RECENT IMMIGRANTS: UNEXPECTED IMPLICATIONS FOR CRIME AND INCARCERATION

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NBER Working Paper No. 6067
June 1997
JEL Nos. F22, K42
Labor Studies

ABSTRACT

Among 18-40 year old men in the United States, immigrants are less likely to be
institutionalized than the native-born, and much less likely to be institutionalized than native-born
men with similar demographic characteristics. Furthermore, earlier immigrants are more likely to
be institutionalized than more recent immigrants. Although all immigrant cohorts appear to
assimilate toward the higher institutionalization rates of the native-born as time in the country
increases, recent immigrants do not increase their institutionalization rates as quickly as one would
predict from the experience of earlier immigrant cohorts. These results are the opposite of what one
would predict from the literature on immigrant earnings, where earlier immigrants are typically
found to have better permanent labor market characteristics.

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The labor economics literature on immigration has focused on changes in immigrants' earnings over time. Chiswick (1978) used cross-sectional data and found evidence that immigrants initially earn less than the native-born, but that within ten to fifteen years they close this earnings gap. This rapid rise in earnings was attributed to assimilation into the United States labor market. Borjas (1985) later presented results suggesting that earlier immigrants have higher earnings not because they have had more time to assimilate, but because they had better labor market characteristics when they initially joined the United States labor market. Borjas points to a decline in the permanent skills of recent cohorts of immigrants.

Borjas (1987) attributes this decline in skills to the dramatic changes in the composition of immigrants to the United States over the past two decades. Before 1960, most immigrants to the United States came from Europe, with a sizeable fraction from the Americas and negligible numbers from Asia and Africa. Over the 1980's, however, 10 percent of the new immigrants came from Europe, 49 percent from the Americas, 38 percent from Asia, and three percent from Africa.[1] During the 1980's, the fraction of immigrants who were Hispanic, black, and "other" race increased, as did the fraction of immigrants with less than a high school education. The 1990's are also bringing a large flow of these new immigrants to the United States.

If recent immigrants are negatively selected from some distribution of permanent labor market skills, then the lackluster performance of recent immigrants in the United States labor market is not expected to improve with time in the country. There may be

further consequences for the economy, depending on how immigrants behave outside the legal labor market. For example, economists have long considered criminal activity as an alternative to the labor market (Becker (1968)). Ceteris paribus, those with poorer legal sector opportunities will be more likely to engage in crime. If, as Borjas posits, recent immigrants are negatively selected from a distribution of labor market skills, then the economic model of crime predicts they will be more likely to participate in the illegal sector. If illegal activity is positively correlated with institutionalization, then immigrants will have an adverse impact on institutionalization rates. Institutionalization, then, represents the social costs of the criminal behavior and the costs associated with punishment.

We begin this paper by comparing the institutionalization rates of various groups of the population in 1980 and 1990. Since we cannot identify incarceration in the 1990 Census from the broader category of institutionalization, we focus on the experience of young adult males. In this group, institutionalization is an unambiguously bad outcome: over 70 percent are in institutions because they have been convicted of a crime; the remainder are in mental institutions, hospitals, and drug treatment centers. Contrary to what one would predict from their characteristics, immigrants are much less likely to be institutionalized than natives. In fact, if native-born men had the institutionalization rates of immigrants with the same characteristics the institutionalized population would be two-thirds its current size.

To address the question of what happens to institutionalization rates as immigrants learn about the United States economy and culture we compare institutionalization rates for several cohorts in the 1980 and 1990 Censuses (c.f. Borjas

(1985), LaLonde and Topel (1992), Blau (1992)). Cross-sectional results show that early immigrants are more likely to be institutionalized than more recent immigrants. This suggests that immigrants may assimilate to the (higher) criminal propensities of natives. However, synthetic cohort analysis shows that the cross-section over-predicts the increase in incarceration for the recent immigrant groups, even though these recent immigrants are those with the poorest labor market characteristics. These results suggest that immigrant self-selection occurs on multiple dimensions and is more complicated than the narrow labor market perspective has considered. Given that institutionalization closely proxies incarceration, it appears that the earlier immigrants are negatively selected from the distribution of criminal propensities (relative to later arrivals), although their labor market characteristics look better.

Our findings are an important addition to the policy debate surrounding immigration. Public concern about the effect of immigration on everything from labor markets to the educational system has been growing.[2] Researchers have responded to this concern by investigating the consequences of immigration for a myriad of socio-economic outcomes: Currie (1995) analyzes immigrants' use of subsidized medical care; Blau (1992) investigates how immigrants' fertility patterns compare to those of natives; and Borjas (1994) documents that immigrants have higher welfare participation rates than the native-born, and that their participation increases as time in the United States increases. Although the consequences of immigration for institutionalization has received attention in the media, almost no research has been done attempting to document the impact.[3]

Section I of this paper describes the data and presents institutionalization rates for various demographic groups. Section II investigates the correlates of institutionalization. In Section III, we present the cohort analysis. Section IV discusses the degree to which we can learn about criminal behavior from these results. Section V investigates the determinants of institutionalization separately for immigrants and the native-born. Section VI offers a brief conclusion.

I. Institutionalization

A. The Institutionalized Population

We use data from the five percent 1980 and 1990 Public Use Microdata Samples to track institutionalization rates for immigrants and natives in 1980 and 1990. Our outcome measure is a dichotomous variable equal to one if the individual is reported as living in an institutional setting.[4] The sample omits people born in United States outlying areas (including Puerto Rico), children born abroad of American parents, and a small number of people from countries difficult to fit into unique regions.

The institutionalized population is a heterogeneous group. It includes people in mental hospitals, homes for the aged, other institutions, and correctional facilities. Ideally, we would like to break the institutionalized population into its individual parts and analyze the relationship between immigrant status and each type of institutionalization. However, only the 1980 Census separately identifies the different institutional settings. Because we wanted to limit our sample to those for whom institutionalization is an unambiguously negative outcome, we focus on men aged 18-40. Among this group, the vast majority (70 percent) of the institutionalized are in

correctional facilities. Of those in non-correctional institutions, 44 percent are in "other institutions" (which include hospitals and drug treatment centers), 43 percent are in mental institutions, and 13 percent are in long-term care facilities. The fraction incarcerated among the institutionalized varies across different groups in the population. Compared to non-Hispanic white men, a higher percentage of the institutionalized immigrants (77 percent), blacks (85 percent), and Hispanics (83 percent) are in correctional facilities (versus other institutional settings).

Although we cannot check within our data, we believe an even larger percentage of the institutionalized in 1990 are in correctional institutions due to the tremendous increase in prison populations and the de-institutionalization that took place in mental health. Interestingly, the profiles of individuals in drug treatment centers, mental institutions, and correctional facilities are strikingly similar in terms of educational attainment. Thus, links we uncover between immigration and institutionalization will be very similar to the links between immigration and incarceration.[5] We will address the question of whether our results can tell us anything about the underlying criminal behavior of immigrants in later sections of the paper.

Descriptive characteristics for these 18-40 year old males, divided into immigrants and natives, are reported in Table 1.[6] Some of the striking differences between immigrants and natives are illustrated here. In both 1980 and 1990 immigrants had lower average educational attainment than natives. However, the percent of immigrants with less than a high school degree increased from 1980 to 1990 (34.6 percent to 39.1 percent), while the percent of natives with less than a high school degree fell (19.3 percent to 16.7 percent). The percentage of the population describing

itself as "white non-Hispanic" fell for both immigrants and natives, but the decline was quite large for immigrants: 33.9 percent to 19.6 percent.[7]

One of the individual characteristics that is expected to increase institutionalization in a non-correctional facility is disability status. The Census collects information on several types of disability. Two that are consistent across the 1980 and 1990 Censuses are "work limited" and "work prevented." In both 1980 and 1990 the native-born are much more likely to report a work limiting disability than are immigrants. In 1980, 5.8 percent of the natives and 3.1 percent of the immigrants reported being limited in their ability to work. By 1990, this number had climbed slightly for natives to 6.2 percent, and changed very little for immigrants (3.2 percent). The numbers for "work prevented" increased dramatically for the native-born over the decade, but the fraction was tiny in the beginning period (0.2 percent to 2.5 percent). The percentage of immigrants with a disability preventing work was 0.9 percent in 1980, and grew to 1.2 percent in 1990. Thus, by 1990, immigrants are much less likely to report any type of disability than are natives.

Although the major changes in immigrant sending regions began after the 1965 change in the immigration law, there were continued shifts between 1980 and 1990. The fraction of immigrants from Mexico, Central and South America increased, as did the fraction immigrant from all areas in Asia, and from some Caribbean Countries. By 1990, Mexico is responsible for a full 30 percent of the male immigrants between the ages of 18-40 residing in the United States. In what follows below, we investigate whether any immigrant groups, defined by country of origin or time of arrival, are disproportionately institutionalized.

B. Changes in Institutionalization Rates

During the 1980's, the number of people institutionalized roughly doubled. Most

of this increase is due to the skyrocketing numbers of inmates incarcerated in state and

federal prisons. The incarceration rate rose from 138 per 100,000 population in 1980 to

271 per 100,000 in 1989 (Maguire and Pastore (1994), Table 6.29). By 1992, one-half

of one percent of the total United States population was incarcerated in local jails or in

federal or state prisons.[8]

Although rates of incarceration are increasing, driving the increase in

institutionalization, institutionalization is still a rare event and difficult to explain

compared to most outcomes studied by economists. This is important to bear in mind

when we come to the econometrics.

Table 2 shows the institutionalization rates for native-born and immigrant men

aged 18 to 40 in 1980 and 1990. The institutionalization rate for these men in the

United States as a whole increased dramatically (60 percent) over the decade, rising

from 0.013 to 0.021. While institutionalization rates increased for all native-born

groups, the increase was most dramatic for black and Hispanic men. By 1990, black

native-born men had an institutionalization rate of 0.081. Immigrant men have much

lower institutionalization rates than the native-born in both 1980 and 1990, although the

gap was somewhat larger in the earlier period. The relative ranking of

institutionalization rates by race and ethnicity are the same within the immigrant and

native populations -- blacks have the highest institutionalization rates and Asians the

lowest. Table 2 demonstrates that no matter which segment of the population we focus

on, the fraction institutionalized increased over the 1980's.

Perhaps surprisingly, within both cross-sections, those immigrants who arrived earlier are more likely to be in institutions than more recent entrants. This is in stark contrast to the usual findings in the literature on labor market outcomes of immigrants in which earlier immigrants are generally found to be more successful than the recent arrivals. (See Borjas (1990), Table 7.1.) There are several influences on these cohort patterns, and we will spend much of the paper attempting to distinguish among them. First, since incarceration drives our institutionalization measure, lags in the criminal justice system may translate into low rates of institutionalization for recent entrants; they simply may not have been in the United States for enough time to get into sufficient trouble for institutionalization. We call this the "exposure time" explanation. Second, we would expect institutionalization rates to increase with time in the country if recent entrants become more like natives as time in the United States increases, i.e. they assimilate to both the legal and illegal sectors of the economy. Third, successive immigrant cohorts may have lower propensities toward activities that result in institutionalization. If we use incarceration as an example, this would mean that successive immigrant cohorts may have lower propensities to criminal activity due to a shift in the underlying distribution of criminal propensities among immigrants (e.g., a change in the composition of the countries of origin, or, within country, a change in the type of person who chooses to immigrate). Finally, there may have been changes in the United States government's policy toward deportation of institutionalized immigrants. We return to these various explanations in Sections II and III.

Table 2 also shows the rates of institutionalization for immigrants from several countries that are often singled out in the immigration debate as having particularly

detrimental effects on the United States economy and social welfare. Note that Mexican immigrants have lower institutionalization rates than natives and immigrants overall in both years. Cuban, Colombian, and Caribbean immigrants all have lower than average institutionalization rates in 1980, but rather high rates in 1990.

The 1990 Cuban immigrants include those who arrived in the United States during the Mariel Boatlift (immigrants from Cuba in 1980-81). This group had an 8.6 percent institutionalization rate, the highest rate of any group. As was widely reported in the press at the time, some of those permitted to leave Cuba during the Mariel Boatlift were inmates of mental hospitals and prisons. Many of these immigrants were held in detention facilities to await decisions about their immigration status. (See Card (1990) and Masud-Piloto (1988).) Thus, this group may have committed more acts which led to their institutionalization after arrival in the United States, or they may have transited directly into institutional facilities upon arrival in the United States.

Immigrants from countries that send large numbers of refugees typically have poor labor market outcomes in the United States. Borjas (1994) finds that refugees have significantly higher welfare participation than natives and other immigrants.[9] In contrast, we find that refugee immigrants in our sample have lower rates of institutionalization than immigrants overall and much lower than the native-born overall in both 1980 and 1990.[10] The bottom panel of Table 2 also reports the increase in the fraction immigrant among the institutionalized and non-institutionalized populations.

From other research and administrative data we know that the institutionalized are disproportionately poorly educated, African-American, and Hispanic.[11] Table 1 shows that immigrants are disproportionately poorly educated and Hispanic. Therefore,

we expect immigrants to have higher institutionalization rates based on their educational attainment and ethnicity, but expect lower rates due to racial composition (since immigrants are less likely to be black and more likely to be Asian than the native-born) and disability status.

To see the importance of the differing characteristics in these populations, in Table 3 we report predicted institutionalization rates for immigrants using the characteristics of immigrants and the relationships between characteristics and institutionalization for the native-born. Recall that the actual institutionalization rates for the native-born are 0.0135 in 1980 and 0.0216 in 1990. The actual institutionalization rates for immigrants are 0.0069 in 1980 and 0.0149 in 1990. Based on the age composition of the immigrant population, we would expect them to have very similar rates of institutionalization to the native-born: 0.0133 in 1980 and 0.0219 in 1990. Since immigrants in fact have much lower education attainment than the native-born, our predictions based on education suggest immigrants would have much higher institutionalization rates if they had the same relationship between education and institutionalization as natives. Controlling for age, race and ethnicity, but not education, we also predict immigrants would have higher institutionalization than the native-born. Controlling for age, race, ethnicity and education, the predicted institutionalization rates for immigrants are much higher than the observed rates for immigrants and the observed rates for natives. Controlling for disability status, in addition to these other variables, reduces the magnitude of the predicted institutionalization rate for immigrants, but it is still substantially higher than the observed rate, the rate for the native born, and the rate predicted for immigrants solely using age. Overall, Table 3

indicates that in 1990, if immigrants had the same "returns" to their characteristics as natives, they would have almost double the institutionalization rates of natives.

Figure 1 presents simple visual evidence of the changes in institutionalization between 1980 and 1990 for immigrants and the native-born. This figure shows the institutionalization rate for each age (18-40) for natives, and immigrants who arrived within the last five years, and those who arrived between five and 10 years ago in each census. The left panel is for 1980 and the right panel is for 1990.

Comparing 1980 to 1990, one can see that the institutionalization rate increased for all groups over the decade. What is most striking about this figure is that the age/institutionalization profile for immigrants is always below that for the native-born. The difference between the second most recent cohort and the native-born expanded for those in their early to mid-twenties (an age with high risk of incarceration). The change for this age group may lead to much lower overall institutionalization rates for this cohort over the life-cycle. At the same time there was a dramatic shift downward, relative to the native-born, in the age/institutionalization profile for the cohort that entered the United States within the previous five years.

II. Determinants of Institutionalization

Ideally, estimation of the determinants of institutionalization would occur within a several equation system. The simplest version requires both a "crime" equation and an "institutionalization" equation. The crime equation would capture the propensity to engage in criminal activity. The canonical economic model of crime treats criminal activity as an alternative to legal sector activities (Becker (1968)). Ceteris paribus,

those who have skills that are relatively well remunerated in the legal sector will be less likely to engage in crime. By the same token, those who suffer higher penalties for criminal activity (including expected punishment) will avoid criminal activity. Thus, individuals with lower labor market skills such as experience and education are predicted to have higher levels of criminal activity. Finally, since punishment follows criminal activity with a lag, the discount rate will also be important to the crime participation decision. In sum, criminal propensity should be a function of the payoffs to criminal activity, legal alternatives to crime, the expected enforcement consequences, the discount rate, and perhaps an idiosyncratic term representing attitudes toward lawfulness:

(1) Crime = f(payoffs to crime, payoffs to work, discount rate, institutionalization; policing, sentencing, attitudes)

Assume the idiosyncratic term and the enforcement environment, with the exception of institutionalization, are exogenous. Immigration status may impact criminal activity through its effect on illegal and legal sector work opportunities, the discount rate, or attitudes.

In the second equation, the institutionalization propensity should be a function of criminal activity and enforcement:

(2) Institutionalization = f(crime; policing, sentencing)

Here, immigration status may impact institutionalization through the actions of the police and courts, as well as indirectly through those factors that affect criminal activity.

Since we do not have information on the criminal activity of individuals, we estimate a reduced form of the institutionalization equation.

(3) Institutionalization = f(payoffs to crime, payoffs to work, discount rate; policing, sentencing, attitudes)

As a result, our empirical model must include variables that capture the differences in criminal behavior as well as variables relating to treatment by the criminal justice system. Thus, our models include age, race, ethnicity, education levels, and disability status in order to control for the returns to crime relative to legal work, the discount rate, and differential enforcement by race/ethnicity.[12] To the extent that the controls absorb these sources of variation, we can then isolate the effect of immigrant status and immigrant cohort of entry on institutionalization. In the results that follow, we report the relative institutionalization rates of immigrants with and without controlling for education, race, and ethnicity. In order to control for the enforcement environment (policing and sentencing), we measure the institutionalization of immigrants relative to that of the native born.

Table 4 reports logit coefficients for several specifications explaining institutionalization in both 1980 and 1990.[13] The first column for each year confirms the results in Table 2, but now controlling for the age distribution. Immigrant status is negatively and significantly related to the probability of institutionalization. The second

set of specifications include separate dummy variables for each cohort of immigrants. Within each cross-section we see that the earliest cohorts have institutionalization rates that are no different from natives, while more recent cohorts of immigrants have increasingly lower rates. This pattern -- where recent immigrants have the lowest institutionalization rates -- is maintained as more control variables are added to the models. Interestingly, this pattern is very similar to what other researchers have found in earnings equations, although here it has a much different interpretation. The immigrants who have been in the country for longer are more similar to natives, but in this setting that is a negative outcome. We explore the implications of this in the next section.

The third and ninth columns add controls for education. Here we define three indicator variables for educational attainment: less than high school, high school degree, and some college. The omitted category is college degree and above. Similar to other studies, we find that educational attainment is a very important predictor of institutionalization, in the expected direction. (See Piehl (1994a, 1994b).) Because immigrants have, on average, lower educational attainment than natives, adding education controls strengthens the negative effect of immigrant status on institutionalization probabilities.

The fourth and tenth columns include race and ethnicity, but not education, controls. The omitted racial/ethnic category is white non-Hispanic. Blacks are more likely to be institutionalized than this omitted group across both years and all specifications. The opposite is true for Asians. The effect of Hispanic ethnicity is

positive and significant in these specifications. "Other" race is also positive and significant.

Educational attainment, race, and ethnicity are all held constant in the specifications in columns five and eleven. The inclusion of these variables increases the amount of explained variation by more in 1990 than in 1980. Clearly these became more important determinants of institutionalization, and possibly of the underlying behavior leading to institutionalization, during the 1980's. This is consistent with the fact that the legal sector earnings of poorly educated men deteriorated during this time period. (See Juhn, Murphy and Pierce (1993) and Levy and Murnane (1992).) We explore the determinants of institutionalization in more detail in Section V by separately analyzing immigrants and the native born.

In the final specification we include two disability measures. These are strongly positively associated with institutionalization. However, their inclusion does not change the inference on the immigration variables, nor the pattern of coefficients associated with the various immigrant cohorts. These variables control for whether or not an individual is in an institution because of his health characteristics, rather than his behavior. Therefore, controlling for disability, the relationships among the other variables come closer to being their predicted effect on incarceration, rather than the broad measure of institutionalization. As expected from the earlier discussion of changes in institutionalization over the decade, disability status does not explain as much of the variation in 1990 as in 1980.

In specifications not reported, we included a citizenship indicator for immigrants. Citizenship is associated with a higher likelihood of institutionalization in 1980. In

analyses of wage determination, citizenship among immigrants is usually interpreted as indicative of positive selection: these are the people who plan to stay in the United States and thus invest in United States-specific skills. In this setting, it could be that those who plan to engage in behavior that leads to institutionalization become citizens for the protection that citizenship offers, e.g. citizens cannot be deported, while even legal resident aliens may be if they are institutionalized. Alternatively, citizenship may be acting as an additional measure of time in the country. By 1990, the effect of citizenship for immigrants is insignificant.[14]

In other specifications not reported here, we also controlled for specific region of origin for the immigrants. Adding dummy variables for 17 regions of origin does not affect the other coefficients very much. The only immigrant group that, across specifications, always has higher institutionalization rates than United States natives is "country not specified."

As promised, we now turn to a detailed analysis of cohorts of immigrants in order to distinguish among possible explanations for the pattern of coefficients observed in Table 4.

III. Assimilation and Cohort Analysis

Although our data are from two points in time, we are not merely interested in snapshots of the institutionalized population. The long-term effects of immigration on institutionalization and many other economic and social issues depends on what happens to immigrants as they spend more time in the United States. The performance of immigrants in the past may help us to predict the outcomes for immigrants arriving

now. We use two methods to try to understand what happens to immigrants over time in the United States. The first is to look at the institutionalization rates of previous immigrants. The second is to look at a particular arrival cohort in two cross-sections.

Within a cross-section, we may find that immigrant cohorts that have been in the United States longer have higher institutionalization rates than more recent entrants for several reasons. The first is the exposure-time hypothesis mentioned earlier. It may take immigrants a certain amount of time to become involved in activities that result in institutionalization. On the other hand, if convergence or assimilation to United States norms is important, we would expect institutionalization to rise with time in the United States, since the immigrants are assimilating to the higher native-born levels of institutionalization. Exposure time and assimilation are observationally equivalent in a cross-section.

Another reason the more recent immigrants might have a different institutionalization probability than the earlier immigrants is if the skills of immigrants have been changing over time. This issue has received a great deal of attention in the literature on immigrant earnings. Using a cross-section of white men from the 1970 Census, Chiswick (1978) found that immigrant men's earnings rapidly increased with time in the country, eventually leading to a "cross-over" point after about 10-15 years in the United States. Borjas (1985,1987, 1990) pointed out that this was only interpretable as an assimilation effect if the characteristics of the recent immigrants are the same as those of earlier arrivals. Borjas argued that the skill level of successive immigrant cohorts has been dropping over time. Therefore, the appearance of improving earnings is just an artifact of cross-sectional analysis where the earlier immigrants have higher

earnings because they have higher skills. In the earnings context, assimilation and changing productivity lead to the same implications for cohort differences: earlier cohorts of immigrants will have higher earnings. In the institutionalization context, if labor market success is negatively correlated with institutionalization, then we would expect more recent cohorts to have higher institutionalization probabilities than earlier cohorts of immigrants. Assimilation and declining cohort "quality" work in opposite directions for institutionalization probabilities: assimilation implies earlier cohorts will have higher institutionalization rates, while declining cohort skill levels imply earlier cohorts ought to have lower institutionalization rates.

In practice, as is done in the labor economics literature, we measure the experience of each cohort of immigrants *relative* to those of the base group (the native-born). In so doing, we assume that the time effects are the same for natives and for each cohort of immigrants. In the wage determination literature, this assumption obviates the need to choose an appropriate price deflator. In our case, this assumption allows us to essentially ignore the dramatic changes in the levels of incarceration over the period.[15] Given the assumption of neutral time effects, we can differentiate between explanations of convergence and changes in immigrant composition by comparing differences in predicted relative institutionalization rates across cohorts within a Census to the differences in predicted relative institutionalization rates within cohorts between Censuses.

There are several ways in which the "between" and "within" analyses may differ. If time in the country is the only factor governing changes in immigrant institutionalization rates, then the difference in the experience of the 1965 and 1975

cohort in 1980 can be interpreted as the effect of 10 years in the country. The cross-section and synthetic cohort analysis should yield similar results.[16] If, on the other hand, immigrant skills have been declining over time and labor market success is negatively correlated with activities that lead to institutionalization, then recent immigrants should be more likely to be institutionalized than earlier immigrants -- and will have higher relative institutionalization rates in 1990 than we would have predicted from earlier immigrants' experience in 1980.

The top panel of Table 5a reports the marginal probabilities of institutionalization derived from the estimates in Table 4 for four cohorts of immigrants in 1980 and five cohorts in 1990. The comparison group here is all native-born men in the sample. The number reported is the average of the marginal probabilities for the cohort. These values summarize the same information as the log odds ratios in Table 4, but are easier to interpret. Moving across the columns we see the effect of changing the control variables on the marginal probabilities. In 1980, all immigrant cohorts shown have significantly lower average probabilities of institutionalization than natives. In 1990, all but the earliest immigrant cohort have significantly lower average probabilities of institutionalization. The difference in institutionalization probabilities between natives and these cohorts of immigrants becomes larger as race, ethnicity, and education controls are added. Controlling for disability mitigates the effects somewhat, but they continue to be large and statistically significant. In sum, most of these cohorts of immigrants are less likely to be institutionalized than the native-born, and particularly less likely to be institutionalized than natives with similar characteristics.

The bottom panel of Table 5a reports two kinds of differences in the institutionalization probabilities over 10 years for the 1970-74 and 1975-1979 cohorts.[17] The first value reported for each cohort is the increase in a cohort's institutionalization rate that would be predicted by looking at the experience of the cohort that entered 10 years earlier, as measured within the 1980 cross-section. Positive numbers indicate that we would have predicted in 1980 that the fraction of the cohort institutionalized would increase relative to the native-born over the subsequent decade. For both cohorts analyzed, in all specifications, we predict increasing institutionalization rates using the cross-section estimates. Again, this may be interpreted as either an assimilation effect or an exposure-time effect.

Looking at the synthetic cohorts, we see that the age-adjusted institutionalization rates increased over the 1980's. The magnitude of the increase for the synthetic cohort (0.0030) is statistically indistinguishable from that predicted by looking at the earlier cohorts within a Census (0.0029). However, once age and education are controlled, the 1975-79 cohort's relative institutionalization rate *fell* during the decade. For the 1970-74 cohort with the same controls, the synthetic cohort analysis continues to show the relative institutionalization probability increasing over the 10 year period. However, the size of the increase is about one-sixth of the within-Census calculation. In the specifications where we control for age, race and ethnicity, the synthetic cohort analysis shows that the relative institutionalization rates of both cohorts falls during the decade. Including controls for age, race, ethnicity, and education increases the discrepancy in the within- and between-Census values -- the between-Census difference is negative and significantly different from the within-Census prediction for both cohorts. The

estimates with disability controls are similar. Thus, the institutionalization "performance" of immigrants who entered the United States in the 1970's improved over the decade relative to natives with similar demographic characteristics. The relatively low institutionalization rates of these cohorts in 1980 were only more remarkable a decade later.

In Table 5b we present the difference in relative institutionalization rates for immigrants in 1980 and 1990 who have been in the United States for the same amount of time. For example, the 1975-79 cohort in 1980 and the 1985-1990 cohort in 1990 have both been in the United States between zero and five years. They have had the same number of years to "assimilate" and their "exposure time" in the United States is held constant. In almost all cases, the immigrants in 1990 have lower institutionalization probabilities than the immigrants in 1980, for a given amount of time in the United States. The results are particularly striking for the immigrants who have been in the United States for less than five years. Depending on the specification, the recent immigrants in 1990 have from 0.43 percent to 1.3 percentage point lower relative institutionalization rates than the recent immigrants in 1980. This suggests that the underlying institutionalization behavior may have decreased among the new immigrants in the latter period.

The relationship between the within- and between-Census analyses in Table 5a, provides little support for the exposure time explanation of higher incarceration rates among the earlier immigrants. Immigrants from the 1975-79 cohort in 1990, despite the fact that they have been in the country for 10 years, have lower relative institutionalization rates than they did in 1980 (controlling for race and/or education).

Similarly, comparisons in Table 5b for immigrant cohorts that have been in the United States for exactly the same number of years provides no evidence supporting the "exposure time" hypothesis.

There are two additional influences on these cohort patterns that need to be addressed. The first is deportation. If newer immigrants who are institutionalized are more likely to be deported than earlier immigrants, the newer immigrants will appear to be "better" in terms of institutionalization outcomes. There were changes in the deportation policies during the 1980's, which might potentially affect our results. We will defer the discussion of these changes to section IV.

The second potentially important influence is age at arrival. Age at arrival varies across cohorts within a Census year, and within each cohort across Census years. As Friedberg (1991) and Kossoudji (1989) point out, the age cutoffs used in this analysis, and in analyses of immigrant earnings, ensure that age at arrival will be younger in earlier cohorts. In order to be under age 40 in 1990, the immigrants who arrived in 1965 had to be much younger than those arriving in 1985. In the earnings literature, this sometimes confounds the assimilation and cohort effects, since those who immigrate during their formative years may have more opportunity to fully assimilate. A similar interpretation applies here: the earlier immigrants have more opportunity to adopt the (higher) native propensities toward institutionalization. In addition, the composition of the cohorts varies across the Census years -- within a cohort, those who are near 40 in 1980 age out of the sample and are replaced by people from that cohort who arrived at an earlier age.

In order to investigate whether age at arrival is driving the difference in the within- and between-Census results, we re-estimated the equations using an age-consistent sample. We used 19-29 year olds in 1980. In 1990, we included 29-39 year olds, and dropped all immigrants who were not in the United States in the 1980's. Note that age at arrival will still vary between cohorts within a Census, but it will not vary across Census years. Therefore, if age at arrival effects were driving our between-Census results in Table 5a, we will find very different effects here. Appendix Table 1 shows that we get similar between-Census effects using the age consistent sample: the institutionalization probabilities fell (or increased slowly, depending on the specification) for the 1975-79 and 1970-74 cohorts.[18]

A second way to approach this problem is to estimate the equations in Tables 5a and 5b using only those immigrants who arrived in the United States at age 20 or older. These results appear in Appendix Tables 2a and 2b. Again, we obtain qualitatively and quantitatively similar results. If anything, the cohort differences are even larger (in the between-Census results) using this sample of people raised abroad. This indicates that the earlier differences in the within- and between-Census estimates are not driven by the fact that immigrants in the older cohorts immigrated at a younger age.[19]

IV. Institutionalization, Incarceration, and Criminality

In this section we investigate the links between institutionalization and the underlying behavior we think drives changes in institutionalization in our sample of young men: being apprehended, charged, and convicted of a crime. The first thing we do is establish that institutionalization is an adequate proxy for incarceration in this

sample. Second, we discuss several hypotheses consistent with our evidence, thought it is beyond the scope of this paper to discern which, if any, of these hypotheses are responsible for the pattern of cohort effects.

A. Institutionalization versus Incarceration

In 1980, we have information on the specific type of institution in which an inmate is housed. Therefore, we ran the 1980 specifications in Tables 4 and 5 using incarceration as our outcome measure, dropping individuals in non-correctional institutions. In the first four specifications the marginal probabilities are somewhat smaller for incarceration than for institutionalization, but patterns across the cohorts are quite similar. In the specification that includes controls for disability status, the marginal probabilities are almost identical to those in Table 5a, as are the within-Census changes in probabilities. [20] These results suggest that institutionalization is a good proxy for incarceration, at least among this sample of young men, and that it is an especially good proxy when disability status is held constant. Therefore, the changes in institutionalization across the immigrant cohorts documented in the previous section are being driven by changes in the immigrants' relationship with the criminal justice system.

B. Competing Explanations

There are several possible ways to reconcile the cohort pattern found in Section III with that found in the earnings literature. First, there may be self-selection of those who choose to immigrate to the United States. The Roy model (Roy 1951) used by Borjas (1987) to show that, under certain circumstances, people from the lower tail of

the earnings distribution will find it attractive to immigrate to the United States, can be augmented with another dimension of self-selection: the distribution of criminal propensity. Under numerous assumptions, it is possible that immigrants are negatively selected from the distribution of labor market skills and positively selected from the distribution of criminality.[21] Thus, one possible explanation for the pattern of our results is that recent immigrants have a different set of skills than earlier immigrants. The skills of the new immigrants are disadvantageous to them in the legal labor market, leading to lower earnings than the native-born, and disadvantageous to them in the illegal sector, leading to less criminal activity and lower institutionalization rates.

A second, related, explanation is that the conception of work and crime as alternative uses of time is too simplistic. From our evidence it does not appear that criminal activity is a direct substitute for labor market success.[22] Therefore, there may be other uses of time that should be modeled. One such activity is investment in human capital. Duleep and Regets (1996) argue that recent immigrants receiving low initial wages invest in human capital accumulation and experience subsequent earnings growth. Therefore, the low skill level of recent arrivals may not be a good indicator of long-term legal sector prospects, which may be relevant for the decision to commit criminal acts.

Third, our findings may also be explained by differences in the relationship between institutionalization and criminality for immigrants and the native-born. There are many reasons why differences in institutionalization may not reveal differences in criminal propensities. For example, incarceration follows crime with a lag. If that lag is different for immigrants and natives because one group is better at avoiding detection,

then that group will have lower incarceration rates for a given amount of crime. Although we have no direct evidence, our suspicion is that immigrants, since they have less experience in the United States and overwhelmingly reside in urban areas, would be more likely to be apprehended for a given amount of criminal activity.[23] This type of bias would lead to an over-estimate of the criminality of immigrants, particularly of immigrants who are the most recent arrivals.

Similarly, institutionalization may increase without any change in criminality if criminal justice policy changes. This is precisely what happened during the 1980's with the advent of mandatory minimum sentencing and a general trend toward harsher penalties (Langan (1991)). If a uniform policy shift were all that occurred over the 1980's, and the distribution of criminal activity were the same among immigrants and natives, then we would expect that the institutionalization rates for both would increase proportionally, leaving relative institutionalization rates unchanged.

If, on the other hand, the underlying criminal behavior differs between immigrants and natives, then the policy shift would not have the same effect across groups. Suppose that in 1980 differences in institutionalization perfectly reflected differences in criminality between two groups. After the policy shift in the 1980's, differences in institutionalization rates are greater than differences in underlying criminal activity. This might lead to our observed pattern among immigrant cohorts: they are less likely to be involved in crime in both 1980 than 1990, but this leads to a much lower relative institutionalization rate in 1990. If we took a group with the same criminality as immigrants, we would not see the relative drop in institutionalization rates. In results not presented here, we used white non-Hispanic natives as the base group, since they

have institutionalization rates that are comparable to immigrants in 1980. With this as the base group, we no longer find that the between-cohort change shows a drop in the relative institutionalization rates of immigrants. However, the between-Census results show a smaller increase than the within-Census comparison. Again, this suggests there has been a change in the qualities of immigrants along this dimension.

A further alternative is that the criminal justice policy shift did not affect all groups in the same way, even if the underlying distribution of criminal activity were the same across all groups. This point is similar to that made by LaLonde and Topel (1992) about the apparent decline in immigrant labor market skills. If immigrants are disproportionately in the lower tail of the income distribution, and the income distribution becomes more unequal, then immigrants will appear to have worse labor market outcomes, without any underlying change in their skills. There is substantial evidence that the shift in criminal justice policy did not affect all groups equally, conditional on criminal activity. For example, changes in the drug environment (e.g. the introduction of crack cocaine) and drug enforcement (e.g. new "mandatory minimum" sentencing laws) may be important contributors. (See Piehl (1995).) To the extent that immigrants have characteristics similar to those of individuals who received the brunt of the increase in criminal justice penalties, we would expect this policy shift to increase their institutionalization rates more than the "average" native's. The relatively low institutionalization rates of immigrants are even more remarkable after a decade of increasing penalties.

In addition, non-citizens are subject to different laws and penalties than citizens. This may either increase or decrease the institutionalization rates among immigrants for

a given level of criminal activity. For example, immigrants may be institutionalized for visa violations. They may be held in INS detention centers while claims for asylum are processed. Citizens are not eligible for institutionalization for these reasons. These factors will lead institutionalization to over-estimate criminality among (non-citizen) immigrants.

Alternatively, non-citizens can be deported. This acts as an additional punishment, since incarcerated aliens may be deported after serving their sentence. The economic model of crime would predict that, even if immigrants have the same underlying disposition toward criminality, the deterrent effect of the deportation threat will cause immigrants to be less likely to commit crimes.

Deportation may lead to an underestimate of criminality based on institutionalization rates. Since immigrants who are convicted of serious crimes serve their sentences in the United States before deportation, this should not lead to a serious bias in our estimates. However, to the extent that deported immigrants are those who *would eventually* commit crimes in the United States that would result in their institutionalization, or immigrant criminals are deported before they recidivate and receive even longer sentences, institutionalization will under-estimate criminality among immigrants.

The INS Statistical Yearbook (1993, p.164) shows that there was a substantial increase in deportation activity after the 1986 Immigration Reform and Control Act. The yearbook states that this law allowed the INS to focus on apprehending "aliens that are the greatest threat to society (p.164)." The INS deported roughly five times as many people for criminal and narcotics violations during the 1980's as during the previous

decade. Unfortunately, the criminal and narcotics related deportation figures were combined as of 1981, so it is impossible to separate out who was deported after an offense that yielded a prison sentence, and who was deported for a relatively minor infraction. Even in 1990, the year with the most deportations for crime and narcotics, only 8,132 immigrants were deported. These numbers are not large enough to explain our findings that immigrants, especially recent immigrants, are significantly less likely to be institutionalized than natives.[24]

While there are many unanswered questions, on balance our evidence offers prima facie support for the idea that the there has been a shift in the type of immigrants to the United States toward those with lower criminal propensities.

V. Determinants of Institutionalization within Immigrant and Native Groups

We now look at the changes in the institutionalized population more carefully by considering the determinants of institutionalization separately for immigrants and for the native-born. To do this, Table 6 reports the mean characteristics of the institutionalized population for immigrants and the native-born in 1980 and 1990. Among the native-born who were in institutions in 1980, 55 percent had less than a high school education, nearly 38 percent were African-American, 54 percent were white non-Hispanic, and six percent were Hispanic. By 1990, the native-born institutionalized population had aged two years, the proportion high school dropout had fallen, and blacks were even more over-represented.

While immigrants made up only 3.5 percent of the young men in institutions in 1980, their education distribution was similar to that of natives. The racial and ethnic

distributions among institutionalized immigrants were very different than among natives, as was the ethnic distribution of the immigrant population at large (see Table 1). By 1990, immigrants were 7.3 percent of the institutionalized population. Nearly 60 percent of the institutionalized immigrants had less than a high school education.

The racial and ethnic distribution of institutionalized immigrants changed dramatically over the decade. In 1980, 30 percent of the institutionalized immigrants were white non-Hispanic. By 1990 this number had fallen to 10 percent. There were large increases in the fraction black (16 percent to 22 percent) and Hispanic (48 percent to 71 percent) among the immigrants in institutions. Surprisingly, the fraction Asian among immigrants in institutions fell over the 1980's, despite the increase in the fraction Asian among immigrants overall.

In Tables 7a and 7b we investigate the predictors of institutionalization separately for immigrants and the native-born. We convert the coefficients for education, race and ethnicity categories to marginal probabilities, averaged over the relevant group. For example, the high school dropout number in column 1 of Table 7a indicates that in 1980 native-born high school dropouts were 3.7 percent more likely to be institutionalized than college graduates. The marginal effects are evaluated using the characteristics of the group in question. The different specifications match those in other tables: first we control only for age (a full set of dummy variables) and education; next we control only for age, race, and ethnicity; then we include controls for age, education, race, ethnicity; the last specification adds disability status to the previous controls.

Tables 7a and 7b highlight several important differences between immigrants and natives in the determinants of institutionalization. For both groups, low levels of education are strongly associated with a high probability of being institutionalized. But for the native-born, this effect is much larger. The first set of results for 1980 and 1990 (column 1 in both tables) shows that native-born high school dropouts were 3.7 percent and 5.9 percent more likely to be institutionalized than college graduates, respectively. The corresponding numbers for immigrants were much smaller: 0.89 percent and 1.9 percent. Controlling for race and ethnicity decreases the relative probability of institutionalization of high school dropouts, but very slightly.

The racial and ethnic categories also contain some interesting differences. The black natives have much higher incarceration probabilities (relative to white non-Hispanics) than black immigrants in both years. By 1990, native-born blacks are 6.9 percent more likely to be institutionalized than native-born white non-Hispanics (column 3, Table 7b). Immigrant blacks were only 2.9 percent more likely to be institutionalized than white non-Hispanic immigrants. Controlling for education decreases these numbers slightly, but the relative comparison remains the same. Although the effect is small, the results show that Asian immigrants have lower institutionalization rates than white non-Hispanic immigrants in both 1980 and 1990.

In 1980, native-born Hispanics are about 0.4 percent more likely to be institutionalized than non-Hispanic whites. Controlling for education, they are less likely to be institutionalized, although the effect is insignificant. Hispanic immigrants have institutionalization rates that are no different from non-Hispanic white immigrants when only age is held constant, and significantly lower institutionalization rates when

education controls are included. By 1990, this picture changes. Hispanic natives are about 2.2 percent more likely to be institutionalized than their white non-Hispanic counterparts. When education controls are added, this number falls to 1.8 percent. While Hispanic immigrants are also more likely to be institutionalized than white non-Hispanic immigrants in 1990, the effect is smaller than among the native-born.

The effect of being "other race" differs between the immigrant and native-born, and between 1980 and 1990 for the immigrants. Native-born individuals who are characterized as other race are significantly more likely to be institutionalized than non-Hispanic whites in both 1980 and 1990. While other race immigrants are more likely to be institutionalized than the comparison group in 1980, they are significantly less likely to be institutionalized in 1990.

In the last two columns of Tables 7a and 7b we report the effects including controls for disability status. Disability has a strong positive correlation with institutionalization in both years for immigrants and natives. Although immigrants are less likely to be disabled than natives, including these variables does not change the comparisons between immigrants and natives in the previous specifications.

In addition to the individual effects of these characteristics, there is a difference in how well these characteristics explain variation in institutionalization among immigrants and the native-born. The pseudo R-square statistic, which is a measure of the proportion of total variation explained by the model,[25] is listed in the second to last row of the table. In both years and across all specifications, these characteristics explain more of the variation in institutionalization for natives than for immigrants. This is consistent with research on the labor market outcomes of immigrants which

frequently finds that immigrants have lower "returns to characteristics" than natives. (See Butcher (1994), Chiswick (1978), Fry (1995), Greeley (1976)).

Comparisons in the amount of explained variation across the two years are also interesting. Education variables alone explain slightly more of the variation in institutionalization in 1980 than in 1990. However, among the native-born, race and ethnicity variables alone explain one and a half times more of the variation in 1990 than in 1980 (0.0884 vs. 0.0536, respectively). When education, race, and ethnicity are included, the amount of explained variation is higher in 1990 than in 1980 for both immigrants and the native-born. Clearly, race and ethnicity became much more important predictors of institutionalization over this decade. Interestingly, when disability measures are added, the amount of explained variation is higher in 1980 than in 1990. This is consistent with the evidence that many institutions serving the disabled closed down or significantly cut back on their populations during the 1980's.

VI. Summary and Discussion

We have demonstrated that the rate of institutionalization is lower among immigrants than among the native-born. When controls are included for characteristics that correlate with labor market opportunities and criminal justice enforcement intensity, institutionalization rates for immigrants are much lower than for natives. Our analysis uncovers a similar cohort pattern to that found in the labor earnings literature, early immigrants are indistinguishable from natives while recent immigrants look very different. In this case, the low institutionalization of recent immigrants is a beneficial outcome. While some of the difference in institutionalization rates does appear to be

an assimilation to the higher institutionalization of the native-born, that explanation is insufficient. We find smaller increases in institutionalization for immigrants over the decade than one would have predicted based on the experience of earlier immigrants in 1980's. Furthermore, immigrants in 1990 "outperform" cohorts of immigrants who had been in the country for the same amount of time in 1980.

Does this mean that selection of immigrants is multi-dimensional, and therefore more complicated than models based only on earnings distributions? It is certainly possible that we are attracting a different type of immigrant now than we did earlier, and that shifts in immigrant institutionalization propensities accompanied shifts in labor market skills. Our findings do conflict with a single index of skill. There may be several ways to expand existing models to account for these results, however.

Whatever drives the differences in the institutionalization rates, if natives had the same institutionalization probabilities as immigrants, our jails and prisons would have one-third fewer inmates. The news may be even better than that. In light of the results of Case and Katz (1991) that youth involvement in crime is strongly related to the criminal participation of family members, the lower institutionalization rates of immigrants could have persistence through the lower criminal activity of the children of immigrants.

Endnotes

1.   Statistical abstract (1993), Table 8, and Borjas (1990) Table 2.2. Note that these numbers refer only to immigrants who entered the United States legally. Note also that people granted permanent status under the Immigration Reform and Control Act of 1986 are included in the Americas number.

2.   For example, California's Proposition 187 explicitly states that the population of legal residents in California is suffering because of the participation of illegal immigrants in activities ranging from crime to consumption of government-subsidized medical care and education.

3.   For an exception, see Butcher and Piehl (1998).

4.   In both the 1980 and 1990 United States Censuses, persons in group quarters were sampled at the same rate (1 in 6) as most households in the country. The enumeration procedure was different, however. Enumeration of persons in institutions was largely carried out from administrative data while questionnaires for the majority of the population were largely filled out by members of the households and mailed back to the Census Bureau. (Telephone conversation with Carmen Campbell, Data User Services Division, Bureau of the Census, March 29, 1995.)

5.   Our sample of young men covers the majority of the incarcerated population. In 1991, men comprised 95 percent of all prison inmates, and 18-39 year olds were 81 percent of the men in these institutions. Our sample captures 77 percent of all state prison inmates, and an even higher proportion of jail inmates.

6.   Although both immigration and incarceration have been increasing over the past two decades, they are both still relatively low probability events. In order to ensure that we had large enough samples of all groups of interest, we use the large samples available in the 5% Censuses. However, in order to make the calculations tractable, we dropped (randomly) 66 percent of the white non-Hispanic native born in 1980 and 76 percent of the white non-Hispanic native-born in 1990. All calculations are weighted to reflect this sampling.

7.   Some of this change may reflect changes in self-definition of race and ethnicity from 1980 to 1990. There are many more racial classifications in the 1990 Census. We find that Hispanics are more likely to identify themselves as "other race" in 1990 than in 1980.

8.   In 1992, jail rates were 175 per 100,000 (Maguire and Pastore (1994) Table 6.18) and imprisonment rates were 330 per 100,000 (Table 6.29).

9.   Historically, refugees have been eligible for welfare benefits upon arrival, while other immigrants have not.

10.   The Refugee Act of 1980 defined a refugee as a person living outside his country of nationality who is unwilling to return to that country because of persecution

on the basis of race, religion, nationality, membership in a particular social group, or political opinion. In practice, who is counted as a refugee, and how many are admitted, depends on the political conditions in both the United States and sending regions. (See Borjas (1990), p. 33). In this study, we classify refugees in the same way as Borjas (1994, see p. 8): a refugee-sending country is one from which more than 1000 refugees originated between 1981 and 1990, and where the refugee flow was responsible for at least 40 percent of the total immigrant flow from that country during the decade. (One exception is Poland, which is included in the list because a relatively large number of refugees came from there in the postwar period.) The refugee countries are: Afghanistan, Bulgaria, Cambodia, Cuba, Czechoslovakia, Ethiopia, Hungary, Laos, Poland, Romania, Thailand, the former U.S.S.R., and Vietnam.

11.   On the incarcerated population, see Freeman (1992), Piehl (1994a), and Maguire and Pastore (1994). On other types of institutionalized populations, inference comes from the authors' calculations from the 1980 Census data.

12.   For example, among those who report having committed a crime, people who live in urban areas are much more likely to have been detained by the police than those in rural areas (Butcher and Piehl (1998)). Native-born minorities and immigrants are both more likely to live in cities than non-Hispanic whites and this will yield differences in institutionalization, without any difference in underlying behavior. Unfortunately, our data are from a point in time, and so we cannot control for area of residence, since if an individual is in an institution there is no way of telling what type of area he lived in prior to his tenure there. Controlling for race and ethnicity will help to absorb some of this heterogeneity.

13.   We include a full set of age dummies in all models. Throughout the paper we report Huber-corrected standard errors which are robust to arbitrary forms of heteroskedasticity.

14.   The fraction of immigrants who were citizens was higher in 1980 than in 1990. In addition, the immigrants who received citizenship during the 1980's in the Immigration Reform and Control Act of 1986 were disproportionately from Mexico and this group has particularly low institutionalization rates.

15.   However, time effects may be critically important for this type of analysis. LaLonde and Topel (1992) point out that the changes in the wage distribution during the 1980's would increase the wage gap between immigrants and the average native even if no underlying change in immigrant skills occurred. We would expect the increasing inequality in the legal labor market to hurt recent immigrants due to their low levels of education. If labor market success is negatively correlated with institutionalization, more recent cohorts should appear more likely to be institutionalized than earlier cohorts of immigrants. Thus, the bias is toward finding higher institutionalization among more recent immigrants. We take up these issues in more detail in section IV.

16.   Assuming, of course, that out-migration is not substantial.

17.   We are limited in the number of cohorts we can analyze in this way due to the sample age restriction discussed above. In 1990, everyone who immigrated before 1950 is too old to be in our sample.

18.   We attempted to run regressions on the pooled 1980 and 1990 to control explicitly for age at arrival. There was too little variation in age at arrival within cohort to separately identify cohort, age, and age-at-arrival effects.

19.   Note that this specification check requires that we identify the immigration effect off of people at the upper end of our age range, when the institutionalization probabilities are about half what they are at their peak.

20.   Additionally, dropping all those with disabilities yields similar results. The results of all of these specification checks are available from the authors.

21.   Since this quickly becomes an intractable problem, start with a simple, stylized example. Consider the example of violent crime, e.g. assault. Assume that the distribution of criminal opportunity is the same in both the sending and receiving country. It seems reasonable to assume that the opportunity to commit assault is approximately the same across different countries. Further, assume that the underlying propensities toward violence are the same in both countries. The only way the countries differ is in the amount of resources available for detecting crimes, and the severity with which they are punished. Under these conditions, if the United States devotes more resources toward the criminal justice system than, say, Guatemala, then Guatemalans interested in committing violent acts will stay in their country of origin and those with little interest in such activity will migrate. Under these stringent assumptions, immigrants are positively selected from the distribution of "propensities toward violence" in their home countries and will be less prone to violence than the average native-born United States citizen.

22.   This conclusion also has been reached by MacCoun and Reuter (1992) among drug dealers and Grogger (1995) using the NLSY.

23.   This may not be true if immigrants commit crimes against other immigrants, and these victims are reluctant to report them to the police.

24.   About 7.3 million (legal) immigrants entered the United States between 1981 and 1990. Among this group, we find an incarceration rate of about 0.01. This means that about 73,000 were institutionalized. The institutionalization rate among natives was about 0.0233 during this time period. If the 81-90 immigrants had that as their "true" institutionalization rate, then we should have found 170,090 in institutions, absent deportation effects. The INS reports that 30,464 immigrants were deported for criminal and narcotics violations over the decade. Subtracting that from 170,090 still leaves 139,626 immigrants in institutions. In other words, even if we assume the deportation during the 1980's applied exclusively to institutionalized immigrants, the numbers still are not large enough to account for our results.

25.   Specifically, the pseudo R-square is one minus the ratio of the log likelihood of the model over the log likelihood of a model including only a constant.
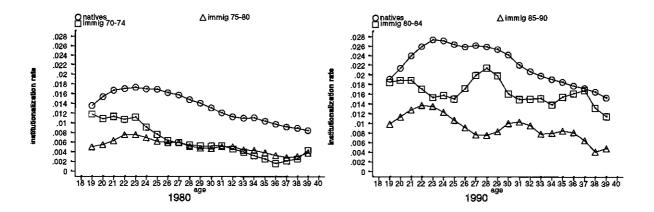
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Figure 1. Institutionalization by Age: Natives and Immigrants in Two Most Recent Cohorts, 1980 and 1990

Notes: The age/institutionalization rates are three-year moving averages. These data are from the 1980 and 1990 5% Public Use Microdata Samples of the U.S. Census.

Table 1. Summary Statistics: Characteristics of Immigrants and Natives in 1980 and 1990
(standard errors)

	1980		1990	
	Native-born	Immigrants	Native-born	Immigrants
Age	27.831	28.735	29.076	29.259
	(0.0070)	(0.0172)	(0.0076)	(0.0134)
Education				
< H.S. degree	0.193	0.346	0.167	0.391
	(0.0004)	(0.0013)	(0.0004)	(0.0010)
H.S. degree	0.391	0.241	0.315	0.186
	(0.0005)	(0.0012)	(0.0005)	(0.0008)
Some College	0.228	0.202	0.321	0.222
	(0.0005)	(0.0011)	(0.0005)	(0.0009)
College Degree	0.188	0.211	0.197	0.201
	(0.0004)	(0.0011)	(0.0005)	(0.0009)
Black	0.114	0.074	0.124	0.083
	(0.0003)	(0.0007)	(0.0004)	(0.0006)
White non-Hispanic	0.833	0.339	0.808	0.196
	(0.0004)	(0.0013)	(0.0005)	(0.0008)
Asian	0.006	0.172	0.007	0.228
	(0.0001)	(0.0010)	(0.0001)	(0.0009)
Other Race	0.024	0.209	0.032	0.268
	(0.0002)	(0.0011)	(0.0002)	(0.0009)
Hispanic	0.041	0.398	0.052	0.504
	(0.0002)	(0.0013)	(0.0003)	(0.0011)
Disability 1: Work Limited	0.058	0.031	0.062	0.032
	(0.0003)	(0.0005)	(0.0003)	(0.0004)
Disability 2: Work Prevented	0.002	0.009	0.024	0.012
	(0.0001)	(0.0003)	(0.0002)	(0.0002)
# of Obs.	839,839	136,221	736,136	219,024

Notes: These data are from the 1980 and 1990 5% Public Use Microdata Samples of the U.S. Census. The data include men aged 18-40. All means are weighted to reflect sampling.

Table 2. Immigration and Institutionalization in 1980 and 1990
(standard errors)
[sample size]

	1980		1990	
Top Panel: Fraction of the Population Institutionalized				
Full Sample	0.0131 (0.0001) [976,060]		0.0209 (0.0001) [955,160]	
	Native-born	Immigrants	Native-born	Immigrants
All	0.0135 (0.0001) [839,839]	0.0069 (0.0002) [136,221]	0.0216 (0.0002) [736,136]	0.0149 (0.0003) [219,024]
Black	0.0445 (0.0004)	0.0150 (0.0012)	0.0811 (0.0006)	0.0392 (0.0016)
White Non-Hispanic	0.0088 (0.0001)	0.0060 (0.0004)	0.0115 (0.0002)	0.0076 (0.0004)
Asian	0.0078 (0.0008)	0.0018 (0.0003)	0.0106 (0.0009)	0.0025 (0.0002)
Other	0.0305 (0.0008)	0.0103 (0.0006)	0.0406 (0.0008)	0.0180 (0.0005)
Hispanic	0.0210 (0.0005)	0.0082 (0.0004)	0.0396 (0.0006)	0.0211 (0.0004)
Immigrant Cohorts:				
1985-1990				0.0098 (0.0004)
80-84				0.0163 (0.0005)
75-79		0.0054 (0.0003)		0.0155 (0.0006)
70-74		0.0062 (0.0004)		0.0176 (0.0008)
65-69		0.0067 (0.0006)		0.0245 (0.0013)
60-64		0.0092 (0.0008)		0.0217 (0.0017)
50-59		0.0100 (0.0008)		0.0158 (0.0017)
Before 50		0.0106 (0.0018)		---

Table continues on next page.

Table 2. Continued

<u>Countries of origin:</u>

Mexicans	0.0055 (0.0004)	0.0122 (0.0004)
Cubans	0.0057 (0.0011)	0.0357 (0.0024)
Colombians	0.0068 (0.0019)	0.0444 (0.0036)
Black *Caribbean	0.0063 (0.0011)	0.0320 (0.0019)
White *Caribbean	0.0033 (0.0008)	0.0281 (0.0017)
Refugees	0.0035 (0.0005)	0.0116 (0.0007)

Bottom Panel: Fraction Immigrant

	Institutional	Non-Institutional	Institutional	Non-Institutional
Fraction Immigrant	0.0353 (0.0014) [17,282]	0.0673 (0.0003) [958,778]	0.0754 (0.0018) [20,933]	0.1063 (0.0003) [934,227]

Notes: These data are from the 1980 and 1990 5% Public Use Microdata Samples of the U.S. Census. The data include men aged 18-40. All means are weighted to reflect sampling.

Table 3. Predicted Institutionalization Rates for Immigrants in 1980 and 1990

		1980		
0.0133	0.0189	0.0164	0.0197	0.0157
(0.000008)	(0.00005)	(0.00003)	(0.00003)	(0.00007)
		1990		
0.0219	0.0334	0.0316	0.0404	0.0355
(0.000009)	(0.00006)	(0.00006)	(0.00009)	(0.00008)

Controls					
Age	yes	yes	yes	yes	yes
Education		yes		yes	yes
Race & Ethnicity			yes	yes	yes
Disability					yes

Notes: The numbers are calculated from logit regressions using the 5% Public Use Microdata Samples of the U.S. Census. The standard errors do not reflect that the predictions are formed from estimated coefficients. Predictions are created by running the logits for natives alone and predicting immigrant institutionalization rates using these coefficients and the characteristics of immigrants. Controls include a full set of age dummies, dichotomous variables for black, Asian, other race, Hispanic origin, high school dropout, high school degree, and some college.

	1980						1990					
Immigrant	-0.661 (0.034)						-0.389 (0.029)					
1990-1985								-0.854 (0.059)	-1.277 (0.060)	-1.196 (0.061)	-1.433 (0.062)	-1.? (0.0)
80-84								-0.319 (0.050)	-0.819 (0.052)	-0.745 (0.052)	-1.001 (0.054)	-0.? (0.0)
75-79		-0.961 (0.063)	-1.363 (0.063)	-1.168 (0.065)	-1.395 (0.067)	-1.133 (0.067)		-0.319 (0.063)	-0.793 (0.064)	-0.691 (0.065)	-0.950 (0.067)	-0.? (0.0)
70-74		-0.760 (0.072)	-1.280 (0.073)	-1.066 (0.074)	-1.309 (0.075)	-1.040 (0.076)		-0.165 (0.078)	-0.604 (0.079)	-0.598 (0.079)	-0.785 (0.081)	-0.? (0.0)
65-69		-0.629 (0.083)	-1.029 (0.084)	-0.842 (0.084)	-1.007 (0.085)	-0.795 (0.086)		0.121 (0.086)	-0.100 (0.087)	-0.236 (0.088)	-0.247 (0.089)	-0.? (0.0)
60-64		-0.334 (0.085)	-0.485 (0.086)	-0.419 (0.087)	-0.412 (0.088)	-0.288 (0.090)		0.048 (0.118)	0.112 (0.119)	-0.190 (0.121)	-0.064 (0.121)	-0.? (0.1)
50-59		-0.270 (0.081)	-0.269 (0.082)	-0.236 (0.082)	-0.177 (0.083)	-0.128 (0.086)		-0.090 (0.162)	-0.055 (0.162)	-0.050 (0.164)	0.043 (0.163)	0.? (0.1)
Before 50		-0.044 (0.168)	-0.048 (0.171)	-0.022 (0.169)	-0.078 (0.172)	-0.030 (0.182)		---		---	---	--
Black				1.621 (0.018)	1.280 (0.018)	1.267 (0.019)				1.975 (0.022)	1.704 (0.023)	1.6 (0.0)
Asian				-0.328 (0.092)	0.011 (0.092)	-0.028 (0.092)				-0.512 (0.085)	-0.197 (0.085)	0.7 (0.0)
Other Race				1.014 (0.037)	0.782 (0.036)	0.802 (0.037)				0.445 (0.038)	0.251 (0.038)	-0.2 (0.0)
Hispanic				0.232 (0.034)	-0.052 (0.034)	0.008 (0.034)				0.928 (0.033)	0.678 (0.034)	0.2 (0.0)
Less than H.S.			2.874 (0.053)		2.556 (0.054)	2.093 (0.055)			3.176 (0.074)		2.716 (0.075)	2.4 (0.0)
H.S. Degree			1.426 (0.054)		1.263 (0.054)	1.072 (0.054)			2.006 (0.075)		1.735 (0.075)	1.6 (0.0)
Some College			0.955 (0.058)		0.836 (0.058)	0.697 (0.058)			1.614 (0.076)		1.418 (0.076)	1.3 (0.0)
Disability 1: Work Limited						0.912 (0.035)						0.8 (0.0)
Disability 2: Work Prevented						1.875 (0.041)						0.8 (0.0)
Age dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ye
-Log Likelihood	67624.27	67605.96	62594.76	64393.83	60638.36	55665.70	96564.59	96495.20	89794.63	88671.37	84294.80	8245

Notes: Data are from the 1980 and 1990 5% Public Use Microdata Samples of the U.S. Census. The regressions have been weighted to adjust for sampling. There are 976,060 observations in the 1980 sample and 955,160 observations in 1990. A constant is included in each specification.

Table 5a. Institutionalization and Immigrant Arrival Cohorts
Compared to the Native-born in 1980 and 1990
(standard errors)

	1980					1990				
Top Panel: Marginal Probabilities of Institutionalization for Immigrant Arrival Cohorts Compared to the Native-born										
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Year of Arrival										
85-89						-0.0130	-0.0240	-0.0214	-0.0288	-0.0238
						(0.0009)	(0.0011)	(0.0011)	(0.0013)	(0.0012)
80-84						-0.0060	-0.0195	-0.0170	-0.0256	-0.0202
						(0.0009)	(0.0012)	(0.0012)	(0.0014)	(0.0013)
75-79	-0.0087	-0.0152	-0.0117	-0.0158	-0.0108	-0.0057	-0.0177	-0.0146	-0.0227	-0.0176
	(0.0005)	(0.0007)	(0.0007)	(0.0008)	(0.0006)	(0.0011)	(0.0014)	(0.0014)	(0.0016)	(0.0015)
70-74	-0.0070	-0.0155	-0.0115	-0.0160	-0.0107	-0.0031	-0.0138	-0.0136	-0.0194	-0.0152
	(0.0007)	(0.0009)	(0.0008)	(0.0009)	(0.0008)	(0.0015)	(0.0018)	(0.0018)	(0.0020)	(0.0019)
65-69	-0.0058	-0.0116	-0.0086	-0.0112	-0.0076	0.0027	-0.0025	-0.0061	-0.0064	-0.0044
	(0.0008)	(0.0009)	(0.0009)	(0.0009)	(0.0008)	(0.0019)	(0.0021)	(0.0023)	(0.0023)	(0.0022)
60-64	-0.0036	-0.0056	-0.0047	-0.0046	-0.0029					
	(0.0009)	(0.0010)	(0.0010)	(0.0010)	(0.0009)					
Bottom Panel: Differences in Institutionalization Probabilities of Immigrant Cohorts Over 10 Years										
1975-1979 Cohort										
Within 1980 Census[1]	0.0029	0.0036	0.0031	0.0046	0.0032					
	(0.0009)	(0.0011)	(0.0011)	(0.0012)	(0.0010)					
Between Census[2]	0.0030	-0.0025*	-0.0029*	-0.0069*	-0.0068*					
	(0.0012)	(0.0016)	(0.0016)	(0.0018)	(0.0016)					
1970-1974 Cohort										
Within 1980 Census	0.0034	0.0099	0.0068	0.0114	0.0078					
	(0.0011)	(0.0013)	(0.0013)	(0.0013)	(0.0012)					
Between Census	0.0039	0.0017*	-0.0021*	-0.0034*	-0.0045*					
	(0.0017)	(0.0020)	(0.0020)	(0.0022)	(0.0021)					

Notes: These numbers are calculated using the logit coefficients reported in Table 4. All specifications include a full set of age dummies. Controls are: (2) Education; (3) Race, ethnicity; (4) Race, ethnicity, education; (5) Race, ethnicity, education, disability.
[1] Within Census changes are calculated by subtracting the given cohort's probability from the probability for the cohort that arrived 10 years earlier.
[2] Between Census changes are calculated by subtracting the probability for a given cohort in the two different Censuses.
* Indicates that the between Census difference is statistically significantly different from the within Census difference (at the 5% level).

Table 5b. Differences in Institutionalization Rates Across Immigrant Arrival Cohorts, 1980 v. 1990
(standard errors)

Years Since Arrival	(1)	(2)	(3)	(4)	(5)
Less than 5	-0.0043	-0.0088	-0.0097	-0.0130	-0.0130
	(0.0010)	(0.0013)	(0.0013)	(0.0051)	(0.0013)
Less than 10	0.0010	-0.0040	-0.0055	-0.0096	-0.0095
	(0.0011)	(0.0015)	(0.0014)	(0.0017)	(0.0015)
Less than 15	-0.0001	-0.0061	-0.0060	-0.0115	-0.0100
	(0.0014)	(0.0017)	(0.0018)	(0.0018)	(0.0017)
Less than 20	0.0005	-0.0082	-0.0089	-0.0148	-0.0123
	(0.0017)	(0.0021)	(0.0021)	(0.0022)	(0.0021)

Notes: These numbers are calculated from Table 4, subtracting the relative institutionalization rate for a cohort in 1980 from the relative institutionalization rate of the cohort in 1990 that had been in the U.S. for a comparable length of time. Column numbers refer to the specification from which the institutionalization rates were estimated, as in the previous two tables. All specifications include a full set of age dummies. Controls are: (2) Education; (3) Race, ethnicity; (4) Race, ethnicity, education; (5) Race, ethnicity, education, disability.

Table 6. Characteristics of the Institutionalized Population in 1980 and 1990
(standard errors)

	1980		1990	
	Native-born	Immigrants	Native-born	Immigrants
Percent of the prison population		0.035 (0.0012)		0.075 (0.0020)
Age	26.750 (0.0542)	26.745 (0.1932)	28.389 (0.0648)	28.511 (0.1548)
Education:				
< H.S. degree	0.554 (0.0045)	0.546 (0.0162)	0.471 (0.0053)	0.576 (0.0132)
H.S. degree	0.296 (0.0042)	0.272 (0.0145)	0.299 (0.0050)	0.211 (0.0109)
Some College	0.115 (0.0029)	0.127 (0.0108)	0.205 (0.0044)	0.167 (0.0102)
College Degree +	0.035 (0.0018)	0.054 (0.0074)	0.024 (0.0019)	0.047 (0.0057)
Black	0.376 (0.0039)	0.161 (0.0120)	0.466 (0.0052)	0.219 (0.0110)
White Non-Hispanic	0.544 (0.0043)	0.294 (0.0149)	0.430 (0.0057)	0.099 (0.0077)
Asian	0.003 (0.0004)	0.045 (0.0067)	0.003 (0.0004)	0.038 (0.0041)
Other Race	0.054 (0.0015)	0.312 (0.0151)	0.061 (0.0018)	0.323 (0.0130)
Hispanic	0.063 (0.0016)	0.476 (0.0163)	0.095 (0.0023)	0.711 (0.0118)
Disability 1: Work Limited	0.341 (0.0044)	0.251 (0.0141)	0.233 (0.0047)	0.151 (0.0094)
Disability 2: Work Prevented	0.260 (0.0042)	0.189 (0.0128)	0.153 (0.0040)	0.099 (0.0080)
# of Obs.	16,342	940	18,762	2171

Notes: Data are from the 1980 and 1990 5% Public Use Microdata Samples of the U.S. Census. See notes to other tables.

Table 7a. Institutionalization Logits, Reported as Marginal Probabilities
Estimated Separately for Native-born and Immigrants, 1980
(Huber corrected standard errors)

	Native-born	Immigrants	Native-born	Immigrants	Native-born	Immigrants	Native-born	Immigrants
High School Dropout	0.0367 (0.0007)	0.0089 (0.0008)			0.0358 (0.0008)	0.0087 (0.0008)	0.0334 (0.0009)	0.0078 (0.0009)
High School Degree	0.0078 (0.0003)	0.0057 (0.0007)			0.0074 (0.0003)	0.0054 (0.0007)	0.0067 (0.0003)	0.0049 (0.0008)
Some College	0.0042 (0.0003)	0.0022 (0.0005)			0.0039 (0.0003)	0.0019 (0.0006)	0.0034 (0.0003)	0.0016 (0.0006)
Black			0.0355 (0.0004)	0.0087 (0.0010)	0.0315 (0.0005)	0.0083 (0.0010)	0.0299 (0.0005)	0.0084 (0.0010)
Asian			-0.0013 (0.0009)	-0.0041 (0.0006)	0.0010 (0.0008)	-0.0032 (0.0005)	0.0008 (0.0008)	-0.0028 (0.0005)
Other			0.0198 (0.0007)	0.0037 (0.0007)	0.0168 (0.0008)	0.0031 (0.0008)	0.0165 (0.0008)	0.0034 (0.0007)
Hispanic			0.0040 (0.0007)	0.0004 (0.0007)	-0.0004 (0.0007)	-0.0031 (0.0009)	0.0007 (0.0007)	-0.0020 (0.0008)
Disability 1: Work Limited							yes	yes
Disability 2: Work Prevented							yes	yes
Pseudo R^2	0.0814	0.0332	0.0536	0.0304	0.1108	0.0476	0.1840	0.1203
-Log Likelihood	55296.69	5427.81	56969.59	5443.55	53525.35	5347.23	49119.15	4938.87

Notes: The entries in this table come from running separate logits (with Huber-corrected standard errors) for the native-born and immigrants in each year. Each logit coefficient was converted to a change in probability for each observation. The average of these marginal probabilities is reported in the table. A complete set of dummy variables for age is included in each regression. All regressions are weighted to reflect sampling. N = 839,839 for natives and N =136,221 for immigrants in 1980.

Table 7b. Institutionalization Logits, Reported as Marginal Probabilities
Estimated Separately for Native-born and Immigrants, 1990
(Huber corrected standard errors)

	Native-born	Immigrants	Native-born	Immigrants	Native-born	Immigrants	Native-born	Immigrants
High School Dropout	0.0586 (0.0015)	0.0186 (0.0013)			0.0570 (0.0017)	0.0165 (0.0017)	0.0556 (0.0018)	0.0156 (0.0017)
High School Degree	0.0179 (0.0007)	0.0135 (0.0012)			0.0170 (0.0008)	0.0119 (0.0014)	0.0166 (0.0008)	0.0113 (0.0014)
Some College	0.0113 (0.0006)	0.0077 (0.0009)			0.0107 (0.0006)	0.0066 (0.0011)	0.0104 (0.0006)	0.0063 (0.0011)
Black			0.0693 (0.0008)	0.0291 (0.0017)	0.0648 (0.0009)	0.0286 (0.0018)	0.0639 (0.0009)	0.0282 (0.0018)
Asian			-0.0019 (0.0013)	-0.0057 (0.0006)	0.0013 (0.0011)	-0.0050 (0.0006)	0.0011 (0.0011)	-0.0050 (0.0006)
Other			0.0188 (0.0013)	-0.0028 (0.0013)	0.0140 (0.0013)	-0.0042 (0.0013)	0.0140 (0.0013)	-0.0038 (0.0013)
Hispanic			0.0215 (0.0010)	0.0129 (0.0011)	0.0176 (0.0011)	0.0102 (0.0013)	0.0178 (0.0010)	0.0104 (0.0013)
Disability 1: Work Limited							yes	yes
Disability 2: Work Prevented							yes	yes
Pseudo R^2	0.0786	0.0309	0.0884	0.0562	0.1374	0.0671	0.1590	0.0930
-Log Likelihood	70771.04	16469.87	70018.61	16040.38	66250.28	15854.58	64589.16	15415.11

Notes: The entries in this table come from running separate logits (with Huber-corrected standard errors) for the native-born and immigrants in each year. Each logit coefficient was converted to a change in probability for each observation. The average of these marginal probabilities is reported in the table. A complete set of dummy variables for age is included in each regression. All regressions are weighted to reflect sampling. N = 736,136 for natives and N =219,024 for immigrants in 1990.

Appendix Table 1. Institutionalization and Immigrant Arrival Cohorts: Age-Consistent Sample Differences in Institutionalization Probabilities of Immigrant Cohorts Over 10 Years Compared to the Native-born
(standard errors)

	(1)	(2)	(3)	(4)	(5)
1975-1979 Cohort					
Between Census	0.0026	-0.0005	-0.0040	-0.0066	-0.0051
	(0.0016)	(0.0021)	(0.0020)	(0.0023)	(0.0021)
1970-1974 Cohort					
Between Census	0.0037	0.0026	-0.0033	-0.0050	-0.0043
	(0.0021)	(0.0029)	(0.0027)	(0.0028)	(0.0029)

Notes: These numbers are calculated in the same way as those reported in Table 5a. All specifications include a full set of age dummies. Controls are: (2) Education; (3) Race, ethnicity; (4) Race, ethnicity, education; (5) Race, ethnicity, education, disability. Between Census changes are calculated by subtracting the probability for a given cohort in the two different Censuses.

Appendix Table 2a. Institutionalization and Immigrant Arrival Cohorts: 20 and Older at Arrival
Compared to the Native-born in 1980 and 1990
(standard errors)

	1980					1990				
Top Panel: Marginal Probabilities of Institutionalization for Immigrant Arrival Cohorts Compared to the Native-born										
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Year of Arrival										
85-89						-0.0142 (0.0010)	-0.0243 (0.0013)	-0.0222 (0.0012)	-0.0305 (0.0014)	-0.0249 (0.0013)
80-84						-0.0057 (0.0012)	-0.0164 (0.0015)	-0.0160 (0.0015)	-0.0267 (0.0019)	-0.0180 (0.0016)
75-79	-0.0083 (0.0007)	-0.0148 (0.0008)	-0.0112 (0.0007)	-0.0157 (0.0009)	-0.0102 (0.0007)	-0.0093 (0.0016)	-0.0210 (0.0021)	-0.0175 (0.0019)	-0.0265 (0.0023)	-0.0203 (0.0020)
70-74	-0.0072 (0.0008)	-0.0143 (0.0011)	-0.0106 (0.0010)	-0.0148 (0.0011)	-0.0092 (0.0009)	-0.0056 (0.0016)	-0.0202 (0.0035)	-0.0150 (0.0032)	-0.0264 (0.0040)	-0.0197 (0.0035)
65-69	-0.0072 (0.0011)	-0.0113 (0.0014)	-0.0092 (0.0012)	-0.0113 (0.0014)	-0.0077 (0.0011)					
60-64	-0.0057 (0.0019)	-0.0082 (0.0022)	-0.0067 (0.0021)	-0.0076 (0.0022)	-0.0053 (0.0019)					
Bottom Panel: Differences in Institutionalization Probabilities of Immigrant Cohorts Over 10 Years										
1975-1979 Cohort										
Within 1980 Census[1]	0.0011 (0.0013)	0.0035 (0.0016)	0.0020 (0.0014)	0.0044 (0.0017)	0.0025 (0.0013)					
Between Census[2]	0.0010 (0.0017)	-0.0062* (0.0022)	-0.0063* (0.0020)	-0.0117* (0.0025)	-0.0111* (0.0021)					
1970-1974 Cohort										
Within 1980 Census	0.0015 (0.0020)	0.0061 (0.0025)	0.0039 (0.0023)	0.0072 (0.0025)	0.0039 (0.0021)					
Between Census	0.0016 (0.0025)	0.0059* (0.0037)	-0.0044* (0.0034)	-0.0116* (0.0041)	-0.0105* (0.0036)					

Notes: These numbers are calculated using the logit coefficients reported in Table 4. All specifications include a full set of age dummies. Controls are: (2) Education; (3) Race, ethnicity; (4) Race, ethnicity, education; (5) Race, ethnicity, education, disability.
[1] Within Census changes are calculated by subtracting the given cohort's probability from the probability for the cohort that arrived 10 years earlier.
[2] Between Census changes are calculated by subtracting the probability for a given cohort in the two different Censuses.
* Indicates that the between Census difference is statistically significantly different from the within Census difference (at the 5% level).

Appendix Table 2b. Differences in Institutionalization Rates Across Immigrant Arrival Cohorts,
1980 v. 1990
20 and Older at Arrival
(standard errors)

	(1)	(2)	(3)	(4)	(5)
Years Since Arrival					
Less than 5	-0.0059	-0.0095	-0.0110	-0.0148	-0.0147
	(0.0012)	(0.0025)	(0.0014)	(0.0017)	(0.0015)
Less than 10	-0.0015	-0.0021	-0.0054	-0.0119	-0.0088
	(0.0014)	(0.0019)	(0.0018)	(0.0022)	(0.0018)
Less than 15	-0.0021	-0.0097	-0.0083	-0.0152	-0.0126
	(0.0019)	(0.0025)	(0.0022)	(0.0027)	(0.0023)
Less than 20	0.0001	-0.0120	-0.0083	-0.0188	-0.0144
	(0.0031)	(0.0041)	(0.0038)	(0.0046)	(0.0040)

Notes: These numbers are calculated from Table 4, subtracting the relative institutionalization rate for a cohort in 1980 from the relative institutionalization rate of the cohort in 1990 that had been in the U.S. for a comparable length of time. Column numbers refer to the specification from which the institutionalization rates were estimated, as in the previous two tables. All specifications include a full set of age dummies. Controls are: (2) Education; (3) Race, ethnicity; (4) Race, ethnicity, education; (5) Race, ethnicity, education, disability.