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Legalization and labor market dynamics of immigrants

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Abstract

We study the effects of obtaining legal status on the extent of economic assimilation of immigrants, using the Immigrant Reform and Control Act of 1986. The paper uses direct measures of human capital accumulation to assess convergence in human capital levels between immigrants and natives, a necessary condition for assimilation. Our findings point to a large increase in the rates of human capital accumulation of immigrants with respect to natives following legalization. This increase is accompanied by a movement to higher quality occupations but, consistent with human capital theory, is only reflected in modest wage gains in the short run.

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1 Introduction

The large number illegal immigrants living in the USA and Europe has ignited a series of debates over the potential economic impact of immigration policies that either promote or preclude legalization [1]. In the US, congress is currently examining a presidential proposal that would provide a path to citizenship for an estimated 11 million illegal workers and would also encourage foreign students in science and mathematics to become citizens.[2] In Europe, bills that make it more difficult for illegal immigrants to live and work have already been enacted while others are under consideration (Street (2013), The Economist (2013)).

These debates are informed by an academic literature in which the costs and the benefits of legalized migration are thought to depend pivotally on whether or not the immigrants' human capital catches up over time with that of natives; a process often referred to as "assimilation". Chiswick (1980), for example, finds the adverse effects of immigration on the wages of low-skilled natives to decrease as the immigrants' skills become comparable to those of natives, Dolado et al. (1994) show how the effects of immigration on output growth might depend on the difference between the human capital brought by immigrants and that of the local population, and Borjas (1995) concludes the economic benefits of immigration "could be increased considerably" if immigration policy attracted "a more skilled immigrant flow" to begin with.

Unfortunately, very little is known about the actual assimilation process of legalized immigrants and, as a result, very few clear-cut policy recommendations can be obtained from the literature. As pointed out by Amuedo-Dorantes et al. (2007), there are theoretical considerations that make it difficult to predict the effect of legalization on capital accumulation. On the one hand, legalization generates an income effect in the form of higher wages and access to social services that diminishes the need to accumulate human capital. On the

[1] Recent estimates from Pew Research Center Hispanic Trends Project and the Clandestino Project indicate there are approximately 11.7 million illegal immigrants currently living in the USA, and between 1.9 and 3.8 million in Europe. see Triandafyllidou (2009)

[2] The proposal is available at www.whitehouse.gov/issues/immigration

other hand, legalization also generates higher returns to skill by making new and better job opportunities available and provides greater incentives for investing in human capital. Empirical evidence on the human capital assimilation process that follows legalization is therefore needed, but such direct evidence is rare[3].

Instead, most empirical studies of assimilation rely on the analysis of wages or earnings and link any observed convergence in wages to a presumed convergence in human capital. Along this line, Chiswick (1978) finds cross-sectional evidence that wages of immigrants rise relative to those of natives over time. Borjas (1985), in turn, shows that when controlling for the quality of immigrant cohorts, the evidence on "earnings catch-up" disappears. More recent studies by Rivera-Batiz (1999), and Kossoudji and Cobb-Clark (2002) utilize panel data on a sample of legalized immigrants and find that, although legalization has a positive impact on wages, such impact is not tied to changes in the human capital of legalized immigrants, but rather to legalization itself. Thus, the empirical evidence available so far from the study of wages has clearly called into question the existence of a human capital assimilation process.

The empirical analysis of wages, however, is not well suited for studying assimilation. First, because studies of wage growth capture the behavior of only those who remained employed during the period of study and, thus, they may underestimate the assimilation process by ignoring those who quit working but continue to accumulate skills via training or schooling. Second, because it is often presumed that any observed increases in the relative wages of immigrants are the consequence of relative increases in their human capital (or, in other words, the consequence of assimilation) and this presumption is not necessarily correct since a change wages after legalization can also be explained by changes in the job-market mobility of newly legalized workers, or changes in their the bargaining power, among other things. And third, because it is possible for wages and human capital formation to be negatively correlated immediately after legalization: legalization can drive immigrants

[3]See Ying Pan (2012) for a similar assessment of the literature

into new occupations that require greater amounts of human capital but offer lower wages to begin with , while the necessary skills are learned or a minimum required experience is accumulated.

This paper presents new, direct evidence on the effects of legalization on the human capital assimilation of immigrants which, in contrast with previous studies, does not rely on the use of wages or earnings data. We show how the extent of human capital accumulation through formal training programs changed with legalization for a group of immigrants who benefited from the Immigration Reform and Control Act (IRCA) of 1986 in the USA, relative to that of the native population living in the USA at that time. Information on the legalized population comes from the US Legalized Population Survey (LPS), a panel survey on immigrants who were illegally in the USA since at least 1982 and became legal through IRCA. Information on the native population is taken from the 1979 National Longitudinal Survey of Youth (NLSY79).

The use of a comparison group from the NLSY79 survey is necessary for us to estimate a difference in differences specification that identifies the effects of legalization separately from the effects of time and the effects of unobserved individual characteristics. We utilize this approach to estimate the effects of legalization on the training incidence of immigrants, as well as its effects on wages, and occupational mobility. We build on two contributions, by Kossoudji and Cobb-Clark (2002) and Amuedo-Dorantes et al. (2007), who have also used the NLSY79 to create comparison groups. We thus pay particular attention to the robustness of our results when alternative comparison groups are used.

Our results indicate that a substantial amount of human capital assimilation via training occurs after immigrants obtain legal status following IRCA. Compared to natives, immigrants increased the incidence of training by eight percentage points as a consequence of their newly obtained legal status. Moreover, we find that assimilation occurs at least in part through movements to higher productivity occupations. For unskilled migrants in particular, legalization has large and positive impacts on training, and this improvement in skill acquisition

is accompanied by higher wages and occupational quality, as defined by occupation-specific average wage rates. Skilled workers also experience a substantially higher incidence of training, but we find no effects on wages or occupational quality. At the same time, our results suggest that these improvements in skill acquisition may not be sufficient for immigrants' wage levels to catch up in the long run with those of natives.

The remaining of the paper is organized as follows: Section 2 describes the data, Section 3 describes the empirical methodology and presents the results, and Section 4 concludes.

2 Data Description

We construct a panel data set of 8,902 observations on training incidence for both, the legalized immigrants and the native population. The panel encompasses the periods leading to, and following the legalization reform of 1986, which went into effect between 1987 and 1988. Besides training, we construct variables for two other labor market outcomes, wage rates, and occupational quality. The dataset is completed with individual level characteristics describing age, high school completion, and gender.

Data on the legalized immigrants was obtained from the Legalized Population Surveys (LPS1 and LPS2) of 1989 and 1992. IRCA provided two legalization programs: the General Legalization program, which affected about 1.8 million individuals, and the Special Agricultural Workers (SAW) program, which affected about 1.3 million individuals. The LPS surveys are a national sample of those individuals affected by the General legalization program who successfully obtained legal permanent residence. Individuals that applied for residence under SAW were not interviewed.

Under the General Legalization program, illegal aliens first applied for legal residence between January 1987 and December 1988. At the time of their initial application, they were then granted temporary legal status and were given 18 months to prepare their application for permanent legal status (a second application process that required an english test). Of

the 1.8 million individuals who qualified for temporary legal residence, only 1.6 million successfully completed the process for permanent residency. Out of these 1.6 million, a random sample of 6,193 individuals was interviewed between February and June of 1989 in the first LPS survey (LPS1). They were asked about their experiences before arriving to the USA and during their illegal stay in the USA. Individuals who benefited from this program had to demonstrate continuous residence since at least January 1, 1982.

The second wave of LPS took place after the deadline for completing their permanent residence application process had expired and the individuals had obtained legal status. A total of 4,012 individuals from the original LPS survey were re-interviewed between April and September of 1992 (LPS2). This time they were asked about their experiences since they received temporary legal status; including their experiences with on-the-job training programs.

The National Longitudinal Survey of Youth 1979 (NLSY79) survey consists of 12,686 individuals who are first interviewed in 1979. For the LPS, the first wave covers 6,193 individuals. To construct our sample, we first drop individuals who were not interviewed in the 1988, 1989 or 1992 waves of the NLSY (4,243 individuals), or in the second wave of the LPS (2,181 individuals). We further drop individuals who reach retirement age by 1992 (161 individuals), who belong to the military subsample of the NLSY79 (161 individuals), and those with incomplete information on training, age, gender, or high school completion (11 individuals). We are left with 8,244 NLSY and 3,909 LPS respondents. Our baseline sample keeps only the hispanic NLSY subsample (1,577 individuals), and the LPS Mexican and Central American subsample (2,874 individuals). The baseline datset consists then of 8,902 observations on 4,451 individuals.

The first period of interest is defined as the time elapsed from the date of arrival to the US to the date of application to IRCA; this is the period of time during which the individual resided in the USA illegally and it varies in length depending on the specific date of arrival and the exact date of application to residence. Both of these dates were recorded in the

LPS. The second period is defined as the time elapsed from the date of application to the date of the second interview; this is a period of about 3 years (we have no information on the month of the second interview) in which the individuals legally resided in the USA.

We are mainly interested in tracking changes in the accumulation of human capital via training between the pre-legalization and the post-legalization periods. For that purpose, we construct an indicator variable labeled *training.*. This variable takes a value equal to one if the individual received any training in the period and zero other wise. Further detail on the extent or duration of training was not recorded in the LPS. Other outcomes of interest are the average hourly wage by occupation, *wage-occup* expressed in current dollars and cents, which is our measure of the quality of an occupation, and hourly wage rates in the jobs held at interview times, *wage*, also in current dollars and cents. The average wage by occupation is computed using the 1990 census public files, and merged using the occupational codes available in both surveys. Wages were censored above 1,000 and below 0.5, which affected 5 observations in the NLSY sample, despite which a few very high values remain. The set of individual controls is formed by age in 1989 and 1992, *age*; an indicator for male, *male*; and an indicator for having a high school diploma *hschool*.

In order to assess the effects of legalization on human capital formation, it would be ideal to compare the observed experiences of legalized individuals to those of a control group of randomly selected individuals who were not allowed to participate in the legalization program and remained in the US in conditions similar to those prevailing before IRCA, but who were otherwise identical to the legalized population. This ideal control group is unavailable, since the reform enacted by IRCA affected all unauthorized workers at the time and established a new set of penalties for employers of illegal immigrants. Instead, following the work of Kossoudji and Cobb-Clark (2002) and Amuedo-Dorantes et al. (2007), we utilize a comparison group of legal workers selected from respondents of the NLSY.

Our benchmark comparison group is comprised by individuals who were living in the United States during the 1980-1992 period, who were legal residents, therefore not affected

by IRCA, and who were considered of hispanic ethnic origin by the NLSY. Alternative comparison groups are used to assess the robustness of our results. These groups include all US citizens, first generation immigrants, as well as the baseline sample with ages censored to cover the same span present in the NLSY sample

The information in the NLSY is rich enough for us to reconstruct the same set of variables constructed with the LPS survey. Note that because the date of arrival and the date of application vary across individuals in the LPS, the pre and post legalization periods will have different lengths for each individual. This is important for constructing comparable measures of training in the NLSY, since the periods of time over which training incidence is measured need to be comparable across samples. To construct comparable periods in the NLSY, we generated synthetic dates of arrival, application, and second interview for each individual in this survey. We first define a "date of arrival" equal to January 1982 (the average in the LPS is June 1981), then a "date of second interview" equal to May 1992 (LPS interviews were conducted in the first semester of 1992), and finally a randomly generated "date of application", where we use the empirical pdf of this date in the LPS sample. These choices ensure that both periods are similar in duration across subsamples.

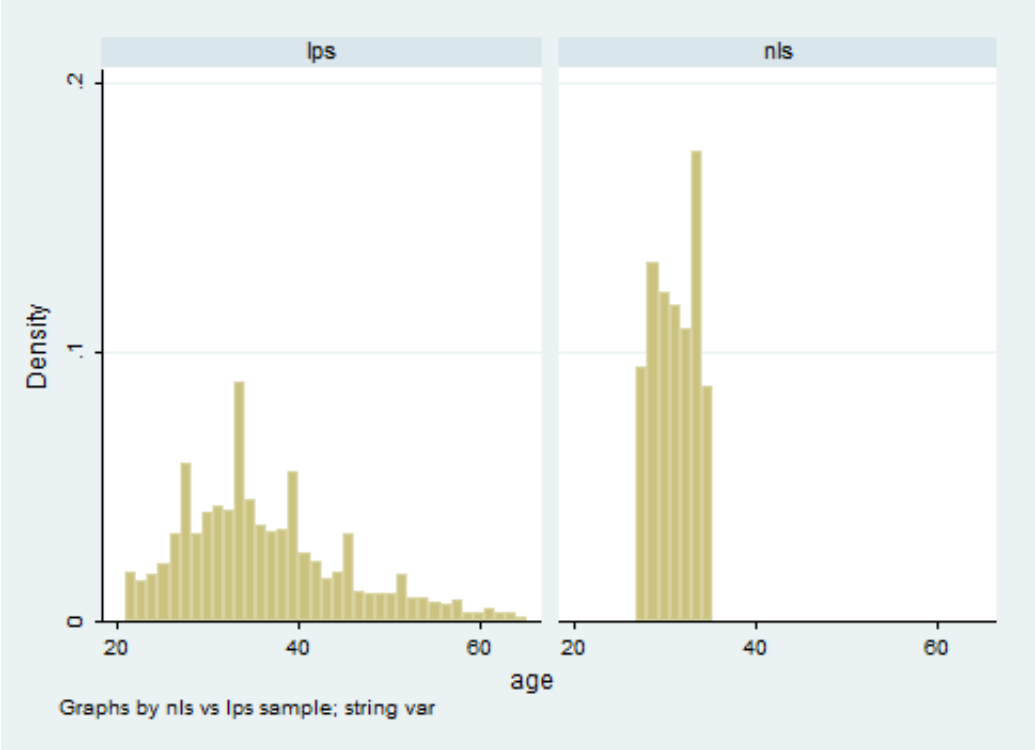
Table 1: Summary of descriptive statistics

		mean	sd	min	max	N
wage	nls	10.37	18.45	0.51	600.00	2192
	lps	6.53	3.14	0.50	50.00	3663
training	nls	0.27	0.45	0.00	1.00	3154
	lps	0.05	0.21	0.00	1.00	5748
wage occup	nls	4.67	2.06	0.22	18.75	1686
	lps	3.44	1.40	0.22	15.14	3830
age	nls	29.76	2.66	25.00	35.00	3154
	lps	34.77	9.05	18.00	64.00	5748
male	nls	0.48	0.50	0.00	1.00	3154
	lps	0.53	0.50	0.00	1.00	5748

Table 1 shows descriptive statistics for all variables, by sample (NLSY and LPS). As expected, wage rates in the NLSY sample are higher than in the LPS sample. Our measure

of the quality of occupations, *wage occup* also shows that individuals in the NLSY sample work in occupations with higher average salaries. Furthermore, a comparison of the standard deviations of this variable shows that wages in the NLSY are also much less compressed than those in the LPS. The incidence of training is also larger in the NLSY sample, in this case by an order of 5 (27% vs. 5%).

Figure 1: Age distribution in the two samples



Finally, we note that LPS individuals have an age distribution with a somewhat higher mean and a much higher variance. Figure 1 compares the two distributions. The differences between samples in this dimension suggest a careful analysis of the sensitivity of our results to changes in the age distribution of the comparison group.

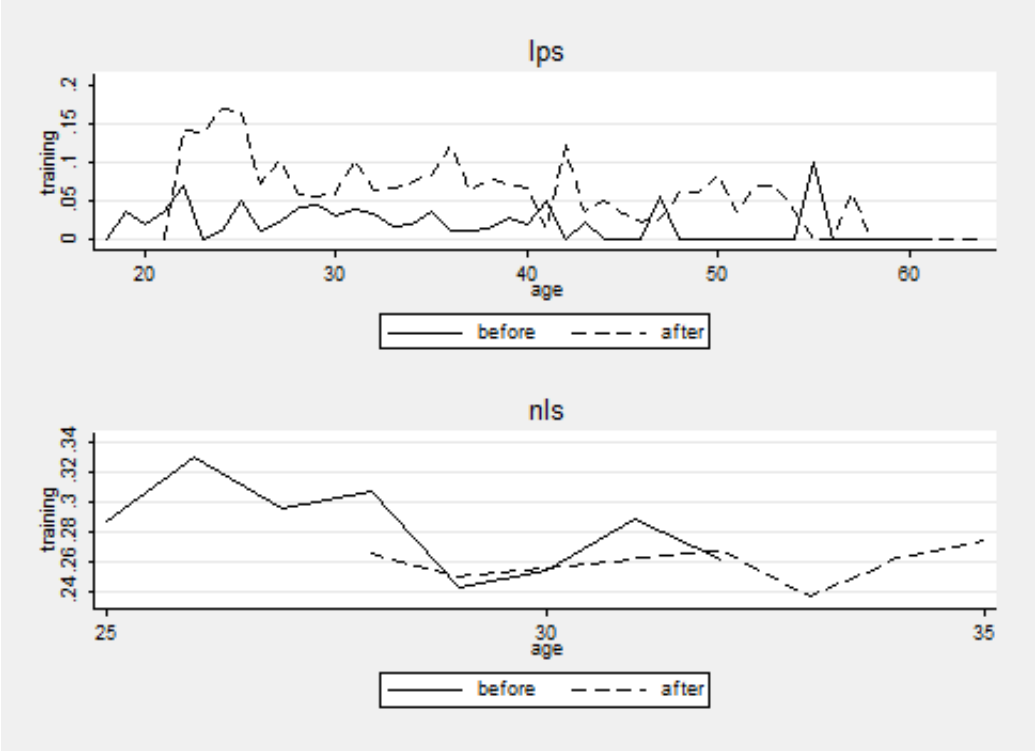
Given that rates of high school completion are much higher in the NLSY subsample, 74% vs. 23% in the LPS subsample, we separate the statistics by high school completion status. Table 2 compares means of selected variables for the two samples, by education level. Not surprisingly, individuals in the NLSY subsample experienced higher wages (10.01 vs 6.31

Table 2: Comparing lps and nls samples

	Less than High School		High School and more	
	nls	lps	nls	lps
wage	10.01	6.31	10.47	7.38
training	0.15	0.04	0.32	0.09
wage by occup.	3.82	3.29	4.90	3.91
age	29.72	35.72	29.77	31.43
male	0.54	0.52	0.46	0.59

for unskilled and 10.47 vs 7.38 for skilled workers), and a much higher incidence of training (15% vs 4% and 32% vs 9% for skilled and unskilled workers respectively). They are also somewhat younger, and have a lower proportion of males in the skilled group.

Figure 2: Life cycle profile of training incidence



Training and wages over the life cycle. Suggestive evidence on the nature of the change in job market status following legalization can be obtained from examining the life cycle (or more precisely age indexed) path of training and wages. For legal workers, the life

cycle profile of training is usually found to follow the behaviour of an investment activity, decreasing with age, with possibly a jump in the early stages of a workers career. This is the pattern predicted by Ben Porath (1967). Associated to this pattern of human capital accumulation, a vast literature, beginning with Mincer (1974), finds life cycle wage profiles to be typically increasing with age until shortly before retirement.

Figure 2 compares the life cycle profile of training incidence for LPS and NLS individuals in both periods. In Méndez and Sepúlveda (2012), we document a life cycle hump shape in training and schooling using the NLSY79 survey. In accordance with this evidence, the training profile for NLSY individuals in our data is roughly decreasing up to 29 years of age, and is flat thereafter. For LPS individuals, by contrast, the profile of training incidence is roughly flat -and low- before legalization, consistent with jobs demanding minimal skills that become periodically depreciated. After workers obtain legal status, the training profile shows the hump shape typical of an investment activity over the life cycle.

Figure 3: Life cycle profile of wages

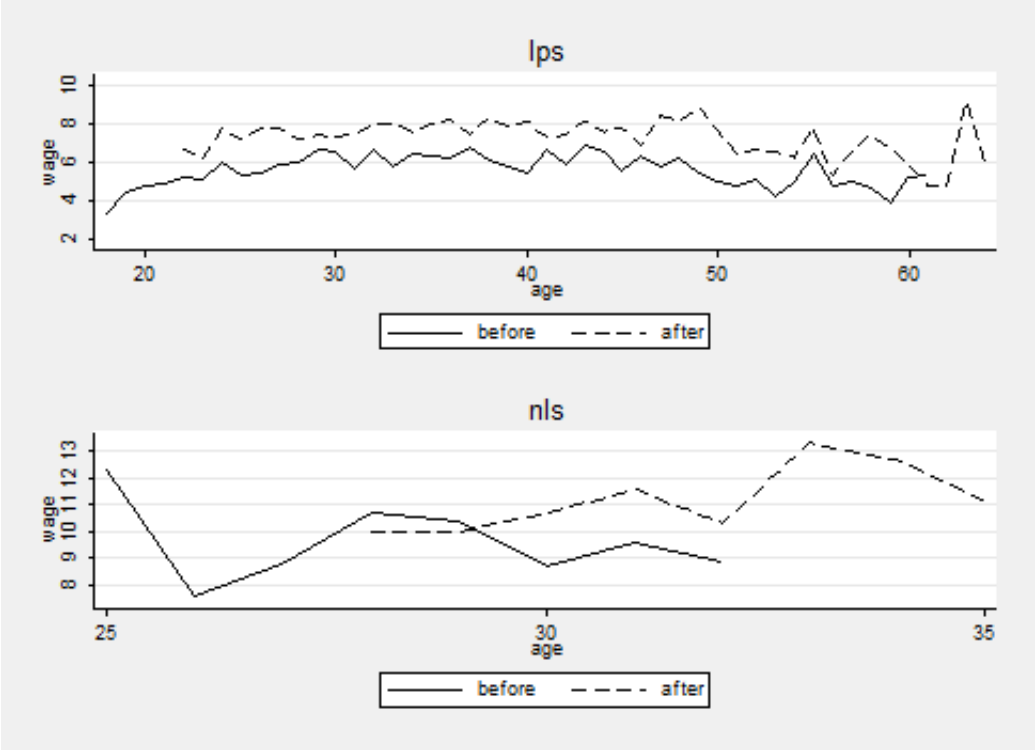


Figure 3, in turn, compares life cycle wage profiles for the two samples in both periods. Wage profiles for NLS workers display the standard hump-shape on both periods. For LPS workers, both the pre and post-legalization wage profiles are roughly flat. Wages for LPS workers in this second period only capture the accumulation of skills that occurred during the three years between legalization and the second interview date. This pattern is then not at odds with human capital theory.

The stylized facts just described are important as they suggest that legalization promotes profound changes in the career expectations of workers. Newly legalized workers, we conjecture, see how a number of career paths open before them that were previously beyond reach. A number of these new career paths associate the accumulation of new skills to a wage profile that increases with experience and tenure. As a consequence of switching to a new career with large initial learning components, some workers might see their wages stagnate, or even decrease, so that it could appear that legalization has no effects on immigrants wages. We explore these conjectures in the next section.

3 Econometric Specification and Results

We identify the effect of legalization through a difference in differences (DD) approach, comparing the outcome of treated individuals (the non legal population, LPS respondents) with the outcome of control individuals (the legal population, NLSY79 respondents), before (in the pre-legalization period) and after (in the post-legalization period) the non legal immigrants obtained legalization. We deviate from a standard DD framework in that our control group is formed by individuals who were "treated" (legal) in both periods.

Our baseline regression is of the form

$$training_{i,t} = \beta_0 + \beta_1 period_t + \beta_2 lps_i + \beta_3 period_t \times lps_i + \gamma X_t + \epsilon_{i,t}, \quad (1)$$

Where $t \in \{pre{-}treatment\ period, post{-}treatment\ period\}$. The variable *period* is equal

to one in the post treatment period, *lps* is a dummy that takes the value one if the individual belongs to the immigrant sample, and the vector X_t contains the individual controls: having high school education or more (*hsschool*), being male (*male*), and a quadratic polynomial in age. The coefficient on the interaction term, β_3, quantifies the effect of interest.

The critical identifying assumption of the DD estimator in the case under study is that other changes in the economy between 1986 and 1992 that affected the outcomes analyzed, and not captured by our controls, should have an equal influence on the non legal and on the legal samples in the absence of the 1986 legalization process. One way to validate the assumption is to show that the trends in training, wages, and other outcomes, were similar for both groups before the legalization of 1986. Regrettably, we were unable to obtain information on such trends for the non legal population. Nevertheless, we are confident that the assumption is likely to hold since in the period under study there were no job market and education policies that could affect differently treated and control individuals. [4]

Table 3 shows results for training, both aggregate (column 1) and by education groups (columns 2 and 3). Column 4 shows results for a test of differences between skilled and unskilled workers.

Legalization increases training incidence by 8 percentage points in the aggregate, and the effects are lower for unskilled individuals (column 2), with a 3 percentage point gain, than for skilled individuals (column 3), who experience a 13 percentage point increase in training incidence. Legalization, and the decreased uncertainty about job tenure that it entails, should give immigrants strong incentives to invest in human capital. The results on training then are not unexpected.

Table 4 shows the estimates of the coefficient on $lps \times period$ across model specifications, in columns, and alternative control groups, in rows. Note that, when we restrict the NLSY sample to low socio-economic status (SES) hispanics, the results are virtually unchanged.

[4] Another necessary condition for identification is parallel trends on unobservables, such us tastes or preferences, between treated and control individuals. We think that this is not an issue since there were only 6 years between the pre and post treatment periods.

Table 3: Training: Main results

	base	lesshs	hsmore
	(1)	(2)	(3)
lps x period	.08	.03	.13
	(.01)***	(.02)**	(.03)***
period	-.03	.008	-.04
	(.01)**	(.02)	(.02)**
lps	-.21	-.12	-.29
	(.01)***	(.01)***	(.02)***
age	.0005	-.0006	-.001
	(.003)	(.002)	(.009)
age2	-.002	-.0007	.000083
	(.004)	(.003)	(.01)
male	.01	.01	.02
	(.007)*	(.006)**	(.01)
high school	.09		
	(.008)***		
Obs.	8902	5297	3605

*** significant at 1%,** significant at 5%,* significant at 10%. Column (4) es the difference between high school and more, and less than high school (column (3) - column (2)).

Table 4: Training: Sensitivity of treatment and control groups

	base	lesshs	hsmore
	(1)	(2)	(3)
baseline	.08	.03	.13
	(.01)***	(.02)**	(.03)***
poorhispanics	.08	.04	.13
	(.01)***	(.02)**	(.03)***
allworkers	.09	.06	.13
	(.01)***	(.01)***	(.03)***
sameage	.07	.02	.12
	(.02)***	(.02)	(.04)***
immigrants	.05	.002	.12
	(.02)**	(.03)	(.04)***

*** significant at 1%,** significant at 5%,* significant at 10%. Column (4) es the difference between high school and more, and less than high school (column (3) - column (2)).

Table 5: Non-linear models: All outcomes

	base	lesshs	hsmore	difference
	(1)	(2)	(3)	(4)
Outcome				
Training	.059	.040	.089	.049
	(.006)***	(.008)***	(.015)***	(.017)***
Obs.	8215	5121	3094	8215

*** significant at 1%,** significant at 5%,* significant at 10%. Column (4) es the difference between high school and more, and less than high school (column (3) - column (2)). Results for training are obtained using a probit model, following Blundell (2004) to calculate marginal effects, and using bootstrapping with 1000 replicas to compute standard errors.

When we use all native workers as controls (fourth row), the results are also similar. One possible interpretation of these results is that legalized immigrants experienced gains in the rates of skill acquisition not only compared to similar ethnic groups, but also compared to the US population. In the fifth row, we restrict the LPS sample to the same age span present in the NLS sample, 25 to 35 years of age at any pint in the dataset. Here, we cease to observe a significant effect for the low skilled workers. Similarly, when our control group is composed of first generation immigrants from the same geographical area as the LPS sample, we find no effect for low skilled workers. For skilled workers, and in the aggregate, the effects are still strong and significant.

We interpret this evidence as conclusive that skilled immigrants see large increases in training incidence as a consequence of legalization. For unskilled workers, the evidence is also suggestive of a jump, with qualifications.

Both tables 3 and 4 present linear regression estimates of the models. Since our measure of training is an indicator variable, we present in Table 5, in the spirit of completeness, the probit analogs of those results. Shown are the marginal effects on the parameter of interest, β_3. Note that they are quantitatively quite similar to those in table 3.

In addition to the analysis of legalization on the incidence of training, we also examined its effects on both wages and occupational quality. As discussed in the introduction, the effects of legalization on wages are ambiguous. Clearly, properly discounted future income

Table 6: Wages: Main results

	base	lesshs	hsmore
	(1)	(2)	(3)
lps x period	.05	3.77	-.38
	(.63)	(1.21)***	(.96)
period	1.34	-2.42	1.96
	(.50)***	(1.13)**	(.55)***
lps	-3.38	-5.24	-3.06
	(.49)***	(.85)***	(.65)***
age	.36	.17	.81
	(.15)**	(.17)	(.33)**
age2	-.45	-.24	-.98
	(.19)**	(.22)	(.47)**
male	2.19	2.35	1.94
	(.31)***	(.43)***	(.44)***
high school	.91		
	(.37)**		
Obs.	5855	3358	2497

*** significant at 1%,** significant at 5%,* significant at 10%. Column (4) es the difference between high school and more, and less than high school (column (3) - column (2)).

should rise as better job opportunities materialize. Such opportunities, however, typically imply choosing career paths with different combinations of initial wages and wage growth. Higher wage growth is made possible, according to the standard theory of Lazear (1976), by the accumulation of human capital in the form of training, learning by doing, and other forms of skill acquisition. These investments imply, in turn, that observed initial wage rates are lower than in the case where no such investments are made. If we observe that wages increase despite increases in training incidence, this is then suggestive of a large improvement in life cycle wage rates. If, on the contrary, we observe negative or no effects on wages, this does not rule out an improvement in the labor market status of immigrants.

The results of the wage equations are presented in Table 6. We find that in aggregate data there are no effects on wages (column 1). Once we decompose the sample between skilled and unskilled workers, we observe strong wage increases for unskilled workers(column 2), but no effects on skilled workers (column 3).

In table 7 we present the results on the coefficients of interest, $lps \times period$, when alter-

Table 7: Wages: Sensitivity of treatment and control groups

	base	lesshs	hsmore
	(1)	(2)	(3)
baseline	.05	3.77	-.38
	(.63)	(1.21)***	(.96)
poorhispanics	-.76	.15	-.47
	(.45)*	(.34)	(1.05)
allworkers	-.32	1.35	.02
	(.53)	(.71)*	(1.11)
sameage	-.03	3.14	.15
	(.90)	(1.75)*	(1.23)
immigrants	-.15	.24	-.03
	(.35)	(.49)	(.62)

*** significant at 1%,** significant at 5%,* significant at 10%. Column (4) es the difference between high school and more, and less than high school (column (3) - column (2)).

native control groups are used. Note that the effects for low skilled workers disappear when restricting the sample to low SES hispanics, in row 2, but appear again in column 3 and, critically, in column 4 when restricting the age span of the treated subsample. These results suggest only weak evidence for wage gains, even among low skilled workers.

We wish to explore some of the channels by which improvements in labor market outcomes take place in the case of legalized individuals. One such channel might be the increased opportunities for switching to higher quality occupations. Table 8 shows the effects of legalization on the quality of the occupation, as previously described. Again, the results point to improvements in the quality of occupations in the case of unskilled workers. Compared to the control group, unskilled, legalized workers move in average to occupations with average wages that are 8% higher . In the aggregate, and for skilled workers, such effects are positive but not significant. Note that switching rates for skilled (.81) and unskilled (.87) workers in the NLSY sample are higher than those of their counterparts in the LPS sample (.79 and .69 respectively). For those who do switch then, the differences in the improvement in occupational quality are even higher in favor of LPS workers.

Table 9 presents sensitivity analysis for the main effect. While in the baseline the only effect is a weakly significant coefficient on low skilled workers, this effect is strengthened

Table 8: Occupation: Main results

	base	lesshs	hsmore
	(1)	(2)	(3)
lps x period	.04	.28	.25
	(.09)	(.14)*	(.17)
period	.21	-.09	.24
	(.08)***	(.14)	(.11)**
lps	-.84	-.59	-1.16
	(.07)***	(.11)***	(.13)***
age	.09	.06	.15
	(.02)***	(.02)***	(.06)***
age2	-.12	-.09	-.20
	(.03)***	(.02)***	(.08)**
male	.42	.45	.42
	(.04)***	(.05)***	(.08)***
high school	.75		
	(.05)***		
Obs.	5516	3303	2213

*** significant at 1%,** significant at 5%,* significant at 10%. Column (4) es the difference between high school and more, and less than high school (column (3) - column (2)).

when restricting the treated sample to low SES hispanics (row 2), all US citizens (row 3), and also when using first generation immigrants as the control group (row 5). The effect does disappear however when restricting the age span (row 4). These results suggest that moving to a higher quality occupation is one channel through which low skilled immigrants both acquire more skills, and experience wage gains after legalization.

Table 9: Occupation: Sensitivity of treatment and control groups

	base	lesshs	hsmore
	(1)	(2)	(3)
baseline	.04	.28	.25
	(.09)	(.14)*	(.17)
poorhispanics	-.04	.38	.12
	(.10)	(.16)**	(.18)
allworkers	.15	.28	.43
	(.07)**	(.10)***	(.15)***
sameage	.04	.25	.23
	(.12)	(.17)	(.21)
immigrants	.05	.47	.02
	(.18)	(.24)*	(.30)

*** significant at 1%,** significant at 5%,* significant at 10%. Column (4) es the difference between high school and more, and less than high school (column (3) - column (2)).

4 Conclusion

We used a difference in differences approach to examine the effects of legalization on the degree of assimilation of immigrants, understood as the catching up of human capital. The results suggest that, for both skilled and unskilled immigrants, legalization lead to higher rates of human capital accumulation. For unskilled immigrants, the results on wages indicate that legalization lead to the availability of jobs with attached career paths that are vastly superior to pre-legalization jobs. At least part of this improvement is accomplished by switching to higher quality occupations.

While immigrants do some catching up on the rates of skill acquisition, the initial differences are so large that the stocks of human capital will still tend to diverge for these two groups. Here, the effect of legalization is to moderate the rates of divergence of human capital stocks for immigrants and US born individuals along the life cycle. In the cross section, however, such stocks will be drawn closer together. In the longer run, we expect the relative dynamics of wages follow a path similar to that of human capital stocks.

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