

SPATIAL SEGREGATION OF IMMIGRANTS IN U.S. CITIES: EVIDENCE FROM THE UNITED STATES CENSUS

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Abstract

The paper analyzes the spatial segregation of immigrants in U.S. cities. Using the data from the United States Census on, preliminary, Asian-born individuals, we run a comprehensive analysis of immigrants' herding and allocation in 23 U.S. major cities.

The results demonstrate there are no areas with high unemployment and a high share of Asian-born individuals. Furthermore, we find a negative correlation between unemployment and the share of foreign-born individuals. The results point out that Asian-born migrants are sensitive to unemployment rates when they chose an area to live, and that they might intentionally avoid areas with exceptionally high unemployment rate. It also might imply that Asian-born migrants in United States tend to work harder than the representatives of other migrant groups, and do not represent a burden for social welfare systems. We assume that these findings also hold for other groups of immigrants in major U.S. metropolises.

Keywords Spatial segregation, urban studies, demography, migration, labor market, United States.

1. INTRODUCTION

For quite some time now, geographers and demographers have attempted to explain why some urban areas (typically in large cities) attract higher shares of foreign born individuals than other areas (see e.g. Park and Iceland, 2011; Zhang, 2011; Rérat, 2012; MacDonald and Sampson, 2012; Duarte and Sabaté, 2013; Pissourios, 2013; or Hall, 2013). It appears very interesting to understand what shapes migrants' decisions in which areas they want to settle down. On the other hand, these decisions might be effectively channeled and targeted by the urban development policies aiming at ameliorating certain neighborhoods and city areas.

There are different plausible theories that could give a hint on how immigrants make this kind of decision. It is reasonable to say that most immigrants come to the U.S. to improve their economic situation. Therefore, this paper hypothesizes that there is a correlation between the share of foreign born individuals and the rate of unemployment within a metropolitan area. Therefore, it seems that metropolitan areas with a lower rate of unemployment should have a higher share of foreign born individuals. For the sake of simplicity, our paper employs the data about Asian-born individuals in U.S. In order to analyze the above-mentioned relationship, we use the 2010 U.S. Census data.

The rest of the paper is structured as follows: Section 2 provides a concise literature review on the factors that shape immigrants' decisions on the selection of urban areas for settling down. Section 3 describes the data and methods. Section 4 outlines main results and discusses their implications. Finally, section 5 provides overall conclusions and policy implications.

2. FACTORS INFLUENCING IMMIGRANTS' SELECTION OF AREAS

Over time, various researchers found different factors that influenced immigrants in their decisions in which part of a country they want to settle down. One of the first attempts to explain how enclaves and Diasporas form was the so-called "Schelling segregation model" that presented a mathematical model of how white and non-white migrants move around in the hypothetical city before the balance is reached – the resulting set-up is surprisingly very similar to the real-life situation in large U.S. cities, like Philadelphia, or Chicago (see e.g. Crooks, 2010; or Baldwin et al., 2013).

The majority of studies agree are in accord that an area with a high share of people that were born in a foreign country tends to attract further immigration (Zavadny, 1997; Clark and Blue, 2004; Park and Iceland, 2011; or Rasoolimanesh et al., 2013). Some studies from the late 1990s also point out that there might be a relation between immigration and the generosity of the local welfare system (Borjas, 1999). This basically means that immigrants take their economic opportunities into consideration when they decide where to settle down.

Considering this it makes a lot sense that several researchers found negative correlations between unemployment rates and an area's share of foreign born population. Åslund (2005), Jaeger (2000), Glaeser and Shapiro (2003), Glaeser et al. (2006), Zhang (2011), or Otto and Steinhardt (2014) unanimously conclude results like that from their studies. Åslund (2005) not only states that foreign born people prefer to settle down in areas with low unemployment rates he also points out that immigrants that move to different areas after arriving in a new country are likely to move to an area with less unemployment. Meaning unemployment is not only important for immigrant's initial choice where to life.

Further, Åslund (2005) points out that people from different countries have different sensitivities towards unemployment rates. Within the US he finds people from the Middle East and South America to be most sensitive to local unemployment rates. (Glaeser and Shapiro, 2003) state that during the 1990s cities with unemployment rates above 10 percent on average only grew with rates below 3 percent while cities with unemployment rates below 5 percent grew on average with a rate of 21 percent. They partly explain this by saying that areas with a robust labor market have a general appeal.

While most researchers find that low unemployment rates attract migration from foreign countries and different areas within the US there are studies that have different results. Zavodny (1997) finds that high unemployment attracts immigration while an economy that is dominated by manufacturing businesses discourages immigrants. Since those relations seem to be illegitimate, Zavodny (1997) believes that they are not robust but denies that there is a relationship between unemployment and immigration. She states that only the amount of fellow countrymen immigrants expect to meet in an area influence where they are going to settle down.

If immigrants move to areas with low unemployment, one can conclude that they are not attracted by social safety net programs, but prefer to get a job and earn their own money. The vast majority of researchers agree that immigrants prefer to live in an area where they are with as many people as possible that originally come from their home country. Concerning the relation between unemployment and immigration a high share of researchers find that immigrants prefer areas with good economic possibilities and a low unemployment rate. Nevertheless, there are researchers that use data that indicates a positive relation between unemployment and immigration.

3. DATA AND METHODS

For the empirical analysis presented in this paper, we use the data from the United States 2010 Census. The data was collected by the Census Bureau and contains variables like the total amount of foreign born individuals, population change, race, age, housing, employment, and more. It can be used to analyze social and economic issues for the United States for the given year. The first census goes back to 1790 and since then there was a census every 10 years. To collect the data the Census Bureau mailed 98 million forms to households in the US and delivered 22 million forms extra to households that can't be reached by mail. There was a long and a short form. Due to the immense effort the data set contains information about a very high percentage of the US population. There are several summary files for the data. The data used for our empirical analysis are sample data from summary file 3 from long form questions.

To support or reject our hypothesis of whether the unemployment of a certain region is a determinant that immigrants consider when they decide in which region of the US they want to settle down, we create and compare a model with two variables. The first variable (ΔA) we create for that purpose is the percentage of individuals born in Asia in a region. Therefore, we divide the total number of individuals born in Asia in a region (A_i) through the corresponding total population (TP). The following relationship (1) describes this procedure:

$$\Delta A = A/TP \quad (1)$$

The second variable (X) we need to create for our empirical analysis is the unemployment rate (Ur). In order to create this variable, we subtract the sum of employed people (E) from the labor force (LF), and afterwards divide the result by the total amount of people in the labor force (TA). This procedure can be described by the following formula (2):

$$Ur = (LA-E)/TA \quad (2)$$

Following that procedure, we execute the scatter plot between our variables ΔA and Ur . The obtained relationship enables us to identify the interdependence between these two variables.

4. RESULTS AND DISCUSSIONS

The scatter plot shows a slightly positive correlation between unemployment rate (x-axis) and the share of Asian-born individuals (y-axis). The plot is presented in Figure 1.

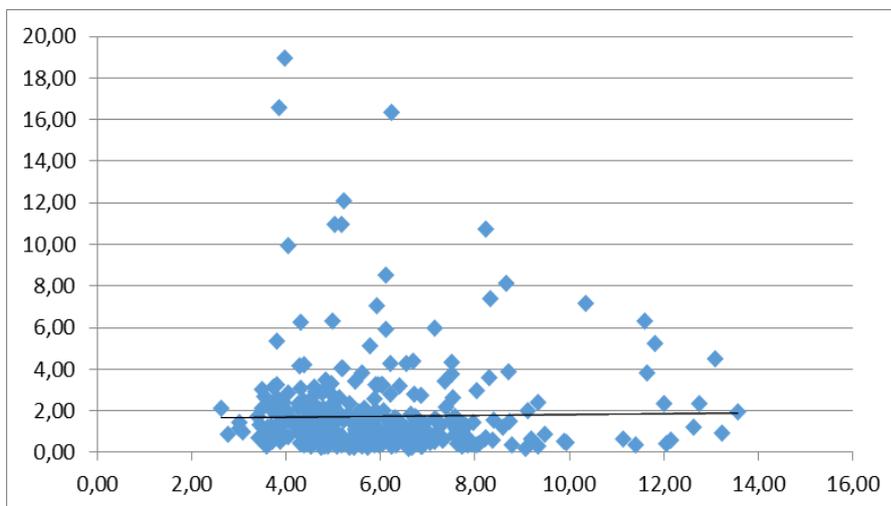


FIGURE 1 - UNEMPLOYMENT ANALYSIS

Note: y-axis: share of Asian-born individuals; x-axis: unemployment rate

Source: Own results

The vast majority of the dots are on the bottom left part of the scatter plot. The others are either on the upper left side or the lower right side. There are no dots on the upper right side. This means that there are areas with low unemployment rate and low share of Asian-born individuals, areas with low unemployment and high share of Asian born individuals and areas with high unemployment rate and low share of Asian-born individuals. Remarkably there are no areas with high unemployment and high share of Asian born Individuals.

Every dot in the scatter plot has the same importance for the trend curve. This means that one single person settling down in a small city where she/he is the only Asian-born individual is equally important for the trend curve than 300 000 Asian-born individuals settling down in another area. This leads to a bias in the trend curve.

To avoid this bias we look at a second scatter plot that takes only the ten areas into account which have the highest total amount of Asian born individuals. The new scatter plot includes data for 36 percent of the Asian born individuals.

The scatter plot shows a clear and strong negative correlation between unemployment and the share of Asian-born individuals (see Figure 2).

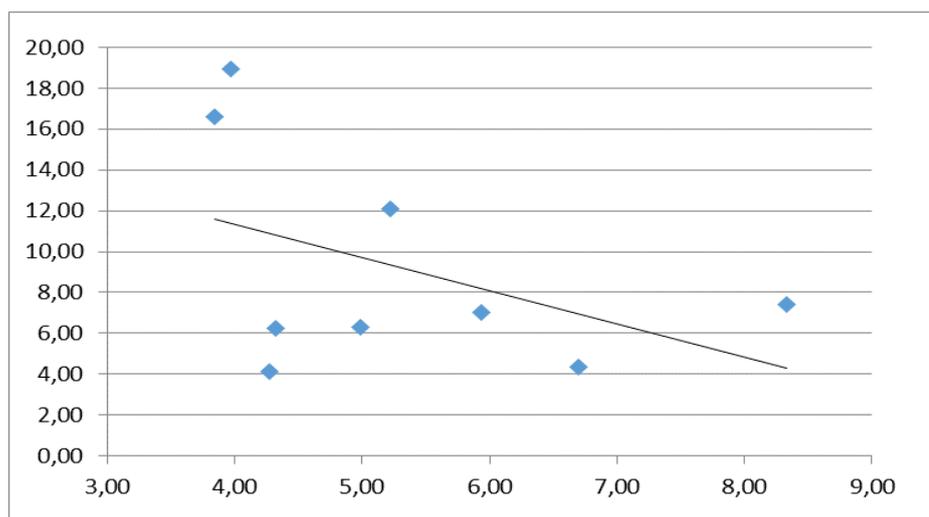


FIGURE 2 - UNEMPLOYMENT ANALYSIS FOR AREAS WITH HIGHEST TOTAL NUMBER OF ASIAN-BORN INDIVIDUALS

Note: y-axis: share of Asian-born individuals; x-axis: unemployment rate

Source: Own results

Together the scatter plots yields a very comprehensive picture. First of all, there are no areas with high unemployment and a high share of Asian-born individuals. When we look at the second scatter plot we find that there is a negative correlation between unemployment and the share of foreign born individuals.

These findings seem to provide evidence that Asian-born migrants are sensitive to unemployment rates when they chose an area to live and especially avoid areas with exceptionally high unemployment rate. It seems rational to assume that this kind of findings hold for other groups of immigrants or people in general (see e.g. Strielkowski et al., 2014). It might also be that Asian-born migrants in United States tend to work harder than the representatives of other groups of migrants and rarely depend on social welfare. Asian-born migrants are notoriously known for their hardworkingness, patience and devotion. These findings make a lot of sense for several reasons. Today's world is seeing a lot of changes in the economic structure. Many kinds of jobs can be outsourced to other countries or even continents using modern communication tools like the Internet. Therefore, it is very important for individuals to have skills that separate them from others (see e.g. Čábelková and Strielkowski, 2013). The foundation for being able to obtain such skills is education. Since rich areas with low unemployment tend to have better education systems it makes a lot of sense for immigrants to choose those areas to settle down.

Additionally, it makes a lot of sense that immigrants avoid areas with really high unemployment rates. It is not only difficult to find a job there but also people living in those areas are likely to be affected in a bad way by their neighborhood. A child that grows up in a neighborhood where a lot of grownups are unemployed might learn that there is nothing unusual or bad about being unemployed. This, in turn, might lower her or his effort in school and therefore have negative influence on the child's future life. Quite often, there is a lot of desperation in the residential areas that is holding people down and is preventing them from using all their creativity and potential.

5. CONCLUSIONS

Although our results seem to be backed up by the evidence from the real life, there are some arguments that could cast doubt on the quality of the evidence. First of all, it is surprising that there is a positive correlation in the first scatter plot. Moreover, the unemployment data do not take into account that maybe when the immigrants moved to a place the unemployment rate was different. This could cast doubt on whether the correlation does mean anything. Can today's unemployment rate really have been a factor for an immigrant's decision in the past? Furthermore, it is not clear in which direction a possible causation works. It may very well be that the immigrants do not choose an area with low unemployment but cause low unemployment in an area by stimulating the local economy with their skills. For example immigration could lead to higher density which could have positive effects on the economy and the employment situation.

Despite all those doubts, both the results obtained from using the U.S. Census data and the common sense indicate that Asian-born migrants and most likely all immigrants tend to prefer areas with low unemployment. Specifically, a clear relationship apparent from the second scatter plot seems to provide some solid indication for that. Large U.S. cities with their vast employment opportunities act like magnets that draw migrants from afar and help to level out the regional disparities and differences throughout the vastly-populated areas.

REFERENCES

- Åslund, O. (2005). Now and forever? Initial and subsequent location choices of immigrants. *Regional Science and Urban Economics*, 35(2), 141-165
- Baldwin, W. C., Boardman, J. T., & Sauser, B. J. (2013). Expanding a system of systems model with the Schelling segregation model. *Systems Research and Behavioral Science*, 30(1), 65-75
- Borjas, G. J. (1999). The economic analysis of immigration. *Handbook of labor economics*, 3, 1697-1760
- Clark, W. A., & Blue, S. A. (2004). Race, class, and segregation patterns in US immigrant gateway cities. *Urban Affairs Review*, 39(6), 667-688
- Crooks, A. T. (2010). Constructing and implementing an agent-based model of residential segregation through vector GIS. *International Journal of Geographical Information Science*, 24(5), 661-675
- Čábelková, I., & Strielkowski, W. (2013). Is the level of taxation a product of culture? A cultural economics approach. *Society and Economy*, 35(4), 513-529
- Duarte, F., & Sabaté, J. (2013). 22@ Barcelona: creative economy and industrial heritage – a critical perspective. *Theoretical and Empirical Researches in Urban Management*, 8(2), 5-21
- Florida, R. (2003). Cities and the creative class. *City & Community*, 2(1), 3-19
- Glaeser, E. L., & Shapiro, J. M. (2003). Urban growth in the 1990s: Is city living back? *Journal of regional science*, 43(1), 139-165
- Glaeser, E. L., Gyourko, J., & Saks, R. E. (2006). Urban growth and housing supply. *Journal of Economic Geography*, 6(1), 71-89
- Glitz, A. (2012). The labor market impact of immigration: A quasi-experiment exploiting immigrant location rules in Germany. *Journal of Labor Economics*, 30(1), 175-213
- Hall, M. (2013). Residential integration on the new frontier: Immigrant segregation in established and new destinations. *Demography*, 50(5), 1873-1896
- Jaeger, D. A. (2000). Local labor markets, admission categories, and immigrant location choice. *Manuscript, College of William and Mary*
- MacDonald, John, and Robert J. Sampson. "The World in a City Immigration and America's Changing Social Fabric." *The ANNALS of the American Academy of Political and Social Science* 641.1 (2012): 6-15
- Otto, A. H., & Steinhardt, M. F. (2014). Immigration and election outcomes—Evidence from city districts in Hamburg. *Regional Science and Urban Economics*, 45, 67-79

- Park, J., & Iceland, J. (2011). Residential segregation in metropolitan established immigrant gateways and new destinations, 1990–2000. *Social Science Research*, 40(3), 811-821
- Pissourios, I. A. (2013). Whither the planning theory–practice gap? A case study on the relationship between urban indicators and planning theories. *Theoretical and Empirical Researches in Urban Management*, 8(2), 80-92
- Rasoolimanesh, S. M., Badarulzaman, N., & Jaafar, M. (2013). A review of city development strategies success factors. *Theoretical and Empirical Researches in Urban Management*, 8(3), 62-78
- Rérat, P. (2012). The New Demographic Growth of Cities The Case of Reurbanisation in Switzerland. *Urban Studies*, 49(5), 1107-1125
- Strielkowski, W., Hejlová, D. & Kisileva, L. (2014). Economic factor influencing wellbeing and the quality of life. *Journal of Applied Economic Sciences*, 9(3), 487-493
- Wozniak, A., & Murray, T. J. (2012). Timing is everything: Short-run population impacts of immigration in US cities. *Journal of Urban Economics*, 72(1), 60-78
- Zavadny, M. (1997). Welfare and the locational choices of new immigrants. *Economic and Financial Policy Review*, (Q II), 2-10
- Zhang, J. (2011). Tipping and Residential Segregation: A Unified Schelling Model. *Journal of Regional Science*, 51(1), 167-193