481	43867	283051	55263

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 5: Linear probability model model allowing for cohort effects in smoking habits

	All Origin			Hispanic	White	Black
	(1) All	(2) Male	(3) Female	(4) All	(5) All	(6) All
(a) Cohort Effects:						
1985-90	-0.0479*** (0.00908)	-0.0886*** (0.0171)	-0.00532 (0.00765)	-0.0872*** (0.0117)	-0.109*** (0.00680)	-0.0762** (0.0226)
1990-95	-0.0653*** (0.00840)	-0.00845 (0.0158)	-0.0977*** (0.00731)	-0.0507** (0.0120)	-0.0653*** (0.00639)	-0.142*** (0.0204)
1995-00	-0.0718*** (0.00814)	-0.0276 (0.0159)	-0.123*** (0.00708)	-0.0554** (0.0120)	-0.0516*** (0.00619)	-0.0905** (0.0190)
2000-05	-0.111*** (0.00818)	-0.100*** (0.0159)	-0.135*** (0.00711)	-0.0593** (0.0122)	-0.106*** (0.00627)	-0.0664* (0.0208)
2005-14	-0.156*** (0.00785)	-0.147*** (0.0155)	-0.182*** (0.00679)	-0.121*** (0.0125)	-0.174*** (0.00617)	-0.0663* (0.0209)
(b) Relative growth in the first 10 years:						
1985-1990 arrivals	-0.1436*** (0.0000)	-0.116*** (0.0008)	-0.159*** (0.0000)	-0.167*** (0.0001)	-0.111*** (0.0000)	-0.0653* (0.0636)
1990-1995 arrivals	-0.0630*** (0.0005)	-0.0559** (0.0299)	-0.0816*** (0.0000)	-0.0250 (0.1340)	-0.0441*** (0.0009)	-0.0769** (0.0185)
1995-2000 arrivals	-0.0833*** (0.0001)	-0.0845*** (0.0038)	-0.0751*** (0.0000)	-0.0252*** (0.0082)	-0.0909*** (0.0000)	-0.0215 (0.3971)
after 2000 arrivals	-0.0172*** (0.1194)	0.0487** (0.0436)	-0.0396*** (0.0014)	-0.0449** (0.0191)	0.0416*** (0.0009)	-0.0869*** (0.0039)
Observations	327600	150107	177493	47108	256269	51398

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$



Table 6: Linear probability model model allowing for cohort effects in number of cigarettes

	All Origin			Hispanic	White	Black
	(1) All	(2) Male	(3) Female	(4) All	(5) All	(6) All
(a) Cohort Effects:						
1985-90	-0.0537 (0.114)	-0.463 (0.236)	-0.418*** (0.0646)	-1.114*** (0.106)	-0.588** (0.139)	-1.317*** (0.208)
1990-95	-0.844*** (0.114)	-0.540* (0.229)	-0.953*** (0.0631)	0.133 (0.106)	-0.821*** (0.149)	-1.416*** (0.172)
1995-00	-0.895*** (0.115)	-0.558* (0.236)	-1.343*** (0.0617)	-0.110 (0.104)	-0.692** (0.152)	-0.913*** (0.154)
2000-05	-1.641*** (0.117)	-1.846*** (0.239)	-1.590*** (0.0619)	-0.315* (0.106)	-1.706*** (0.155)	-0.823** (0.166)
2005-14	-2.163*** (0.114)	-2.421*** (0.235)	-2.088*** (0.0593)	-0.889*** (0.108)	-2.417*** (0.157)	-0.873*** (0.156)
(b) Relative growth in the first 10 years:						
1985-1990 arrivals	-2.371*** (0.0000)	-2.531*** (0.0000)	-2.110*** (0.0000)	-1.587*** (0.0000)	-2.749*** (0.0000)	-0.264 (0.3496)
1990-1995 arrivals	-1.876*** (0.0000)	-2.117*** (0.0001)	-1.756*** (0.0000)	-1.054*** (0.0001)	-1.912*** (0.0000)	-0.370 (0.1541)
1995-2000 arrivals	-2.130*** (0.0000)	-2.479*** (0.0000)	-1.720*** (0.0000)	-1.125*** (0.0000)	-2.447*** (0.0000)	-1.064*** (0.0011)
after 2000 arrivals	-1.621*** (0.0000)	-1.320*** (0.0016)	-1.230*** (0.0000)	-0.793*** (0.0004)	-1.173*** (0.0002)	-1.261*** (0.0004)
Observations	327600	150107	177493	47108	256269	51398

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$