UNDERSTANDING THE DEMOGRAPHIC HURDLES TO REVITALIZE SAINT LOUIS

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INTRODUCTION

Saint Louis is one of the great iconic cities in the United States. The legacy and historical influence of Saint Louis is not in question. A list of the great attributes of Saint Louis will make any resident proud (e.g., the Gateway Arch, The Botanical Gardens, Forest Park, or the Soulard Farmer’s Market). Despite these great accomplishments, Saint Louis is an under-studied city when compared to Chicago, New York, and Los Angeles. A quick search on Sociological Abstracts or JSTOR reveals the paucity of serious intellectual thought on the current state of quality of life, economic development, or social theory related to the unique characteristics of Saint Louis.2

Coupled with the paucity of peer-reviewed scholarly knowledge about the city, there is a folk knowledge about the city3 partly fostered by residents in the

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2. I did a search in Sociological Abstracts using the words “St. Louis” and “Saint Louis” with the word “demography.” In the past forty years there were no articles listed for peer reviewed or scholarly articles. This same strategy was applied to Chicago and New York. Using 1970 as the baseline, I found seventeen articles for Chicago and 48 articles for New York. For an explanation of the Abstracts, see CSA Sociological Abstracts, PROQUEST, http://www.csa.com/factsheets/socioabs-set-c.php (last visited Apr. 22, 2014) (search conducted by the author).

3. See Michael Banton, Analytical and Folk Concepts of Race and Ethnicity, 2 ETHNIC AND RACIAL STUD., no. 2, Jan. 1979, at 129 (In the social science literature there is a distinction between folk and analytical knowledge. Folk knowledge can be defined as knowledge that is
city and in the suburbs, which is driven in large part by pseudo-scientific studies that rate the city as one of the most dangerous cities or most sinful cities in the United States. The inability of city leaders to marshal the intellectual courage and imagination to refute these pseudo-scientific studies greatly contributes to a widespread belief that city is a dangerous place to live, which thus reinforces population, economic, and cultural movements to the suburbs.

Figure 1 shows the population trends for Saint Louis from 1840 to 2010. This figure shows that Saint Louis was an important population destination, as the population increased from 1840 to 1950. After peaking in 1950, the population for the city has continued to decline in every census. The majority of the decline can be attributed to whites leaving the city. Why after 1950? In 1954, the Supreme Court ruled in Brown v. Board of Education that racial segregation in public schools was unconstitutional.

Over the past sixty years Saint Louis has lost 537,503 (63%) residents. Demographically speaking this is an extraordinary demographic change. Population growth and stability are major elements that are needed to maintain derived from assumptions, rumors, or experience. Analytical knowledge is derived from the scientific method.


6. See infra Figure 1.

7. See infra Figure 1.

8. POPULATION DIV., U.S. CENSUS BUREAU, 2012 POPULATION ESTIMATES 2 (May 2013), available at http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2012_PEPANNRSIP.US12A&prodType=table (according to the latest data from the United States Census, the 2011 and 2012 population estimates show a decline from the 2010 census count of 319,294 residents, as the 2011 and 2012 estimates were 318,563 and 318,172, respectively).


12. See infra Figure 1 (calculation by author). Data is from the decennial U.S. censuses from 1840 through 2010. To view the decennial U.S. censuses, see Census of Population and Housing, U.S. CENSUS BUREAU, https://www.census.gov/prod/ www/decennial.html (last visited Apr. 22, 2014) [hereinafter Decennial Censuses].
a socially and culturally viable and economically competitive city.13 When the 2010 census numbers were released, there was widespread disappointment among city leaders who were convinced that the population loss had reached its nadir point and that the city was gaining population.14

In my opinion, this mythical belief of population growth can be traced to the fact that there is a dearth of peer-reviewed scientific studies that investigate the demographic transitions in Saint Louis. Rather, the mythical belief that all is well in Saint Louis stems from city leaders, academics, and community activists relying on anecdotal evidence to maintain the status quo.15 Many of these individuals have failed to take the necessary time to critically reflect on the challenges facing the city.

The motivation for this paper is to provide an honest and reflective analysis of demographic transitions in Saint Louis. This analysis will be framed around two central demographic concepts: (1) demographic hurdles16 and (2) demographic dividends.17 Demographic hurdles and dividends are connected to three core demographic transitions: (1) births, (2) deaths, and (3) migration.18 To understand the social and economic vitality of Saint Louis, it is important to understand the stability of births, deaths, and migration.19 From a demographic standpoint, births, deaths, and migration are important to the development of a society and contribute to a demographic transition.20 If any of the three core demographic transitions start to get out of equilibrium, then they can disrupt social and economic processes. An effort to restore the equilibrium can be viewed as a demographic hurdle.21 Once a society gets over the demographic hurdles that have hampered economic or social growth, it will start to receive the demographic dividends of healthy demographic

14. Doug Moore, Jeremy Kohler, & Paul Hampel, Census Shows City is ‘Hollowing out,’ ST. LOUIS POST-DISPATCH, Feb. 25, 2011, at A1 (quoting Mayor Francis Slay, “We had thought, given many of the other positive trends, that 50 years of population losses had finally reversed direction.”).
15. See, e.g., Botanical Heights, CITY OF ST. LOUIS, MO, https://stlouis-mo.gov/neighborhoods/profile.cfm?neighborhood=Botanical%20Heights (follow “Census Data” hyperlink; then select “McRee Town” for “Neighborhood”) (last visited Apr. 22, 2014) (showing that community leaders’ belief that redevelopment of a neighborhood will lead to success is wrong because even that cannot stop population decline).
17. See id. at 56.
18. See infra Figure 2; Weeks, supra note 13, at 27.
19. See Weeks, supra note 13, at 27.
20. Id.
21. The magnitude of unhealthy demographic transitions can give us a sense if the hurdle is low or high.
transitions. For Saint Louis, the most important demographic hurdle that it must get over is the out-migration of residents. If the city can show positive gain in the population, then Saint Louis can expect to enjoy some dividends from this growth. In this paper, I will make four arguments: (1) Saint Louis is nearing the end of population loss; (2) out-migration is outpacing internal population momentum in Saint Louis; (3) Saint Louis is ageing; and (4) there is a dueling pattern of population change within Saint Louis.

I. NEARING THE END OF POPULATION LOSS

Figure 3 shows the population changes for racial and ethnic groups from 2000 to 2010. The good news is that Hispanic, Asian, and Multiracial residents grew in Saint Louis. However, all other racial groups experienced a decline in population during this same time period. What do these percent changes really mean? Figure 4 puts these percent changes into perspective. Although the Hispanic, Asian, and Multiracial populations grew, together they only added 7,157 new residents. This compares to the loss of 14,634 white residents and 21,061 black residents.

Using the population numbers from 2000 and 2010 for males and females, I created a population cohort component model. This model computes how many residents will be added or subtracted over the next ten years, based on the birth, death, and migration rates for all male and female age cohorts. The model shows that the projected population for Saint Louis in 2020 will be 317,411, if birth, death, and migration rates remain at the levels from 2000 to

23. These demographic dividends could be demand for new housing, demand for more restaurant and cultural activities, redevelopment of parks, etc.
24. See infra Figure 3.
26. See infra Figure 3; ST. LOUIS CITY REP., supra note 25.
27. See infra Figure 4.
29. See infra Figure 4; CENSUS 2010-PL 94 DATA, supra note 28.
30. See generally RICHARD E. KLOSTERMAN, COMMUNITY ANALYSIS AND PLANNING TECHNIQUES 53 (1990) (explaining the methodology for the Age Cohort Component Model).
31. Id.
2010. What does this mean? Saint Louis will continue to lose population. However, the news is not bad. The age cohort component model projects a 1,883 population loss. This would be the smallest amount of population decline since the 1950 decline.

II. OUT-MIGRATION OUTPACES INTERNAL POPULATION MOMENTUM

Even though Saint Louis is losing residents, there are some positive demographic transitions. Perhaps the most important demographic fact (that gets overlooked) is that the city has positive internal population momentum. Simply analyzing the number of births and deaths, one can understand how much momentum a population has based on fertility rates. Saint Louis had a population momentum factor of 5. This means that if there was no in-migration or out-migration of residents, Saint Louis should have experienced an increase of 17,000 residents from 2000 to 2010. Instead of reporting a population of 365,200, the city reported a population of 319,294, a gross loss of 45,906 residents, which exceeds the net loss 28,906 residents (see fig. 6). By taking into account internal population momentum, the amount of residents leaving the city is far greater than what is being reported in the popular media.

Figure 7 provides a detailed analysis of the demographic trends of migration by age cohort for males and females. This figure is interesting because it highlights the complex nature of migration along the age

32. See infra Figure 5; NET MIGRATION COMPONENT OF CHANGE, MO. CENSUS DATA CTR., http://mdc.missouri.edu/cgi-bin/broker?_PROGRAM=websas.poptrend1.sas&_SERVICE=sa sapp&st=29 (last visited Apr. 22, 2014).
33. It is important to point out that the relative small population decline falls within the margin of error. What does this mean? It is statistically possible that Saint Louis could experience a small increase in population, if there is a small increase in births or small decline in out-migration.
34. WEEKS, supra note 13, at 53.
35. The formula for the Population Momentum Factor (PMF) is:
\[ PMF = CBP*E \]
\[ CBP = Proportion of Crude Births \]
\[ E = Life Expectancy \]
36. Calculation was derived by Author. E.g., .05*348200=17,410.
37. NET MIGRATION COMPONENT OF CHANGE, supra note 32.
continuum. For most age cohorts, the migration factors are negative, meaning that most age cohorts experienced a loss of people after taking into account births and deaths. There were three age cohorts for male and females that had positive migration factors, 20-24, 25-29, and 30-34. This is to be expected as Saint Louis offers many cultural and entertainment activities for these age cohorts. The figure also shows negative age cohort migration factors for all residents under 20 years of age for males and females.

The results from this analysis should provoke the reader to ask follow-up questions about the internal demographic makeup of the city. In particular, what does it mean if the city is losing its youngest age-cohorts? What will happen to the schools and the playgrounds? More importantly, how will this impact internal population momentum, which is one of the most important demographic assets of city? If young mothers from 15 to 19 start to leave the city, en masse, it is possible that the city will experience a decline in population momentum and once this happens it is difficult to turn this demographic process around.

III. SAINT LOUIS IS AGEING

One of the consequences of young cohorts leaving the city is that the city gets a little older. Figure 8 shows a population pyramid for 1970 and 2010 for Saint Louis. The 1970 side of the pyramid shows a city that has a vibrant population base with strong population momentum from the young age cohorts. The largest age cohorts were under 20 and younger, with the largest age cohort being 10-14 years old. However, by 2010, the pyramid shows a significant change in the internal structure of the age of the population. The youngest age cohorts were no longer the largest part of the population. The largest age cohorts were residents in the college year age cohorts.

40. This analysis could be more complex if I did for each racial group. See infra Figure 7.
41. See infra Figure 7.
42. See infra Figure 7.
44. Calculation derived by Author. The migration data was calculated using the 2000 and 2010 Decennial Census STF 1 database.
46. See infra Figure 8.
47. See infra Figure 8.
48. See infra Figure 8 and sources cited.
49. See infra Figure 8.
50. See infra Figure 8 and sources cited.
51. See infra Figure 8 and sources cited.
measure the change in the internal structure of the population, demographers use the index of dissimilarity. If there is no change in the cohorts, the index will be 0. This means that the percent in age-cohorts in 1970 would be the same in 2010. As the index moves from 0, the greater the change in age cohorts. The index of dissimilarity for the 1970 and 2010 age cohorts was 0.16. This means that there has been a 16 percentage point change along the age distribution. This is a rather significant change given that births and deaths are stable demographic processes. The magnitude of change in the index of dissimilarity derives from migration, and in the case of Saint Louis it is out-migration.

IV. DUELING PATTERN OF POPULATION CHANGE

As I mentioned earlier in this paper, Saint Louis had a net loss of 28,906 residents from 2000 to 2010. However, the story of population decline in Saint Louis is more complicated. Migration is a bi-directional process. Every year residents move into and out of Saint Louis. Between 2000 and 2010, Saint Louis was home to 13,777 new residents. However, 42,683 residents left the city during this time period. Thus, the number of residents leaving the city was greater than the net loss 28,906. Figure 9 shows the population change by census block groups. While many parts of the city experienced a net loss of residents, some parts of the city experienced a net gain in residents. An interesting pattern emerged when examining the population in declining block groups. There was a loss of 27,441 black residents and 18,322 white residents.

52. For a discussion of the index of dissimilarity, see DONALD T. ROWLAND, DEMOGRAPHIC METHODS AND CONCEPTS 95–96 (2003).
53. Id.
54. Id.
55. See infra Figure 8 (calculation by author).
56. E.g., DONALD T. ROWLAND, supra note 52, at 24.
57. See infra Figures 1, 7.
58. See infra Figure 1 (calculation by author).
60. Id.
61. This number is different from the previous number mentioned in this paper because it does not include the internal population numbers. This decline number relies on the 2000 and 2010 census counts. See Decennial Census: 2010 Redistricting Data [Public Law 94-171] Summary File, U.S. CENSUS BUREAU, http://factfinder2.census.gov/faces/nav/jsf/pages/programs.xhtml?program=dec (follow “get data” hyperlink) (last visited Apr. 22, 2014) [hereinafter 2010 Redistricting Data] (calculation by author).
63. Id.
residents. However, in these same block groups that experienced the loss of black and white residents, there was a small increase of Latino and other racial minorities. On the other spectrum of population change, we have some block groups that experienced positive population gain from 2000 to 2010. In these block groups, there was a net gain of 6,380 black residents; 3,688 white residents; 1,375 Latino residents; and 2,334 other racial minorities. The increase in black residents suggests that there was internal migration within the city. Black residents were leaving neighborhoods that were in distress and moving to stable economic and social neighborhoods within the city. Figure 10 shows the magnitude of population loss for white and black residents. Even though there were small parts of the city that have gained population, the vast majority of the city has experienced white and black flight.

Up to this point, the analysis has not relied on spatial statistics. However, the maps show spatial patterns of population loss and gain. Figure 11 shows a Local Indicator of Spatial Association (LISA) map of population loss and gain. The advantage of using LISA is to examine if spatial neighbors experienced similar population changes. The LISA map shows that there were spatial clusters of population loss and population gain. In other words, the dark cluster of block groups indicate that block groups that lost population were significantly more like their surrounding block groups in that they lost population. The light cluster of block groups indicate that block groups that gained population were significantly more like their surrounding block groups in that they gained population. Thus, the maps show a spatial pattern of population change. Parts of the city have had a population implosion, whereas other parts of the city have burgeoned with population. In the spatial cluster of block groups that have imploded, there was a decline of

64. Id.
65. Id.
66. Id.
68. Id.
69. See infra Figure 10.
70. 2010 CENSUS DATA, supra note 39; 2000 CENSUS DATA, supra note 39.
71. See infra Figure 11; Luc Anselin, Local Indicators of Spatial Association, 27 GEOG. ANALYSIS 93, 94 (2010) (regarding a more detailed discussion regarding LISA).
72. See Anselin, supra note 71, at 94 (defining a spatial neighborhood as one defined by having an adjacent block group).
73. See infra Figure 11; see Anselin, supra note 71, at 102 (explaining the significance of the shaded areas).
74. See infra Figure 11; 2010 CENSUS DATA, supra note 39; 2000 CENSUS DATA, supra note 39.
75. See infra Figure 11.
76. See infra Figure 11.
77. See 2010 CENSUS DATA, supra note 39; 2000 CENSUS DATA, supra note 39.
10,854 black residents and 279 white residents.\textsuperscript{78} There was a 73 resident increase among Latinos in these spatial clusters.\textsuperscript{79} Nonetheless, these spatial clusters account for a big chunk of the black out-migration from Saint Louis.\textsuperscript{80} On the other hand, in the spatial cluster of block groups that have burgeoned, there was an increase of 5,492 white residents, 2,638 black residents, 278 Latino residents, and 1,259 other racial minorities.\textsuperscript{81} This analysis suggests that neighborhoods that surround the population growth cluster will continue to experience growth, while neighborhoods that surround the population decline cluster will continue to experience decline.\textsuperscript{82} The results will eventually produce a racial demographic makeover of the city. The large out-migrants of black residents coupled with an increase of young white residents may eventually result in white residents becoming the largest racial group in the city.

**SUMMARY**

There are many exciting prospects that promise to help shape a better future for Saint Louis. Along with this excitement there is a realization that Saint Louis will never have 900,000 residents again. If the city can stop the hemorrhaging of residents moving out to the suburbs, then the city can start to focus on urban policy that will create sustainable neighborhoods with business districts that improve the quality of life of residents as a place to live and raise children.

In this paper, I have addressed four issues that frame demographic hurdles to redevelopment. The first issue is to confront the fact that Saint Louis has been a shrinking city since 1950. Hoping this fact away, or mythically thinking that city will experience exponent population growth, only prolongs the inevitable discussion of how to reshape and reorganize a city that is conducive to realistic economic development.\textsuperscript{83} If there is any good news that arises from this paper, it is the fact that the population projections based on an age-cohort component analysis shows that population decline is insight. If Saint Louis can get over the net population decline hurdle, I believe it will be rewarded with many demographic dividends. Some of these dividends will come in the form of new residents demanding better housing options, more cultural and entertainment activities, and better neighborhood spaces that signal vitality.

\textsuperscript{78} Id.
\textsuperscript{79} Id.
\textsuperscript{80} See id.
\textsuperscript{81} Id.
\textsuperscript{82} See Anselin, supra note 71, at 95–115.
In other words, to get over the demographic hurdle of net population loss, the city needs to develop a plan to mitigate out-migration of residents, especially families with children. Lost in the translation of population loss, is the fact that the city should be growing based on the internal population momentum (i.e., births). In the era of lower fertility rates, Saint Louis should be able to capitalize on this demographic asset. The reality is that the magnitude of population loss over the past sixty years has been camouflaged by the internal population momentum. City leaders need to be aware that fertility rates are dropping and Saint Louis is not precluded from this fact. Moreover, if the city continues to lose young families with children and young female adults in the 15-19 age cohort, the internal population momentum will begin to decline. Thus, the one asset that has helped mitigate population loss will no longer be available if the past trends continue.

The third demographic hurdle mentioned in this paper is the age structure of the city. The overall trend of the age-structure is not unique to Saint Louis. However, many cities have been able to add younger cohorts to their population through immigrants, especially among Latinos. Saint Louis has not fared well among these groups. According to the 2007-2011 American Community Survey, there were 10,748 Latinos (3.4% of the city population) and 21,944 foreign born residents (6.9% of the city population). These numbers reflect the trend for the greater Saint Louis metropolitan region, in that the majority of Latinos and immigrants live in the suburbs. However, it is important to note that the changing age structure is not all bad news. There is a net increase in young adults moving into the city. However, these household structures are different in that many of these young adults prefer to live alone and have no children.

Finally, a simplistic analysis of the population decline in Saint Louis that focuses on out-migration of residents ignores the nuances of in-migration.

86. Easy Stats, supra note 85 (select “Missouri”; then refine by “Place”: “St. Louis city, Missouri”; then select “People”; then select “Sex by Age By Nativity and Citizenship Status”; then follow “Get Results” hyperlink).
87. Id.
88. Id.
89. See infra Figure 7.
Migration is a complex demographic process. Everyday people are moving out and moving into the city. Simply focusing on the net loss of residents hinders an honest analysis of the true demographic transitions taking place in the city. There are two Saint Louis cities: one that is imploding, growing older, and crime ridden; and one that is burgeoning with population growth, restaurants and bars, loft and condo developments, and cultural and entertainment activities.

If Saint Louis wants to reclaim some national recognition as a destination city for all age groups it will need to overcome many demographic hurdles. The inchoate urban development policies being pursued by the city do not address, with any sense of urgency, the most important demographic hurdles facing the city. Of all the hurdles mentioned in this paper, the most important hurdle is reducing the out-migration of black and white residents. City, business and community leaders must creatively work on developing strategies that keep current residents in the city and strategies to attract, en masse, burgeoning populations (i.e., Latinos and immigrants).

Saint Louis is a city draped with tradition, great architecture, sports venues, entertainment, and culture. I walked around the city, with great optimism, that better days are ahead for Saint Louis. Although this paper presents many demographic hurdles for Saint Louis, I am rather sanguine about the demographic transitions that await the city. City leaders, community leaders, residents, and academics need to work together and develop a realistic shared vision for the city that is actionable. At a minimum, this vision needs to encourage people to stay in the city, while at the same time encouraging people to make the city their home. The fundamental failure in addressing the demographic hurdles is to pretend that the hurdles do not exist and to continue to do business as if all is well within the city.

91. See, e.g., Tim Logan, McKee Eyeing NorthSide Tenants, ST. LOUIS POST DISPATCH, July 13, 2013, at A12.
FIGURE 1

POPULATION TRENDS BY RACE FOR THE CITY OF SAINT LOUIS, 1840-2010

92. See Dicennial Censuses, supra note 12 (calculation by author) (figure created by author).
FIGURE 2

CONCEPTUAL FRAMEWORK OF DEMOGRAPHIC HURDLES AND DIVIDENDS\textsuperscript{93}

FIGURE 3
PERCENT POPULATION CHANGE FROM 2000 TO 2010

94. See 2010 Redistricting Data, supra note 61 (calculation by author) (numbers in graph are approximate).
FIGURE 4
ACTUAL POPULATION CHANGE FROM 2000 TO 2010

FIGURE 5

2020 POPULATION PROJECTION BASED ON A SEX COHORT COMPONENT MODEL

96. See NET MIGRATION COMPONENT OF CHANGE, supra note 32.
FIGURE 6
SAINT LOUIS HAS POSITIVE POPULATION MOMENTUM\textsuperscript{97}

\textsuperscript{97} See id.
FIGURE 7
MIGRATION RATES BY AGE COHORTS AND GENDER\(^98\)

FIGURE 8
SAINT LOUIS POPULATION PYRAMID FOR 1970 AND 2010\textsuperscript{99}

\textbf{Index of Dissimilarity = .158}

\begin{center}
\begin{tabular}{cccc}
\hline
Age Group & 2010 & & 1970 \\
\hline
75+ & 55 & & 38 \\
70-74 & 31 & & 40 \\
65-69 & 60 & & 58 \\
60-64 & 61 & & 58 \\
55-59 & 62 & & 57 \\
50-54 & 72 & & 54 \\
45-49 & 68 & & 54 \\
40-44 & 61 & & 52 \\
35-39 & 65 & & 45 \\
30-34 & 8.9 & & 46 \\
25-29 & 10.0 & & 57 \\
20-24 & 9.8 & & 8.9 \\
15-19 & 7.1 & & 8.6 \\
10-14 & 5.3 & & 8.8 \\
5-9 & 3.4 & & 8.3 \\
0-4 & 2.4 & & 8.0 \\
\hline
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FIGURE 9
POPULATION CHANGE FROM 2000 TO 2010 BY BLOCK GROUP

100. Calculation derived by author. See 2010 CENSUS DATA, supra note 39; 2000 CENSUS DATA, supra note 39.
FIGURE 10
POPULATION CHANGE FROM 2000 TO 2010 BY BLOCK GROUP FOR WHITE AND BLACK RESIDENTS

101. Id.
FIGURE 11

SPATIAL ANALYSIS OF POPULATION CHANGE FROM 2000 TO 2010 BY BLOCK GROUP

102. Id.