

## **Cluster and Super-cluster formation in Chicago**

Indranil K Ghosh

Graham School of Management

Saint Xavier University

Chicago

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Abstract

The paper will analyze the growth of industrial clusters and superclusters in large urban areas by identifying these groups or agglomeration of closely related and complementary industries as well as the synergies that these clusters promote. As a direct impact of the development of such clusters, we will look at the economic impact on the areas and neighborhoods of the cities in which these clusters develop and grow. We will analyze the costs and benefits of such growth, by providing a mapping survey that point to the increase in wellbeing in growth neighborhoods of these urban areas. We will also analyze the economic costs of such high rates of growth in these neighborhoods. This paper is focused on the growth of clusters in the metropolitan area of Chicago.

Keywords: Industrial Clusters, Economic Impact, Urban Areas, Regions of Development, Spillovers and Synergies, Population movement

## INTRODUCTION

Locations with abundant economic activity that specialize in one or more similar types of activities tend to generate agglomeration economies or clusters for a firm that enhances their value proposition. These include access to skilled labor, access to specialized suppliers, and knowledge spillovers from competing firms in specific industries that lead to industrywide efficiencies. Thus, firms have access to key resources and this builds the advantage that they create, especially relative to similar industries in other non-clustered areas. Historically the United States has seen meatpacking and grain trading clusters in the Chicago area because of its midwestern great lakes location, eventually evolving into the derivatives industry located in the same region; the financial services and trading cluster in the New York City area, perhaps as a function of the initial development of the area as a financial trading hub primarily due to the first Treasury Secretary Alexander Hamilton; and the automobile industry in the Detroit area, developed as a result of Henry Ford and the innovations of the assembly line techniques of mass production. In recent times, we have seen a tech supercluster develop in Northern California, the Finance superclusters thrive and innovate in New York City, Chicago, Boston, and San Francisco, as well as trade clusters along the coast and an entertainment supercluster dominate in the Los Angeles area. The larger and more successful cities have the scale to have several clusters develop concurrently. This is quite evident in the Chicago metropolitan area that we will discuss in this paper.

There are however challenges to the development of clusters that are face by urban areas. Clusters also bring clusters of people to an area, and the city has to be prepared to deal with housing, transportation, health care, and schooling issues. Government policy is often used to provide incentives for cluster development, for example tax and incentive policy, transportation infrastructure development policy, rental housing policies etc. (Hospers, Desrochers, and Sautet, 2009). Trade Associations for example the Chicagoland Chamber of Commerce as well as the suburban chambers in the Chicagoland area, provide meaningful dialogue between the businesses, entrepreneurs and public policy decision makers to enhance the economic growth potential of their respective cities.

In this paper, we will analyze the growth of neighborhoods particularly in the business districts of Chicago. The industrial clusters that form the business districts of these cities are analyzed for their growth trends. Because of the growth of these clusters we see a rise in housing stock as well as a sharp increase in the prices of houses/condominiums both for rental and purchase. We will also analyze the growth in income and spending capacity of individuals living in these areas over time. The data is collected from Census Data, Department of Commerce data as well as specialized Bureau of Economic Analysis data. Mapping software using the Simply Analytics Mapping site is used to provide a visual exposition of economic growth in these areas. We expect to pinpoint high growth areas in selected large cities, and provide information and future strategy that can be effectively

implemented by urban planners to provide for a more equitable and sustainable growth. As a conclusion we would like to suggest a need for future comparative studies between the experiences of different large metro areas in North America in cluster formation, as well as key Canadian cities.

## **CLUSTER FORMATION – AN INTRODUCTION**

A cluster is defined as “... a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities” (Porter, 2000). Thus within a cluster you could have specialized suppliers, businesses in related industries, research and educational institutions, and chambers of commerce and other trade promoting institutions, all geographically collocated to take advantage of innovation and knowledge spillovers amongst themselves. As a result of the collocation of the allied industries several benefits arise for the region. Wages and Employment will trend upwards. Specialized inputs that are specific to a certain industrial cluster can be shared among the firms in the region. Knowledge spillovers are also an important component of cluster formation. However one has to be careful about unambiguously assigning this as a positive since larger firms may be wary about locating in a cluster where all the spillovers are one directionally away from them and towards smaller firms (Alcacer and Chung, 2010). There are however costs to be borne both by the regional government as well as the firms that choose to locate in a cluster. The more successful and large a cluster becomes, the higher will be the cost of living increases, as well as the cost of additional infrastructure. However, cities do gain additional tax revenues both from the new businesses that move to a particular cluster location as well as the new residents that are the economic agents in the cluster. Cluster development also leads to some positive future outcomes for the region for example there is an enhanced attractiveness of the region for jobseekers, as well as attractiveness for new firm operations and existing firm expansion. There is also the possibility of the development of other clusters both allied and non-allied.

## **THE CHICAGO AREA – DEVELOPMENT AND GROWTH OF CLUSTERS**

In this paper we concentrate on the city of Chicago and its surrounding areas. Chicagoland as it is called, is the third largest Metropolitan area in the US and is also the third largest Combined statistical area. The CS area has a population of 9.87 million according to the 2018 census update. The population has grown by about 0.25% since 2010 census. The unemployment rate in the state of Illinois is 4.2% which is marginally

higher than the overall US 3.7% unemployment rate. The city of Chicago has an unemployment rate of 4.1%, the median home value: \$226,500 with home prices having fallen 0.4% (Zillow, 2019) over the last year. The metro area has a foreign born population of approximately 17.5%. The area is host to a large number of Fortune 1000 Companies HQs such as Boeing, ADM, Walgreens, State Farm, Caterpillar, United, Deere, Allstate, McDonalds, Abbot, Kraft, Baxter, Discover, Motorola, Hyatt, Groupon, and CME etc. What is very interesting about the Chicago region is the very recent inclination for large businesses in particular to relocate within the larger downtown area, as well as the trailing inclination of high income high net worth individuals as well as the younger and older millennial generation to relocate in the same area. This will also show up as a direct effect when we look at the change in well being and spending power of downtown blocks and will have an effect on the efficiency of the public transportation system.

For example we can look at firm movements around the area and see that companies such as Motorola, Kraft Heinz, Sara Lee, AT&T, United, and McDonalds have moved or are ready to move from other areas in the region to the downtown loop. Chicago used to be a sprawling city with large corporations spread out among the suburbs. The recent trend has been a movement back to the downtown areas. There has also been a substantial movement of HQs from other regions to loop e.g. GE Healthcare, ConAgra, Oscar Meyer, Boeing, and Caterpillar. New facilities have been built or refurbished by Google, Amazon, and lately McDonalds. The area has also seen a new startup culture germinate new firms/Industry like Groupon, Grubhub, and Orbitz/Expedia. This process has been helped by trade associations as well as incubators like 1871 Chicago. What is striking about the area is the diversity of industry clusters, there is not a single or two superclusters; rather there is a wide variety of clusters and industries a large number of which rank in the top 10 in the country.

The major clusters as well as the employment and the US rank are presented below (2017 data) as indicated in Table 1 (Appendix) and Figure 1 (Appendix).

The figure above as indicated in Figure 2 (Appendix) looks at the growth in the clusters through a 7-year period prior to 2017. We see that almost all the clusters exhibited average growth between 2-5% with the exception of biopharma that saw some phenomenal growth, probably because it started from a lower baseline.

The basic premise of this paper is to link the growth in clusters in the Chicagoland area to the development of the downtown-Loop area of the city. As mentioned earlier, the Loop and the neighboring areas have seen an incredibly large growth spurt as far as large and medium enterprises go. Part of this was the sustained development projects undertaken in the downtown area, making it safe as well as enhancing the natural beauty characteristics of the area being bounded by Lake Michigan on the eastern side. The western edge of the Loop especially the Randolph street and surrounding areas over a period of 10 years took the title of Restaurant Row because of the large number of high end critically acclaimed restaurants that opened in the area. This was followed by housing development both in

the Loop area as well as in the northern, southern, and western edges of the Loop. As an added incentive Chicago has been very well developed with respect to a public transit system, both within the city and also to and from the suburbs. Thus vehicular congestion, even though a problem as in other large cities, is nowhere near the scale of Los Angeles, New York or the DC metro area. As a result, Chicago saw a unique remigration of educated and moderately to extremely wealthy population back into the city center and areas close to the Loop, including upscale neighborhoods like Lincoln Park, Bucktown, Wicker Park, and Logan Square. People wanted to live close to work, as well as close to restaurants, bars, and nightlife. Similar remigrations have been seen also in New York as well as San Francisco. The graphic below indicated in Figure 3 (Appendix) tells the story of education characteristics in the West Loop area. The darker shaded areas closer to downtown and the lighter shaded areas further out give us an idea of the wealth and education levels of the population migrating to the city. The city of Chicago has been losing population in the last 2-3 years, however what is astounding is the relative share of the population that is educated. The percentage of population with a bachelors degree jumped from 29.3% in 2006 to 38.3% in 2016 (US Census data), which is the highest in the nation. Also if you look at the data for households with income above \$100K it rose from 17% in 2006 to 26.1% in 2016, right at the national average and a shade behind Los Angeles which is at 2<sup>nd</sup> place. What has happened is that the erstwhile working class city of Chicago has been steadily replacing the working class population with white collar highly educated and relatively high income populations.

If we want to take a look at business development in the West Loop area, we can do a comparison of the area in terms of the number of businesses which is given below in graphic form indicated by Figure 4 (Appendix). The two figures illustrate the growth of the Financial Services cluster in the area west of the river known as West Loop, with darker colors implying larger number of firms. With the development of businesses, as stated above, there has been an equivalent development of restaurants, and bars; as well as development of new shopping and high end grocery stores nearby. The latter would be a result of the large influx of population, particularly millennials that choose to live in areas that are flush with restaurants and other entertainment options; including proximity to all sporting venues. An average 2 bed 2 bath condo in a high rise doubled in price between 2009 and 2016, going from an average of \$300K to \$600K. Some of this change can be seen in the figures below. We can compare the differences in median household income, as well as median home values in the West Loop and Loop area between 2000 and 2017 in the four graphics below indicated by Figure 5 and Figure 6 (Appendix).

## CONCLUSION

This paper provides a brief overview of the city of Chicago and the strategies implemented to become a multi-cluster city. While the city has been successful in

attracting industry with a diverse portfolio, Chicago has seen a lot more success dealing with congestion as well as affordable housing stock in areas that individuals and families want to live with respect to comparable large cities. Future Research along this line would take into account a detailed description of the industrial cluster formation in various large metro areas in North America, and compare and contrast the experiences, as well as public policy strategies followed. This will give us a comprehensive sense of useful and beneficial strategies that could be followed by policy makers.

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- Data Sources: US Census Bureau, Bureau of Economic Analysis, Chicagoland Chamber of Commerce.

**APPENDIX**

<b>Cluster Name</b>	<b>Employment</b>	<b>US Rank</b>
Business Services	397753	5
Distribution and Ecommerce	269555	3
Education and Knowledge Creation	139461	6
Financial Services	93186	4
Transportation and Logistics	89474	4
Hospitality and Tourism	87305	8
Marketing Design and Publishing	81229	4
Insurance Services	54715	4
Production Technology and Heavy Machinery	50216	1
Food Processing and Manufacturing	46406	3
Upstream Metal Manufacturing	36056	1
Automotive	34723	6

Table 1

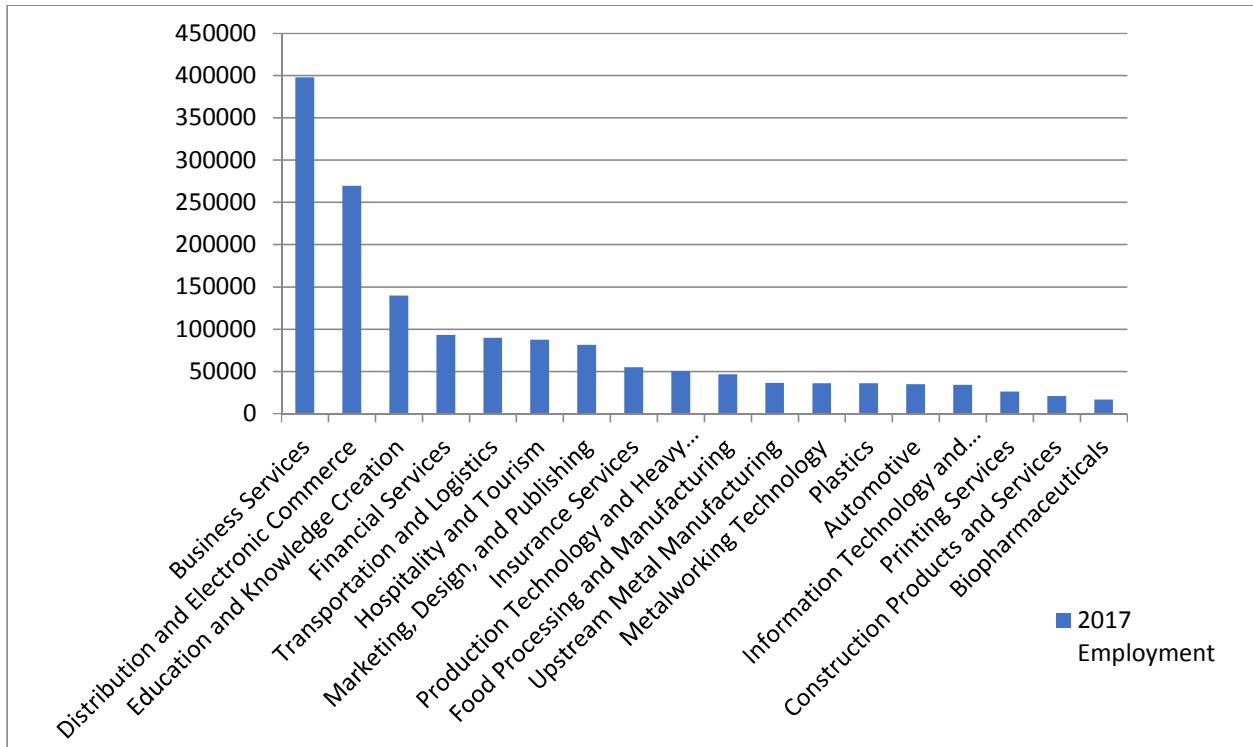


Figure 1: Employment in Clusters 2017

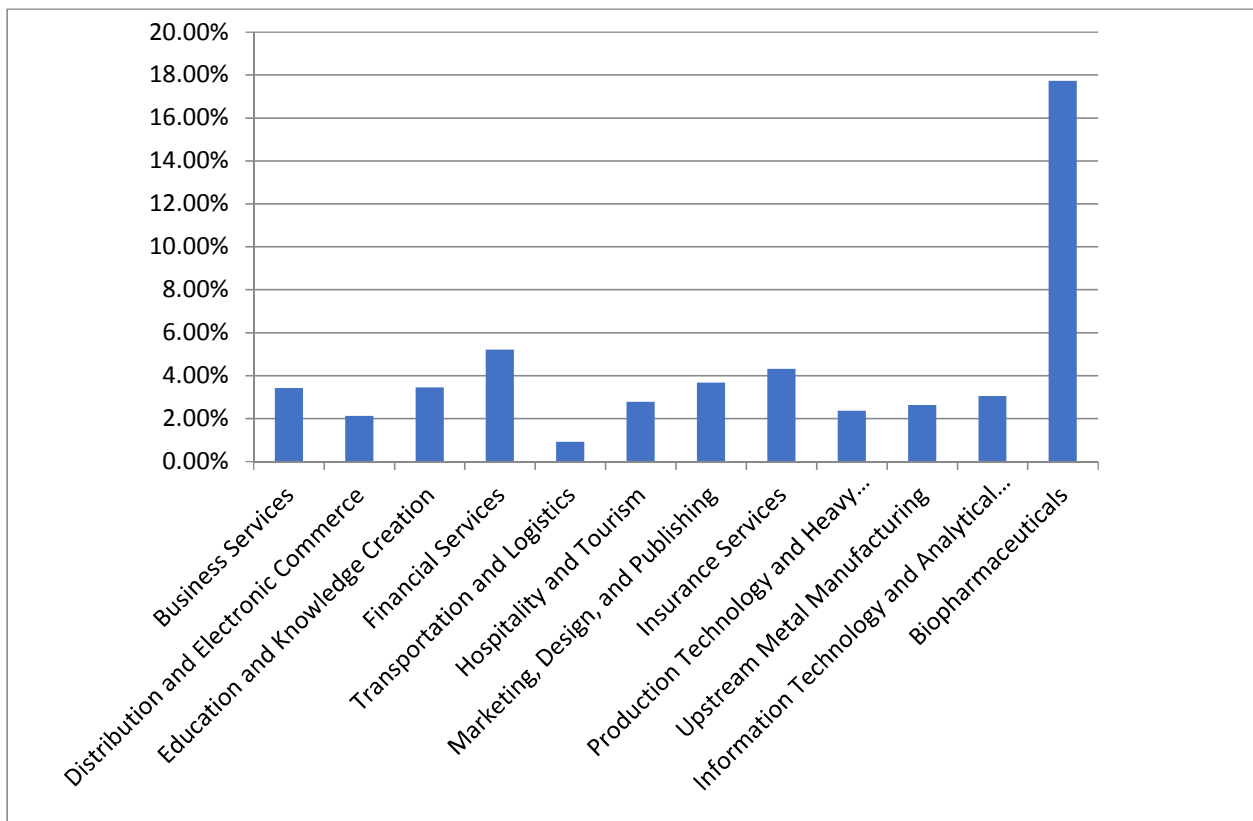


Figure 2: Growth in Clusters – 2010 – 2017



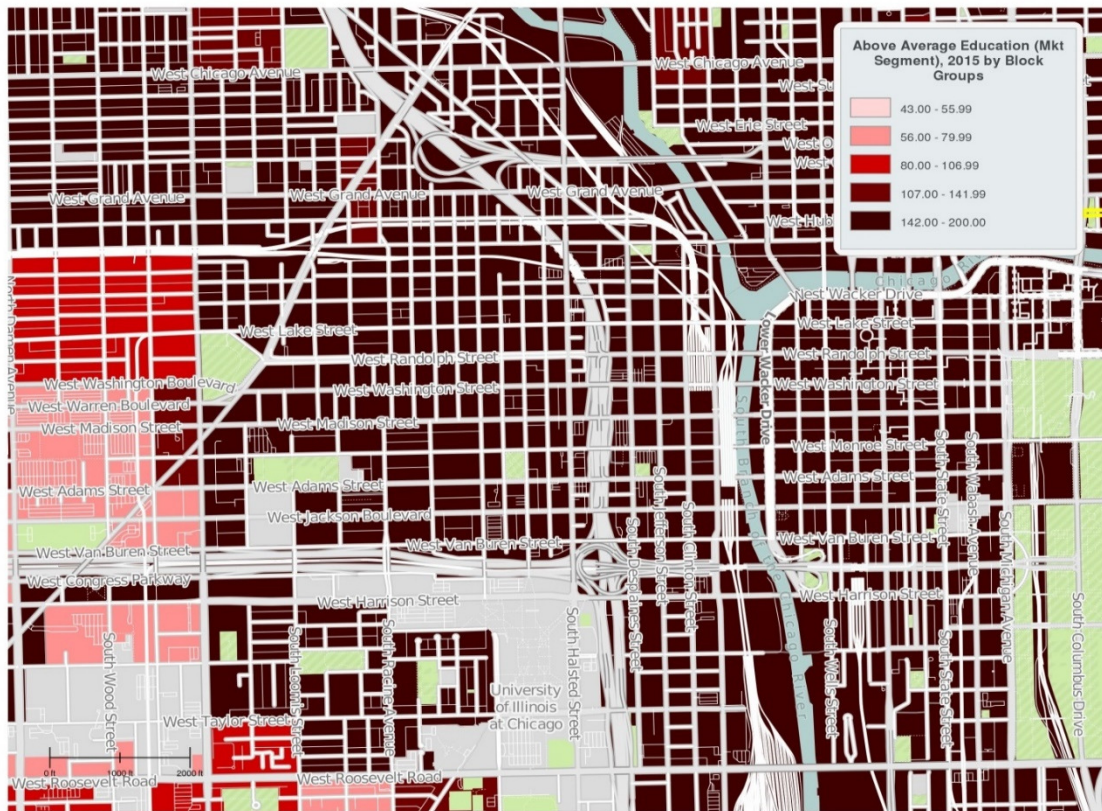


Figure 3: Education by Block Groups – West Loop Chicago

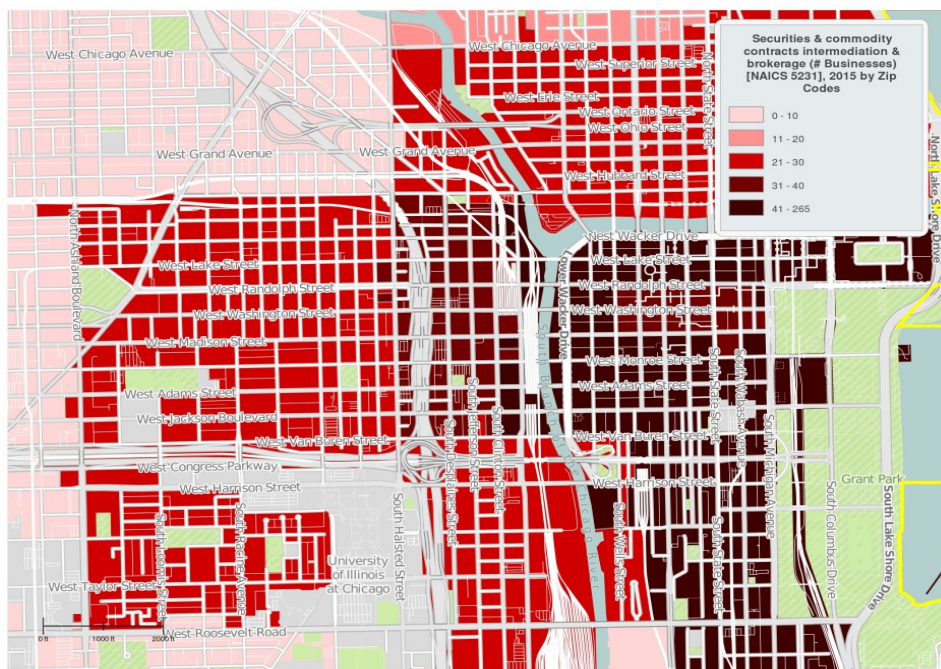
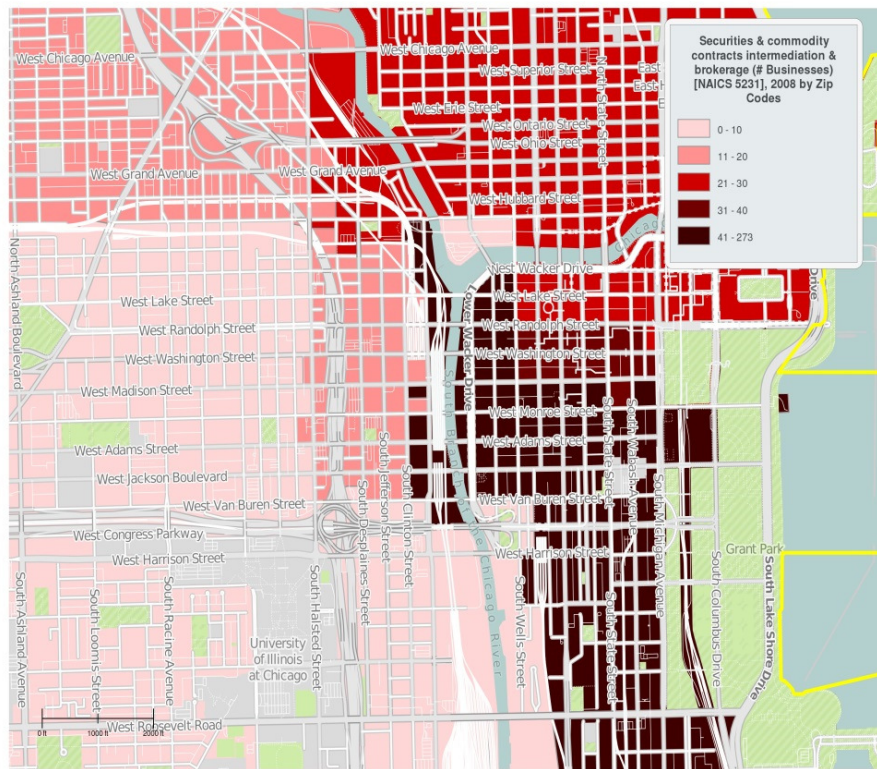


Figure 4: Comparison of Number of Securities firms in 2008 and 2015

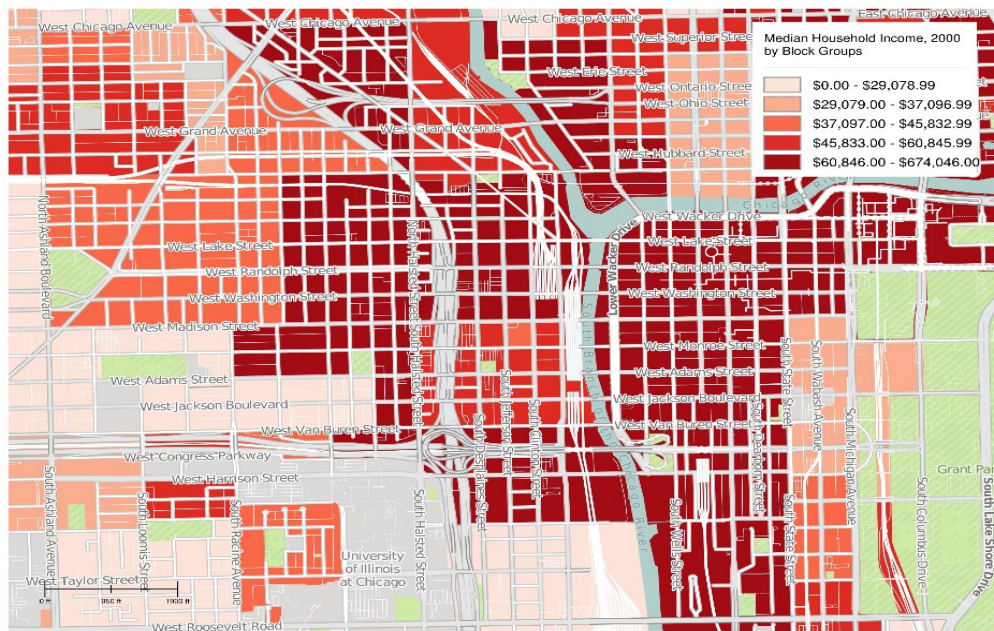
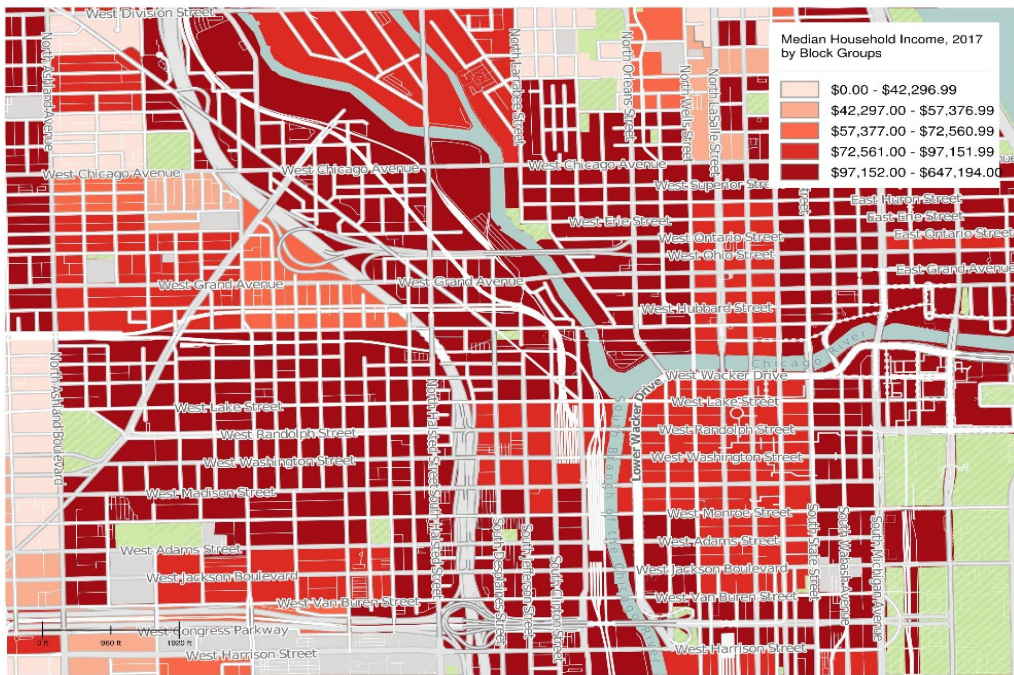


Figure 5: Comparison of Median Household Income 2000 and 2017

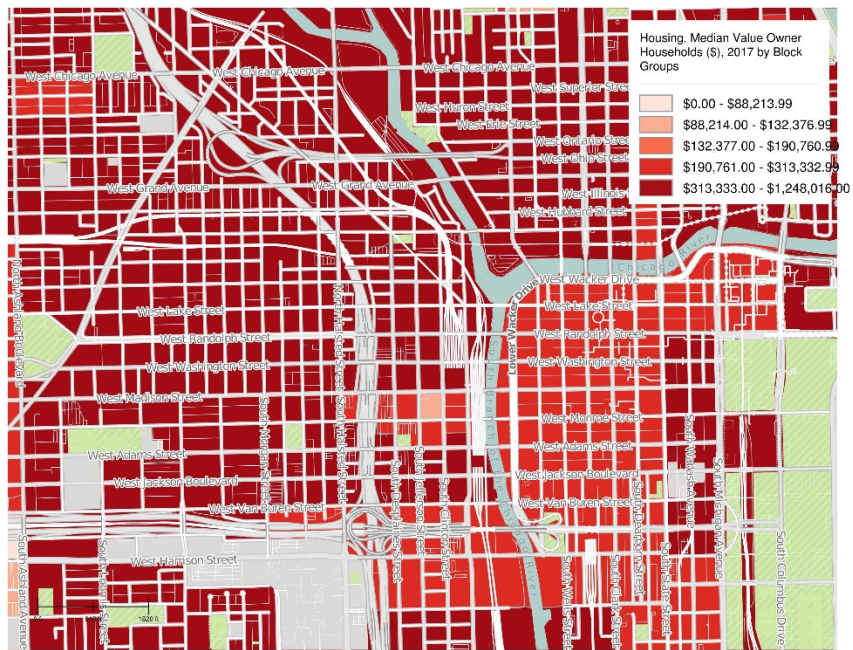
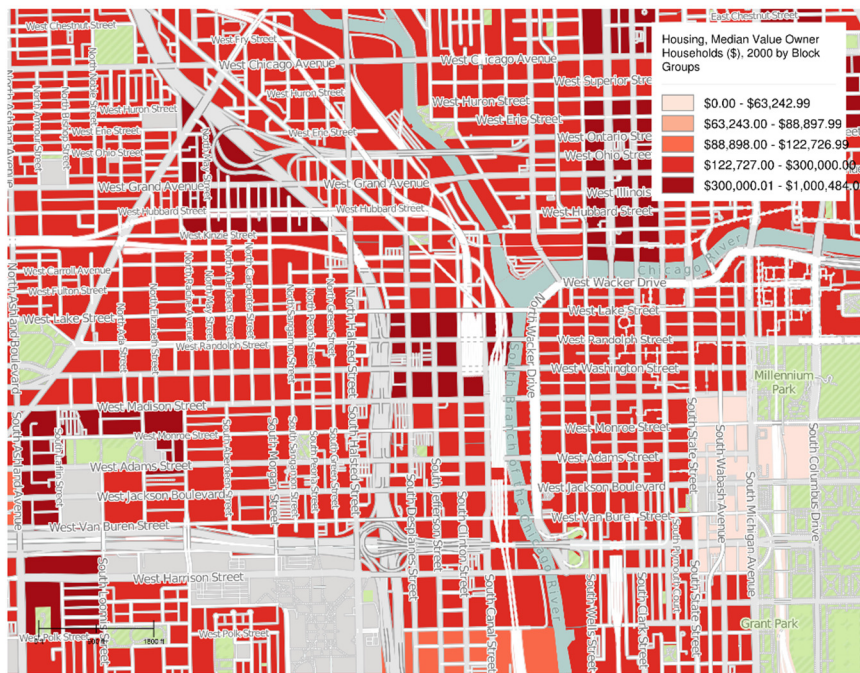


Figure 6: Comparison of Home values 2000 and 2017