IMMIGRATION AND THE STRUCTURE OF DEMAND: DO IMMIGRANTS ALTER THE LABOR MARKET COMPOSITION OF U.S. CITIES?

by

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Abstract

Does the presence of immigrants help determine the types of jobs that exist in American cities, and the size of various sectors of these cities' economies? This study explores the relationship between immigration and labor market demand by employing information about the occupational distribution of recent immigrants as compared to natives to analyze the circumstances under which the two groups are more likely to compete with or complement each other in the labor markets of U.S. cities. The findings lend some support to Light and Rosenstein's (1995) specific demand hypothesis: in small and medium-sized cities, many immigrants fill occupational niches that would not exist in their absence. The picture is different in large metro areas; here there appears to be little relationship between the relative sizes of the immigrant population and of the labor market sector made up of occupations which are – on a national scale – immigrant-dominated. I propose reasons for this discrepancy, as well as suggestions for further research along these lines.

Do immigrants take others' jobs, fill vacant jobs, or create new jobs? This controversy is central to the political debate over immigration policy, and to a growing body of scholarly research. Since few – if any – politicians, activists, or social scientists would argue for a single, definitive resolution, most research in this area seeks to define the conditions under which immigrants compete with or complement native workers – in terms of wages, employment opportunities, or occupational distribution. If some natives' labor market position is hurt by immigrants, we want to know when, where, and for whom this is the case. The same is true if we believe that some immigrants fill positions that would otherwise disappear, or have never existed at all. The present study addresses this issue by exploring the impact of immigration on the structure of labor market demand. Its focal question is: Does the relative size of the immigrant population partially determine the distribution of jobs in American cities, and, in particular, the size of various occupational sectors of these cities' economies?

Competitors and complements: theoretical arguments

Immigrants come to the U.S. for a variety of reasons; these include employment, family reunification, and expanded educational opportunities for themselves or their children. In the aggregate, the immigrant population differs from the native population in terms of age distribution, education, skills, and job and consumption preferences. Because of this, immigration does not simply expand existing labor and consumer markets to scale. Rather, it effects a modest gain in the GDP accruing to native-born Americans.[1] Yet at least some immigrants who join the labor force possess skills and job preferences that are similar to those of some natives. When this is the case, the two groups are potential substitutes in production –

[1] Yearly estimates range from one to ten billion dollars in a seven trillion dollar economy (NRC 1997:153; see also Borjas 1995; Johnson 1997).

competitors. To the extent that such competition exists, we would expect an increase in the supply of labor via immigration to induce a decrease in the wages and employment opportunities of natives with whom they compete (Borjas 1989). These natives would lose out while other natives reap the economic benefits of immigration.

On the other hand, the difference between the immigrant population and the native population suggests that at least some immigrants complement native workers because they produce *different* goods and services. In fact, the occupational distribution of the foreign-born is quite different from that of natives. In proportion to the size of their population, immigrants are over-represented in some jobs and underrepresented in others. than the native population. To the extent that immigrants specialize in labor market activities that would not exist at the same scale – or at all – if the immigrants were absent, nobody loses (NRC 1997:146). Immigrant workers increase demand by providing new goods and services; overall production rises, and all natives benefit. Another possibility is that immigrant labor helps industries (e.g., the steel industry in the early 1900s or the software industry today) expand. In this situation, immigrants may not compete in any meaningful way with those currently employed. An expanded pool of immigrant workers could create more supervisory positions into which native workers would be promoted. Both of these scenarios are demand-driven; immigrants originate or respond to labor market demand.

Light and Rosenstein (1995:80-82) expand the demand-side argument by proposing that immigration exerts "specific demand effects." Specific demand effects arise when only one or some groups respond to, or create, changed demand. For example, immigrants may respond to specific demand for seamstresses or physicists, or create specific demand for ethnic cuisine. Thus, specific demand changes the share of total demand that various groups of workers, e.g., immigrants and natives, supply. The specific hypothesis does not require us to distinguish between various causes of changed demand. The important point is that demand can be

specialized, and have specialized effects. Immigration might not only affect the size of the immigrant share in a particular industrial or occupational category in a particular city; *it may affect the size of the category itself*. To the extent that this is true, it means that immigrants occupy economic niches that would otherwise go unfilled.

To summarize the predictions of the two theoretical arguments presented above, supply-side reasoning stresses competition. It infers that immigration weakens the labor market position of some natives. Viewed from the demand-side, this is not the case because immigrant workers – especially recent immigrants – complement the labor market activities of all natives. Since both supply- and demand-side emphases are consistent with neoclassical economic theory, and – at this point – no other theoretical perspectives offer further insight relative to questions about the labor market impact of immigration, it is clear that these questions are not resolvable by way of theoretical argument. Both accounts are plausible; neither appears to be altogether true. In light of ever-changing immigration and employment circumstances, we cannot hope for a definitive resolution of the competition/complementation question, but we can empirically assess the general extent to which one or the other situation prevails. We can also identify the circumstances in which immigrants and natives are more likely to compete with or complement each others' labor market activities. Attempts to do this can be divided into three categories: wage studies, employment studies, and studies of occupational distribution. The following section reviews the contributions of recent work in each of these areas.

Recent research

Wage studies

In these studies, individuals are the units of analysis. Area-based studies explore the relationship between natives' and immigrants' wages (for subgroups divided by age, race, gender, and/or occupation) and changes in immigration over a specified period of time within a given city or

state. They identify only slight – if any – wage effects of immigration on the native population. For example, Altonji and Card (1991) find that the largest wage effect, for native black females, was a 1.2 percent decrease in wages for every 1 percent increase in immigrant concentration. Borjas, Freeman, and Katz (1996) report that immigrants earn about the same as natives in the same jobs -- even when groups are separated by level of education (see also Grossman 1982; LaLonde and Topel 1991).

An important criticism of area-based studies is that states or metropolitan areas are by no means closed economic units. As a recent National Research Council report points out, "labor, capital, and goods flow across localities and in doing so tend to equalize the price of labor" (NRC 1997:225-226). Thus, there is no reason to expect to find a relationship between immigrants' presence and natives' wages. Native workers may respond to the entry of immigrants by moving to areas that offer better opportunities, i.e., less real or perceived competition, while some firms may locate in high-immigration cities because new immigrants offer a ready supply of relatively inexpensive labor.

Other wage studies try to address this problem by looking at the mobility of labor and capital across the nation. For example, Borjas, Freeman, and Katz (1992) measure changes in the supply of workers in various education categories, then multiply these changes by estimated elasticities of relative wages to relative supplies. This method -- called factor-proportions analysis -- does not directly gauge the impact of immigration on wages, but infers it from immigrant-induced changes in the relative supply of labor. Using it, the authors conclude that changes in immigration contributed more than changes in trade to the overall lowering of high-school dropouts' wages during the 1980s. Similarly, Camarota (1997) compares the actual earnings of natives with different proportions of immigrants in their occupation. He finds, on average, a 0.5 percent wage decrease for every 1 percent increase in immigrant composition of the work force in a particular job.

While it may be advantageous to consider the whole country as if it were one labor market, Borjas, Freeman and Katz's factor-proportions analysis is based on the unlikely assumption that wage changes occur *instantaneously* when the supply of workers increases. Even if this premise were true, studies designed in this way do not allow us to draw conclusions about causal order. Did immigrant's arrival flood the labor market, lowering wages, or did immigrants arrive in response to an exogenous change in demand for low-skilled workers? A related problem arises in Camarota's cross-sectional research. Without knowing how immigrant concentration in various occupations has changed over time, he cannot attribute the fact that some jobs pay less than others requiring similar skills and education to the presence of immigrants. Basically, his findings indicate that a lot of immigrants work in low-paying jobs. All in all, wage studies' questionable underlying assumptions and disparate outcomes make this approach to understanding the labor market relationship between immigrants and natives highly problematic.

Employment studies

This group of studies seeks to assess the effect of immigration on the labor market by evaluating trends in immigrant and native employment. Some analyze the situation in a particular area. For example, Card (1991) shows that the Mariel boatlift did not alter the job opportunities of workers in Miami. This finding holds even for Cubans who were already in Miami prior to the boatlift. Other studies include groups of cities or the entire country. Among these, Borjas (1990) finds a small, negative effect of immigration on the labor force participation of native-born white men, while Altonji and Card (1991), Muller and Espenshade (1985), Simon, Moore, and Sullivan (1993) and Winegarden and Khor (1991) all indicate that immigration does not have a significant impact on native employment, even when less-skilled groups are singled out. In a review of this literature, the National Research Council (1997:224) suggests that one reason for these null

findings might be that African Americans and immigrants tend to live in different areas of the country; about 30 percent of African Americans live in areas with less than 2 percent immigrants. However, this response is based on the assumption that the labor market effects of immigration are area-specific. As previously mentioned, this premise is highly questionable.

In general, the authors of wage and employment studies interpret their findings with caution, particularly when they do not discover clear evidence of competition between immigrants and low-skilled natives. There is one notable exception: Card (1990) reasons that Miami was better prepared to receive the Mariel immigrants than any other city would have been because there had been a continuous flow of Cubans and other immigrants for the past twenty years. "Miami's industry structure was well suited to make use of an influx of unskilled labor…[it] evolved over the previous two decades in response to earlier waves of immigrants" (p. 257). This insight leads us to another group of studies: those that examine immigrants' and natives' occupational distribution.

Studies of occupational distribution

In this literature, occupations, not individuals, are the units of analysis. Researchers compare the occupational distribution of immigrants to that of natives. Both quantitative and qualitative work along these lines emphasizes the differences between immigrants and natives, in terms of education, specific skills, and willingness to accept particular types of employment, e.g., jobs with poor working conditions, jobs that offer few or no benefits, or temporary jobs. Quantitative studies usually involve longitudinal research in high-immigration areas or cross-sectional observations of immigrants' and natives' occupational distribution nationwide. Their authors often interpret immigrants' disproportionate concentration in certain areas of employment (e.g., the restaurant and textile industries) and near absence from others (e.g., the public sector) as evidence that similarly skilled immigrant and domestic workers do not compete for the same

jobs. For example, Marcelli and Heer (1997) find that immigrants' occupational distribution in the San Diego area is quite different from that of natives, but similar across groups of recent immigrants. They conclude that new immigrants vie with other immigrants for jobs, not with native workers (see also NRC 1997:241-218; Vanderhart and Welch 1997; and qualitative studies: Böhning 1972; Castles and Kosack 1985; Cornelius 1989).

Other researchers suggest that, while immigrants are concentrated in certain jobs, this is the case because they have displaced natives in one way or another. Immigrants' arrival may incite blue-collar worker departure from urban areas (Frey and Liaw 1996), or deter natives from moving to them in the first place (Borjas, Freeman, and Katz (1997). In other words, if immigrants were not present, natives would fill their jobs. Yet almost none of the research mentioned above is designed in a way that allows us to examine or predict what the situation in a particular locality would be if immigrants were not present. Here too, Altonji and Card's (1991) work is an exception. They compare the employment of native groups in high-immigrant-share industries in high- and low-immigration cities, over a ten-year period. The logic is that if native workers have less of a share of a particular industrial category in high-immigrant cities, immigrants are (successfully) competing with them. Their results are ambiguous: "[T]here is no indication that immigrants and less-skilled natives are concentrated in particular industries in a manner that would greatly accentuate the labor market competition between them, or, on the other hand, substantially reduce the degree of labor market competition between them" (p. 216).

All in all, studies that use measures of occupational distribution to assess the labor market relationship between natives and immigrants lend weak, debatable support to the demand-side argument. One reason that Altonji and Card's occupational distribution-based research leads to what are essentially null findings may be that they do not consider the possibility that immigration could change the size of an occupational category itself. In the present study, I address this prospect through inquiry into the relationship between immigration and labor market

demand. If the relative size of the immigrant population partially determines the size of various occupational sectors of U.S. cities' economies, we would expect that high-immigrant cities will have proportionally more workers employed in high-immigrant-share occupations than cities with relatively few immigrants.

Research Design

Does immigration generate specific demand for the services and products of immigrant labor? If so, immigrant workers and native workers are labor market complements. I employ information about the occupational distribution of recent immigrants as compared to U.S. natives to investigate the circumstances – if any – under which this may be the case. If immigrant and native workers complement each other more than they compete, then immigration will alter the structure of labor market demand. The specific demand hypothesis predicts that there will be more of certain types of goods and services produced in cities with relatively large immigrant populations than in cities with few immigrants. We should be able to observe this over time and across areas of the country.

To test the specific demand hypothesis, I assess the impact of immigration on the composition of the labor market in U.S. cities in 1990, as well as on the change in the labor force between 1980 and 1990. This work is based on the knowledge that, on a national level, immigrants are over-represented in certain occupations. These occupations, which I call "immigrant jobs," are listed in Table 1. As a group, they comprise an "immigrant job sector." I compare the proportional size of this sector across Metropolitan Statistical Areas (MSAs) or Consolidated Metropolitan Statistical Areas (CMSAs). This varies substantially across cities, as does the ratio of immigrants to natives in the population. The degree to which this ratio is related

to the proportion of workers in immigrant jobs[2] provides an indication of immigration's relevance as a determinant *or* consequence of a city's labor market structure. If the size of a city's immigrant population, expressed as a proportion of its total population, does not explain much or any of the variance in cities' labor market share of immigrant jobs, we could infer that when immigrants are absent, domestic workers perform the immigrant jobs. On a national level, this finding would support the supply-side argument that some immigrants *do* compete with natives. Conversely, if cities with many immigrants have relatively more immigrant jobs than cities with few immigrants, we could reason that immigrants complement natives in the labor market. At least to the extent that newcomers work in immigrant jobs, they take or create positions that would not exist in their absence.

Table 1. "Immigrant Jobs" in 1990: Immigrants in the U.S. for 10 years or less are at least twice as likely as natives to hold these jobs.*

Occupation	percent of immigrants/ percent of natives
Managerial and Specialty Professional	
computer science teachers (post-secondary)	20.79
medical science teachers (post-secondary)	20.79
physics teachers (post-secondary)	10.40
engineering teachers (post-secondary)	5.94
physical education teachers (post-secondary)	4.16
mathematical science teachers	3.90
foreign language teachers (post-secondary)	3.47
posts-secondary teachers, subject not specified	2.22
respiratory therapists	2.21
physical scientists, n.e.c.**	2.19
artists, performers, and related workers, n.e.c.	2.11
Technical, Sales, and Administrative Support	
duplicating machine operators	6.93
peripheral equipment operators	4.16
hotel clerks	3.13
communications equipment operators. n.e.c.	2.97
science technicians, n.e.c.	2.17
Service	

[2] I use the terms "proportion of workers in immigrant jobs" and "size of the immigrant job sector" interchangeably.

launderers and ironers	20.79
housekeepers and butlers	11.88
private household cleaners and servants	5.54
cooks, private household	5.20
baggage porters and bellhops	4.80
child care workers, private household	3.39
waiters'/waitresses' assistants	2.90
maids and housemen	2.87
misc. food preparation occupations	2.65
cooks	2.35
personal service occupations, n.e.c.	2.31
janitors and cleaners	2.17
Farming, Forestry, and Fishing	
nursery workers	9.10
graders and sorters of agricultural products	6.76
forestry workers, except logging	6.40
farm workers	5.24
supervisors, related agricultural occupations	5.20
horticultural specialty farmers	2.45
groundskeepers, gardeners (except farm)	2.43
Precision Production, Craft, and Repair	
tailors	8.19
engravers, metal	6.40
jewelers	6.18
dressmakers	4.70
plasterers	4.30
precision assemblers, metal	3.90
insulation workers	3.75
misc. precision apparel and fabric workers	3.47
electrical and electronic equipment assemblers	3.25
food batchmakers	3.23
bakers	3.19
misc. precision workers, n.e.c.	3.16
furniture and wood finishers	3.08
concrete and terrazzo finishers	2.65
farm equipment mechanics	2.60
drywall installers	2.49
camera, watch, and musical instrument repairers	2.40
painters, construction and maintenance	2.14
tile setters, hard and soft	2.08
boilermakers	2.08
patternmakers, lay-out workers, and cutters	2.08
shoe repairers	1.98
Operators, Fabricators, and Laborers	
roasting and baking machine operators	13.86
textile sewing machine operators	5.82
pressing machine operators	4.46
packaging and filling machine operators	3.78

parking lot attendants	3.55
fabricating machine operators, n.e.c.	3.47
shoe machine operators	3.47
hand packers and packagers	3.37
crushing and grinding machine operators	2.87
taxi drivers and chauffeurs	2.83
production helpers	2.71
metal plating machine operators	2.68
misc. machine operators, n.e.c.	2.56
graders and sorters (except agriculture)	2.39
helpers, construction trades	2.34
construction laborers	2.32
misc. hand working occupations	2.25
laundry and dry-cleaning machine operators	2.16
paint and paint spraying machine operators	2.14
assemblers	2.03
production testers	2.00
lathe and turning machine operators	1.98
total (38% of immigrants / 13% of natives)	2.92

*Source: 1990 1:1000 PUMS
**n.e.c.: not elsewhere classified

Data and Measurement

As defined here, an "immigrant job" is an occupation in which recent immigrants (in the U.S. for ten years or less) are at least twice as likely to be employed as natives are.[3] Since the goal of this study is to determine how much the presence or absence of immigrants affects the number of these occupations relative to the size of a city's total labor market, the dependent variable is the 1990 proportion of immigrant jobs in a MSA or CMSA – regardless of whether or not the workers in these jobs are immigrants. The independent variables are the relative size of the immigrant population in a metropolitan area, and 1980-1990 change in this proportion. The change measure thus quantifies the impact of new immigrants' arrival on the composition of an area's population.

[3] 38 percent of recent immigrants work in 'immigrant jobs,' compared to approximately 18 percent of all immigrants. This highlights an aspect of immigrants' success at economic assimilation: more time in the U.S. decreases immigrants' concentration in specific occupations.

The control variables represent other measurable factors that could potentially influence the proportion of immigrant jobs in a city. The majority of these jobs fall into three of the Census Bureau's more general occupational categories: "service" (15 percent); "precision production, craft, and repair" (28 percent); and "operators, fabricators, and laborers" (28 percent). I include city size (expressed as the natural log of the population) because per-capita demand for services is higher in large cities (Sassen-Koob 1984). Since the firms that employ most of the workers in the other two sectors are classified by industry as either durable or non-durable goods manufacturing enterprises, I also consider the total size of the manufacturing segment of a city's labor market.[4] The appendix provides summary information for all of the variables included in the analyses to follow.

Analysis and Findings

1990

Table 2 reports the unstandardized regression coefficients of the percent immigrant jobs on the key set of independent variables in 1990. The results demonstrate a clear association between the relative size of a metro area's immigrant population and the size of the immigrant job sector. Interestingly, the coefficient for proportion immigrants becomes larger as more variables are added to the regression equation. As the models become more complex, the apparent strength of the relationship between proportion immigrants and proportion immigrant jobs increases. This is because population size and proportion immigrants are positively correlated (r = 0.330), whereas proportion manufacturing and proportion immigrants are negatively correlated (r = -0.296). Since they are also factors that affect the proportion of immigrant jobs in an area, controlling for population size and proportion manufacturing removes 'noise' from the relationship between the proportion immigrants and the proportion immigrant jobs in a city.

[4] In earlier versions of this analysis, I included a wage variable and a dummy variable for region. Neither coefficient showed a significant impact of these variables on the proportion of 'immigrant jobs' in a city. Both separately and together, these variables *reduced* the explained variance in the regression models.

Also, the coefficient for population size is negative (Models 1-3). The negative population coefficient may appear because there is much more variance in the proportion immigrant jobs in small MSAs than in large MSAs or CMSAs, and the relative size of the immigrant job sector decreases as the size of a metro area increases. Likewise, the negative coefficient for the interaction term, proportion immigrants x LN population, in Model 4 indicates that the strength of the relationship between proportion immigrants and proportion immigrant jobs decreases as MSA/CMSA size increases.

Table 2. Coefficients for Regression of Immigrant Jobs as a Proportion of the Total Labor Market in U.S. MSAs/CMSAs, 1990 (N=226)

Variable	Model 1	Model 2	Model 3	Model 4
Immigrants / total population	0.223***	0.360***	0.404***	1.977***
	(0.062)	(0.06)	(0.038)	(0.53)
LN population		-0.021***	-0.021***	-0.013***
		(0.003)	(0.003)	(0.004)
Proportion of workers employed in manufacturing jobs			0.102*	0.127**
			(0.040)	(0.041)
Proportion immigrants x LN population				-0.116**
				(0.039)
Constant	0.156***	0.420***	0.406***	0.290***
	(0.005)	(0.038)	(0.038)	(0.053)
Adjusted R2	0.050	0.217	0.236	0.262
F	12.880***	32.238***	24.138***	20.962***

#p< 0.10 * p < 0.05 ** p < 0.01 *** p < 0.001 (two-tailed tests)
Note: Standard errors are shown in parentheses.

To clarify the role of city size, Table 3 shows the coefficients for proportion immigrants and proportion manufacturing by metro area population. Here we see that the pattern reported in Table 2 is consistent in small and medium-sized cities, but does not hold in large MSAs/CMSAs

with populations over 1,000,000. In cities with 250,000 or fewer residents, the predicted size of the immigrant job sector grows by 80 percent when the proportion of immigrants doubles. If, for example, in a city of 100,000 where immigrants comprise 3 percent of the population, the immigrant job sector comprises 10 percent of the labor market, we would expect a city of 100,000 with 6 percent immigrants to have a labor market with 18 percent in immigrant jobs. The actual numbers here are small, but the labor market impact of 6,000 immigrants in a city of this size (as compared to 3,000 immigrants in another) is quite substantial. In the largest cities, it would take unrealistically large changes in the proportion immigrants to effect a change of similar magnitude in the composition of the labor market.

Table 3. Coefficients for Regression of Immigrant Jobs as a Proportion of the Total Labor Market in U.S. MSAs/CMSAs, 1990, by Population Category
(N=226)

	Population			
	83,831 - 250,000	250,001-500,000	500,001-1,000,000	over 1,000,000
N	95	58	34	39
Total immigrants	529041	1022442	1240271	14667624
Total immigrants / total population	0.036	0.049	0.05	0.118
Proportion immigrants	0.803***	0.433***	0.339***	0.054
	(0.016)	(0.103)	(0.093)	(0.042)
Proportion of workers in mfg. jobs	0.191**	-0.014	0.156#	0.096#
	(0.067)	(0.080)	(0.080)	(0.056)
Constant	0.119***	0.148***	0.111**	0.121***
	(0.016)	(0.017)	(0.016)	(0.011)
Adj. R2	0.195	0.246	0.258	0.05
F	12.357***	10.286***	6.752**	1.997

#p< 0.10 *p< 0.05 **p< 0.01 ***p< 0.001 (two-tailed tests)
Note: Standard errors are shown in parentheses.

To summarize so far, the 1990 data show a distinct relationship between the presence of immigrants and the types of jobs that make up the economies of small and medium-sized cities83

percent of all MSAs/CMSAs. These results tentatively support the specific demand hypothesis: cities with relatively large immigrant populations have proportionally larger immigrant job sectors. Proportionate to their populations, low-immigrant cities have fewer immigrant jobs – e.g., fewer nannies, cooks, housekeepers, gardeners, jewelers, painters, machine operators, and even college teachers – than high-immigrant cities do. This infers that immigrants create specific jobs, and/or that they are drawn to areas in which labor market demand in these jobs is high. Yet this finding is essentially a snapshot; it offers no information about the factors that led up to the observed circumstances. Does change in a city's ratio of immigrants to natives correspond to change in the size of its immigrant job sector? The next section extends the inquiry to encompass variation over a ten-year period.

1980-1990 Change

Table 4 presents lagged models of the proportion immigrant jobs in 1990.[5] This procedure separates the carry-over influence of the 1980 situation from the effect of change between 1980 and 1990. By doing so, it also accounts for the *level* at which the change takes place. For example, a change in the proportion immigrants from 0.01 to 0.05 may have a different labor market impact that a change from 0.21 to 0.25, even though the magnitude of change is the same. Model 1 includes only the 1980 measure for the dependent variable, proportion immigrant jobs. Model 2 includes all of the 1980 variables, Model 3 adds the absolute change in values from 1980 to 1990, and Model 4 adds an interaction term: change in the proportion immigrants by 1980 population.

Table 4. Lagged Models: Coefficients for Regression of 1990 Immigrant Jobs as a Proportion of the Total Labor Market in U.S. MSAs/CMSAs on 1980and 1980-1990 Change Variables (N=205)

	Model	Model	Model	Model

[5] There are 205 cities included in the lagged models, as opposed to 226 in the 1990 cross-section. This is because twenty-one of the 1990 MSAs were not large enough to be designated as MSAs (SMSAs) in 1980.

Variable	1	2	3	4
Proportion immigrant jobs 1980	0.293***	0.155#	0.113	0.072
	(0.078)	(0.079)	(0.079)	(0.08)
Proportion immigrants 1980		0.262***	0.231**	0.219**
		(0.077)	(0.078)	(0.077)
LNpopulation 1980		-0.016**	-0.017**	-0.016**
		(0.003)	(0.003)	(0.003)
Proportion of workers in mfg. jobs 1980		0.048	0.088*	0.113**
		(0.033)	(0.042)	(0.043)
80-90 change in proportion immigrants			0.397*	3.501***
			(0.159)	(1.319)
80-90 change in LNpopulation			-0.001*	-0.002**
			(0.001)	(0.001)
80-90 change in manufacturing jobs			0.053	0.065
			(0.073)	(0.073)
80-90 change in proportion immigrantsimmigrants x LNpopulation 1980				-0.216*
				(0.009)
Constant	0.114***	0.320***	0.336***	0.317***
	(0.013)	(0.046)	(0.046)	(0.046)
Adj. R2	0.060	0.162	0.189	0.208
F	13.919***	10.864***	7.803***	7.690***

#p< 0.10 * p < 0.05 ** p < 0.01 *** p < 0.001 (two-tailed tests)
Note: Standard errors are shown in parentheses.

Looking at the how the coefficients in Table 4 change as more variables are added to the models, it is notable that the relative size of the immigrant job sector in 1980 is not an important predictor of its size in 1990. However, the proportion *immigrants* in 1980 does play a key role. And, 1980-1990 change in this proportion exerts an effect above and beyond that of the 1980 measure. Here it is evident that the size of the immigrant job sector is the result of change in the relative number of immigrants, not the other way around.

The results of the lagged models thus refine and reinforce the patterns that appear in the cross-sectional models. Of particular note is the consistency of the finding that the strength of the proportion immigrants - proportion immigrant jobs relationship is contingent on city size. Reported separately by population category (Table 5), the lagged models also indicate that the specific demand effect of immigration on labor market composition is largely limited to small and medium-sized metro areas.

Table 5. Lagged Models: Coefficients for Regression of 1990 Immigrant Jobs as a Proportion of the Total (N=205) Labor Market in U.S. MSAs/CMSAs on 1980 and 1980-1990 Change Variables, by Population Category

	1990 Population			
	under 250,000	250,001-500,000	500,001-1,000,000	over 1,000,000
N	79	56	32	38
Proportion immigrant jobs, 1980	0.044	-0.103	0.514*	0.189
	(0.137)	(0.145)	(0.211)	(0.183)
Proportion immigrants, 1980	0.543*	0.281	0.254*	0.058
	(0.265)	(0.174)	(0.113)	(0.052)
Proportion of workers in mfg. jobs, 1980	0.194**	-0.015	0.238*	0.093
	(0.074)	(0.082)	(0.099)	(0.065)
80-90 change in proportion immigrants	1.266**	1.131**	-0.683	0.066
	(0.481)	(0.387)	(0.412)	(0.118)
80-90 change in LNpopulation	-0.017	0.002	0.037	0.000
	(0.021)	(0.008)	(0.027)	(0.000)
80-90 change in manufacturing jobs	0.354*	-0.130	0.651*	0.057
	(0.165)	(0.101)	(0.263)	(0.121)
Constant	0.122***	0.066**	0.035	0.090***
	(0.026)	(0.028)	(0.032)	(0.025)
Adj. R2	0.100	0.285	0.333	0.036
F	2.447*	4.657***	3.576*	1.229

#p< 0.10 *p< 0.05 **p< 0.01 ***p< 0.001 (two-tailed tests)
Note: Standard errors are shown in parentheses.

Discussion

This analysis – both the 1990 cross-section and the 1980-1990 lagged models – offers some support to the specific demand hypothesis. These findings augment Light and Rosenstein's (1995) empirical work by suggesting that specific demand effects occur throughout the labor market, not only in relation to entrepreneurial activities. The present study indicates that, in small and medium-sized cities, immigrants fill occupational niches that do not exist in their absence. In these places, immigrants contribute services and goods that would otherwise not be available, or at least not *as* available. Things that the immigrant job sector provides – like ethnic cuisine, foreign language instruction, child care, home services, and precision craft services (e.g., dressmaking or cabinetry) – are considerably more obtainable in high-immigrant cities than they are in low-immigrant cities. To the extent that natives enjoy these things, they benefit from the presence of immigrants in the labor market. There is little reason to believe that any natives – even those who work in immigrant jobs – are hurt. Rather than increasing the competition for employment in the immigrant job sector, immigration expands the sector.[6]

Why is the situation different in big cities? First of all, the proportional size of the immigrant job sector does not change much – between cities or across time – regardless of the proportion immigrants. As shown in Figures 1 and 2, the variance in the distribution of the proportion immigrant jobs is quite low in the largest MSAs/CMSAs. Likewise, the 1980-1990 change measures are relatively constant. This may indicate that the size of the immigrant job sector in big cities is considerably more stable than it is in smaller cities. Interestingly, *none* of

[6] To some extent, immigration also *defines* the 'immigrant job' sector. Re-calculated at different time points, the list of occupations in Table 1 changes somewhat. Consistent with the specific demand hypothesis, this indicates that immigrants are quick to identify new opportunities, and that changes in the composition of the immigrant population will affect the composition of the 'immigrant job' sector in which many immigrants work.

the variables included in this analysis contribute meaningfully to an explanation of the determinants of the proportion immigrant jobs in cities with populations of over 1,000,000.

Appendix: Description of Variables used in the Regression Analyses of 'Immigrant Jobs' in United States MSAs/CMSAs, 1980 and 1990

Variable	1990 Mean	1980 SD	Mean	SD	Description
Dependent Variable					
Proportion of workers employed in immigrant jobs*	0.169	0.051	0.164	0.042	adults employed in 'immigrant jobs' / all employed adults
Independent Variables					
Proportion immigrants**	0.049	0.054	0.042	0.042	immigrants / total population
1980-1990 change in proportion immigrants	3.587	0.032	-	-	
Control Variables					
LNpopulation	12.849	1.06	12.666	1.01	natural log of total population
1980-1990 change in LN population	0.771	4.978	-	-	
Proportion of workers in manufacturing jobs**	0.17	0.077	0.218		workers employed in durable and non-durable goods manufacturing / total workers
1980-1990 change in proportion manufacturing jobs	-0.045	0.053	-	-	

*Source: 1990 and 1980 1:1000 PUMS**Source: 1990 and 1980 Census of Population and Housing

It is also possible that the way I have defined the proportion immigrants variable obscures some of the relationship between immigration and the proportion immigrant jobs in big

cities' labor markets. "Proportion immigrants" includes *all* immigrants: children, grandparents, recently arrived refugees, etc. If relatively more immigrants than natives are not labor force participants, "proportion immigrants" may be a poor proxy for the proportion of immigrant *workers* in a city – particularly in large cities. There is some evidence that big cities are "immigrant magnets" – regardless of the labor market situation. For example, Sohoni (1997) finds that the settlement choices of Asian immigrants to the West Coast of the U.S. have little to do with economic opportunity. Rather, these immigrants aggregate in large cities with sizable ethnic populations. There seems to be a "California effect" as well: with control for city size, location within the state of California can be a significant factor in determining where Asian immigrants choose to live. This may be due to the relatively long history of Asian immigration to California, or to the state's image as a "land of opportunity" (p. 39).

At any rate, the U.S. residential choices of the Asians that Sohoni studied appear to have been motivated by factors such as the companionship of fellow ethnics, the foods and services available in an ethnic enclave, and pleasant weather. Perhaps immigrants who settle in small and medium-sized cities, e.g., Mexicans and Central Americans who move to the Midwest to work in meat processing plants, do so for more directly employment-related reasons. It is beyond the scope of the present study to empirically test this conjecture, but it is testable. A first step would be to separate immigrants who participate in the labor market from immigrants who do not. Studies that focus on a specific industry and include a qualitative dimension, such as Waldinger's (1986) in-depth portrayal of the New York garment industry or Bailey's (1987) of the New York restaurant industry, also contribute importantly to our understanding of the process through which occupations become immigrant jobs. Relative to the question of competition in the labor market, or the contrast of supply- and demand-side models of immigrant labor, such industry-specific studies would be more advantageous if they encompassed many cities in which immigrants comprise varying shares of the population.

A final limitation of this study is the fact that many immigrants do not work in immigrant jobs. If all immigrants – or even all recent immigrants – were to do so, the strength of the relationship between the proportion immigrants in a city and the size of its immigrant job sector, expressed in terms of change over time, would be a near-perfect indicator of the extent to which immigrants complement the labor market activities of natives. In reality, about 80 percent of all immigrants and 60 percent of new immigrants hold jobs outside of this sector, i.e., jobs in which immigrants are not strongly over-represented. Here I do not directly address the labor market role that this majority of immigrant workers plays. However, according the reasoning upon which this study is based, immigration's net contribution to the economic well-being of natives accrues because the immigrant population is *different* from the native population. Immigrants' concentration in particular jobs is evidence of this difference as it affects the labor market. Applied to individual immigrants who do not work in immigrant jobs, the same argument suggests that they are very much *like* natives in terms of their productive capacities and their consumption preferences. To the extent that this is true, their presence simply scales up the population *and* the economy (NRC 1997:158).

Conclusion

In the aggregate, this analysis shows that the supply of immigrants does impact the structure of demand for workers. This does not indicate that there is no labor market competition between immigrants and natives, but it does suggest that the competition – to the degree that it exists – occurs outside of the immigrant job sector. Since the majority of immigrant jobs are relatively low-skilled and/or require little formal education, this finding implies that concerns about immigrant competition with natives at the bottom of the employment ladder, e.g., high school dropouts or persons enrolled in "welfare to work" programs, is somewhat misplaced. However, two constraints restrict the application of this study's findings. First, it does not explain what

determines the proportion immigrant jobs in large cities. As suggested above, establishing the extent to which the specific demand hypothesis holds in these cities will require further research. Second, this study does not directly evaluate the labor market position of immigrants who do not work in immigrant jobs.

Given these limitations, what are the strengths of the methodology that I have employed, as opposed to comparisons of wages and employment opportunities among individuals, or of immigrants' concentration in particular jobs? Of primary importance, it does not regard cities as closed economic units, or labor market composition as exogenous to the composition of the population. Also, to a greater degree than other types of studies, it allows us to test a counterfactual argument by asking what the immigrant job sector looks like when immigrants are not there – when they comprise only a tiny portion of a city's population. These are viable justifications for pursuing research along these lines. It will not supplant other types of work in this area, but it offers a useful complement.

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