



# THE ECONOMIC INTEGRATION OF IMMIGRANTS AND REGIONAL RESILIENCE

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**ABSTRACT:** *This article explores variation in the economic integration of immigrants across U.S. metropolitan areas and tests a basic hypothesis that greater economic integration promotes regional resilience. Here we construct two quantitative indexes of occupational diversity as primary indicators of economic integration and develop a conceptual framework of social, economic, and spatial factors that are likely to shape occupational diversity at the regional scale. We conduct an exploratory quantitative analysis in two steps. First, we model labor market diversity in 2000 with metro level data drawn primarily from the Building Resilient Regions (BRR) database. Next, we use the occupational diversity indexes as dependent variables and assess whether greater occupational diversity among immigrants led to greater economic resilience between 2000 and 2010, as measured by changes in unemployment rate and real wage growth. We find some evidence that immigrants in regions that have more broadly integrated immigrants (across occupations) were relatively more resilient in the face of the economic shocks of the Great Recession.*

**A**s the economy continues to recover slowly from the Great Recession, the flow of new immigrants into the United States has slowed significantly. Two decades earlier, millions of new workers and their families migrated to and settled in a variety of U.S. regions. This period of migration is markedly different in three key ways from other periods: (1) large-scale immigration from Latin America (particularly Mexico) and Asia, (2) a continual replenishment of immigrants from the same sending countries, and (3) migration to “new destinations” such as regions in the Southeast and new types of communities—suburbs and rural towns (Waters & Jiménez, 2005).

Thus, it is critical that policymakers understand how the U.S. economy performed in successfully integrating new migrants into the labor market and the degree to which these families are able to move up the economic ladder. Since the pattern of immigration was uneven across regions and also varied by country of origin and skill level, we might also expect that there is wide geographic variation in the level of economic integration of immigrants. Uneven patterns of economic integration may also be driven by factors relating to (1) human capital, (2) the context of reception, (3) migration to ethnic enclaves, (4) spatial mismatch between where immigrants locate (e.g., concentrated poor neighborhoods in the central city) and where jobs are located (e.g., suburbs), and (5) the increasingly divergent patterns of economic development across regions, as some “innovative regions” move far ahead of declining metropolitan areas in wealth generation and economic opportunity (Moretti, 2012).

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JOURNAL OF URBAN AFFAIRS, Volume 00, Number 0, pages 1–19.

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ISSN: 0735-2166.

DOI: 10.1111/juaf.12205

This article will explore the patterns of immigrant economic integration across metropolitan areas with large immigrant populations in the United States and attempt to explain which factors or sets of factors are associated with immigrant economic integration. Furthermore, the study will explore whether immigrants in metropolitan areas with higher levels of economic integration are more resilient to the economic shock resulting from the Great Recession. Specifically, this article will document the extent to which immigrants are relegated to isolated niches in the labor market that lack the opportunity for economic mobility—for example, in food processing occupations in the Southeast—or, conversely, well integrated to a variety of occupations and industries throughout a regional economy. This article builds upon research supported by the Building Resilient Regions (BRR) network in the past; particularly in Pastor, Lester, and Scoggins (2009), which demonstrates the divergence in economic performance in terms of income and employment growth across US regions, and Chapple and Lester (2010), which explores the factors behind resilient regional labor markets. In addition, this article will use the BRR database as a basis for explanatory variables and will add additional updated (e.g., 2010 American Community Survey data) measures to this shared resource. Whereas previous studies have examined immigrant integration in a select number of comparison regions (Pastor & Mollenkopf, forthcoming) or regions within a single state (Pastor, Ortiz, Carter, Scoggins, & Perez, 2012), these data allows us to examine a large number of metropolitan areas.

This article is intended to be an exploratory analysis that highlights regional variations in the economic integration of new immigrants. We define and test several quantitative measures of occupational diversity among immigrants as a key proxy for their economic integration. Next, we explore the characteristics of regions that are associated with greater economic integration and test several leading theories (e.g. human capital, context of reception, ethnic enclave, spatial mismatch, and regional industrial structure). Finally, we test the relationship between economic integration of immigrants and regional economic resilience by measuring the effect of immigrant occupational diversity on unemployment and real wage growth before and after the Great Recession. The remainder of this article is structured as follows. The next section reviews the literature on immigrant economic integration and develops a conceptual framework that describes the theoretical determinants of economic integration. Then we describe the methodology used to measure occupational diversity and outline the quantitative analyses to follow. Following that, we present the results and summarize the findings, and then we offer some discussion of our findings. The final section concludes with policy recommendations and outlines a research agenda that builds upon this exploratory research.

## IMMIGRANT ECONOMIC INTEGRATION IN THE UNITED STATES

### Classical and Segmented Assimilation

Classical models of immigrant integration or assimilation have heavily focused on European immigration to urban gateways, such as New York and Chicago, in the early 20th century. During this period, immigration occurred in large waves (as opposed to steady streams), which allowed for studies of immigrant cohorts. In general, studies revealed that there was a linear process of assimilation for European immigrants. Immigrants became more integrated with longer residence and were fully integrated into host societies after two or three generations (Alba & Nee 2005; Ireland, 2004; Joppke & Morawska, 2003). This model predicts that higher levels of human capital, including English language ability, education, and work experience, will accelerate economic integration.

Post-1965 changes in federal immigration policy which resulted in large-scale immigration from Latin America and Asia and changing settlement patterns challenged traditional assimilation theories. Scholars found that not all contemporary immigrant groups follow a linear assimilation process as posited by classical models; rather, they follow divergent paths of assimilation (Kasinitz, Mollenkopf, Waters, & Holdaway, 2008; Rumbaut & Portes, 2001). This alternative model, segmented assimilation, suggests that while some immigrants achieve socioeconomic mobility and assimilate into the middle class, other groups experience “downward assimilation” leading to permanent poverty and spatial settlement with the underclass (Gans, 1992; Portes, Fernández-Kelly, & Haller, 2005; Portes and Zhou, 1993; Zhou 1997), as in the case of West Indians in Miami, Florida.

Findings from empirical tests of these theories do not resolve the debate over the process of immigrant economic integration. On the one hand, a number of studies find continuing support for the classic assimilation model. For example, Kasinitz et al.'s (2008) study of second-generation (including 1.5-generation) immigrants from a variety of different ethnic origins in New York finds that children of immigrants have more diverse occupational profiles than their parents (e.g., more integrated into the labor force). Furthermore, second-generation groups that are more successful in the labor market, such as Chinese and Russian Jews, are more likely to assimilate into the mainstream economy. That is, labor force participation by second-generation Chinese and Russian Jews most closely resembles native-born New Yorkers of their same race. For all second-generation immigrants studied, their wages are more similar to native-born whites than native-borns of their same race (i.e., the comparison groups). Overall, Kasinitz and his colleagues concluded that downward assimilation was rare for second-generation immigrants and that joining the mainstream economy, as opposed to the ethnic economy, was the most successful path towards economic mobility. Alba and Nee's (2005) review of studies about second-generation immigrants and occupational position also shows upward mobility for second-generation immigrant groups. For example, Asian, European, Canadian, and South American children of immigrants have greater representation in executive, managerial, and professional jobs than third and later generation non-Hispanic Whites. Furthermore, immigrants who arrive in the United States at a younger age become more fully incorporated into mainstream American society, including having higher rates of participation in white-collar occupations (Myers, Gao, & Emeka, 2009).

On the other hand, the path to upward economic and occupational mobility was not equally traversed by all immigrant groups. In particular, Mexican immigrants and darker skinned immigrants (e.g., Haitians and black Caribbeans) and their descendants have not fared as well. Haller, Portes, and Lynch's (2011) analysis of the Children of Immigrants Longitudinal Study data shows evidence of a segmented assimilation pattern with some groups, such as Cuban Americans achieving high occupational status, while Mexican Americans experience downward assimilation. In addition, they found that Haitian immigrant's higher educational attainment did not translate to higher occupational status whereas other groups, including Chinese and Korean Americans, were able to realize occupation gains by being more educated. A number of other studies point to a duality in Mexican immigrants' economic assimilation. When compared to other second-generation immigrants, Mexican immigrants may not fare as well, but compared to third-generation (or later) Whites or when compared to their own parents, they show great strides in rates of economic assimilation (Alba & Nee, 2005; Portes & Rumbaut, 2001).

The empirical results reveal that there is no single linear path of economic assimilation. They also reveal that race and ethnicity play a very important role in explaining rates of assimilation. Cuban Americans in Miami as compared to Mexican Americans in Los Angeles, for example, arrive in the United States under different pressures and bring with them varying levels of human capital. Their environment, such as the neighborhoods where they locate and socioeconomic and political contexts of their local and regional area, also influences how quickly they incorporate. We examine the role of ethnic enclaves and the context of reception for immigrant integration below.

### **Ethnic Enclaves and Context of Reception**

The presence of an ethnic enclave where immigrants work or reside and how they are received by the host society have been shown to affect their economic integration. Wilson and Portes (1980) were the first to present an ethnic enclave model of economic assimilation that diverges from both the classical and segmented assimilation models. Studying Cubans in Miami, they argue that an alternative path to socioeconomic mobility exists. This path runs through employment in the ethnic enclave and relies on strong co-ethnic ties and group solidarity. This model suggests that immigrants do not have to assimilate into mainstream Anglo-American society or the mainstream labor market in order to succeed.

Ethnic enclaves are defined by the concentration of co-ethnics in space. These concentrated co-ethnic neighborhoods, which allow immigrants to preserve their culture, maintain community

solidarity, and access social networks may be another avenue for achieving economic advancement and labor market integration. The case of Cubans in Miami is an example of how ethnic enclaves can buffer the transition resulting from migration and can provide kinship ties that insulate Cuban immigrants from downward assimilation (Portes et al., 2005).

The persistence of ethnic enclaves, the steady stream of new immigrants from the same sending communities (e.g., immigrant replenishment), and the high numbers of undocumented immigrants who are often transnational residents that want to eventually return to their home country, raise interesting questions about the need or the desire to integrate into middle-class white society in order to achieve economic advancement (Kasinitz et al., 2008). Bonacich (1973) describes the immigrant sojourner as someone who does not fully participate in the civic life of the host society because he does not consider it his permanent home. She describes middlemen minorities as occupying an intermediate role in the economy, such as someone in between the employer and the employee or the consumer and the producer, with the following characteristics: "... resistance to out-marriage, residential self-segregation, the establishment of language and cultural schools for their children, the maintenance of distinctive cultural traits (including, often, a distinctive religion), and a tendency to avoid involvement in local politics except in the affairs that directly affect their group" (Bonacich, 1973, p. 586). Thus, sojourners and middle-men minorities are able to succeed economically, but do not depend on integration into the host society to do so.

Whereas some racial/ethnic groups do not want to integrate, others face barriers in doing so, such as Black immigrants (Freeman, 2002). Studies suggest that living in racially or economically homogeneous neighborhoods can inhibit socioeconomic mobility, by restricting an individual's social network to those who have similar resources and skills. Granovetter (1973) explains that it is not these strong ties with one's interpersonal network in homogeneous neighborhoods that lead to employment opportunity, but weak ties (i.e., with acquaintances) that expand an individual's connections to a more varied set of institutions and organizations. Thus, close-knit networks, such as those found in ethnically homogeneous neighborhoods (e.g., ethnic enclaves), that have strong *bonding capital* but little *bridging capital* can inhibit economic integration (Granovetter, 1973; Lin, 2000; Putnam, 2001). In addition, Hendricks (2002) finds that employers use race or ethnicity as a predictor of skill because it is difficult to evaluate new immigrants' skills. This may account for why Haitians do not translate higher education into better occupational attainment and why Mexican immigrants do not achieve economic assimilation as rapidly as other immigrant groups (Alba & Nee, 2005; Haller et al., 2011; Portes & Rumbaut, 2001). Put differently, racialization in the labor market may exist for certain immigrant groups. Furthermore, the continual streams of immigration from poor sending countries can depress wages for immigrants entering in earlier periods and may also discourage earlier immigrants to invest in skills improvement because employers hire and pay on the basis of ethnicity and not necessarily skill level.

For some groups, solidarity with co-ethnics and ties with the ethnic enclave may result in economic advancement, but how immigrants are received by the host society may also play a factor. A burgeoning literature suggests that street-level bureaucrats, local immigration policies, immigrant advocacy organizations, and local government actions can work to facilitate or discourage immigrant integration (Jones-Correa, 2008a, 2008b, Marrow, 2009, 2011; Nguyen, Gill, & Steeph, forthcoming; Steeph, Gill, & Nguyen, 2013). Thus, it is important to understand the context of reception across different localities.

### Spatial Mismatch

Although much of the theoretical debates over immigrant integration have been aspatial, there is a growing body of research that applies Kain's (1968) spatial mismatch thesis to immigrants. Kain's seminal study on housing segregation, decentralization of jobs, and Black employment found that Blacks living in concentrated poor neighborhoods in the central city were disconnected from major growth centers (e.g., suburbs). Thus, residential segregation of Blacks in urban areas and job growth in the suburbs, otherwise known as the jobs/housing imbalance, results in higher overall unemployment and greater poverty for the region. While the magnitude of the effect of employment

decentralization on Black unemployment has been debated, decades of research offer evidence that Blacks in the central city have less access to jobs than Blacks and Whites in the suburbs and Blacks who are employed have higher commute times than employed Whites (Holzer, 1991).

Recent migration trends show that immigrants are bypassing immigrant gateways and locating in new destinations and even locating directly to suburbs rather than central cities (Frey, 2003; Singer, 2004). This raises the question of whether job decentralization has impacted immigrants differently than Blacks. Liu and Painter's (2012) study of 60 metropolitan areas finds that immigrants are more spatially segregated from jobs than Whites, but less so than Blacks. Furthermore, they find that immigrants are more residentially mobile than Blacks, and can thus follow the jobs, while Blacks are slower to locate residentially to where the jobs move. Another study also found that first-generation Latino immigrant youths' employment was not constrained by whether they lived in the central city, inner-ring suburbs, or outer-ring suburbs, suggesting that Latino youth are more residentially mobile than even White youth (Painter, Liu, & Zhuang, 2007).

## **Occupational Diversity of Immigrants and Resilience**

Significant attention has been paid to defining the concept of *resilience* and understanding how to operationalize it (Christopherson, Michie, & Tyler, 2010; Foster, Pendall, & Cowell, 2010; Simmie & Martin, 2010). In this article, we define resilience as the ability of metropolitan areas to be more or less adaptable to economic stress caused by the Great Recession. We hypothesize that immigrants in regions with greater occupational diversity of immigrants will be more resistant to and recover more quickly from the economic downturn. Specifically, we examine whether regions that have higher levels of occupational diversity are more resilient to the economic shocks posed by the Great Recession. In particular, we test the relationship between occupational diversity among immigrants in 2000 and the resulting change in unemployment and real wage growth between 2000 and 2010 among immigrants.

## **METHODOLOGY**

### **Measuring Occupational Diversity**

There are a number of ways to conceptualize and operationalize immigrant economic integration. Economic integration could mean achieving a middle-class standard of income and be measured in a simple unidimensional way. However, income alone does not fully capture the concept of *integration*. Alternatively, economic integration could be measured in a broad, multidimensional manner by using a combination of indicators, such as income, home ownership, and children's educational attainment. Furthermore, these indicators could be measured over time for individuals or across different generations, thereby requiring longitudinal measures. However, longitudinal data are extremely difficult to obtain, especially at the regional level. Thus, we chose a measure of economic integration that was richer than simply measuring income but also could be measured for all regions in the United States. Specifically, we use labor market diversity as our primary proxy measure for economic integration of immigrants. This measure is supported by Waldinger (2005), who argues that newly arrived immigrants tend to cluster in occupational niches, but when they make economic progress and assimilate they disperse throughout the labor market.

Labor market diversity is referred to here as the degree to which immigrants are employed throughout a region's economy and are not simply concentrated in a few key sectors or niches. We believe this adequately captures the concept of economic integration, even if it only captures one aspect of it. Consider a hypothetical region where recent immigrants are recruited for agricultural work and are not able or allowed to work in other sectors, even those where their skills could be relevant. Immigrants in this region would lack economic integration under our conceptualization in that they are less likely to find out about opportunities to advance in other sectors or interact with non-immigrant workers (to gain greater knowledge of the labor market and U.S. institutions). Compare this region to another where immigrants are able to find employment in a broad spectrum of occupations. In this region, a worker is more likely to find a good match with his or her skills.



Thus, while labor market diversity is not the perfect or the only measure of economic integration, we argue that it captures some critical elements.

To measure the economic integration of immigrants we constructed two distinct measures of occupational diversity at the metropolitan level. First we construct a non-relative occupational diversity index based on the Hirschman-Herfindahl index.

$$occdiv_{ij} = 1 - \left( \sum_k p_k^2 \right)_{ij} \quad (1)$$

As described in Equation (1), the occupational diversity index is defined for each metropolitan area ( $i$ ) and is based on the squared shares of workers in each occupational category ( $p_k$ ) compared to the overall workforce. We defined nine broad occupational categories based on the Integrated Public Use Microdata Sample (IPUMS<sup>1</sup>) variable *occ*. The occupational diversity index is calculated separately for three groups ( $j$ ): all immigrants, Mexican immigrants, and native-born workers. Thus, the term  $p_k$  for the occupational diversity index of immigrants represents the share of immigrants in occupational category  $k$  out of the total number of immigrant workers in the metro area. If all immigrant workers were concentrated in only one category, then  $occdiv_i$  would equal zero (i.e.,  $1 - 1^2 = 0$ ). Alternatively, if workers were evenly distributed across all categories the index would equal  $1 - (1/k)$ , or 0.889. Thus, higher values of the diversity index indicate more diversity across occupations, whereas lower values reflect more concentration.

As with all categorical measures of diversity, our occupational diversity index is highly dependent on the number of categories and the method used to develop them. There is an inherent tension in developing the occupational categories between the level of detail achieved and the statistical limits of the microdata samples we employed. On the one hand, we would ideally like to capture the degree of immigrant concentration in key occupations that are dominated by immigrants, at least anecdotally (e.g., restaurant cooks, drywall installers, etc.) However, if we use too many occupations we will not have sufficient sample size in each metro/occupational cell to estimate an accurate measure of  $p_k$ . Thus, our goal in determine a categorizing scheme was to maximize the sample size of regions for which we can accurately calculate the indices, while also capturing important aspects of labor market segmentation. Ultimately, we used the following categorization scheme, which roughly approximates the major occupational groups defined in the standard occupational classification (SOC) system: (1) management; (2) professional, technical and protective services; (3) low-wage services (includes food services, home health aids, building maintenance occupations); (4) sales and office/administrative; (5) agriculture; (6) construction; (7) other blue-collar jobs (includes transportation, utilities, communication, repair, and resource extraction occupations); (8) production and/or manufacturing; and (9) military and unclassified occupations. We made minor modifications that better approximate the skill and wage distinctions within the service sector. Table 1 lists the distribution of employed workers across these occupational categories for immigrants, native-born workers, and Mexican immigrants. It is important to note that we do not include self-employed individuals as a separate category. While the literature suggests that access to entrepreneurship is an important indicator of economic success, sample size limitations at the metropolitan level preclude this analysis.

This way of measuring diversity does not make comparisons in a given metropolitan area to a reference region (e.g., the United States as a whole). As such, it simply measures diversity across a given set of categories within a single economy. There is no implied “ideal” distribution across occupations because the structure of labor demand is itself likely to vary across metropolitan areas for reasons that do not relate to the degree of integration of immigrants. Thus, one concern in conceptualizing the occupational diversity index as a measure of immigrant economic integration is that the index may simply be reflecting variation in the industrial structure across different metropolitan areas. For example, large metropolitan areas with diverse economies naturally have a greater opportunity for immigrants to be distributed across the broader set of occupations because they have industries that contain these occupations. Conversely, smaller regions that are economically specialized in one major industry may simply not have the labor demand for workers (immigrants or otherwise) in certain

TABLE 1

Distribution of Occupation by Immigrant Status, 2000 and 2010

Occupational Group	Native-born		Immigrants		Mexican Immigrants	
	2000	2010	2000	2010	2000	2010
Management	14.6%	15.3%	10.1%	10.5%	3.7%	4.0%
Professional, technical and protective services	23.4%	24.4%	18.9%	18.6%	4.8%	4.6%
Sales and office	28.6%	27.8%	20.3%	18.6%	13.0%	12.8%
Low wage services	11.6%	13.3%	19.1%	22.7%	25.4%	29.4%
Agriculture	0.3%	0.2%	1.7%	1.6%	5.4%	4.7%
Construction	4.9%	4.7%	7.3%	9.4%	15.2%	18.5%
Other blue collar	9.6%	8.9%	9.8%	9.7%	13.6%	12.9%
Production/Manufacturing	6.7%	5.0%	12.6%	8.8%	18.8%	13.1%
Military or Unclassified	0.2%	0.4%	0.1%	0.1%	0.0%	0.1%

Source: Author's analysis of *Integrated Public Use Microdata Series* (IPUMS), U.S. Census Bureau data from the 2000 5% PUMS sample, and the 2010 American Community Survey 5% sample.

occupations. While we recognize that this is a concern, in the main empirical analysis below we explicitly control for the industrial diversity of each metropolitan area when analyzing the impact of diversity on key outcome variables. Second, since this index is calculated for occupations rather than industries, and is measured at a relatively coarse number of categories, it is still effective at capturing the relative level of opportunity that immigrants are granted within the regional labor markets. Furthermore, even regions that are relatively specialized still have some amount of employment in low-wage, residentiary industries (e.g., restaurants) and construction, and the occupational diversity index would capture the degree to which immigrants are overly concentrated in these occupational groups or not.

To provide an alternative measure of occupational diversity that implicitly controls for differences in industrial structure across regions, we calculate an alternative measure of occupational diversity.<sup>2</sup> Specifically, we use an index of specialization. As Equation (2) indicates, the index of specialization is a relative index that compares the share of immigrant workers employed in a given category  $k$  in each region  $i$  to the same share for all workers of group  $j$  (e.g., immigrants, native-born workers, etc.) across the United States as a whole.

$$IS_{ij} = \frac{1}{2} \sum_{ki} \left| \frac{US_{kj}}{US_{Aj}} - \frac{R_{kij}}{R_{Aij}} \right| \quad (2)$$

The index of specialization ( $IS_{ij}$ ) in Equation (2) ranges from 0 to 1, with more diverse regions closer to 0 and more specialized ones closer to 1. A higher index of specialization means that the absolute differences between the share of workers in the occupational groups is higher. In other words, higher values indicate that the immigrant labor force in the region is more specialized or concentrated in some categories compared to the distribution of immigrant workers overall.

### Data Sources and Construction Steps

The primary data source for the measures of occupational diversity is the Integrated Public Use Microdata Sample (IPUMS) from the U.S. Census Bureau maintained by the University of Minnesota Population Center (Ruggles et al., 2010). We used microdata extracts from the 5% (long form) 2000 decennial census and the 2010 American Community Survey (ACS). In addition to the occupational diversity indices, we also computed the percent of immigrant workers with a bachelor's degree or higher, the rate of unemployment, and the real income growth of each immigrant group for each year. All values were calculated at the metropolitan area level using the consistent IPUMS variable *metarea* and then rescaled to the current combined statistical area (CBSA) definitions.<sup>3</sup> We then merged these variables with a selected subset of relevant variables from the BRR database (Pastor et al., 2009). The BRR database, developed by a MacArthur Foundation funded research network, contains over 1,400

variables that measure a wide variety of demographic, economic, social, and political characteristics of metropolitan regions. The database contains information for all metropolitan areas in the United States, but some variables derived from microdata were only available for larger regions (i.e., those with a minimum of 200,000 persons in 2000). Thus, we limited our analysis to the sample of 192 metropolitan areas that meet this size criterion.

We also developed a proxy measure to test for the ethnic enclave effect. Specifically, we used tract level data from 2000 on nativity status and country of origin to calculate the percent of the foreign-born in each tract. Tracts that had at least 30% immigrants (or Mexican immigrants) were considered enclaves. We then calculated the proportion of a region's immigrant population that lives in an enclave. This captures the degree to which immigrants living in a region are spread out throughout the metropolitan area, or living in close proximity to one another.

In addition to using data from the IPUMS and BRR databases, we developed two new variables which we argue are metrics of a region's *context of reception* of immigrants. These variables are policy or civic variables that are intended to be proxies for the broader institutional setting at the regional scale. In the last decade, a greater number of local elected officials and local governments have attempted to actively facilitate immigrant integration by changing public and administrative policies and institutionalizing the change through the development of immigrant service offices. For this study, we identify the metropolitan areas that have an immigrant or ethnic service office or have adopted immigrant-friendly citywide initiatives as *pro-immigrant*. We classify metropolitan areas as *anti-immigrant* if they have adopted policies that immigrant advocacy groups have considered hostile to immigrants, such as the ICE ACCESS 287(g) Program. Both *pro-immigrant* and *anti-immigrant* are dichotomous variables and a single metropolitan area might have both types of policies.

To identify these policies, we searched government websites for the primary city or cities of each metropolitan area. We searched on the following keywords/terms: *immigration*, *immigrant*, and *citizenship*. We also looked at all the local commissions and the various types of mayor's offices (e.g., Mayor's Office of Immigrant Affairs, Mayor's Office for New Americans) to see if they explicitly served immigrants, through programs such as translation for Spanish-language speakers or an advisory commission for a specific ethnic group. We also examined special local initiatives, such as welcoming immigrant initiatives.

It should be noted that the quality and ease of navigating the city websites varies widely, so we may have missed a program/policy that was not easy to find on the website. On the flip side, this may be indication of the importance of the initiative. If it is difficult to find publicly, there may not be much public support for the initiative. These are somewhat crude measures of pro- and anti-immigrant policies, but there is currently no centralized database that contains information on the context of local government reception for immigrants.

Lastly, we used data from the National Center for Charitable Statistics (NCCS) database from the Urban Institute to count the number and revenue of nonprofit organizations that serve immigrant or ethnic populations. These immigrant-serving organizations may provide a broad array of services to immigrant communities including housing and social services in addition to labor market support. These variables were normalized by the total immigrant population in the given year.

## Research Questions and Empirical Strategy

The main empirical analysis in this article consists of two distinct tasks. First, we attempt to explain the variation in occupational diversity across metropolitan areas based on the conceptual framework developed in the Immigrant Economic Integration in the United States section above. In this task we ask which factors are associated with occupational diversity, our main proxy for economic integration of immigrants. For each of the potential explanatory factors—human capital, ethnic enclaves, spatial mismatch, context of reception, and regional industrial structure—we chose a set of metrics from our updated BRR database. Next, we estimated a set of ordinary least squares (OLS) regression models that measure the association between each factor and our various measures of occupational diversity (the dependent variable). It is important to note that our purpose in conducting this OLS analysis



is not to test specific causal relationships, but rather to explore broad associations between regional characteristics and occupational diversity.

The next task is to test the hypothesis that occupational diversity among immigrants leads to greater resilience among immigrants at the regional scale. For the purposes of this article we define *resilience* in a strictly economic sense—the ability to withstand economic shocks such as the Great Recession—and use two primary outcome measures of resilience: the change in the unemployment rate of immigrants and the change in real wage income of immigrants between 2000 and 2010.

## RESULTS

### Descriptive Analysis and Ranking Tables

Before turning to our regression results, we examine the occupational distribution of native-born, immigrant, and Mexican immigrant workers across the nine occupational categories we used to develop the occupational diversity index. As shown in Table 1, native-born workers are heavily concentrated in three occupational groups in both 2000 and 2010: sales and office; professional, technical and protective services; and management. These three occupational groups, which tend to be higher paying, employ 67.5% of the native-born workforce in 2010. In addition, a greater proportion of native-born residents were working in low-wage service jobs in 2010 (13.3%) than in 2000 (11.6%). A very small proportion of native-born individuals work in agriculture and military occupations, 0.3% and 0.2%, respectively.

When immigrant workers are considered, they are less concentrated in higher wage occupations than native-born workers. In 2010, there were 18.6% of immigrants working in sales and office, 18.6% in professional, technical and protective services, and 10.5% in management, for a total of 47.7%. Compared to native-born workers, immigrant workers are also more concentrated in low-wage services: construction, other blue collar, and production/manufacturing. These jobs account for 47% of the immigrant workforce in 2010. These statistics show that immigrant workers appear to be bifurcated into high-wage and low-wage jobs. Like native-born workers, a greater proportion of immigrant workers were working in low-wage service occupations in 2010 than in 2000. This signals the changing economic structure over time.

We also compare Mexican immigrants, the largest immigrant group in the United States, to immigrants overall. We find that there are stark differences in their occupational makeup, as compared to all immigrants. Mexican workers have low representation in management and professional, technical, and protective service occupations. A large number of Mexican workers, 73.9%, are concentrated in low-wage services, construction, other blue-collar, and production/manufacturing.

When we compare the occupational distribution of native-born, immigrants, and Mexican immigrants, there are clear differences. A greater proportion of native-born workers are concentrated in higher wage, higher status jobs, and Mexican immigrants are more concentrated in lower wage, lower status jobs. Yet, when we consider the diversity index, all groups have high levels of occupational diversity. Immigrant workers have the highest occupational diversity score in 2000 at 0.85. Mexican immigrant workers have the next highest at 0.83, and native-born workers have the lowest at 0.81. These trends remain similar in 2010. Taken together, these statistics reveal that the overall occupational diversity, as measured by the diversity index, of the three groups is similar, but how each group is distributed across occupational categories varies.

Next, we rank metropolitan areas by the top ten most diverse and least diverse occupationally for immigrants, using our two measures: the diversity index and the index of specialization. Metropolitan areas that were ranked highest with the diversity index include six California metropolitan areas: Modesto, Stockton, Chico, Oxnard-Ventura, Santa Barbara-Santa Maria, and Santa Cruz-Watsonville (see Table 2). There were two metropolitan areas from Texas, Beaumont-Port Arthur and McAllen-Edinburg-Mission, that were also ranked high on occupation diversity of immigrants. In general, these regions have traditionally been magnets for immigrants, particularly Mexicans. They have also had strong agricultural and manufacturing bases and tend to be smaller in population than other metropolitan areas in our study. Boise City-Nampa, Idaho and Lakeland, Florida round out the top

TABLE 2

**Ranking of Ten Most/Least Occupationally Diverse Regions in 2000, All Immigrants**

Region		Diversity Index	Region	Index of Spec.
<i>Most Diverse</i>				
1	Modesto, CA	0.866	San Diego-Carlsbad-San Marcos, CA	0.044
2	Stockton, CA	0.866	Sacramento-Roseville, CA	0.048
3	Chico, CA	0.865	New Orleans-Metairie-Kenner, LA	0.048
4	Lakeland, FL	0.864	Hartford, CT	0.051
5	Oxnard-Ventura, CA	0.863	Tampa-St. Petersburg-Clearwater, FL	0.053
6	Boise City-Nampa, ID	0.863	New York CBSA, NY-NJ-PA	0.061
7	Beaumont-Port Arthur, TX	0.863	Kansas City, MO-KS	0.064
8	McAllen-Edinburg-Mission, TX	0.863	Nashville-Davidson-Murfreesboro, TN	0.070
9	Santa Barbara-Santa Maria, CA	0.859	Indianapolis-Carmel, IN	0.072
10	Santa Cruz-Watsonville, CA	0.859	Portland-Vancouver, OR-WA	0.075
<i>Least Diverse</i>				
1	Champaign-Urbana, IL	0.612	Hickory-Lenoir-Morganton, NC	0.432
2	Gainesville, FL	0.650	El Paso, TX	0.431
3	El Paso, TX	0.682	Yakima, WA	0.422
4	Ann Arbor, MI	0.696	Visalia-Porterville, CA	0.417
5	Hickory-Lenoir-Morganton, NC	0.713	Champaign-Urbana, IL	0.410
6	Atlantic City, NJ	0.742	Gainesville, FL	0.355
7	Pittsburgh, PA	0.757	Bakersfield, CA	0.352
8	Madison, WI	0.764	Ann Arbor, MI	0.338
9	Baton Rouge, LA	0.770	Fayetteville-Springdale, AR-MO	0.313
10	Visalia-Porterville, CA	0.771	Merced, CA	0.312

Source: Authors analysis of IPUMS census data from 2000.

ten most occupationally diverse metropolitan areas for immigrants. The range in the diversity index value for these metropolitan areas varies from a high of 0.877 to a low of 0.859; therefore, the differences in level of occupational diversity is small among these metropolitan areas.

Looking at the ten areas with the least occupational diversity for immigrants, they seem to be metropolitan areas that have older economies, such as Pittsburgh, Pennsylvania and Atlantic City, New Jersey, or are smaller in size. Four of the metropolitan areas could be considered college towns: Champaign-Urbana, Illinois; Gainesville, Florida; Ann Arbor, Michigan; and Madison, Wisconsin. Whereas the most diverse regions appear to be magnets for Mexican immigrants, metropolitan areas that have less occupational diversity seem to attract immigrants from a broader range of countries.

Since the diversity index is the spread of immigrants across the nine occupational groups without reference to any other group, we also calculate the index of specialization to compare the occupational distribution of immigrants in each metropolitan area relative to their distribution in the U.S economy as a whole. The rankings using the index of specialization are somewhat different than our rankings using the diversity index. Examining the top ten regions for occupation diversity of immigrants, we find that larger metropolitan areas, and those with strong high-tech and service economies, tend to rank high. As shown in Table 2, two populous California regions, San Diego-Carlsbad-San Marcos and Sacramento-Roseville, rank highest for occupational diversity for immigrants. There is much more regional variation using the index of specialization as compared to the diversity index, with three metropolitan areas in the West, three in the South, two in the Northeast, and two in the Midwest.

According to the index of specialization, the regions that have the least occupational diversity for immigrants appear to be smaller places with more specialized economies. There are six metropolitan areas that are the same as those found in the diversity index ranking for least diverse area. The places that make it on this list and are different than on the diversity index list for least diverse include: Yakima, Washington; Bakersfield, California; Fayetteville-Springdale, Arkansas/Missouri; and Merced, California. In general, the places on this list appear to have more specialized economies.

## Explaining Occupational Diversity Across Regions

Beyond the rankings tables, we ran a set of OLS regression models to explore which characteristics are associated with greater occupational diversity of immigrants that take the following general form:

$$OCCDIV_i = \beta [HC_i] + \beta [EE_i] + \beta [SM_i] + \beta [IS_i] + \beta [CR_i] + \mu_i \quad (3)$$

As indicated by Equation (3), the dependent variable is the diversity index for each metropolitan area  $i$ , and is predicted by five sets of variables.  $HC_i$  is a vector of variables that measure the human capital of immigrants and include the share of immigrants with a bachelor's degree or higher, the share of a region's immigrants who immigrated in the 1980s or 1990s (our proxy for labor market experience), and the degree of linguistic isolation or language ability. The terms  $EE_i$  and  $SM_i$  are vectors of variables that measure the degree to which immigrants are spatially concentrated or cut off from regional job opportunities and include variables such as the spatial dissimilarity index of the foreign-born and the suburban share of jobs. Since the occupational diversity of all workers in a region, much less immigrant workers, is shaped by the structure of regional labor demand, we include a set of control variables that account for the industrial structure  $IS_i$  of each region. Lastly, the vector  $CR_i$  includes variables that proxy for the context of reception, such as the presence of pro- or anti-immigrant policies in the central city of each region and the number of immigrant service NGOs per capita.

We conduct this analysis for the occupational diversity index for all immigrants, Mexican immigrants, and also for the differential diversity index for immigrants versus native-born (Table 3). In specifying the models, we attempted to balance the competing needs of including variables from each of our conceptual factors while maintaining as parsimonious a model as possible with decent explanatory power.

Table 3 lists the results of our regressions predicting occupational diversity of immigrants. Column 1 contains the results for all immigrants, while Column 2 is for Mexican immigrants separately. The measure of human capital (% of immigrants with a bachelor's degree or higher) is associated with lower occupational diversity and is significant for all immigrants and the differential. While this result is contrary to individual level theories regarding immigrant integration, at the regional level this makes sense because, as more immigrants earn a higher degree of education, they tend to be more concentrated in the two higher skill occupational categories (management and professional services), which is an indicator of labor market specialization. Furthermore, a greater share of educated immigrants makes immigrants' occupational diversity more similar to native-borns. Interestingly, this variable is not significant for Mexican immigrants, which is consistent with the literature on racialization in the labor market for Mexicans. The degree of linguistic isolation also appears to reduce labor market diversity for immigrants, but not for Mexican immigrants.

Our findings also indicate that when immigrants are more spatially segregated, they are less diverse across occupations, as indicated by the negative and significant coefficient for the spatial dissimilarity index among immigrants. Recall that the dissimilarity index (calculated at the census tract level) measures the share of immigrants that would have to move to another neighborhood to even out the distribution of foreign-born and native-born individuals within a region. This finding is consistent with the existing literature on the spatial isolation of immigrants.

When we examine the results for our variables that attempt to capture the *context of reception* for immigrants, we find that generally none of the policy variables were significant, except for Mexican immigrants and the number of immigrant service nongovernmental organizations (NGOs) per capita. The fact that regions with more immigrant service NGOs have less occupational diversity among Mexican immigrants is somewhat of a puzzling finding. One reason why this may be the case is that these organizations form in response to the fact that Mexican immigrants are concentrated in a relatively narrow set of low-wage jobs that may require more social and support services.

Interestingly, our primary measure of ethnic enclaves—the share of the regional immigrant population residing in census tracts that are 30% or more foreign-born—is not significant, but spatial segregation of foreign-born from native-born is significant. Among all immigrants, higher levels of spatial segregation are associated with lower occupational diversity.

TABLE 3

## Predicting Occupational Diversity in 2000

Variable	Diversity Index, All Immigrants [1]	Diversity Index, Mexican Immigrants [2]
<i>Human capital</i>		
Share of immigrants with a bachelor's degree or higher, 2000	-0.235*** (0.031)	-0.041 (0.081)
CBSA pre-1980 immigrant population (millions), 2000	-0.006 (0.041)	-0.007 (0.080)
CBSA percent households linguistically isolated, 2000	-0.389** (0.194)	-0.078 (0.261)
<i>Context of reception</i>		
Central city has a pro-immigrant policy stance, 2013	0.008 (0.006)	0.004 (0.011)
Number of immigrant service NGOs/immigrant 2000	-3.261 (19.308)	-85.2** (36.421)
Revenue of immigrant service NGOs/immigrant (\$1,000s), 2000	-0.022 (0.026)	0.034 (0.051)
<i>Ethnic enclaves</i>		
Share of foreign-born living in ethnic enclaves, 2000	-0.013 (0.036)	0.002 (0.049)
Dissimilarity index of the foreign-born, 2000	-0.001* (0.001)	0.001 (0.001)
<i>Spatial mismatch</i>		
Suburban share of regional jobs, 2000	0.019 (0.018)	-0.026 (0.036)
<i>Industry structure</i>		
Industry diversity index (employment-based), 2000	0.256*** (0.067)	0.128 (0.134)
Percent of employment in manufacturing, 2000	-0.133** (0.052)	-0.130 (0.102)
<i>Regional controls</i>		
Total CBSA population (millions), 2000	0.003 (0.003)	0.004 (0.001)
CBSA, median age, all, 2000	-0.001 (0.001)	0.0003 (0.002)
CBSA percent home owners, 2000	0.075 (0.065)	0.064 (0.124)
Median household income, 1999 (in 2000 \$)	0.002*** (0.000)	0.000 (0.000)
CBSA 90–10 income ratio, 2000	0.007*** (0.002)	-0.002 (0.004)
CBSA unemployment rate, 2000	-0.002 (0.002)	0.003 (0.004)
Adjusted $R^2$	0.4424	0.1325

Note: All regressions include regions with at least 200,000 total population in 2000 and at least 10,000 immigrants in 2000. Sample size equals 128 for all three models. Standard errors in parentheses.

\* significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level

Our indicator for spatial mismatch was insignificant for all three models, although the two indicators for regional industrial structure are highly significant for all immigrants. Specifically, the industry diversity index (calculated in a parallel manner as our occupational diversity index) is positive and significant for Models 1 and 3. This suggests that more diverse economies in terms of labor demand are associated with greater occupational diversity for immigrants. It is critical that we control for the effect of industrial structure of the region since the availability of jobs in different industries shapes the ability of workers to be employed in a broader range of occupations. Therefore, we view industrial structure as a critical control factor. Notably, this variable is insignificant for Mexican immigrants, again perhaps, indicating that Mexicans face additional barriers within the labor market that prevent

them from taking advantage of a wider array of jobs within the regional economy. In addition, the share of regional jobs in manufacturing is negatively associated with occupational diversity.

Among the other variables that control for the economic structure of regions, the overall median household income level was positive and significant. This indicates that richer regions tend to have greater occupation diversity among immigrants. The only other variable that is significantly associated with occupational diversity is the measure of income inequality (the 90/10 household income ratio). Regions that are more unequal are slightly more diverse.

Overall, the model predicting occupation diversity among Mexican immigrants has low predictive value, with an adjusted  $R^2$  equal to 0.1325. The other two models have much higher  $R^2$  values, with Model 1 (all immigrants) equal to 0.4424 and Model 3 (the differential between immigrants and native-born) equal to 0.4681. This suggests that none of the factors (e.g., human capital, context of reception, ethnic enclaves, spatial mismatch, industrial structure, and regional controls) strongly explain the occupation diversity of Mexican immigrants, and that there may be some unexplained factors that are difficult to capture in a quantitative model, such as the racialization of Mexican immigrants in the labor market, that might be shaping labor market outcomes for this population.

Our models predicting the occupational index of specialization have higher predictive values with the  $R^2$  value for the all immigrant model equal to 0.537 and  $R^2$  value equal to 0.322 for Mexican immigrants (see Table 4). The results for our models that explain variation in the occupational index of specialization are similar to the results for the occupational diversity index. As a reminder, the signs on each coefficient have the opposite interpretation. Therefore, as the index of specialization increases, occupational diversity decreases. Again, the share of workers with a bachelor's degree or higher is associated with less diversity, while good English language ability of immigrants seems to increase diversity.

Unlike the diversity index regressions, for the index of specialization we do find evidence that spatial mismatch and enclave effects matter. For all immigrants, the degree to which regional jobs are spread out in suburban locations, rather than concentrated in the central city tends to reduce occupational diversity (positive sign and significant at the 5% level). While immigrants are increasingly bypassing the central city for emerging suburban immigrant hubs, the majority of immigrants are still concentrated in the older central city areas, which tend to have better transit access and lower housing costs. Interestingly, in regions that have a higher share of the Mexican immigrant population living in ethnic enclaves, labor market diversity is reduced. This suggests that Mexicans face dual barriers in terms of labor market and residential segregation. This is also consistent with the close ethnic ties and social networks built up within ethnic enclaves (e.g., strong ties) that could serve to exacerbate labor market segmentation.

The story with industry structure is also broadly similar, with the percent manufacturing negatively associated with diversity, and the index of specialization negative and significant. As regions specialize in other sectors for their primary export base (e.g., high-tech services, finance-insurance-real estate [FIRE]) rather than manufacturing, they tend to generate job opportunities across a wider spectrum of occupations and thus create a more diverse labor demand structure. In other words, regions with high-tech or service-based economies produce a broad based labor demand for all workers, including immigrant workers. The fact that these variables are not significant for Mexican immigrants again is suggestive of labor market segmentation within the labor market for Mexican immigrants.

## **Explaining Economic Resilience**

Next, we turn to our models that explore the relationship between occupational diversity and economic resilience. We analyze the impact of diversity on two distinct measures of economic resilience; the change in unemployment and the net change in real wage income among immigrants between 2000 and 2010. A comparison across this time period offers a comparison with a base year that was the pinnacle of the overall labor market in terms of unemployment (2000) to 2010, which is just after the Great Recession that ended in 2009. Our diversity index variables are measured in the year 2000. Table 5 contains the results of models that test the relationship between our



TABLE 4

**Predicting Occupational Index of Specialization, 2000**

Variable	Index of Specialization, All Immigrants [1]	Index of Specialization, Mexican Immigrants [2]
<i>Human capital</i>		
Share of immigrants with a bachelor's degree or higher, 2000	0.427*** (0.087)	0.355*** (0.118)
CBSA pre-1980 immigrant population, 2000	0.073 (0.085)	0.071 (0.103)
Metro rate of "good" English language ability among immigrants, 2000	-0.004*** (0.001)	-0.001 (0.001)
<i>Context of reception</i>		
Central city has a pro-immigrant policy stance, 2013	-0.021* (0.012)	-0.023 (0.016)
Number of immigrant service NGOs/immigrant, 2000	-18.845 (39.476)	-17.639 (51.887)
Revenue of immigrant service NGOs/immigrant (\$1,000s), 2000	0.080 (0.052)	0.055 (0.069)
<i>Ethnic enclaves</i>		
Share of foreign-born living in ethnic enclaves, 2000	0.003 (0.038)	0.176*** (0.050)
Dissimilarity index of the foreign-born, 2000	0.001 (0.001)	0.001 (0.0001)
<i>Spatial mismatch</i>		
Suburban share of regional jobs, 2000	0.097** (0.047)	0.029 (0.060)
<i>Industry structure</i>		
Industry diversity index (employment-based), 2000	-0.413*** (0.136)	-0.385** (0.180)
Percent of employment in manufacturing, 2000	0.482*** (0.107)	0.274* (0.140)
<i>Regional controls</i>		
Total CBSA population, 2000	0.016** 0.007	0.016* 0.0159
CBSA, median age, all, 2000	0.004* (0.002)	0.003 (0.003)
CBSA percent home owners, 2000	-0.097 (0.128)	-0.255 (0.167)
Median household income, 1999 (in 2000 \$)	-0.003*** 0.000	-0.003** 0.000
CBSA 90-10 income ratio, 2000	-0.015*** (0.004)	-0.001 (0.005)
CBSA unemployment rate, 2000	0.016*** (0.005)	0.003 (0.006)
Adjusted $R^2$	0.537	0.322

*Note:* All regressions include regions with at least 200,000 total population in 2000 and at least 10,000 immigrants in 2000. Sample size equals 124 for all three models. Standard errors in parentheses.

\* significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level.

occupational diversity measures and economic resilience among immigrants. In each of the models below we include the same set of regional controls that appear in tables 3 and 4 for population, age, homeownership, inequality, and base-year unemployment and income. These variables are included to control for the broad economic factors that differentiate the economic characteristics of U.S. metropolitan areas. In addition to these controls, we also include a measure of overall economic performance—the change in unemployment rate for all workers—so that we can better isolate the impact of our occupational diversity measures on the change in unemployment or income among

TABLE 5

Impact of Occupational Diversity Indices on the Resilience Outcomes Among Immigrants, 2000–2010

Variable	Change in Unemployment Rate, Immigrants 2000–10		Change in Real Wage Income, Immigrants, 2000–10	
	[1]	[2]	[3]	[4]
Occupational diversity index, immigrants, 2000	–0.161** (0.059)		16727.2* (2.500)	
Index of specialization, immigrants, 2000		0.035 (0.031)		–4749.8 (1.360)
Change in unemployment rate overall, 2000–2010	0.0001* (0.000)	0.0001* (0.000)	–0.004 (0.260)	–0.003 (0.230)
Percent change in immigrant population, 2000–2010	0.006 (0.009)	0.005 (0.009)	–2552.4* (2.430)	–2415.6* (2.250)
Percent of employment in FIRE, 2000	–0.125 (0.130)	–0.174 (0.134)	7232.7 (0.490)	11231.2 (0.740)
<i>Regional controls</i>				
Total CBSA population, 2000	–0.003 (0.002)	–0.003 (0.002)	97.8 (0.390)	77.2 (0.300)
CBSA, median age, all, 2000	0.001 (0.001)	0.001 (0.001)	116.1 (1.260)	109.8 (1.170)
CBSA percent home owners, 2000	0.070 (0.045)	0.059 (0.046)	–21245.2** (4.120)	–20153.4** (3.850)
Median household income, 1999 (in 2000 \$)	0.00005 (0.0004)	–0.00001 (0.0004)	21.6 (0.500)	26.8 (0.610)
CBSA 90–10 income ratio, 2000	0.001 (0.001)	0.002 (0.002)	–594.1** (3.520)	–655.0** (3.850)
CBSA unemployment rate, 2000	–0.008** (0.002)	–0.010 (0.001)	435.9* (2.510)	578.9** (3.430)
Adjusted R <sup>2</sup>	0.450	0.420	0.320	0.300

Note: All regressions include regions with at least 200,000 total population in 2000 and at least 10,000 immigrants in 2000. Sample size equals 124 for all three models. Standard errors in parentheses.

\* significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level.

immigrants. We also include a measure of changing labor supply—percent change in total immigrant population between 2000 and 2010—as well as an indicator of the nature of labor demand (percent of regional employment in finance, insurance, and real estate [FIRE] sectors).

Based on the results presented in Table 5, we find that greater occupational diversity is moderately associated with smaller changes in unemployment and higher real wage income changes among immigrants. However, the results are significant only for the occupational diversity index, rather than the index of specialization. This indicates that regions where immigrants are more broadly spread out across the labor market are more resilient to the economic shock posed by the Great Recession. There is essentially a *portfolio argument* at work here. To the degree that immigrants are not concentrated in any one sector (e.g., construction) that faces a macroeconomic shock, immigrant workers as a whole will not see as large a spike in unemployment. Interestingly, regions with higher rates of homeownership had a lower change in real income for immigrants, which may be reflective of the housing foreclosure crisis during the Great Recession.

## DISCUSSION

Whereas the literature on immigrant integration often pitches competing theories, our study of metropolitan areas with the largest immigrant populations suggests that there is support for combining different schools of thought on immigrant economic integration. Using two different measures for immigrant economic integration (operationalized as occupational diversity in the metropolitan labor market), we found that the most robust factors affecting occupational diversity for all immigrants,

regardless of how we operationalized occupation diversity, include human capital and industrial structure. In particular, English-language ability (or isolation) are associated with immigrants' labor market outcomes, thus lending support to the classic assimilation theory. It is not surprising that the distribution of jobs across industries is also highly predictive of whether immigrants are able to enter into a more varied set of occupations.

To some extent, there was some support for all of our hypotheses, but it was largely dependent on the outcome variable of choice. When the diversity index was the dependent variable, spatial segregation was associated with less occupational diversity for all immigrants. When the index of specialization was the dependent variable, having a pro-immigrant policy stance, which is an indicator of the local context of reception, was associated with more occupational diversity. In addition, the spatial mismatch variable, suburban share of regional jobs was related to a decrease in occupational diversity.

For Mexican immigrants, regardless of the outcome variable used, the predictive power of our statistical models was much lower than for all immigrants, suggesting that there are unobserved factors that may better explain labor market integration for Mexican immigrants. In addition, the continual stream of Mexican immigration and the high numbers of undocumented immigrants may also contribute to Mexican immigrants being employed in occupational niches rather than being distributed throughout the labor market. These factors could explain why more human capital did not translate into greater occupational diversity for Mexican immigrants, but did for all immigrants. These results for Mexican immigrants are consistent with research that shows that Mexican immigrants do not realize the same occupational gains from human capital accumulation as other immigrants (Alba & Nee, 2005; Haller et al., 2011; Portes & Rumbaut, 2001). Furthermore, for Mexican immigrants, it is not the spatial distance from Whites (dissimilarity index) that affects occupational diversity, but living in ethnic enclaves that does. Thus, living in ethnic enclaves for Mexican immigrants may be inhibiting their ability for labor market advancement. This supports Granovetter's thesis regarding the need to have *weak ties* with individuals that can offer opportunities to a wider range of occupations.

Are metropolitan areas with greater immigrant economic integration more resilient to economic shocks? Our analyses using the occupational diversity index as the independent variable of interest indicates that greater occupational diversity does buffer immigrants within metropolitan regions from more pronounced effects of the Great Recession. Unemployment level change for immigrants is less dramatic in metropolitan areas with greater labor market integration. Furthermore, real wage income growth is higher in metropolitan areas with more economic integration. However, we did not find support for this with the other independent variable of interest, index of specialization. Thus, our findings are mixed.

While our findings are statistically significant, it is important to note the limitations of this analysis in drawing causal conclusions on the direct relationship between labor market diversity and overall economic integration of immigrants or regional resilience in a larger sense. There are other critical factors which shape opportunity which we are unable to measure, including multigenerational measures of integration such as homeownership and wealth transfers as well as more specific measures of skill acquisition and labor market advancement. Moreover, our measures of resilience (change in unemployment and real wages) are rather coarse and do not explicitly measure the capacity to bounce back from economic shocks as Benner and Pastor (2012) do. Nonetheless, we argue that this exploratory analysis is useful in shedding light on the links between labor market diversity and the economic well-being of immigrants and the importance of the metropolitan scale for both further research and policy interventions.

### **Policy Implications and Future Research Directions**

These findings have implications for current immigration policy reform, showing that policies that seek to recreate a segmented labor force will be unwise since occupational diversity may reduce the impact of a sectoral specific shock. Our current federal immigration policies offer preferential treatment to high-skilled (e.g., software engineers) and low-skilled or agricultural workers, thereby

limiting the range of occupations that are allowed to migrate to the United States. Policymakers should provide legal avenues for workers from more wide-ranging types of occupations.

At the regional level, local government actions towards adopting immigrant-friendly policies can work to economically integrate immigrants. Also, having a greater industrial mix provides more opportunities for immigrants to be more diversely distributed across occupations. Overconcentration in one industry, such as manufacturing, however, can result in less occupational diversity for immigrants.

The importance of spatial dynamics, including the significance of racial segregation and the regional share of suburban jobs, highlights the importance of policies that work to develop more economic, racial/ethnic, and land-use integration. Housing and land use policies, such as mixed-income, mixed-use, and inclusionary housing, for example, that are directed at integrating low-income families may result in greater spatial integration for immigrants, thus leading to economic integration.

Looking forward, the findings in this article can serve as the basis for case selection for future qualitative analysis that seeks to drill down to the explanatory factors that enhance or exacerbate economic integration and labor market mobility of new immigrants. Also, the differences between the explanatory factors associated with occupation diversity for Mexican-immigrants and all immigrants deserve more examination. Furthermore, findings from this study offer ways policymakers, elected officials, and street-level bureaucrats who would like to facilitate immigrant integration can do so through human capital accumulation, desegregating immigrants, and developing a more welcoming context.

## ENDNOTES

- 1 We used the 5% samples from the 2000 decennial census and the 2010 American Community Survey, respectively, for all diversity index calculations and to calculate our resilience outcome measures for 2000–2010.
- 2 We also explored other alternative measures of occupational diversity, including the difference in the diversity index between immigrants and native-born workers. Since the results were similar, we exclude this analysis for the sake of brevity.
- 3 The IPUMS files use the older metro definitions, which correspond to the MSA/PMSA definitions used for the 2000 census. To convert these values to the current system, we allocated each value to the county level and then used the county-based CBSA definitions determined by the Office of Management and Budget (OMB) to take the population-based weighted average to reconstruct each measure back to the CBSA level. Variables were converted from their original geography so that we could merge the data set to the BRR database.

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