Differential Impacts of Immigrants on Native Black and White Workers

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Introduction

This paper examines the differential labor market impacts of immigration on native non-Hispanic white and African American workers across metropolitan areas. Historically, immigrants have played an intriguing and complex role in reinforcing and reproducing racial inequality. For example, imported Chinese labor was used to threaten black labor in the agricultural South in the latter part of the nineteenth century. Black workers faced competition with growing numbers of Irish and Southern European immigrants in northern cities in the early twentieth century. (See for example, Lowen, 1971; Takaki, 1998; Reich, 1981) The potential role of immigrants in shaping racial outcomes has once again emerged as a significant societal issue with the large-scale global movement of labor from less-developed regions to advanced economies during the latter part of the twentieth century. There are conceptual reasons to believe that the increase in the supply of foreign-born labor could affect U.S.-born non-Hispanic (NH) white and African Americans differently. For example, pre-existing racial inequality disproportionately concentrates African Americans in less skilled sectors with relatively more competition from foreign-born workers. While this expose blacks to substitution effects, the presence of immigrant labor may also have a complementary effect by expanding industries, particularly in the context of extensive global competition for low-wage economies.

There may also be differential impacts associated with the type of immigrant labor defined along ethnicity/race lines and by the level of economic assimilation of immigrants. In particularly, the paper focuses on the three major immigrant groups: Asians, Latinos and all others (Others), comprised of primarily of whites from Europe and Canada. A plausible hypothesis is that these three groups have differential impacts because they differ in internationally portable human capital, face alternative institutions and networks that incorporate immigrants into the economy, have differential access to capital, and have widely varying English language ability. This in turn influences the sectoral distribution of immigrant workers. For example, Asian immigrant workers are relatively more likely to be employed in firms owned by co-ethnics and be confined to an ethnic-based sub-economy, while many Latino immigrant workers are hired by white owned firms using Spanish speaking intermediaries. Moreover, it has been argued that Asians and Latinos enter into jobs that native workers find unattractive, which mitigates the substitution effect. Europeans, on the other hand, are more likely to be directly hired into such firms, thus offer the greatest competition. In fact, these "Other" immigrants are relatively more advantaged because there are fewer "push" factors in the home country (e.g., lower international wage differences), so those who come are those who easily fit into the American economy, and because they do not face racial discrimination. As a

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consequence of these differences in economic incorporation, Asian, Latino and Other immigrants may affect native workers differently.

A second plausible hypothesis is that the labor market impacts may vary by the length of residence of the immigrant workers. Immigrants undergo economic assimilation, through which they learn some English language, acquire U.S. specific human capital, and become more knowledgeable of how to undertake job search in the American labor market. (Chiswick, 1978) Most studies show that the rate of economic assimilation slows with years in the U.S. and levels off after 15 years. This may alter the balance of substitution and complementary effects, and this shift may have differential impacts on native workers by race. In other words, the impacts of recent immigrants may differ from the impacts of more established immigrants.

This paper uses inter-regional differences to examine the impacts. The metropolitan area is a desirable geographic entity because it defines a labor-market at a scale that is sufficiently integrated to enable direct labor-market competition with minimal transaction and job-search costs. Conversely, there are substantial barriers to direct competition across metropolitan areas. Equally important, the relative size of the immigrant labor force varies dramatically across metropolitan labor-markets. For example, in 2000 the ten largest metropolitan labor markets contained 26 percent of all workers in metropolitan areas, but 40 percent of immigrant workers. While the three subgroups show a high level of concentration in these large metropolitan areas, their spatial patterns are not identical. Table 1 presents the correlation matrix of the relative size of the three immigrant groups in 297 metropolitan areas broken down by length of residency in the United States (10 years or less, and over 10 years). The correlation between two different ethnic/racial group ranges from only .52 (recent Asians and recent Others) to .22 (recent Asians and established Latinos). While all of the correlation coefficients are statistically significant, the low absolute values *across* racial/ethnic groups nonetheless indicate that the settlement patterns do differ substantially. The *within group* correlation between recent and established immigrants is considerably higher, indicating persistence of settlement patterns over time.

Table 1: Correlation of Immigrant Share of Labor Force

	Recent Asian	Recent Latino	Recent Other	Est. Asian	Est. Latino
% Recent Latino Immigrant Workers	0.30				
% Recent Other Immigrant Workers	0.52	0.36			
% Established Asian Immigrant Workers	0.88	0.32	0.42		
% Established Latino Immigrant Workers	0.22	0.90	0.25	0.28	
% Established Other Immigrant Workers	0.40	0.36	0.81	0.43	0.29

The literature on estimating the effects of immigrants on native born wages and employment has relied heavily on estimating human capital type models augmented with variables measuring the percentage of immigrants in the labor force by region of residence. This method exploits the spatial separation of labor markets in order to

estimate the effects of immigrants on native born wages and employment. We also use this approach but with some modification to address problems with this method.

Limitations of the Inter-Metropolitan Approach

While the variation across metropolitan areas is analytically useful, previous studies using this approach have produced mixed results. A conceptual limitation is that metropolitan labor markets are not perfectly isolated and self contained. The geographic movement of capital and labor can offset regional differences in the impacts of immigration. In other words, at least some of the impacts are diffused throughout the national economy. (See for example, Borjas et al 1996 and 1997; Borjas and Katz, 2005).

However, there is no evidence that mobility is sufficient to equalize the effects across all regions, and therefore the impacts in areas with substantial number of immigrants are only attenuated rather than entirely eliminated. On one hand, Frey (1995, 1996) argues there is a strong positive relationship between immigration and out migration by native-born workers, lending support that area studies may tend to understate immigration effects due to out migration by native-born workers. However, in a number of studies Card has found that there is an extremely weak relationship between immigration and out migration. (See, for example Card, 1990; Butcher and Card, 1991; Card 2001) Even in studies where migration is explicitly controlled there have been mixed results. Pedace (1998) attempts to address the migration issue by constructing a net migration instrument for native-born workers in each region using a demographic survivor model. The inclusion of this exogenous instrument in the standard area regressions generally increases the magnitude of effects of immigrants on wages and employment, but not greatly and not always in the expected direction. For example, significant negative effects are found primarily on the employment of native born workers with less than a high school education. However, results for other native born groups were quite mixed with several groups having positive wage effects from immigration for higher skill groups.

While our approach does not estimate the diffused national impacts, it does nonetheless provides useful insights because much of the differences in regional impacts are still of concern. Immigration control falls exclusively within the powers of the federal government, and it is important to determine what are the nationally acceptable short-term and long-term costs and desired benefits from immigration. To the degree that impacts do not geographically equalize, there is also the issue of what should be the appropriate policy to address inter-metropolitan disparities in the impacts. Much of the related debate on regional differences has focused on the unequal cost to the provision of governmental services, with local governments with large immigrant populations bearing a disproportionate share the cost of education, health and public safety. The same can be applied if there are differences in the burden of addressing the labor-market needs of disadvantaged native populations such as African Americans.

We address the limitations of the inter-metropolitan approach in the following way. To partially account for the possibility of omitted variables across areas affecting the parameter estimates of the labor-market effects of immigration, we add variables to control for regional differences in labor markets. We also test alternative specifications with and without native-born migration variables for each region in order to account for labor mobility. We also believe that the existing literature produces mixed results because they do not adequately account for how ethnic/racial composition and economic assimilation can alter the substitution and complementary effects. The immigrant earnings literature has found that immigrants do better with time in the US. (See for example, Chiswick, ibid; Card, 2005 for a representative discussion.) Most studies have estimated effects by skill group categories. We attempt to measure the impact of recent immigrants versus established immigrants on native labor market outcomes.

Model and Data

We empirically estimate the immigrant impacts on NH white and black workers' annual earnings, annual hours worked, and hourly wages. The core of the study is a set of cross-sectional regressions that incorporate both individual and regional characteristics. The individual variables are based on the standard human-capital approach, schools of education and years of experience. We also include a dummy race variable (being black) to capture residual race effects. There are three categories of regional variables. The first category is based on general features that have been identified in the literature on urban agglomeration and institutional behavior that can influence metropolitan-level outcomes. This includes the size of the labor market and factors (greater agglomeration potential leads to larger size), relative size of work force comprised of the highly educated (knowledge spillover), unionization rate (increased collective worker power), and relative presence of large firms (increased economic power of employers). We also include the rate of net migration for native workers (accounting for the relative attractiveness of the region for workers), the unemployment rate (which could capture either a downward pressure on the labor market or a compensating wage-employment tradeoff), and the cost of housing as an index for the cost of living (used to adjust earnings and hourly wages only). The second set of metropolitan-level variables control for the level of contemporaneous and past racial disparity. This includes the level of residential segregation (which captures both the degree of racial discrimination in the housing market and the effects of spatial mismatch), the relative size of the black population (which captures the "black threat" perceived by whites), and the income and employment gap from the previous decade. The final set of regional variables are the relative size of the immigrant work force by ethnicity/race and length of residence (ten years or less, and over ten years).

The sample for the study comes from the 2000, 5% Public Use Micro Sample (PUMS). Two sets of restrictions are used. The first set is based on individual characteristics. The observations include only U.S. born non-Hispanic white and African American (using the single-race category) males between the ages of 24 and 60, not attending school, not in the military, without a disability that prevents work, and not residing in a group quarter. The intent is to measure immigrant impacts on prime age

men. The second set of restriction is based on metropolitan areas. The sample includes only those in a MSA (metropolitan statistical area) that meets the following criteria: the MSA includes at least 100 NH white and 100 blacks fulfilling the individual criteria; the same boundaries in 1990 and 2000 or where the boundary changes produce only a minor (5% or less) difference in the total population; and where there are data on the in and out migration of native workers. The final sample includes over three-quarters of million observations across 97 MSAs. African Americans comprise approximately one-eight of the observations.

Primary data for the regional variables are calculated from the 1990 and 2000 decennial PUMS data. The following independent variables are constructed by aggregating to the MSA level information from the PUMS: the absolute size of the labor market (in log form), the relative size of the work force with at least a bachelor's degree, the rate of net migration for native workers, the unemployment rate, the cost of housing index, the relative size of the black population, the estimated the income and employment gap from the previous decade (adjusted for differences in education and experience), and six variables for the relative size of the immigrant labor force by the previously mentioned three ethnicity/race grouping and two categories of length of residence (ten years or less, and over ten years).

Additional regional variables were derived from supplemental sources. The level of residential segregation is based on the tract-level dissimilarity index calculated from census data by the Lewis Mumford Center, State University of New York, Albany. Unionization rates come from tabulations by Hirsch and Macpherson based on pooled multi-year estimates from the Current Population Survey. Finally, the relative presence of large firms is estimated as the percent of the employed working in firms with at least 500 employees based on special tabulations by the Bureau of the Census for the U.S. Small Business Administration. The specific sources for these variables are shown in the appendix.

The sample means are presented in Table 2. There are substantial differences in labor-market outcomes. Average annual earnings are the broadest measure of economic status of workers, and our statistics including zero-value observations, which is disproportionately black. The earnings mean for blacks is only about a half of that for non-Hispanic whites. This is due to differences in both total hours work and hourly wages (calculated for those with at $1,000 in annual earnings). The racial disparity is due partly to the lower level of human capital among African Americans. However, there are also systematic differences in the means for the regional variables. Blacks are more likely to reside in MSAs with lower overall skill levels, higher unemployment, lower unionization rates, larger labor markets, lower housing costs, more Latino and Other immigrants, and fewer Asian immigrants. Finally, the data show considerable racial disparity from the previous decade and a high degree of residential segregation. All of the individual and regional factors can contribute to the observed racial differences in labor market outcomes between native NH whites and blacks.

Table 2: Sample Means

	Pooled White and Black	Standard Deviation	White Means	Black Means
Dependent Variables				
Total Annual Hour	2,063	892	2,136	1,622
Total Annual Earnings	$53,245	$62,660	$57,343	$28,406
Log of Hourly earnings	2.98	0.78	3.03	2.67
Human Capital Personal Variables				
Years of Schooling	13.81	2.75	14.01	12.59
Experience	21.77	10.47	21.81	21.56
General Metropolitan-Level Characteristics				
Net 5-year Metro Migration Rate	0.0065	0.0534	0.0071	0.0035
% of LF with BS/BA +	29.68	6.49	29.73	29.37
Metro Unemployment Rate	5.64	1.43	5.59	5.96
Metro Unionizatin Rate	16.35	7.26	16.46	15.70
% Workers in large firms	56.34	5.43	56.20	57.23
Log of Size of Metro Labor Force	13.87	1.02	13.85	13.97
Housing Cost Index	1.28	0.48	1.29	1.22
B/W Metropolitan-Level Characteristics				
Metro 1990 Adj B/W Hours B/W Gap	-372	113	-370	-386
Metro 1990 Adj B/W Earnings B/W Gap	-$11,176	$2,630	-$11,086	-$11,722
2000 B/W Residential Segregation	65.0	12.6	64.6	67.5
Immigrants as % of 2000 Metro Work Force				
% Recent Asian Immigrant Workers	1.53	1.37	1.54	1.48
% Recent Latino Immigrant Workers	2.76	2.29	2.74	2.92
% Recent Other Immigrant Workers	1.98	1.58	1.96	2.08
% Established Asian Immigrant Workers	2.63	2.61	2.66	2.47
% Established Latino Immigrant Workers	4.09	4.57	4.07	4.23
% Established Other Immigrant Workers	4.02	2.81	4.00	4.08
Sample Size (except for Log of Hourly Wages)	844,955		734,611	110,344
Sample Size for Log of Hourly Wages	781,552		692,860	88,692

OLS models for total annual hours and total annual earnings are estimated because of the difficulty of transforming zero values into log form. We use both OLS and the two-stage Heckman method to model hourly wages, although only the OLS results are shown as the Heckman results do not differ greatly. All of the regional variables are entered as interactive terms with the race of the observation (either NH white or black).

Results and Discussion

The basic results for the immigrant variables for our models are presented in Table 3. (Full results are available on request from authors.) Overall, the models perform well, explaining a tenth to a fifth of the variance. The effects of the unreported variables are largely consistent with a priori expectations and statistically significant. The estimated effects of immigrants show that the impacts do vary by ethnicity/race and time of residence. Recent Asian and Latino immigrants have a *positive* effect on native NH whites and blacks, but as they undergo economic assimilation, the impacts become

negative. This is consistent with the hypothesis that these immigrants tend to be incorporated into sectors with jobs that are highly undesirable for native workers, and by making these sectors more viable (particularly in the face of global competition), they have a net complementary effect on native born workers. However, as Asian and Latino immigrants become adjusted to the U.S. labor market, they become more likely competitors with at least some native workers. Other immigrants, comprised primarily of foreign-born whites, have a different pattern with respect to time in the US, with recent immigrants being direct competitors and established immigrants producing net complementary effects. This is consistent with the hypothesis that these immigrants are more likely to be fully integrated into the American labor market at the time of entry. Over time, however, the effects turn positive, perhaps due to increase in capital and other factors. It may be that on the longer-term that Asian and Latino workers would also reverse their native impact, but that is beyond the scope of this paper.

Table 3: Estimated Coefficients for Immigrant Variables					
	NH Whites		Blacks		Pairwise Difference
Total Annual Earnings					
% Recent Asian Immigrant Workers	2914	***	1135		**
% Recent Latino Immigrant Workers	1598	***	736	***	***
% Recent Other Immigrant Workers	-2579	***	-1528	**	*
% Established Asian Immigrant Workers	-1346	***	-738	*	N.S.
% Established Latino Immigrant Workers	-424	***	-158		N.S.
% Established Other Immigrant Workers	1341	***	405		***
R-squared	0.178				
Sample Size	844,853				
Total Annual Hours					
% Recent Asian Immigrant Workers	26.8	***	30.2	**	N.S.
% Recent Latino Immigrant Workers	20.2	***	20.4	***	N.S.
% Recent Other Immigrant Workers	-19.9	***	-29.3	***	N.S.
% Established Asian Immigrant Workers	-18.7	***	-19.7	***	N.S.
% Established Latino Immigrant Workers	-7.0	***	-8.1	***	N.S.
% Established Other Immigrant Workers	0.7		8.6	*	N.S.
R-squared	0.103				
Sample Size	844,853				
Log of Hourly Wages					
% Recent Asian Immigrant Workers	0.040	***	0.020	*	*
% Recent Latino Immigrant Workers	0.019	***	0.017	***	N.S.
% Recent Other Immigrant Workers	-0.032	***	-0.033	***	N.S.
% Established Asian Immigrant Workers	-0.017	***	-0.005		**
% Established Latino Immigrant Workers	-0.003	***	-0.003		N.S.
% Established Other Immigrant Workers	0.011	***	0.010	**	N.S.
R-squared	0.198				
Sample Size	781,458				

The regression results also show some distinctive differences in the impacts of immigration by the race of the native workers. The last column reports the pair-wise comparison for the statistical difference between the NH-white and black coefficients. In terms of earnings, the effects are generally larger on NH-whites, and this can both increase and decrease the racial gap among native workers. On the other hand, the impact on total hours worked is generally greater on blacks than NH-whites, and this can alter the racial gap in either direction, depending on the type of immigrants. While there are some statistically significant differences in the coefficients for the hourly-wage model, the differences in absolute size are small.

We check on the robustness of our results by estimating alternative specification of the three models. This includes dropping the net-migration variable for native workers and alternatively dropping the lagged racial disparity variables. Although there are some changes in the magnitudes of the estimated coefficients, they do not change the qualitative results for the estimated effects of immigration by race/ethnicity and length of residence in the United States.

The elasticity estimates for the effects of immigrants on native born blacks and NH white earnings and employment are relatively small. Elasticity estimates of the effects of a 1% increase in immigrants in the labor force on black earnings range from -0.05 to 0.04, for NH white earnings, the range is from -0.044 to 0.05. Employment effects are also relatively small, with elasticity estimates of a 1% increase in immigrants in the labor force changing black total hours, ranging from -0.02 to 0.02, for NH white total hours, the range is from -0.01 to 0.01. These estimates are similar to previous studies on immigrant impacts on all workers, although they are on the low end (relative small effects) compared to other studies. This may be due to limiting the sample to prime age workers instead of focusing on low skill workers. In addition, the regional labor market control variables may have reduced the misspecification of previous regional studies.

We have tried to revisit the estimation of the effects of immigration on US born NH whites and Blacks using regional variations in labor markets. We believe that we have improved on the results of past regional studies with the inclusion of additional labor market variables and migration. Moreover, we have attempted to untangle some of the past studies mixed results concerning the substitutability/complementary nature of immigrants on native-born workers by differentiating immigrants by time in the US and ethnicity. Our results generally show that more recent Asian and Latino immigrants may indeed be complementary to native workers, but with time in the US, immigrants may become substitutes for native workers. Interestingly, the reverse is true for non-Asian/non-Latino immigrants. In other words, the impacts of immigration are more complex than previously documented, and the impacts operate differentially on natives by race.

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