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### Growth Amid Decline:

### A Spatial Analysis of the Hispanic Population Change in Michigan and Detroit

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## Introduction

Michigan is a state with a contradictory population change: unlike the decrease of the habitants for the overall population, the population of Hispanic people has increased in past years. According to some leaders of the Hispanic community and current literature, the change in Hispanic population is due to natural growth of the population as opposed to increased immigration. In a period of long-term mass immigration to the United States (US) and a particularly sharp decline in Michigan's population, this fact introduces concerns for policymaking. Using in-person interviews and spatial analysis techniques, we will analyze trends in the Hispanic population in Michigan and Wayne County in order to formulate a hypothesis on the growth characteristics of the Hispanic population in Michigan and in particular Wayne County, where Detroit is located.

We will start describing relevant literature to understand the phenomena in other parts of the country. Then, we will test the narrative of increased immigration and overall population decrease in both Michigan and within Wayne County, which contains a substantial portion of Detroit. As a further step, using data from the US Census Bureau from 1990 to 2010, we will describe state-level changes in population and how that maps to the expectations of interviewed experts of the Hispanic population of Michigan. Next, we will focus on Wayne County, which contains much of Detroit, including the area known colloquially as Mexicantown.

### Literature Review: Hispanic migration to the US and Michigan

The US and Latin-America face a number of common challenges, and the decisions of local policymakers can impact the lives of people born or raised on either side of the border. For instance, an important issue for the political agenda is the status of people living in the US without immigration documents. Mexican people are an illustrative case: around 12 million undocumented immigrants are living in the US, and about seven million of them are of Mexican descent. The number of Mexican undocumented immigrant population leveled in 2011 for many reasons, primarily due to the economic crisis of 2008, and the security concerns at the US-Mexico border (Pew Hispanic Center, 2014). This is in contrast to the steady immigration of Mexicans and Central Americans before and during the 1990s. During the 1980s and 90s, almost every Latin American country faced economic crises, and the US dollar appreciated compared to the local currencies, spurring a prolonged wave of immigration toward the US (Passel, 2012). After 2001, crossing the border became significantly more difficult for both documented and undocumented. The region has since achieved relative macroeconomic stability, but continuing promises of jobs and higher wages fueled the ongoing migration at least until the financial crisis.

What motivates people to migrate? Douglas et al. (1997) suggest the main reasons are associated with social capital formation, human capital formation, and market consolidation. While the social stigma of undocumented immigration in the US is quite negative, many immigrants still chose to cross the border in order to send remittances back home to family (Pew Hispanic Center 2014). Passel et al. (2011) explain that the increase of Hispanic populations in the US was due to

better wages, educational opportunities, and entrepreneurship opportunities; or to join family members that had migrated before.

From a public policy perspective, it is relevant to study the Hispanic population change because of its magnitude and size. There are more than 50 million people in the US who identify themselves as Hispanics, representing 16.3% of the population. The change in Hispanics represented the greatest increase for the country's population growth from the 2000 Census to 2010 (Passel et al., 2011). This change in population has been widely studied in areas with mostly Hispanic people. For instance, Kochhar et al. (2005) found that in some southern counties in the US, the Hispanic growth from 1990 to 2000 exceeded 1000%, which is most likely explained by immigration. The Latino population is expected to continue growing at least until 2050, and according to Suro et al., (2003): "the growth rate for the second generation has already gained sufficient momentum that it will remain higher than the first generation's even if immigration flows accelerate." This study also estimates that one in seven new students enrolling in the US education system are second-generation Hispanic immigrants. It has also been found that the population is gaining a significant share in smaller metropolitan cities (Singer, 2004), less densely settled small towns and rural areas in the South and Midwest (Lichter et al., 2006).

The growth of the Hispanic population may be explained by a natural increase of the population rather than an influx from other countries. The gap between net migration and natural increase were analyzed spatially for differentiating urban and rural areas (Lichter, 2008) using data from the National Center for Health Statistics (NCHS) with tabulations of Hispanic births and deaths per county. Brown et al. (2013) developed a detailed spatial analysis from the distribution of the Latino population using both Census Data and the American Community Survey. However, this work does not represent how the change occurred by decades or what are the policy implications for Michigan.

Michigan represents a unique case because it is the only state where the total population declined from 2000 to 2010 but the Hispanic/Latino population grew (Passel et al., 2011). To our knowledge, this path has not yet been analyzed in detail. In the past, several studies have been conducted about the migration in this area, a few especially centered on Mexicantown in Wayne County (Cotera, 2007; Balderrama, 2006). Alvarado et al. (2003) states that the migration of the Hispanic/Latino population to Detroit started in 1920, which created several destination communities that started powerful local community organizations. In the abandoned city of Detroit, Lara (2012) argues that Mexicantown is an example of how "Latino communities can revitalize retail corridors and improve both the economy and quality of the public realm for its residents and visitors." Lara (2012) found that Latino immigrants were the owners of 85% of 212 Latino-oriented businesses in Mexicantown and that most of those business were second or third generation of immigrants.

## Methodology

This study began with personal interviews with cultural experts in Wayne County to gain a top-level perspective on Hispanic issues in the Detroit area, especially regarding undocumented

immigrants. The informants had years of expertise working with the Latino community in the area, as well as with some public offices. The observations of these local experts aligned with the assertions of the literature: undocumented residents from Latin America are still coming to the US, but the main population growth of this demographic in Michigan comes from natural population growth, namely, current residents having children. This prompted us to produce maps to further explore the direction of growth, positive or negative, at both the county level in Michigan and the census tract level of Detroit, to gather a better understanding of the changing populations to see if these assertions held with data concerning Michigan.

For the state-level analysis, we used the decennial Census undertaken by the US Census Bureau, which acts as a snapshot of population makeup in the year it is taken. We used the 1990 census as baseline to measure the changes from the 2000 and 2010. Data was aggregated by the Pew Research Center to the county level, with self-reported numbers of people of Mexican descent, because it would be expectable that the biggest change would occur among that population. Using ArcGIS software we combined the publicly-available TIGER (Topographically Integrated Geographic Encoding and Referencing) geographic shapefiles with the data aggregated by Pew Research Center for visualization and analysis.

To study Wayne County's changing population, we utilized the American Community Surveys' (ACS) 5-year-estimates and measured the changes between demographic figures: Hispanic/Latino identity, Mexican origin, and overall figures, for 60 months prior to the labeled year. For example, the 2013 ACS 5-year would estimate current demographics and indicators using data collected over 60 months: from January 2009 to December of 2013. We used the 2010 and 2012 ACS 5-year estimates, which means our estimates overlapped years of coverage within these 5-year measurement times, presenting a potential problem of statistical rigor. However, in looking at the differences between the two estimates, we are focusing on the change in the estimated population for these periods and the trend that is being seen in the population of Detroit - this would lead to a different conclusion if we were attempting to make statements regarding quantitative analysis. However, looking at trends to qualify the qualitative analysis conducted, we find that the maps add context. The collusion of these maps with the qualitative analysis is where we can find value, not in magnitude of difference. There was also a concern about addressing the provided margins of error with these estimates, which we chose not to address considering our main motive was directional computation and not magnitude. More robust analyses can be conducted should the margins of error be addressed in the figures provided for the estimates, but for our purposes the estimates were enough to gain trends for observed populations.

It must be noted that Census data is prone to possible errors when measuring population statistics, especially for identity. Hispanic and Latino are not racial designations, as being a Spanish-speaker (Hispanic) or from Latin America (Latino). It does not qualify as a racial designation, but an ethnic one. Thus, comparing between races is particularly hard when Hispanic identity is added to the variables of interest. This problem could be solved by testing for national origin within the data set: however, all data is self-reported, and thus require that someone identify themselves ethnically by what language they speak or what country or region they are from. The ACS is the best measure of population the US has, and while it is limited, we must trust this dataset with our calculations

simply due to a lack of a better dataset that is less subjective, not self-reported, more inclusive of identity, and can also reach undocumented immigrants to inquire about their demographics. While it is entirely possible that undocumented immigrants are undercounted in this study, undocumented immigrants have no dangers from answering because the legal status is not required, but also may fear repercussions of including their personal information on official federal forms. Theoretically, because of the random nature of dispersal over the course of 60 months, all populations have a population-proportional chance of being selected for the survey.

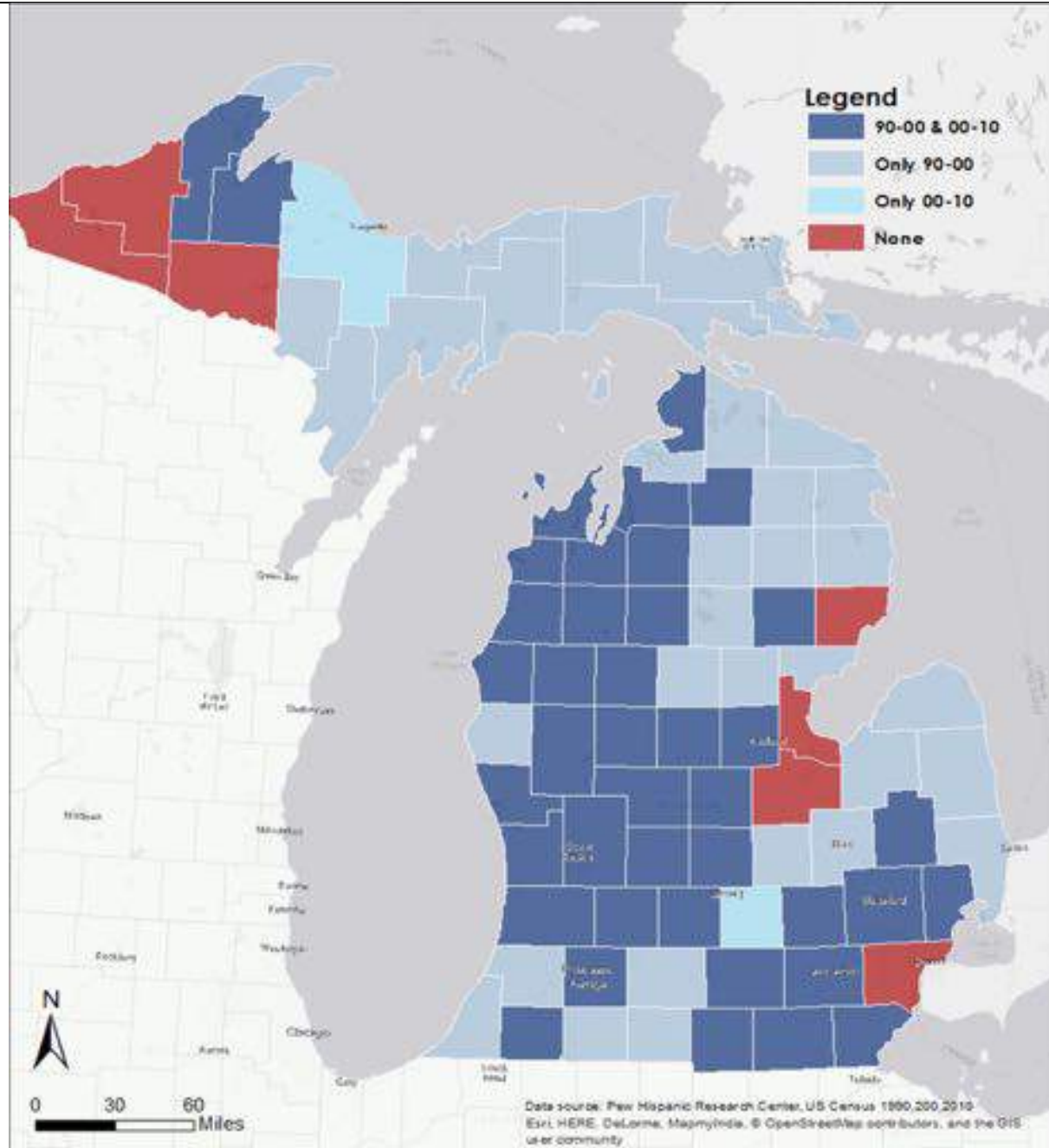
For the remainder of this paper, we use the term “Hispanic/Latino” to be inclusive of our population of interest, especially where the data is ambiguous in distinguishing the groups apart, and where one or the other is explicitly mentioned means we have verified for what particular population the data speaks for. For instance, in Figures 3-5, Hispanics are the observed population because the data was presented as such, and the inclusion of Latino or different identities is uncertain. One potential advantage of the ACS is that the survey is a randomly mailed sample set to a certain number of people within each census tract area, meaning that theoretically we are capturing undocumented immigrants within our sample since random selection should lead to a randomly distributed sample, but this requires complete compliance, accurate self-reporting, and no attrition in order to be representative of the population and its subsets, including undocumented immigrants. The survey is anonymously coded and thus means there is no basis to disregard the entire sample for these limiting factors. Being aware of the dataset’s limitations simply limits the confidence with which we can generalize our findings, and many researchers use the ACS in order to generalize their findings to the whole of the US population.

## Results

### Michigan State-Level

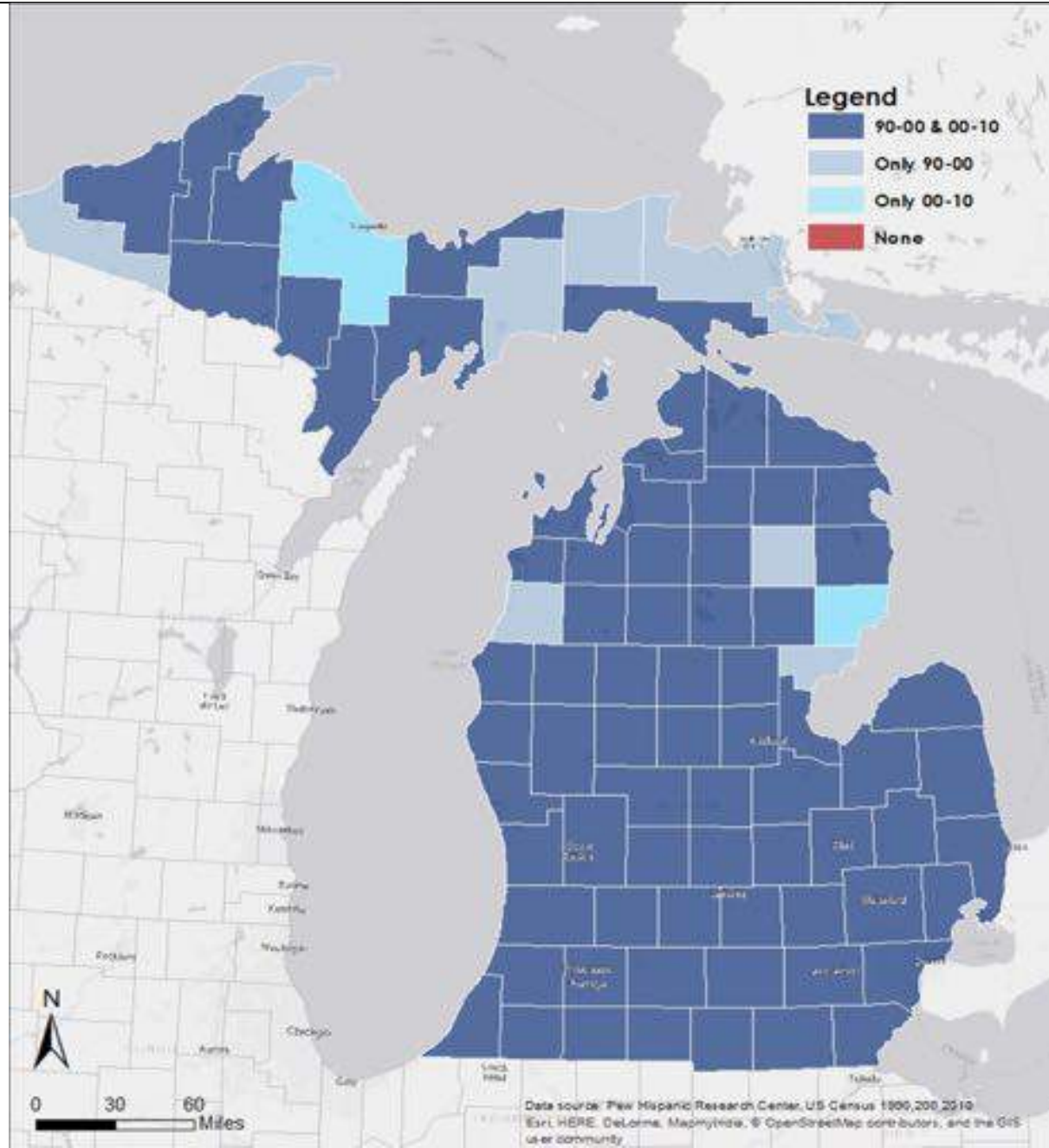
In Michigan, Hispanic/Latino population increased in every Michigan County. In the city of Detroit, for example, the total population decreased 24.97 percentage points from 2000 to 2010, but the people of Hispanic/Latino origin increased in 3.20 percentage points (Census Viewer 2010). Figure 1 presents the absolute change of the overall population in each Michigan County. In the state of Michigan, seven counties have a decrease in the general population over the period of the last two Censuses, yet unlike the rest of the population, in the last 20 years the Hispanic population experienced growth in every county over the span of three decennial censuses, as seen in Figure 2. Looking at Wayne County across both maps, the total population did not increase over the course of the three census periods, but the Hispanic population increased in all decades.

**Figure 1:** Decadal Population Growth, by County.



*Note:* This map shows counties that have grown in population over the course of different decades according to Pew Research Center. The darkest blue signifies population growth within a county between 1990 and 2000 and 2000 and 2010. All other colors signify no growth or growth in only one of the mentioned decades. The term Hispanic here refers specifically to the data taken at this level, which identifies the survey respondents as Hispanic.

**Figure 2:** Decadal Population Growth of Hispanic people, by County.

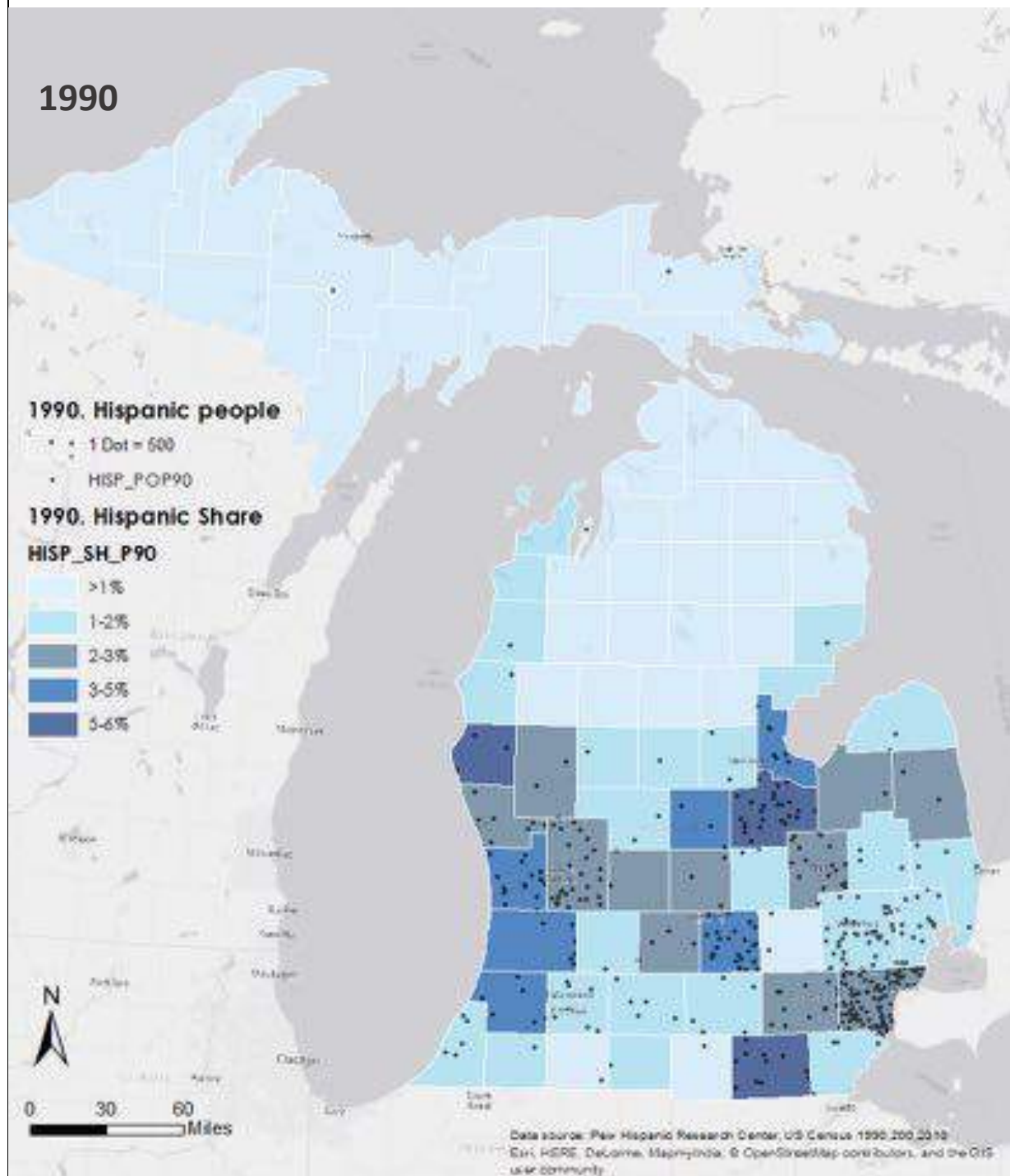


*Note:* This map shows counties that have grown in Hispanic population over the course of different decades according to Pew Research Center. The darkest blue signifies population growth within a county between 1990 and 2000 and 2000 and 2010. All other colors signify no growth or growth in only one of the mentioned decades. Notice here that significantly more counties saw increases in Hispanic population during both decade periods compared to overall population growth. The term Hispanic here refers specifically to the data taken at this level, which identifies the survey respondents as Hispanic.

Figures 3 through 5 show the changes in both relative and absolute terms. For the Hispanic share of the county population, the scale ranges from lowest (light blue) to highest (dark blue) share of the population. Dot density is mapped over the graphs to show absolute Hispanic population distribution across the State of Michigan in reference to total share of the population. The average of Hispanic people per county increased from 2,428 people in 1990, to 3,902 in 2000, to 5,257 in 2010. The average Hispanic population percentage per county has also increased from 1.5% in 1990, to 2.2%, and to almost 3% in 2010. According to the Census, people who self-identified as Hispanic were 200,000 in 1990, 320,000 in 2000, and 436,000 in 2010. In every decade, Keweenaw County has been the place with the least number of Hispanic people. Wayne County has held the biggest concentration of this population, and the overall population of Michigan, for the last twenty years.

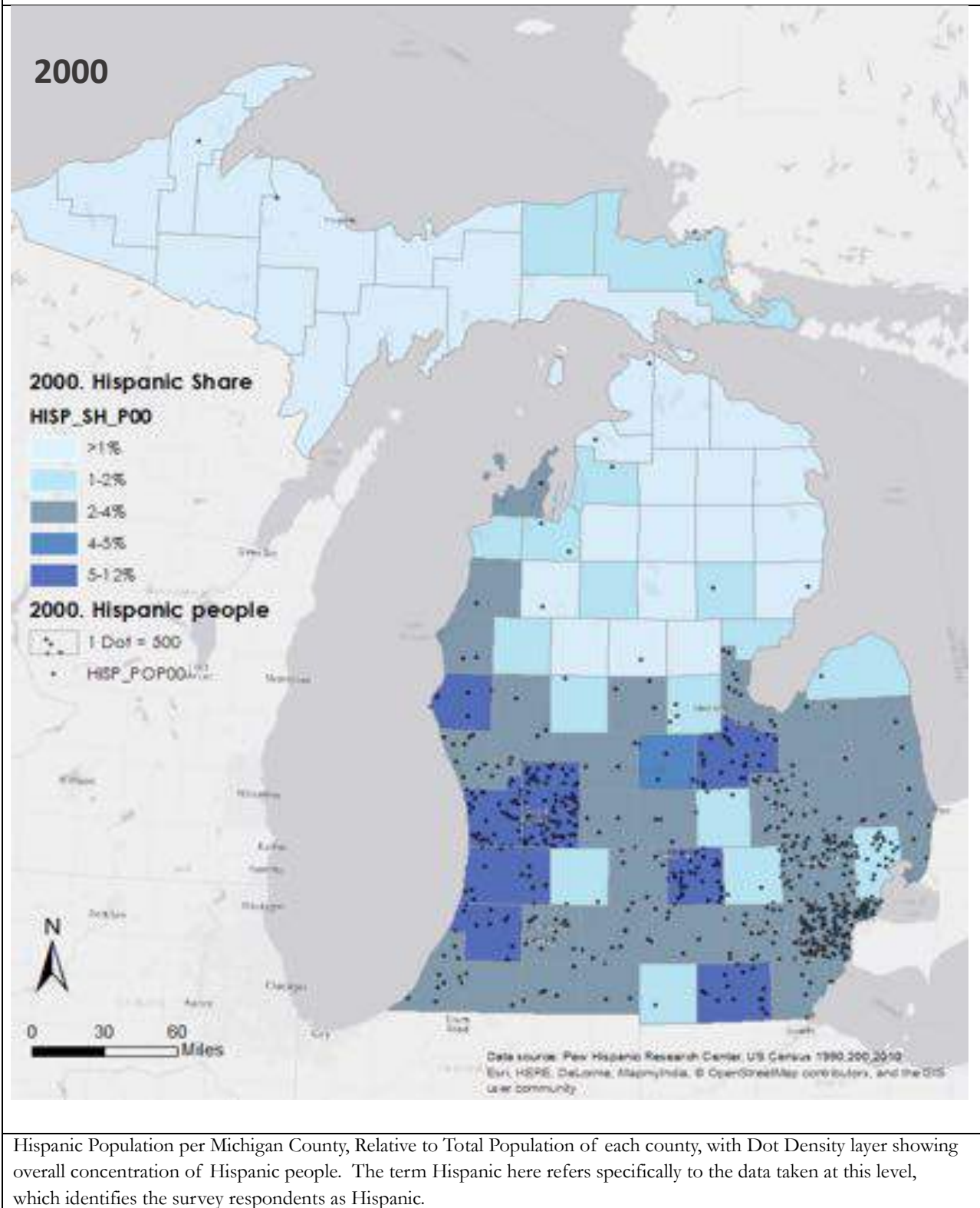


**Figure 3:** Hispanic Population per Michigan County, 1990



Hispanic Population per Michigan County, Relative to Total Population of each county, with Dot Density layer showing overall concentration of Hispanic people. The term Hispanic here refers specifically to the data taken at this level, which identifies the survey respondents as Hispanic.

**Figure 4:** Hispanic Population per Michigan County, 2000



Hispanic Population per Michigan County, Relative to Total Population of each county, with Dot Density layer showing overall concentration of Hispanic people. The term Hispanic here refers specifically to the data taken at this level, which identifies the survey respondents as Hispanic.



As expected, the growth has not been homogeneous across counties. In ten counties the Hispanic share of the population has remained less than 1%; most of these counties are located in the Upper Peninsula and the northern part of the Lower Peninsula. Oscoda County, which is closer to the bridge to the Upper Peninsula than to Bay City, is the southernmost county in those counties. The regions with the largest population increases are located in Southwest Michigan. Oceana County has among the largest shares of the Hispanic/Latino population in the entire State for 2010. These maps suggest that Hispanic/Latino people might be more visible in Grand Rapids than in Detroit, for example. The four counties with higher Hispanic/Latino shares of the population were from 8 to 14% of the population. Oceana County experienced the biggest change because in 1990 the Hispanic population represented 6% and twenty years later it was 14%. The county of Van Buren increased from 3.2%, to 7.3% in 2000, to 10.17% in 2010. Also, Kent rose from 2.9% in 1990 to 6.9% ten years later to 9.69% in the last census.

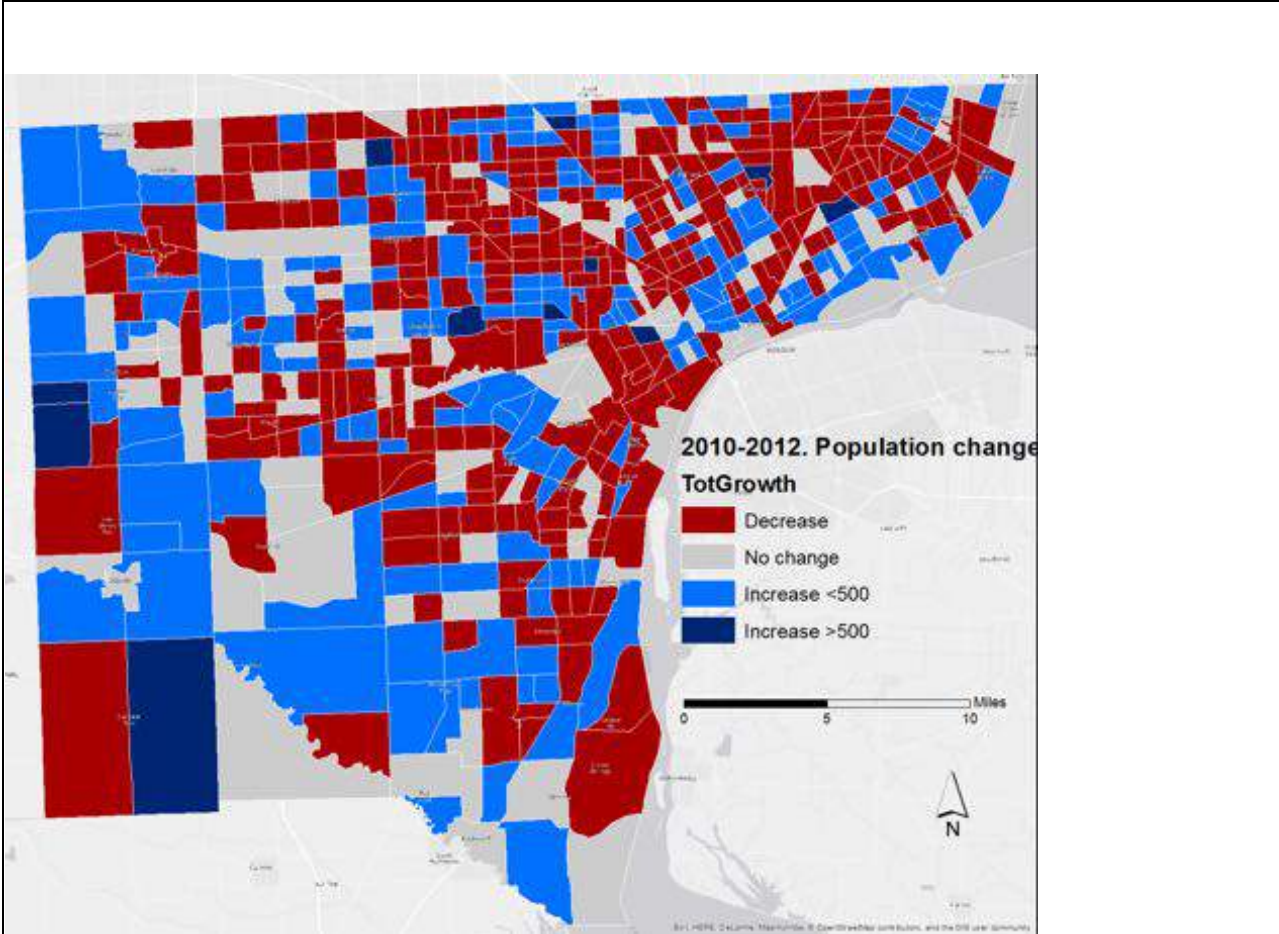
Two hypothetical implications can be raised from our findings. First, the Hispanic population has experienced an increase in almost every Michigan county, and this is quite observable at the county level. Second, the Hispanic/Latino representation has become bigger in the areas located in Michigan's south, especially the southwestern and south-central parts of the State, even though Detroit and Wayne County still hold the biggest concentration of Hispanic population.

### Wayne County

As shown in Figure 6, Detroit's population change is a mixed story. Census tracts show decreases and no population changes more often than they show positive movement of any magnitude. Figure 7, on the other hand, shows where the Hispanic/Latino population has grown throughout Wayne County, compared to the changes in total population. For the historic Mexicantown area, outlined in black within Figure 7, the story is not clear on how some areas have growth while others have declined in total population. The majority of heavily Hispanic-populated areas are experiencing a growth in population, even if the overall population is falling.

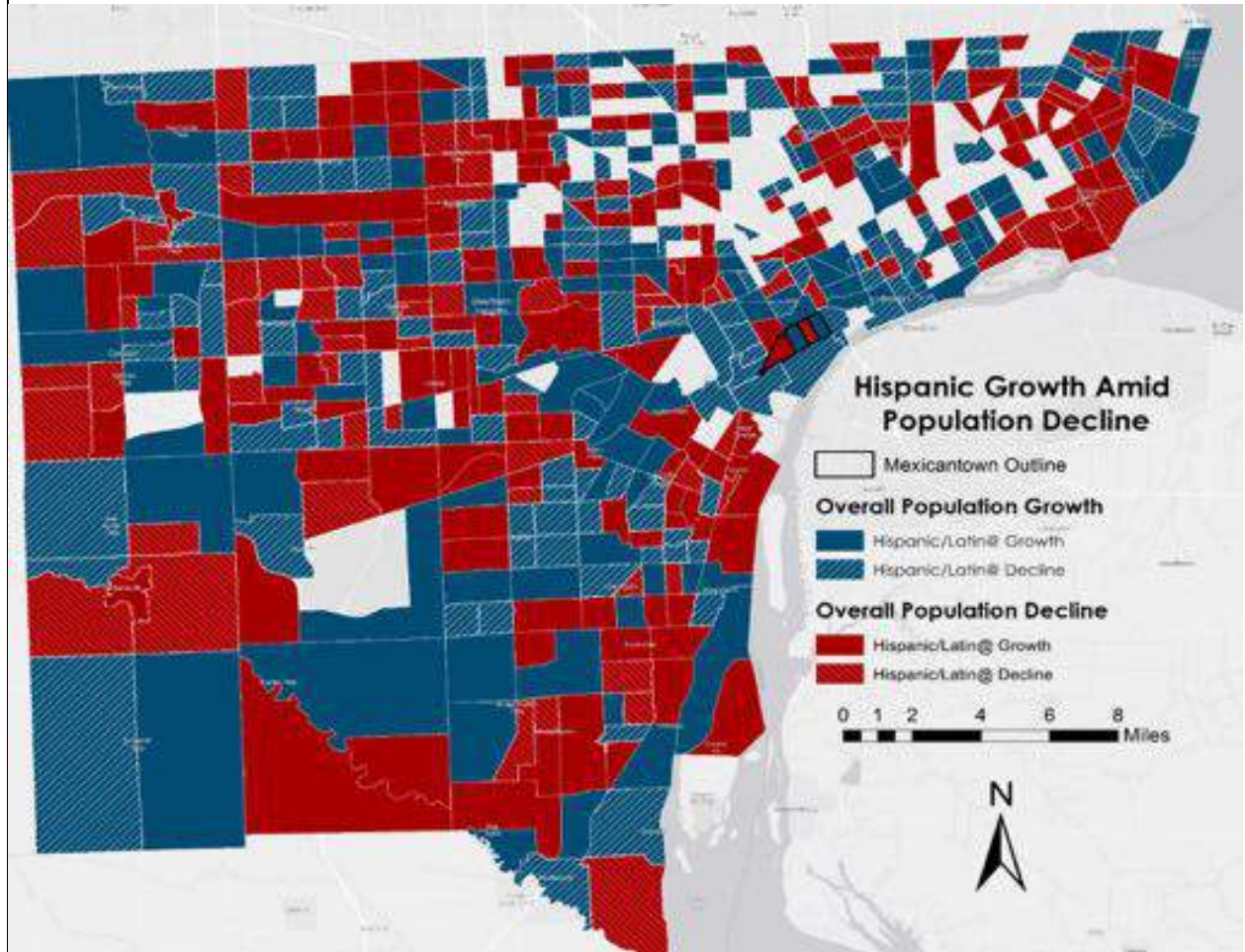
As discussed earlier in *Methodology*, since this is a random sampling of the population over two 60-month sampling periods, we can generalize to the whole of Wayne County, including undocumented residents. To understand if the growth of populations rests on immigration or on natural population growth, we look to the ACS's age data and place of birth indicators to understand the primary status of children in Wayne County regarding their nationality. For the Mexicantown area, immigrant children under five are outpacing the growth of state born children while Hispanic population grows in half of the districts; the other half is split into either growth or decline in Hispanic/Latino population and displays prevalence of Michigan-born growth. The growing Hispanic areas around Mexicantown also do not seem to conform to a single narrative, wherein all of them have increasing Hispanic/Latino populations but vary between Michigan-born and Foreign-born prevalence in children under five.

**Figure 6:** Overall Population Growth, Wayne County



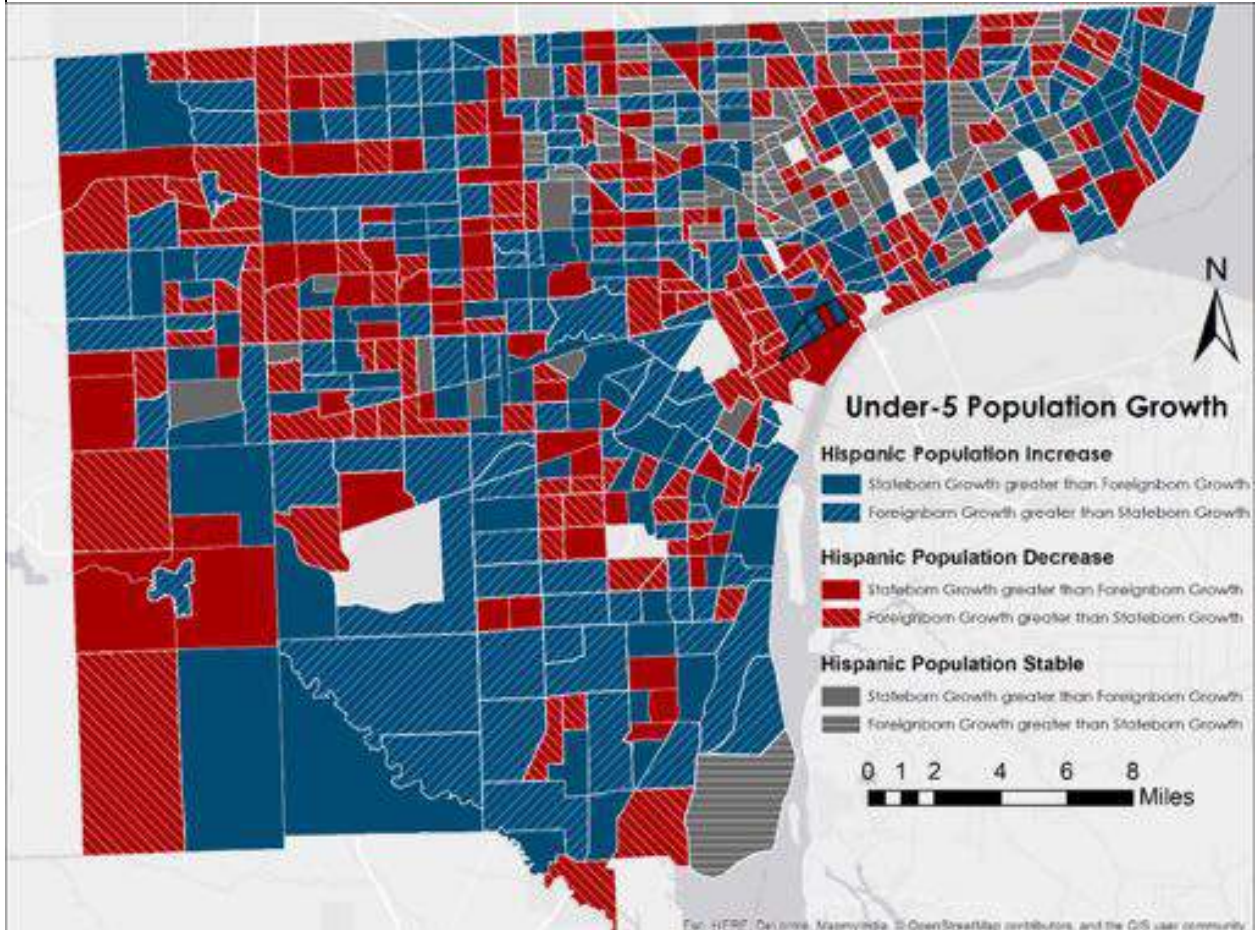
Overall Population Growth by Census Tract, Wayne County, Michigan. A majority of census tracts show no change or decrease in total number of people between the estimated periods given by 2010 and 2012 ACS estimates.

**Figure 7:** Hispanic change across population change



Hispanic/Latino Growth Amid Population decline. Color indicates total population movement, blue for increasing population and red for decreasing, while added textured hatching indicates where Hispanic and Latino population is declining; solid colors indicate that Hispanic and Latinos in that tract are increasing in total number.

**Figure 8:** Hispanic/Latino Children Under Age 5 and State-born vs. Foreign-born growth per census tract



Colors indicate Hispanic/Latino growth in terms of children under the age of 5: blue where population of Hispanic/Latino children increase, red where they decrease, grey where the population has not changed. Solid colors indicate that more children of this age bracket were born within the State of Michigan as opposed to being foreign-born, while textured hatching indicates that more children were born outside of the United States compared to children whose birthplace is Michigan.

The gray areas of the map tend to be areas where there was minimal Hispanic/Latino residence in earlier analyses, as well as areas of industry with no residences whatsoever.

Without a cohesive narrative formulating within the trends, it is obvious that more in-depth analysis needs to be done to determine whether the growth is from immigration or from natural population growth. The County-level visualizations need more context and data to explain the observed trends.

## Conclusion

There is growth in the Hispanic/Latino population of Michigan in terms of raw numbers and direction, while Wayne County and Mexicantown defy a single overarching narrative. Detroit may be shrinking in terms of overall population still to this day, but for whom it is actually shrinking remains unclear. Yet the common narrative of Detroit shrinking and Michigan population growing is challenged by our findings. There are enough divisions for us to see that Wayne County has population shifts even within Mexican and Hispanic/Latino communities, with general population growth. The most densely populated areas of Detroit, including Mexicantown, are seeing growth in the Hispanic population, and the trends from the decennial census show us that is likely to remain the case.



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