



Theses and Dissertations

2004-04-20

From Mission to Megacity: The Changing Concentration of the Los Angeles City-system

Kerri L. Cosby
Brigham Young University - Provo

Follow this and additional works at: <https://scholarsarchive.byu.edu/etd>



Part of the [Geography Commons](#)

BYU ScholarsArchive Citation

Cosby, Kerri L., "From Mission to Megacity: The Changing Concentration of the Los Angeles City-system" (2004). *Theses and Dissertations*. 27.
<https://scholarsarchive.byu.edu/etd/27>

This Thesis is brought to you for free and open access by BYU ScholarsArchive. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of BYU ScholarsArchive. For more information, please contact scholarsarchive@byu.edu, ellen_amatangelo@byu.edu.

FROM MISSION TO MEGACITY: THE CHANGING CONCENTRATION OF THE
LOS ANGELES CITY-SYSTEM

by

Kerri L. Cosby

A thesis submitted to the faculty of

Brigham Young University

in partial fulfillment of the requirements for the degree of

Master of Science

Department of Geography

Brigham Young University

August 2004

BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APPROVAL

of a thesis submitted by

Kerri L. Cosby

This thesis has been read by each member of the following graduate committee and by majority vote has been found to be satisfactory.

Date

Samuel M. Otterstrom, Chair

Date

J. Matthew Shumway

Date

Perry J. Hardin

BRIGHAM YOUNG UNIVERSITY

As chair of the candidate's graduate committee, I have read the thesis of Kerri L. Cosby in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

Date

Samuel M. Otterstrom
Chair, Graduate Committee

Accepted for the Department

J. Matthew Shumway
Department Chair

Accepted for the College

David B. Magleby
Dean, College of Family, Home and
Social Sciences

ABSTRACT

FROM MISSION TO MEGACITY: THE CHANGING CONCENTRATION OF THE LOS ANGELES CITY-SYSTEM

Kerri L. Cosby

Department of Geography

Master of Science

Having an understanding of when, where, and why people settle in an area is crucial in explaining the growth course of a city. However, this cannot be done by looking at a city in isolation. Its surrounding region has a tremendous impact on its development. The purpose of this thesis is to examine the growth of Los Angeles from a regional perspective, called the Los Angeles city-system, which consists of Los Angeles and its hinterland. Connections are made between the history and the geography of the Los Angeles city-system by examining the spatial distribution of population within the region between 1769 and 2000. The Hoover Index of Population Concentration is used to determine the population concentration, and major shifts in the concentration are illuminated by the geography and historical events of the Los Angeles area. The main factors contributing to the changing concentration were the region's physical geography,

the introduction of transportation innovations, the region's economic structure, historical and political events, and migration trends. It was found that the counties in closest proximity to Los Angeles County are becoming more alike, while the more peripheral counties are becoming more different. This has led to a greater understanding of urban/periphery growth economics.

ACKNOWLEDGMENTS

I wish to thank Dr. Sam Otterstrom for his countless hours of help, and for his constant involvement in my work on this thesis. I would not have been able to finish this without his support. I also wish to thank Dr. Perry Hardin for his encouragement and feedback on my work, and for allowing me to be his teaching assistant for the past three years. It has been through this experience that I have learned what it means to do meaningful research. I would also like to thank Dr. Matt Shumway for his helpful suggestions and support in completing this thesis. I wish to also thank the entire BYU Geography Department faculty, especially those from whom I have taken classes, for their examples and their willingness to share their geographic knowledge with me. I would also like to thank my fellow graduate students who have always been a source of encouragement. Most of all, I would like to thank my family (Dad, Mom, Amy, Ryan, and Dustin) for constantly supporting me throughout all of my years of formal education. I wish to especially thank my dad for always encouraging me to get a graduate degree. I would also like to thank many of my friends who have constantly supported me throughout graduate school. Thank you, Amy, Roxy, Joo Lin, Jamie, Kara, and all my other friends and 88th ward members! Last of all, I would like to thank my Father in Heaven for blessing me with this opportunity to be a student at this great university, and for His constant love, support, and motivation in completing this degree.

TABLE OF CONTENTS

ABSTRACT.....	iv
ACKNOWLEDGMENTS	vi
LIST OF TABLES.....	ix
LIST OF FIGURES	x
LIST OF PICTURES	xi
CHAPTER 1 Introduction and Purpose.....	1
Research Purpose.....	2
Thesis Objectives.....	3
Spatial and Temporal Boundaries.....	3
Limitations of the Study.....	6
Importance of the Research	7
CHAPTER 2 Background Literature	9
Factors that Affect Regional Growth and Concentration	10
Economy	10
Physical Geography	18
Transportation.....	19
Historical and Political Events.....	21
Migration.....	23
Summary	25
CHAPTER 3 Data Gathering and Methodology	27
Population Concentration Model	27
Variables	29
Operational Definitions.....	29
Methodology.....	32
CHAPTER 4 Historical Background.....	39
Native American Population Distribution	39
Spanish Years: 1769-1822	41
Mexican Years: 1822-1850.....	47
Summary	51
CHAPTER 5 Results and Discussion	53
Broad Overview, 1850-2000.....	53
Frontier Dispersion Stage, 1850-1870	67
Urban Amplification Stage, 1870-1930.....	75
Equilibrium-Seeking Stage, 1930-2000.....	85
Summary.....	111
Comparing Los Angeles City-System to National Trends	115
CHAPTER 6 Conclusion	119
Review	119
Review of Research Objectives	122

Suggestions for Future Research	124
NOTES.....	126
BIBLIOGRAPHY.....	127
APPENDICES	135

LIST OF TABLES

TABLE 3.1: THE MEASUREMENT OF INDEPENDENT AND DEPENDENT VARIABLES AND THE SOURCES OF DATA	31
TABLE 4.1: THE MISSIONS, PRESIDIOS, AND PUEBLO IN THE LOS ANGELES CITY-SYSTEM, 1769 – 1850	42
TABLE 5.1: HOOVER INDEX VALUES FOR THE LOS ANGELES CITY-SYSTEM.....	54
TABLE 5.2: HOOVER INDEX VALUES FOR THE CONCENTRATION OF EMPLOYEES IN ECONOMIC SECTORS, 1850 – 2000	58
TABLE 5.3: CORRELATIONS BETWEEN DECADAL CHANGE IN POPULATION DENSITY AND EMPLOYMENT DENSITIES.....	65
TABLE 5.4: TOTAL COUNTY AND CITY-SYSTEM POPULATION FOR THE LOS ANGELES CITY-SYSTEM, 1850-2000, WITH PERCENT OF EACH COUNTY POPULATION OF THE TOTAL CITY-SYSTEM POPULATION	73
TABLE 5.5: COUNTY POPULATION DENSITIES, 1870 – 1930	77
TABLE 5.6: COUNTY POPULATION DENSITIES, 1930 – 2000	86
TABLE 5.7: TOTAL CITY-SYSTEM IN-MIGRATION BETWEEN 1995 AND 2000.....	103
TABLE 5.8: TOTAL CITY-SYSTEM OUT-MIGRATION BETWEEN 1995 AND 2000	104
TABLE 5.9: COUNTY-TO-COUNTY MIGRATION IN-MIGRATION BETWEEN 1995 AND 2000	106
TABLE 5.10: COUNTY-TO-COUNTY MIGRATION OUT-MIGRATION BETWEEN 1995 AND 2000	107
TABLE 5.11: NUMBER OF CITIES THAT BECAME LESS DENSE, 1940-2000.....	111

LIST OF FIGURES

FIGURE 1.1: LOS ANGELES CITY-SYSTEM BOUNDARIES	4
FIGURE 3.1: GENERALIZED MODEL OF STAGES IN CITY-SYSTEM POPULATION CONCENTRATION	28
FIGURE 5.1: LOS ANGELES CITY-SYSTEM POPULATION CONCENTRATION, 1850 – 2000	54
FIGURE 5.2: LOS ANGELES CITY-SYSTEM CONCENTRATION OF EMPLOYEES IN ECONOMIC SECTORS, 1850 – 2000	57
FIGURE 5.3: DIFFERENCES BETWEEN HOOVER INDEX VALUES FOR THE CONCENTRATION OF EMPLOYEES IN ECONOMIC SECTORS COMPARED TO TOTAL POPULATION CONCENTRATION	59
FIGURE 5.4: PERCENT OF TOTAL PEOPLE EMPLOYED IN THE LOS ANGELES CITY- SYSTEM EMPLOYED IN EACH ECONOMIC SECTOR, 1930 – 2000	60
FIGURE 5.5: HISTORICAL COUNTY BOUNDARIES, 1850 – 1870	68
FIGURE 5.6: CLIMATE REGIONS OF CALIFORNIA	69
FIGURE 5.7: HISTORICAL COUNTY BOUNDARIES, 1880 – 1920	76
FIGURE 5.8: PERCENT OF FOREIGN BORN POPULATION LIVING IN EACH COUNTY, 2000	94
FIGURE 5.9: TOTAL NUMBER OF FOREIGN BORN POPULATION, BY COUNTRY OR REGION OF BIRTH, 2000	94
FIGURE 5.10: PERCENT OF TOTAL CITY-SYSTEM AGRICULTURAL EMPLOYMENT IN CERTAIN COUNTIES, 1910 – 2000	99
FIGURE 5.11: PERCENT OF TOTAL CITY-SYSTEM MINING EMPLOYMENT IN CERTAIN COUNTIES, 1930 – 2000	100
FIGURE 5.12: PERCENT OF TOTAL CITY-SYSTEM MANUFACTURING EMPLOYMENT IN CERTAIN COUNTIES, 1850 – 2000	101
FIGURE 5.13: PERCENT OF TOTAL CITY-SYSTEM SERVICES EMPLOYMENT IN CERTAIN COUNTIES, 1930 – 2000	101
FIGURE 5.14: THE POPULATION CONCENTRATION OF CITIES WITH POPULATION >25,000 IN THE LOS ANGELES CITY-SYSTEM COMPARED TO THE OVERALL POPULATION CONCENTRATION	110
FIGURE 5.15: THE POPULATION CONCENTRATION OF CITIES IN THE LOS ANGELES CITY-SYSTEM AND THE NUMBER OF CITIES WITH POPULATION >25,000, 1890-2000	110
FIGURE 5.16: COMPARISON BETWEEN THE POPULATION OF THE NATION AND THE LOS ANGELES CITY-SYSTEM	115

LIST OF PICTURES

PICTURE 4.1: MISSION SAN DIEGO DE ALCALÁ	43
PICTURE 4.2: EL PUEBLO DE LA REINA DE LOS ÁNGELES	43
PICTURE 4.3: MISSION SAN JUAN CAPISTRANO	44
PICTURE 4.4: MISSION SANTA BARBARA	45
PICTURE 4.5: MISSION SAN LUIS OBISPO DE TOLOSA	45
PICTURE 5.1: THE AH LOUIS STORE IN SAN LUIS OBISPO	70
PICTURE 5.2: MT. WHITNEY	75
PICTURE 5.3: SAND DUNES AT DEATH VALLEY	75
PICTURE 5.4: CALIFORNIA AQUEDUCTS IN KERN COUNTY	80
PICTURE 5.5: AQUEDUCT GOING FROM KERN COUNTY OVER THE MOUNTAINS TO THE LOS ANGELES BASIN	80
PICTURE 5.6: ORANGE ORCHARD IN SAN BERNARDINO COUNTY	82
PICTURE 5.7: AGRICULTURE IN SAN LUIS OBISPO COUNTY	82
PICTURE 5.8: A FIELD OF OIL DERRICKS IN KERN COUNTY	83
PICTURE 5.9: AN OIL DERRICK IN AN OFFICE COMPLEX PARKING LOT	83
PICTURE 5.10: FREEWAY INTERCHANGE IN SAN BERNARDINO COUNTY	87
PICTURE 5.11: ETHNIC INFLUENCE IN LOS ANGELES, DOWNTOWN L.A. IN THE BACKGROUND	95
PICTURE 5.12: ETHNIC INFLUENCE IN LOS ANGELES, SIGNS IN SPANISH, ENGLISH, AND KOREAN	95
PICTURE 5.13: KNOTT’S BERRY FARMS, ORANGE COUNTY	96
PICTURE 5.14: PARAMOUNT PICTURE STUDIOS, LOS ANGELES COUNTY	96
PICTURE 5.15: EDISON FIELD, HOME OF THE ANAHEIM ANGELS, ORANGE COUNTY	97
PICTURE 5.16: STAPLES CENTER, HOME OF THE LOS ANGELES LAKERS AND CLIPPERS, LOS ANGELES COUNTY	97
PICTURE 5.17: SANTA MONICA BEACH AND PIER, LOS ANGELES COUNTY	97

Note: All pictures taken by Kerri Cosby or Dustin Cosby

CHAPTER 1

Introduction and Purpose

“As I wandered about Los Angeles, looking for the basic meaning of the place, the fundamental source of its wealth and its economic identity, I found myself quite at sea. The Chamber of Commerce people told me about the concentration of fruit, the shipping, the Western branch factories put up by concerns in the East. But none of these things seemed the cause of a city. They seemed rather the effect, rising from an inexplicable accumulation of people - just as the immense dealing in second-hand automobiles and the great turnover of real estate were an effect. It struck me as an odd thing that here, alone of all the cities in America, there was no plausible answer to the question, ‘Why did a town spring up here and why has it grown so big?’” (Fogelson 1967, 3)

The reasons that a city develops are very complex. Having an understanding of when, where, and why people settle in an area is crucial in explaining the growth course of a city. This thesis seeks to determine a “plausible answer” to why Los Angeles has grown so big. However, this cannot be done by looking at Los Angeles in isolation. Its surrounding region has had a tremendous impact on its development. Therefore, the purpose of this thesis is to examine the growth of Los Angeles from a regional perspective called the Los Angeles city-system, which consists of Los Angeles as the core city and its hinterland. Connections will be made between the history and the geography of the Los Angeles city-system by examining the spatial distribution and growth of population within the region over time. Because cities often develop into regional networks according to their population and economic growth, my thesis will not only focus on the region’s population geography, but also on the economic geography of the city-system. This will allow for a closer examination of the changing dynamics of this region and the reasons for the location of people throughout the city-system in the

context of what was occurring economically. By examining the location of population over time, it will be possible to identify reasons for different settlement patterns. This thesis will therefore analyze the evolving relationship between Los Angeles, as the core of the region, and its periphery, from its earliest Anglo settlements in the late 1700s to the present.

My research will seek to explain not only when population concentration and growth rates have changed both in the core and periphery, but also to illuminate where and why the changes in concentration and growth have occurred. The explanation of why the changes have occurred will focus on the historical location of people in the region as affected by various factors. Such factors include the economic structure of the area, the physical geography of the region, major transportation innovations, historical and political events, and migration trends. Understanding *when*, *where*, and *why* people have located in the region throughout history will be a powerful tool in determining why the Los Angeles region has grown to be the most populous and dominant region in the West.

Research Purpose

The research question for this research is as follows, when, where, and why has population grown in the Los Angeles city-system since it was first settled in 1769? As previously stated, the main purpose of this thesis is to examine the growth of the Los Angeles city-system by analyzing the evolving relationship between Los Angeles, as the core of the region, and its periphery. By examining the concentration of population within the region and the factors that have affected that concentration, connections will be made between core and peripheral growth.

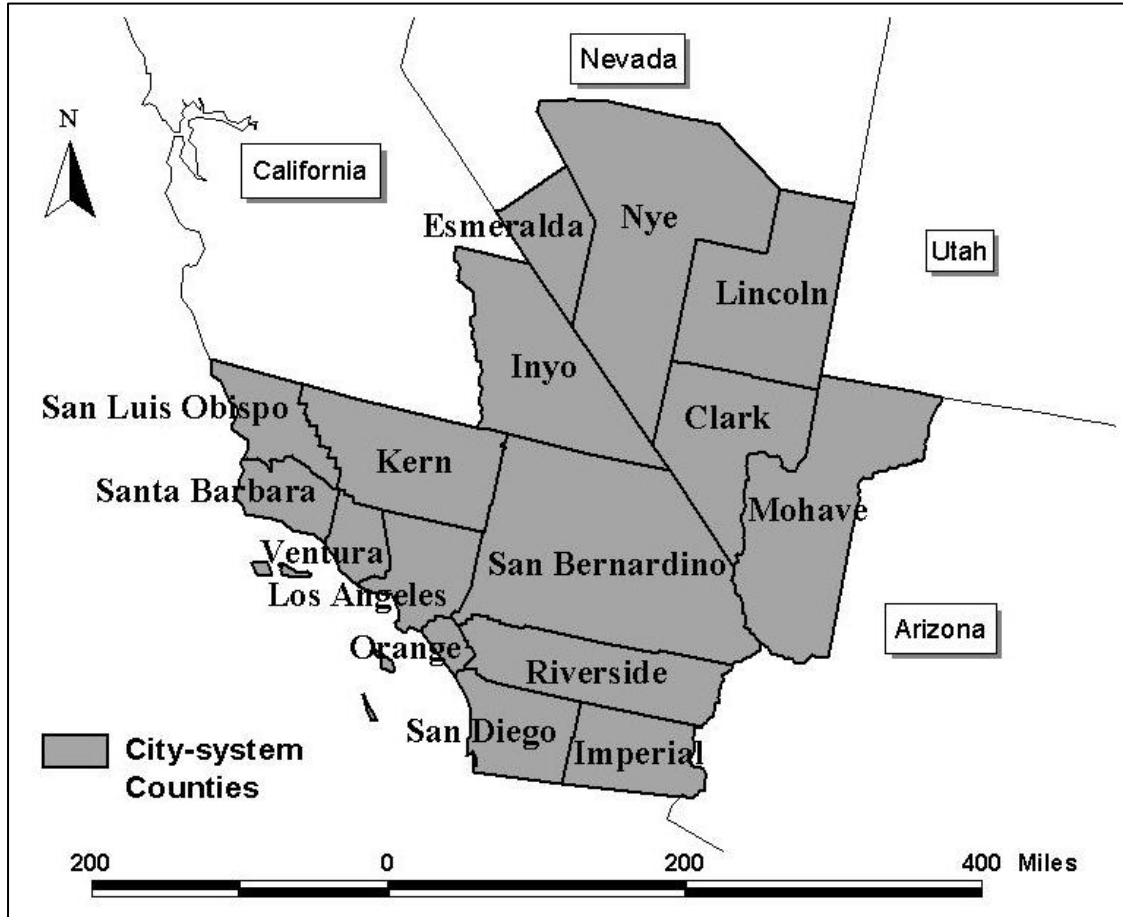
Thesis Objectives

This thesis has four main objectives. The first objective is to explain *when* population settled in this area and *when* changes in the concentration of population occurred throughout the history of the city-system. The second objective is to determine *where* the population settled and how the location of population contributed to the changes in overall concentration. The third objective is to illuminate the first two objectives by explaining *why* people located when and where they did in both the core and the periphery, which will contribute to further understanding of city-hinterland growth economics. This objective ties the research together and focuses specifically on the fulfillment of the purpose of this thesis. The fourth objective is to compare the trends in population concentration of the Los Angeles city-system to the national trends and explain why differences may exist between the two. The manner in which these objectives are going to be accomplished will be explained in the discussion of the methodology.

Spatial and Temporal Boundaries

For the purposes of this thesis, I will primarily be using county level data for the 16 counties included in the Los Angeles city-system, although some city level data will be used to develop a new sub-county method of examining population concentration. The Los Angeles city-system includes eleven counties in California (Los Angeles, Orange, San Diego, Imperial, San Bernardino, Riverside, Kern, Inyo, Ventura, Santa Barbara, and San Luis Obispo), four counties in Nevada (Clark, Esmeralda, Nye, and Lincoln), and one county in Arizona (Mohave). This city-system can be seen in Figure 1.1. The Los Angeles city-system is derived from the *2000 Rand McNally Commercial*

FIGURE 1.1: LOS ANGELES CITY-SYSTEM BOUNDARIES



Source: 2000 Rand McNally Commercial Atlas and Marketing Guide

Atlas and Marketing Guide publication of “major trade areas” in the United States, which determined the boundaries for the major trade areas of the United States after “an intensive study of such factors as physiography, population distribution, newspaper circulation, economic activities, highway facilities, railroad service, suburban transportation, and field reports of experienced sales analysts” (Rand McNally and Company, 2000). These major trade areas are economically unified regions within the United States.

The major trade areas have changed throughout time; therefore, in order to keep the counties included in the Los Angeles city-system constant, the most recent

designation of counties in the Los Angeles major trade area are used for all the decades being studied. In other words, the same counties that are presently a part of the Los Angeles major trade area are included in the Los Angeles city-system in all decades even though the counties included in the Los Angeles major trade area may have changed from decade to decade. This was done primarily because of the lack of historical major trade area definitions and because it was important to maintain a consistent spatial region. The use of these boundaries also permits comparisons to be made to other city-systems in the United States, and these boundaries were the basis to for the generalized model of stages in city-system population concentration developed by Otterstrom (2003).

County boundaries (historical and present) will be used to calculate population densities and growth rates where they are available for this area over time. This is important because when California first became a state, the counties were extremely large, and as population grew, the larger counties were divided into smaller counties. The change in county land area influences the density and concentration of the counties. For example, in 1850, San Diego County included both what are now San Diego, Imperial, Riverside, San Bernardino, and Inyo Counties. When these counties were separated from San Diego County, the density, growth rate, and concentration of San Diego County were affected because its land area decreased. These changes are important to recognize in order to accurately analyze the changing density and growth rate of each county. Thus, the reasoning for the spatial boundaries and use of historical counties boundaries for this thesis is clearly understood.

I will be using the time period of 1769-present as my temporal framework because the first permanent Anglo settlement occurred in 1769 in the San Diego area.

United States Census data was not collected for California until it acquired statehood in 1850. Data for the period before 1850 is primarily qualitative coming from state and county histories. Because this topic is focused on the historical geography of population location within this city-system, I have chosen to look at the years that Anglo people have permanently settled in the area. This thesis will only include a brief discussion of the Native American settlement in the area because little quantitative information is recorded about these peoples.

Limitations of the Study

The primary limitation of this thesis is the volume of historical information available about the region. It is impossible to read everything and determine every single factor that has attracted people to this region. Therefore, the major trends and attractions have been identified in order to give a broad overview of the historical geography of the region. Another limitation of this research was the unavailability and the inconsistency of certain data. Different information was gathered by the U.S. Census in every year, so there were some years where data were unavailable or different from other years.

The lack of generalization is another limitation of this thesis. Los Angeles is a very unique city, and its growth and the factors that have affected that growth may be different from many cities and city-systems. While the precise methods or findings are not specifically applicable to other regions, the general research approach could be applied to other city-systems in the United States. Another limitation involves the predetermined boundaries established for the Los Angeles city-system. Many could argue that certain counties should or should not be included, but this research had to fit within the framework already established by previous research (Otterstrom 2001; 2003). Further, demographic growth variables such as natural increase, birth rate, death rate, etc.

are not considered in this thesis as indicators of growth because it was my desire to see how other factors outside of those that measure natural growth affect population increase and concentration in the city-system even though the factors to be studied are not independent of these natural growth factors.

Importance of the Research

This study of the Los Angeles region will be valuable for geographers and urban historians alike. First, a study of a region provides a holistic view of how regions function and how population interacts with components, such as agriculture, manufacturing, transportation, and migration. Second, this research also connects the history of the area with the spatial distribution of population over time. This has rarely been done, and it is a powerful tool in obtaining a complete understanding of a region because past trends can be identified and used to better understand the present and predict the future growth.

Third, by comparing the historical geography of the Los Angeles region to the nation as a whole, important differences will be discovered between the two which will better illuminate why Los Angeles has grown to be so large and influential. Finally, by determining why, where, and when people have located in this region, patterns and trends can be identified. An understanding of past and present concentration trends can lead to a better awareness of how the region is connected and how the region functions as a collection of populated areas. Therefore, this thesis will contribute to the more complete understanding of city-hinterland economics by further exploring the relationship between core urban areas and their peripheral surroundings. This will further clarify the

increasing homogeneity or heterogeneity of the region, which is important to understand because of the economical interdependency of city networks.

CHAPTER 2

Background Literature

Introduction

Many researchers (Perloff, et al. 1960; Morrill 1992; Fonseca and Wong 2000; Otterstrom 2001) have studied the reasons that regions of the United States have grown and declined over time at the national scale, but not specifically the Los Angeles region. Much of the research that has been written about the Los Angeles region (e.g.; Fogelson 1967; Lewin 1949; Nelson 1983) has been about its history, but little research has been conducted that connects the history of the region with its geography or the reasons for the spatial location of people within the region. Likewise, much has been written about the spatial location of population or the concentration of population in the United States (e.g.; Vining and Strauss 1977; Morrill 1979; Morrill 1980; Long and DeAre 1988; Frey and Speare 1992; Johnson and Beale 1994; Long and Nucci 1997; Otterstrom 2001), but again, this has not always been connected with the history of the area under study nor has it examined a region as small as a single city and its surrounding hinterland. In addition, most of this body of literature has focused on the last few decades rather than on all the years of population settlement. Exceptions to this are studies conducted by Harris (1940) on Salt Lake City and Cronon (1991) on Chicago.

The following review will assess the factors that influence regional population growth and decline and how these factors impact population concentration. It will also show how these factors that affect regional growth influence the relationships between core and peripheral areas. The main factors that have an effect on growth are the economic condition of the region (including the growth or decline of different economic sectors such as agriculture, mining, manufacturing and industry, services, and amenities),

the physical geography of the area, the advent of transportation innovations in the region, the occurrence of historical and political events (both external and internal to the region), and migration trends in the region.

Factors that Affect Regional Growth and Concentration

A group of cities or counties that interact and are connected with each other constitute a region, or in this case, a city-system. Over time, regions often develop a core city or a core area, which continues to interact with its hinterland forming an integrated network. Once a city is settled, its initial growth is often dependent on its connection with its hinterland. The cities that have the best access and interaction with their hinterland are usually the most successful (Muller 1977). In the case of Seattle, its growth was directly tied to the development of its hinterland, and this development was what gave Seattle the edge over Portland in becoming the regional node or core of the Northwest (Abbott 1992). Friedman and Miller (1965) looked at the relationship between core areas with their peripheries as a new spatial order called an “urban field”, in which a metro core merges with the nonmetro periphery around it. There are numerous factors that influence a region’s growth and population concentration. I will look at many of these and literature related to core/periphery regional relationships.

Economy

A region’s economy can have a very significant impact on the population growth and concentration. Economic growth and population growth are most often positively tied together. Usually, when one is increasing the other is increasing and vice versa. One of the most influential factors on a region is the national economy. National economic trends are often evident in regional economic trends. National nodes of economic

activity are tied to regional nodes and regional nodes are tied to subregional nodes. They each influence and interact with each other forming core/periphery relationships with one another (Meyer 1980). In case of a city-system, its core city is not only tied to the subregional nodes within its boundaries, but it is also tied to the national nodes higher in the hierarchy. In examining the national and broad regional economic trends of the United States, Perloff, et al. (1960) studied the different economic sectors that affect economic conditions nationally and regionally, including agriculture, natural resource extraction, manufacturing and industry, and services. Because this work was written in 1960 when the U.S. economy was more agro-industrially based, the need to discuss the affect of services such as, recreation, retirement, and tourism was not as important as it is today. A discussion of the influence of these types of services is discussed at the end of this section. Each of these economic sectors has grown and declined in the Los Angeles area and have consequently had differential impacts on population concentration and core-hinterland relationship.

Agriculture

The presence of agriculture in a region initially tended to have a positive influence on both the population and economic growth of a region. The presence of fertile soils and amenable climates in an area often attracted people, especially in early periods of settlement when livelihood was based on agriculture. This was especially the case in the Los Angeles area where many people came because of the abundant agriculture-friendly land (Grenier 1978). Although agriculture was often a cause of growth in the early settlement period, as a region became more populated and economically developed, an agriculturally based economy eventually led to slow

population growth (Perloff, et al. 1960). In a developing region, the land used for agriculture was needed to support a growing population. In the 1970s, nonmetropolitan or peripheral counties began to grow at a faster rate than metropolitan counties, but it was still found that counties with an agriculturally based economy lost population (Beale 1975). Similarly, in the 1980s and 1990s, counties that were based on agriculture were the least likely to gain population and more likely to experience lower levels of net migration (Richter 1985; Johnson 1989; Johnson and Beale 1994).

When cities grow, urban development replaces agricultural land; such was the case in much of Southern California (Goodenough 1992). The conversion of agricultural land to non-agricultural land uses and the decrease in people employed in agriculture are some of the most observable impacts of a changing economic structure. As population grows, more land is needed to supply housing and employment for the population, so the amount of agricultural land declines. An example of this in Southern California is Orange County. It was named for its many acres of orange orchards that have been replaced by houses and industry (Bachus 1981). However, there are also many areas in the Los Angeles city-system that are still agriculturally rich. Although research has demonstrated the negative impact of agriculture on growth (Beale 1975; Richter 1985; Johnson 1989; Johnson and Beale 1994), little research has been done that directly addresses how agriculture affects population concentration, which will be addressed in the thesis. With many of the core areas of the city-system lacking in agriculture and several agriculturally rich peripheral areas, it will be interesting to see how population concentration is impacted by the presence of agriculture.

Mining

Similar to agriculture, mining and natural resource extraction were another part of the economic condition of the Los Angeles region. It was one of the major reasons for initial settlement in the West generally, and in parts of the Los Angeles city-system in particular. Mining and natural resource extraction often caused a concentration of people in specific areas. The mining of coal and iron ore were very important to the growth and development of the Eastern U.S. (Perloff, et al. 1960). The mining of minerals and metals and the presence of petroleum and oil were crucial in the settlement of the West. Networks of small settlements developed in West around mining operations as people began to trade the extracted metals and minerals. Trade routes developed, and core population centers began to be more connected to their peripheries. Such was the case in Comstock, NV with the Comstock Lode, in which Comstock, a peripheral settlement, developed into a contributor to the growth of San Francisco (Moehring 1997). San Francisco and Northern California had developed as a core of the region because of the California Gold Rush in 1848 (Meinig 1972). This was the main reason for California's initial population growth and settlement.

It was more than just the mere presence of natural resources that led to population and economic growth. When natural resources were extracted, they had to be processed, which led to employment opportunities. While the presence of natural resources attracted people to an area initially, it was everything that happened because the natural resources were there that brought population and economic growth to an area. California was rich in natural resources, which led to economic growth because of the manufacturing and industry that was necessary in order to make those natural resources usable to people.

This is one of the reasons that California became such a wealthy state so quickly (Walker 2001a).

As the national economy developed and became more technologically advanced, mining and natural resource extraction within the United States became less important (Perloff, et al. 1960). Like agriculture, mining often decreased as population shifted to urban centers, and counties based on mining activities often experienced declining migration rates (Richter 1985). While mining used to attract people to the West, other things are attracting people now, such as amenities (Booth 1999). In the 1990s, counties that were heavily reliant on mining for their economic well-being were the least likely to gain population (Johnson and Beale 1994), and mining counties experienced outmigration (Fuguitt and Beale 1996). As counties have urbanized and become more industrialized, mining has become less and less important as a part of the economy and as a cause of population growth. Like agriculture, not much research has been done to examine how the presence of mining activity affects population concentration which will also be examined in this thesis.

Manufacturing

Understanding the changes in manufacturing is important in studying a region because of the effect manufacturing has on population location and growth (Perloff, et al. 1960). As previously mentioned, the growth of the agricultural and mining industries often led to a demand for manufacturing and industry. Again, agricultural products and natural resources needed to be processed in order to make them usable by people (Walker 2001a). As agricultural products and natural resources began to become more important to the economy of a region, there was a need to improve equipment and make labor more

efficient. In the Midwest, it was found that agriculture and mining developed simultaneously with manufacturing or because of advancements in manufacturing products (Page and Walker 1991). The growth of the manufacturing industry stemmed from the demands to bring more goods to the people.

Growth in the manufacturing sector facilitated population growth as agriculture declined (Johnson 1989). Because manufacturing often required human labor and a precise location – namely, proximity to transportation routes and access to hinterland– it became most prominent in and around urban centers or urban nodes (Muller 1977). It was often the growth in the manufacturing sector that initiated the emergence of metropolises and urbanization (Pred 1965). One of the reasons that many cities developed into metropolises was to manufacture goods that the population and hinterland demanded (Morrill 1980). In comparing the growth of Seattle and Portland, Seattle became a more important regional center when it began to manufacture goods and trade them internationally (Abbott 1992). Therefore, manufacturing is often associated with urbanization and population growth, as people migrated into the cities because of employment opportunities. Whether it was population growth that attracted manufacturing to urban centers, or the growth of manufacturing that brought more people to the metro nodes is hard to determine. Suffice it to say that both grew and concentrated at relatively the same time for most regions.

Eventually, both population and manufacturing concentrations reached a peak and then began to deconcentrate into the suburbs at the national level (Morrill 1979). In trying to determine the factors that affected the concentration of population in the U.S. at this time, Beale (1975) found that one of the factors was the deconcentration of

manufacturing. Like population, after transportation and communication advancements, the need to be located in cities or in specific locations was less important. Therefore, people as well as manufacturing companies could locate other places, which resulted in deconcentration. In examining the deconcentration of industry in San Francisco, Walker (2001b) found that cheaper land prices and better infrastructure in the periphery was another reason for manufacturing deconcentration and not necessarily a change in transportation mode. Another contributing factor to the deconcentration of manufacturing was the changing nature of society toward a more service-based economy. During the 1980s, Frey and Speare (1992) found that there was a decline in the demand for manufacturing. The location of manufacturing was also found to be very important in determining the development of the urban area of Los Angeles (Fogelson 1967; Hise 2001). As the U.S. became more technologically advanced, the demand for manufacturing declined and the need for more services increased (Perloff, et al. 1960).

Services

As another part of the economic structure of a region, the growth of the services industry has been characteristic of a developed city and region. The demand for services in a region was a result of more economic and technological development, and the West was no exception (Perloff, et al. 1960). The growth of services was and is an indicator of economic and metropolitan growth (Frey and Speare 1992) as well as higher rates of immigration (Richter 1985). “The rapid growth of larger cities [reflected] their increasing importance as commercial and service centers rather than as industrial centers” (U.S. National Resources Committee 1937, 37). By the 1980s, the regions with the most consistent growth were those that “served as advanced service and corporate headquarter

[centers], those that specialized in knowledge-based industries, and those that engaged in certain high-tech activities” (Frey 1993, 770). In the Los Angeles area, the services industry was the second leading employment category in Los Angeles after manufacturing in the 1960s (Preston 1971). There still exists a research gap concerning how the increase in the services industry has influenced population concentration, which this thesis will address.

The more recent growth in importance of specific types of services has also impacted the growth and concentration of people in the U.S. Recent decades have witnessed the increasing importance of recreation, amenities, and retirement in the growth of regions, especially regions in the West. In the 1970s, when population began to grow in nonmetropolitan counties, it was discovered that much of the nonmetro growth could be explained by the amenity opportunities within the counties (Beale 1975; Morrill 1979). This trend continued at even greater strength in the 1990s. As regions became more technologically advanced, the population no longer had to be close to the city or even the suburbs in order to work. More and more people chose to locate in environmentally attractive areas with environmental amenities (Morrill 1992; Johnson and Beale 1994). This is especially the case in the West where recreation and amenities and the tourism associated with them have positively influenced the population density in the West (Booth 1999). Both the natural and manmade amenities and recreation opportunities available in the Los Angeles city-system attract people. Many counties in the West are also retirement destinations because of the moderate climate and other amenities. In the 1980s and 1990s, retirement counties were among the fastest growing (Fuguitt and Beale 1996; Frey and Speare 1992).

All of these factors, agriculture, mining, manufacturing, services such as amenities, tourism, retirement, and recreation, are important in having a good understanding of the economic growth of a region (Perloff, et al. 1960). The role of each of these in the growth of a region changes over time, but they all contribute, whether in their decline or increase, to the growth of the region and to the relationship that exists between core and periphery. It is often the relationship between core and peripheral areas and what is happening in those areas economically that contribute to the concentration or deconcentration of a region. The economy, both at the national and local level, greatly impacts the population growth and concentration of regions.

Physical Geography

One of the factors that often effects the initial settlement and growth of a region is the region's physical geography. In order to understand a region's population concentration, it is important to be aware of its physical geography (Otterstrom 2003). Some regions have a physical geography that was conducive to growth and other regions were more isolated. For the early part of America history, the West was isolated from the East by the Great Plains and the Rocky Mountains. The settlement and development of the West occurred much later than that of the East because of this isolation. Once geographical barriers were overcome by transportation innovations, such as the railroad, people began to settle in the West and form connections between core and peripheral areas. More specifically to the Los Angeles city-system, the Southern California coast was isolated not only by mountains, but also deserts. These geographical barriers kept much of the area, especially the Los Angeles basin, largely isolated from settlement by the population living in the East (Nelson and Clark 1976; Nelson 1983). It was not until

these barriers were overcome by the railroad that people began migrating to the area in large quantities.

Many different things contribute to the physical geography of a region. The presence of fertile soils, natural resources, and moderate climate are part of a region's physical geography as well as its natural amenities including beaches and national parks that attract tourism and people seeking recreational activities. Therefore, the physical geography of the Los Angeles city-system acted as both a barrier and as an attraction to newcomers. The fertile soils, natural resources, and amenable climate attracted people to the area, while the mountains and deserts acted as barriers to initial growth and settlement. However, many of these same mountains and deserts that once limited growth have actually become attractions to people, which is evident in the growth of the desert cities of the Inland Empire such as Palm Springs. The impact of physical geography on growth and concentration has changed over time and is connected with other factors like transportation and technological innovations.

Transportation

The advent of transportation innovations was another major factor that affected the growth and concentration of regions. As previously mentioned, it was the transportation innovations that first allowed people to settle in the West. Without the advent of the railroad in the late 1800s, the West would not have grown like it did during that time. Borchert (1967) studied the transportation evolution in the United States, identifying four transportation epochs. In the Sail-Wagon Epoch, 1790-1830, the population of the U.S. was deconcentrating as it spread westward into the frontier. During the Iron Horse Epoch, 1830-1870, the population was still deconcentrating and

moving to the West. When railroads became the major source of transportation, the Steel-Rail Epoch, 1870-1920, began, and a national transportation system developed for the first time. The population was still deconcentrating but at a slower rate because there was some concentration around the rail lines and urbanization to the cities began to occur. This follows along with the sector theory of urban growth, which posits that growth takes place along main transportation routes (Harris and Ullman 1945). During the Auto-Air-Amenity Epoch, 1920-, population began to locate in the cities causing population concentration across the nation. The growth of city nodes depended on an expanding transportation network because it expanded the hinterland of the nodal city (Muller 1977). A growing hinterland added to the economic base of the nodal city.

Transportation is a key factor in connecting core with periphery especially in Southern California (Preston 1971; Meinig 1972; Muller 1977). As Los Angeles grew, its population depended on surrounding counties for things such as agricultural products and water. The interaction permitted by the transportation network has allowed the peripheral regions to grow. Eventually, the automobile facilitated the movement of people to the suburbs, which changed the trend back to population deconcentration (Foster 1975). Each transportation innovation increased the outward expansion of the city, but it was the automobile that largely resulted in the decentralization and suburbanization of urban areas (Smith 1986). While transportation has a very important impact on the growth of a region, it is not the only thing that must be considered when studying how and why cities grow (Kuehn and West 1971), especially when considering the city of Los Angeles. Los Angeles experienced deconcentration in the 1920s, which was largely caused by the automobile. However, other factors, such as the real estate

boom and the commitment of city leaders to decentralization (Foster 1975). This demonstrates the importance of studying more than one factor when trying to determine what impacts population growth and location.

Transportation has been crucial in facilitating the movement of people from core areas to peripheral areas. In less developed countries, the development and improvement of transportation networks has allowed isolated communities to be connected to core cities. This makes possible the development and industrialization of these isolated communities (Taaffe, et al. 1963; Aguilar 1999). In recent decades, the interstate highway system has contributed to the shift in population from metro to nonmetro counties (Lichter and Fuguitt 1980). Therefore, the impact of transportation on concentration is evident in the fact that it is often the means by which people concentrate in cities or deconcentrate into suburbs. If access to cities or to peripheral areas is not available, then concentration is going to be influenced.

Historical and Political Events

Historical and political events that happen within and outside the region can have a great impact on when, where, and why people locate in a region. This was defined in the literature as “period effects” by Frey and others (Frey 1988; Frey and Speare 1992; Frey 1993; Fuguitt and Beale 1996). Frey (1988) argued that one of the explanations for the nonmetro growth of the 1970s could be termed a “period explanation” in which economic and demographic circumstances, like the recession, energy crises, and foreign competition, contributed to the change in population movement. Although Frey’s research was at the national level, “period effects” or historical events have influenced regional and city growth as well. Historical events such as the Klondike Rush and the

Gold Rush influenced the growth of Seattle and Portland (Abbott 1992). Likewise, events such as the Gold Rush, the land boom of the 1880s, and World Wars I and II (Meinig 1972), impacted the growth of the Los Angeles city-system. Because of the positive or negative effect that these events can have on the economy of a region, they can either be a deterrent or stimulation to population growth. Both of the World Wars stimulated the economy and job market in Southern California which attracted many people to the area (Muller and Espenshade 1985). Political decisions to bring more water into the area by aqueducts also permitted population growth. Many political and historical events were important to the growth of the city-system.

Several researchers have examined the existence of long-wave economics in the United States and other capitalist countries in relation to political and historical events (Kondratieff 1935; Kuznets 1958; Easterlin 1968; and Berry 1991). Kondratieff (1935) believed that there were long waves in wholesale prices in business cycles. This idea was further developed by Kuznets (1958), in which he proposed that the long wave theory could better explain periods of population and economic growth. Easterlin (1968) identified long waves in the international migration of the United States and demographic trends. Both Kuznets (1958) and Easterlin (1968) examined how population growth was affected by changes in infrastructure. Berry (1991) provided a thorough overview of all these previous arguments showing how different long wave hypotheses were similar and different. All of these researchers discussed the long wave theory in relation to war cycles and the impact of war on population and economic growth. Otterstrom (1997) also related the long wave theory to population settlement and concentration for the

United States. The long wave theory is a further indication of the importance of examining historical and political events and if there are cyclical trends in these events.

Migration

Migration in and out of the United States has increased and decreased at different times throughout the history of the nation. Likewise, the different regions of the United States have gone through different periods of in-migration and out-migration. There are many different scales of migration. People can move within the same region, between regions, or from other countries. Each region in the U.S. has experienced these different types of migration. In Southern California, all of these different types of migration have been experienced especially the international immigration of recent decades. Migration has introduced various dynamics in the location and concentration of people within the Los Angeles city-system.

Many researchers (Richter 1985; Johnson 1989; Fuguitt and Beale 1996) have studied the net migration rates of metropolitan counties versus adjacent and nonmetropolitan counties, but this has never been directly tied to population concentration. Fuguitt and Beale (1996) found that migration rates for metro counties have been fairly constant over time, but the migration rates for nonmetro counties have fluctuated. Fuguitt and Beale (1996) also noted that significant decreases in migration rates for metro counties were accompanied by significant increases in the migration rates of nonmetro counties. Richter (1985) found similar results in that regions with high migration were those that were the most metropolitan and experiencing urban expansion. This shows the relationship between metro and nonmetro counties or core and periphery and how migration trends can affect that relationship. Nonmetropolitan counties that are

adjacent to metro counties are often part of the deconcentration of the metro counties (Morrill 1992). Thus, it would be expected that when net migration rates decrease in metro counties deconcentration is occurring.

Another manifestation of how the growth of the core region affects its hinterland is termed the “spillover effect”. The growth of the core often “spills over” into surrounding counties (Morrill 1979; Johnson 1989). In Southern California, Los Angeles has grown and spilled over into Riverside, San Bernardino, and Ventura counties and into San Diego, the Mojave Desert and Bakersfield (Morrill 1992; Frey 1995). These once peripheral areas in Southern California have become self-sufficient and more independent from Los Angeles. People can live in these suburbs and not ever go to the core, which is part of the periphery model outlined by Harris (1997).

Examining migration rates for different counties has also been connected with some of the variables previously discussed. Retirement counties have experienced positive net migration rates since the 1970s, and they have grown more rapidly because of in-migration than other types of counties such as commuting and manufacturing counties (Beale, 1975; Fuguitt and Beale, 1996). People have migrated to certain regions at different times and for different reasons. Often times the reasons for migration are tied to many of the factors that affect growth previously discussed. For example, people migrated to California during after World War II because there were job opportunities and the economy was growing (Muller and Espenshade 1985; Kirsch 1993). As many of the large cities in California have experienced international in-migration, California has also experienced some flight as people move out of California to surrounding states (Frey

1995). Outmigration to surrounding states began to occur at a noticeable rate in the late 1970s and has continued since then (Kirsch 1993).

Another major influence on the migration patterns in the Los Angeles city-system has been the rapid growth of minority population. Between 1980 and 1990, the Los Angeles metropolitan area experienced the highest increase in minority population in the nation (Frey 1993). Los Angeles is also one of only ten metropolitan areas where the minority population is greater than one half the total population (Frey 1993). Minorities often tend to locate in urban areas because that is where the most job opportunities are located. This has contributed to the expansion of the Los Angeles metropolitan area into surrounding and peripheral counties and states (Frey 1995). International immigration is the largest component of California's population growth (Kirsch 1993). Thus, it will be important to consider the growth of the minority population within the city-system in order to best comprehend the regional growth and historical geography of the city-system.

Summary

Each of these factors (economy, physical geography, transportation, historical and political events, and migration) affects the growth and concentration of a region in different ways and at different times. Not only is the population concentration influenced by each of the factors, but they also influence each other forming a complex interaction of many variables that affect the growth of a region. The noteworthy geographic characteristics of the Los Angeles city-system, such as its physical geography and location and the natural amenities available in the region have all influenced the timing in which the region has grown and concentrated. Even with all that has been written on

these factors, many gaps exist when it comes to tying these together in their effect on population concentration. Developing an understanding of how these factors changed in importance throughout history and how that has affected the core/periphery relationship within the region will also provide a better knowledge of the historical geography of the Los Angeles city-system.

CHAPTER 3

Data Gathering and Methodology

My approach to this research is a mixed methods approach, meaning that both quantitative and qualitative techniques will be used. I quantitatively analyze the concentration of the total population and the concentration of population in the various economic sectors as well as examine the densities of these populations and their growth rates over time. Then historical documents are explored in order to find explanations for the changes in the various concentration measures focusing mainly on the factors identified in the literature.

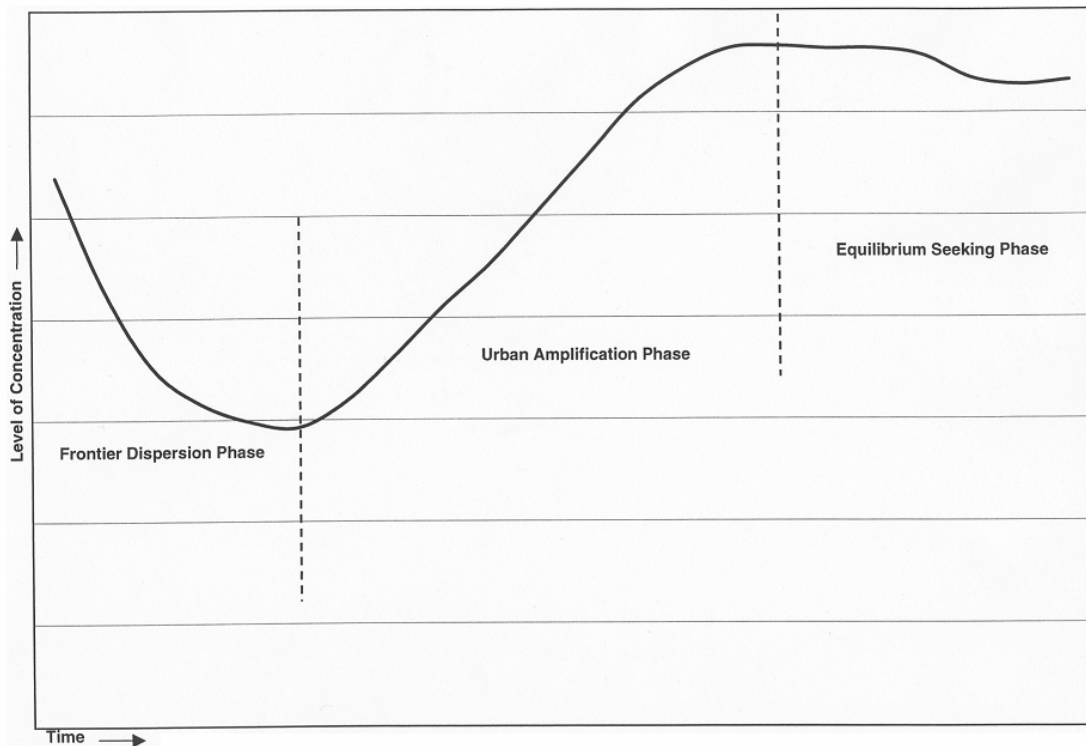
Population Concentration Model

The foundation for much of my research was to identify the stages of population concentration for the Los Angeles city-system, as Otterstrom (2001; 2003) did for the entire nation, and then compare the national trend to the trend for the Los Angeles area. In examining the changing concentration of the United States, Otterstrom (2001; 2003) identified three stages of population concentration (See Figure 3.1, a model of the New York City city-system). The phases reflect the impact of the different factors affecting the growth and concentration of the region. The first phase of the city-system concentration model was labeled “frontier dispersion,” in which a region experienced high concentration during the time of its first settlement and then deconcentrated as people spread throughout the region. In other words, the growth of the hinterland was happening at a higher pace than the growth of the city. When the concentration curve reached its lowest point, the region had experienced the end of the frontier, which happened at the national level in 1910 (Otterstrom 2001). The second phase, “urban

amplification” then began. People moving to the cities and leaving rural areas causing rapid population concentration characterized this phase. The growth of the urban area overshadowed the growth of the rural areas previously experienced, which is usually termed “urbanization”.

The third phase began when population concentration reached its highest point being termed the “equilibrium-seeking” phase which occurred at the national level in 1970 (Otterstrom 2001). This is similar to what Vining and Strauss (1977) found. They determined that 1970 was the year in which population concentration reached its peak, and there was a “clean break” from past concentration trends (Vining and Strauss 1977, 751). It was in the 1970s that population began to deconcentrate at several levels of disaggregation, including the state and county level. The characteristics of this

FIGURE 3.1: GENERALIZED MODEL OF STAGES IN CITY-SYSTEM POPULATION CONCENTRATION



Source: Otterstrom 2003

“equilibrium-seeking” phase include deconcentration and an increase in the growth of suburban and rural areas. In other words, the core area began to experience lower population growth because the growth was expanding outward to surrounding counties and amenity-rich, rural areas.

These different phases have been experienced at different times in every city-system of the United States. In his article, Otterstrom (2003) addressed the need to look at specific city-systems because they would be different both spatially and temporally from each other and from the national trends. By examining the concentration trends of the Los Angeles city-system, these different phases will be identified and then explained by exploring the factors that affect regional growth and concentration.

Variables

Several independent and dependent variables are measured and examined throughout this research. The dependent variables are the concentration, density, and growth rate of total population and the population employed in the various economic sectors in the city-system. Each of the other variables identified in the literature were independent variables. These variables include the physical geography of the city-system, transportation innovations, the occurrence of various historical and political events, and the migration trends of the region.

Operational Definitions

The dependent variables are defined as the following:

- *Population concentration*: measured by the Hoover Index, this generates a number between 0 and 100. This number tells the percentage of the population that would have to cross county boundaries in order to have a uniform density across the whole county.
- *Population density*: the number of people per square mile using historical land area where appropriate

- *Growth rate*: the log of the total population in the later year divided by the total population in the earlier year, divided by ten and multiplied by 100.
- *Agriculture, mining and resource extraction, manufacturing, and services concentration*: this is the same as population concentration but instead of looking at the total population, this looks at the total number of people employed in agriculture, mining and resource extraction, manufacturing, and services by county
- *Agriculture, mining and resource extraction, manufacturing, and services density*: the number of agriculture, mining and resource extraction, manufacturing, and services employees per square mile using historical land area where appropriate

The independent variables are defined as the following:

- *Physical geography*: commentary about the impact of physical geography as noted in historical documents, percent of land area in climate regions, topography
- *Transportation*: the advent of new transportation innovations in the city-system, namely the railroad, the electric railroad, the automobile, and air travel as noted in historical documents, the number of miles of approved highway and the year highways were approved
- *Historical and political events*: major internal and external events that had an effect on the location of people in the city-system as noted in historical documents
 - Internal: water projects, annexations, the construction of ports, and land booms
 - External: the Gold Rush, the Civil War, the World Wars, the Great Depression, the Dust Bowl
- *Migration/immigration*: the number of migrants into and out of the counties within the city-system and population redistribution caused by migration as discussed in previous literature and using available census data
- *City concentration*: measured by the Hoover Index, similar to the population concentration defined above, but using the city total population and area instead of the county measures
- *City density*: total population per square mile of land occupied by cities

Data Sources

As shown in Table 3.1, the majority of the numerical data came from the U.S.

Censuses for the years under study, 1850-2000. The total population in each county was

TABLE 3.1: THE MEASUREMENT OF INDEPENDENT AND DEPENDENT VARIABLES AND THE SOURCES OF DATA

VARIABLE	MEASUREMENT	SOURCE
Population concentration	Hoover Index	Raw data : U.S. Census Calculations by author
Population density	Population per square mile	Raw data : U.S. Census Calculations by author
Agriculture concentration	Hoover Index	Raw data : U.S. Census Calculations by author
Agriculture density	Population employed in agriculture per square mile	Raw data : U.S. Census Calculations by author
Mining and resource extraction concentration	Hoover Index	Raw data : U.S. Census Calculations by author
Mining and resource extraction density	Population employed in mining and resource extraction per square mile	Raw data : U.S. Census Calculations by author
Manufacturing concentration	Hoover Index	Raw data : U.S. Census Calculations by author
Manufacturing density	Population employed in manufacturing per square area	Raw data : U.S. Census Calculations by author
Services concentration	Hoover Index	Raw data : U.S. Census Calculations by author
Services density	Population employed in services per square area	Raw data : U.S. Census Calculations by author
City concentration	Hoover Index	Raw data : U.S. Census Calculations by author
City population density	Total population per square mile	U.S. Census and County and City Data Books Calculations by author
Physical geography	Physical geography barriers to population settlement and growth Climate regions Topography	Various Sources
Transportation	Advent of new transportation innovations in the city-system, highway history	Various Sources
Historical and political events	Major internal and external events that had an effect on the location of people in the city-system	Various Sources Historical museums and sites
Migration/Immigration	Number of migrants into and out of the counties within the city-system	U.S. Census Historical museums and sites and various sources

available for every decade, but the number of employees in the different economic sectors was only available for all the economic sectors since 1930. The U.S. Census data was both available online for many of the years and from library holdings of Government Documents. The problem with the data for the number of employees in the agriculture, mineral, and services industries is that the same data was not collected every census year. Using the available data, the data that was most consistent from year to year since 1850 was used.

Other secondary data that was collected included information concerning the influence of the physical geography, transportation innovations, and historical and political events were taken from state and county histories, published research, and historical sites and museums. Additional data such as this was acquired while visiting historical museums and sites within the city-system during the summer of 2003. I visited nearly all of the county seats in the region and each of the county historical museums where possible. Other historical sites that pertain to the location of population within the city-system were also visited and more information was gathered at these sites. The field work in each of the counties provided a more thorough feel for the dynamics and composition of the region under study.

Methodology

The methodology of this research was comprised of six steps, with each step contributing to the accomplishment of the four main research objectives.

Determining *When and Where* (Objectives 1 and 2)

The first objective is to explain *when* population has settled in this area and *when* changes in the concentration of population occurred (either increased or decreased) throughout the history of the city-system. The second objective is to determine *where* the population settled and how the location of population contributed to the changes in overall concentration. These objectives will be fulfilled by completing the following steps:

Step 1: I reviewed county and state histories to gain a better understanding of the population location prior to 1850. This provided me with a general understanding of the concentration of population of the Native Americans and the early European settlers prior to the availability of U.S. Census data. For the years after 1850, I compiled United States Census data for the years and the counties being examined. This data focused primarily on the population size and area of each county for each decade of available census data as well as the number of employees in each of the economic sectors previously identified.

Step 2: I use the Hoover Index of Population Concentration (Hoover 1941; Duncan et al, 1961) to determine the relative distribution of population in each decade at the county level. The Hoover Index produces a value between 0 and 100, and the value indicates the percentage of the population that would have to resettle in order to have a uniform distribution across the whole region. The formula for the Hoover Index is as follows:

$$H_t = 0.5 \sum_{i=1}^n |p_{it} - a_i| 100$$

where H_t is Hoover index at the point t in time, p_{it} , the fraction of the population in the city-system living in subarea i at time t , and a_i is fraction of the land area of county in the city-system, and n is the number of subareas (Vining and Strauss 1977).

By knowing the concentration of the region, I gain a relative understanding of where the population is located in the region at each decade. Because of the nature of the Hoover Index, the concentration of the region at a scale smaller than the city-system is not feasible for a historical study; therefore, the county population densities and growth rates are used to determine which counties that grew or became more or less dense during each decade.

The three stages of city-system concentration as labeled by Otterstrom (2001) are identified for the Los Angeles city-system. When the level of concentration was increasing, it is assumed the population was urbanizing which I compare to the density to determine if this was the case. On the other hand, when the concentration level was decreasing, the population is dispersing to less populous parts of the region. This is important because when a region experiences periods of concentration, this is evidence that specific socio-economic shifts are occurring. For example, if a region was concentrating, the economic condition of the region might be analyzed to see if the concentration was being caused by the availability of more jobs or a growth in manufacturing employment. Thus, much of my research is exploratory, as I identify major shifts in concentration, and then rely on other data to explain why these shifts

occur. Exploratory research included going back to the county histories or other census data in order to determine what was causing the major shifts and discrepancies during the different time periods. This allows for connections to be made between the relationship between the core and the periphery over time.

Step 3: As part of examining where population was going, this research also looks at population concentration and density within the region at the city level.

Because many of the counties within the region are so large, it was useful to examine concentration at a smaller scale (see Cohen and Debbage 2003). This included the acquisition of the population size and land area of all the cities in each county for the time periods where data was available, which was 1940-2000. Using the population and area of land occupied by incorporated cities of more than 25,000 people, a modified Hoover Index was calculated in order to examine the concentration of the region based on the city level rather than the county level.

Determining *Why* (Objective 3)

The third objective is to illuminate the first two objectives by explaining *why* people located when and where they did in both the core and the periphery, which will contribute to the furthering understanding of city-hinterland growth economics. This objective will be met by completing the following steps:

Step 4: I use the Hoover Index to examine other census data, such as the concentration of employees in agriculture, mining and natural resource extraction, manufacturing, and services. I again utilized the Hoover Index to calculate a concentration of employees in these different sectors. I compare these statistics

with the population concentration values. I also examine the number and density of people employed in each economic sector for each decade to determine which counties or industries were the most dominate in each decade. By running correlations on the density of the total population and the population employed in the different economic sectors, I show the evolving relationship between the economic sectors and total population. During this phase of the research, I also collected more data on the other factors that affect the location of population, such as the physical geography of the region, migration trends, transportation innovations, and major political and historical events.

Step 5: Once patterns and trends are identified in these relative concentration statistics, I analyze the information in order to determine what was occurring within the region over time. By combining this numerical data with qualitative data gathered from historical documents, books, published research and historical sites, a more holistic understanding of the Los Angeles region develops. For example, if there were major increases or decreases in population concentration or growth, I went to the historical documents that I had collected and tried to determine why these trends occurred focusing on explanations involving the factors of regional growth identified in the literature.

My main focus when looking at the historical documents was any mention of things that attracted or deterred people from the region and any connections that were made between Los Angeles and its hinterland. It was assumed that the factors that were attracting people to the urban centers were

causing concentration within the city-system, and factors that inhibited people from settling in the region negatively impacted growth. While completing these two steps, I also focused on explaining the core/periphery relationship between Los Angeles and its surrounding counties. Once these two steps are completed, I identify areas of the region that are becoming more similar or more different thus fulfilling the purpose of this research.

Comparing to National Trends (Objective 4)

The fourth objective is to compare the trends in population concentration to the national trends and explain why differences may exist between the two. This objective will be completed by carrying out the following step:

Step 6: The population concentration of the Los Angeles region is compared to the concentration of the nation. The population concentration trends at the national level have already been studied and put into the Model of Stages of in City-System Population Concentration (Otterstrom 2003). Major shifts in the concentration curve of the city-system are identified and then explained using exploratory research of the factors that affect growth identified in the literature. This allows historical comparisons to be made between different time periods concerning the importance of the different factors affecting regional growth, resulting in a better understanding of why Los Angeles has grown to be so populous.

CHAPTER 4

Historical Background

The following chapter includes a brief overview of the Native American population living within the Los Angeles city-system prior to Anglo settlement. The early Anglo settlement period, including the Spanish colonization and Mexican secularization, is discussed. The Spanish established missions, presidios, forts created to protect the missions, and pueblos, which were small towns. Missions, presidios, and pueblos were often constructed near each other (see Table 4.1). Because the area comprising the city-system was not part of the United States at this time, no census data is available. Likewise, counties had not been established prior to statehood, but I will refer to the counties in order to provide a general reference point for the location of Native American and Spanish settlement. Therefore, only general assumptions can be made about the concentration of the region during this time period. The purpose of this chapter is to provide a historical background for the Los Angeles city-system and to develop a framework for understanding population growth and concentration for the years prior to California acquiring statehood.

Native American Population Distribution

Some scholars believe that the earliest Native American population inhabited Southern California 40,000-50,000 years b.p. (before present). If true, Native American populations have therefore been consistently present in this area since that time. From the early 1500s to the 1760s, the Indian population in the region had been relatively undisturbed by European exploration. They had traded some with European explorers along the Colorado River and along the Pacific coast, but their culture and traditions had

not been affected until the Spanish invasion and colonization effort during the sixteenth century (Forbes 1982).

Many different tribes existed in the region when the first Spanish explorers came (see Appendix A for map of Native population locations). The Native Americans that inhabited the Los Angeles Basin were some of the most advanced tribes in the region. The Spanish named those in the Los Angeles area *Gabrielinos*. It was their friendliness and willingness to welcome the Spanish that encouraged the first settlers to stay in the Los Angeles area. The Indian population provided most of the labor in building the missions, presidios, and pueblos. The Gabrielinos were hunters and gathers, and they had a great familiarity and knowledge of the area's geography (Nelson 1983).

The Indian populations in the Orange County areas were more primitive and peaceful than most other Indians in North America (Parker 1963). The Yokut Indians occupied most of the San Joaquin Valley as well as the Tüba-tulabal of the Kern River area were the main inhabitants of Kern County. The basic distribution of Native Americans in Southern California included the Panamint, Ute-Chemehuevi, Serrano, Gabrielino, and Luiseño-Cahuilla (Beck and Haase 1974). In many parts of the region, Native American hostility was a deterrent to permanent European settlement. Although relationships with the Native American varied from county to county, it is important to note that the Spanish were not the first people to settle in this area.

Native Americans were quite dispersed throughout the region, but the number of Native Americans in the different parts of the region was largely unknown. It can be assumed that the physical geography of the region, especially the lack of water and prevalence of uninhabitable climates, kept the Indians fairly concentrated to many

specific locations throughout the region. According to Hornbeck (1983), Native American Population was very dense along the coast and in parts of the Central Valley at the time of European contact. However, it is difficult to state the specific population concentration prior to European settlement.

Spanish Years: 1769-1822

The counties situated along the coast were the areas primarily settled during this time period. I assume that population concentration was fairly high as people settled near these governmental centers. Spanish missionaries established missions along the coast in an effort to colonize the region for Spain and to bring Christianity to the Native Americans (for a map of the missions established in California see Appendix B). Missions were the centers of the “Christianization” of the Native Americans. The population, mostly Spanish and Mexican settlers, came by land from Mexico or by sea. Very few people had come from the eastern U.S. due to the physical geographic barriers of the mountains and deserts to the East. Besides the missionary and colonization effort, people were attracted to this area because there was open and available land. The land was also fertile and generally provided for successful agriculture. In 1822, Mexico gained independence from Spain, and the missions in California began to decline. The Mexican government implemented a secularized system of land division called the rancho system. This caused the population to spread out around where the missions were located as they laid claim to new land. Some settlement occurred in counties adjacent to the coastal counties, but the rural Nevada and Arizona areas had yet to see permanent settlement.

San Diego County is considered by many to be the “birthplace of California” because it was the point of entrance for Spanish explorers moving northward from Mexico. The earliest Spanish visitors to San Diego came in 1542, but the first permanent settlement and mission was the San Diego Mission, established in 1769 by Junípero Serra (see Picture 4.1). Contact with other people was done mainly by sea, and most of the people coming to the region during this time were Spanish. San Diego Bay became the

TABLE 4.1: THE MISSIONS, PRESIDIOS, AND PUEBLO IN THE LOS ANGELES CITY-SYSTEM, 1769-1850

	DATE ESTABLISHED	CURRENT COUNTY
MISSIONS		
San Diego de Alcalá	July 16, 1769	San Diego
San Antonio de Padua	July 14, 1771	San Luis Obispo
San Gabriel Arcángel	September 8, 1771	Los Angeles
San Luis Obispo de Toloso	September 1, 1772	San Luis Obispo
San Juan Capistrano	November 10, 1776	Orange
San Buenaventura	March 31, 1782	Ventura
Santa Bárbara	December 4, 1786	Santa Barbara
La Purísima Concepción	December 8, 1787	Santa Barbara
San Fernando Rey de España	September 8, 1797	Los Angeles
San Miguel Arcángel	July 25, 1797	San Luis Obispo
San Luis Rey de Francia	June 13, 1798	San Diego
Santa Inés	September 17, 1804	San Luis Obispo
San Bernardino	1820	San Bernardino
PRESIDIOS		
San Diego	July 16, 1769	San Diego
Santa Bárbara	April 19, 1782	Santa Barbara
PUEBLO		
Los Ángeles	1781	Los Angeles

Source: Various county histories, table compiled by author



Picture 4.1: Mission San Diego de Alcalá

first important port for migrants by sea. Many international ships, such as the Russian *Baikal* and a few French ships, visited the port on a regular basis.

Transportation by land was still very sparse because it

was so rugged and costly (Pryde 1992). Later on, another mission was founded in 1798 just outside the San Diego Mission, called Mission San Luis Rey del Francia. It became another economic and population center within the county (Elliot 1965).

The establishment of missions quickly spread northward from San Diego along *El Camino Real*, a trail from Southern California to San Francisco that connected all the missions. In 1771, the first Spanish mission was founded in the Los Angeles region called *Mission San Gabriel*. In 1781, another settlement was established as an agricultural colony near the San Gabriel Mission called El Pueblo de la Reina de los Angeles (see Picture 4.2).

By 1790, this small pueblo consisted of 139 inhabitants. The meager economy of the pueblo was originally based on agriculture and livestock, but the land was found to be



Picture 4.2: El Pueblo de la Reina de los Angeles

very suitable for agriculture. Some of the crops grown were grapes, olives, and hemp. Another mission grew out of the establishment of ranches for livestock in the Los Angeles area known as the San Fernando Mission, which was founded in 1797. Grenier (1978) states that the population of Los Angeles was between 300 and 400 people between 1799 and 1811, and by 1812, it was up to 500 or 600 people.

Many other missions were created within the region during these early years. Not only were they religious centers, but with the pueblos, most of them became centers of agriculture and trade. What is now Orange County was first settled in 1776 with the establishment of Mission San Juan Capistrano, the seventh of what would eventually be a total of twenty-one missions in California (see Picture 4.3). Vegetable gardens, orchards, and vineyards were the basis for the economy of many of the missions, especially the San Juan Capistrano Mission. Many of the products grown, like grapes and oranges, were the same crops that the settlers grew in Spain (Parker 1963).

Further northward along the coast, Spanish explorers first landed on the coast of Ventura County in 1542, but a permanent settlement was not established there until 1782 when Father Junípero Serra established Mission San Buenaventura on El Camino Real. It was based on the production of crops and livestock (Robinson 1955). Ventura County was part of Santa Barbara County during this time period, so their histories are quite similar through these



Picture 4.3: Mission San Juan Capistrano



Picture 4.4: Mission Santa Barbara

years. Santa Barbara received its first permanent settlement in 1786, with the Mission Santa Barbara. It became one of the best kept and preserved of all the missions (see Picture 4.4). Eventually, two more missions were built in Santa

Barbara County, La Purísima in 1787 and the Santa Inés Mission in 1798 (Phillips 1927).

The only other area of the city-system to be settled by Spanish missionaries and to receive a Spanish mission was San Luis Obispo County. Mission San Luis Obispo was established in 1771 (see Picture 4.5). The Spanish settlers experienced great conflicts with the Indians around the area where the mission was built. Despite the conflict, Mission San Luis Obispo grew to be one of the richest of the California missions. It had a great coastal location, and the climate was good for agriculture. Unlike most of the more southern counties of the city system, San Luis Obispo received sufficient winter rain to maintain its water needs. Another mission was established in San Luis Obispo area in 1797, called Mission San Miguel. It was largely used for sheep grazing. This mission was also very prosperous, and it attracted many new settlers. In 1802, it was estimated that the population of the county was 16,862. Because the coastline of San



Picture 4.5: Mission San Luis Obispo de Tolosa

Luis Obispo County had no natural harbors, it did face quite a bit of difficulty in ocean-going trade (Thompson 1966).

Some of the most inland counties were settled a little after the Spanish missions along the coast were established. The Mission of San Bernardino was established as a branch of the San Gabriel Mission in Los Angeles in 1820. The mission was built quickly, but destroyed in a Native American raid in 1832. The Native Americans that lived in San Bernardino County were very proficient at wheat raising, so that is where San Bernardino got its agricultural start. There were also many cattle and sheep enterprises in the San Bernardino. This was the basis of the livelihood for the people living in this area (Elliot 1965). In 1772, the first white man, Pedro Fages, entered Riverside County, but the first settlers did not come until 1818 when Leando Serrano and his family were sent from San Diego County to settle in the Temescal Valley. They set up orchards and vineyards, and eventually a stock ranch called San Jacinto. Serrano's brother-in-law, Bernardo Yorba, started a cattle ranch in La Sierra. The valley eventually became the path for movement between San Diego and Los Angeles. In 1824, Mission San Gabriel set up an outpost in the San Gorgonio Pass to expand their missionary influence (Robinson 1957). Thus, it is evident that the influence of Los Angeles on these counties was present from the very first settlements.

In 1776, the same explorer who had been in Riverside County, Pedro Fages, entered the San Joaquin Valley by way of the Tejon Pass. Unlike the counties already discussed, the first settlement in Kern County was not a Spanish mission. However, a Spanish missionary named Father Francisco Garcés was one of the first visitors to Kern County. El Camino Real crossed through Kern County, adding to the movement and

sometimes settlement of population in this area. American trappers entered the Kern County in 1827, and they were in and out of Kern County throughout the following decade (Robinson 1961). Like Kern County, a great mission was not established in Imperial County. Two small missions were constructed, but they were not great attractions to immigrants because it was not along the Camino Real. Thus, even though Imperial County had been permanently settled during the early nineteenth century, it saw little growth during this time period (Tout 1931). The other very peripheral counties experienced some exploration during this time, but they did not have any permanent settlement.

Although the quantitative data about this time period is scarce, it can be assumed the population was quite concentrated because most people lived near this chain of Spanish missions along the Camino Real. The missions, pueblos, and presidios were the economic and population centers of these early settlements. Many Native Americans were brought from more peripheral areas to the missions for labor. There was not transportation technology available yet for major movement of large numbers of people across land. Therefore, most people stayed close to the coast and close to the permanent settlements. Most of the missions became economic nodes of commerce and trade not only with merchants by sea but also with other missions along the Camino Real.

Mexican Years: 1822-1850

During the early 1820s, Los Angeles was the largest community in California with a population of more than 600 people. By 1828, the population was 800 people. As the missions and the settlement grew, the desire for a more formal governing body increased. Although Mexico gained independence from Spain in 1822, the effect of the

change was not felt in California until the 1830s. In 1835, the Mexican government made Los Angeles the capital of California with a population of 1,000 people.

In the 1830s, the Indians began to be segregated from the non-Native population. The 1830s were a time of struggle between these two populations. With the Mexican government in control, the missions declined and a secularized land system known as the rancho system was established (see Appendix B for a map of the ranchos in the city-system). Prior to Mexican rule, little land had been given to the people, but the rancho system consisted of large land areas given to Californians rather than being controlled by the government. The first three ranchos of the great California rancho system were organized in Los Angeles County. By 1840, there were more than 35 ranchos in what would become Los Angeles County (Grenier 1978).

In 1845, the population in the Los Angeles area had grown to 1,250. Most of these people came from Mexico, but some were starting to come from eastern areas of the U.S., from places such as New Mexico and Texas. As the origins of new immigrants changed, the population make-up shifted. The population became more and more American over time. It was not until 1847, Americans permanently occupied Los Angeles, and in 1848, the war with Mexico ended. California acquired statehood shortly thereafter, in 1850 (Grenier 1978). With more land being given to the people in the area, population spread out into the ranchos. The population probably was still very concentrated, but levels may have declined some with this population dispersal.

The rancho era began in San Diego a short time after it started in Los Angeles. The first rancho in San Diego was established in 1823. Other surrounding counties quickly followed the trend. The year 1833, saw the first organized ranchos in Orange

County; one of the most famous being Rancho Cañon de Santa Ana. Most ranchos were used primarily for cattle ranching, and the majority utilized cheap Indian labor. The cattle raising in the south supplied most of Northern California with its beef during the rancho era. The rancho system reached San Buenaventura in 1802 with Rancho Simi and El Conejo Rancho. There were eventually a total of nineteen ranchos in this area. Cattle raising and sheep grazing were also important in these ranchos. Several earthquakes shook San Buenaventura in 1812 which contributed to a decline in its population, and total population reached its lowest point in 1822. In 1836, Mission San Buenaventura became a secular administration driving out Indians just as had happened in Los Angeles (Parker 1963).

The 1830s were the decade of the major ranchos. Without the rule of the missions, the ranchos were able to increase without interference. The early growth and settlement of Ventura County was similar to that of Los Angeles, however, they did not grow as fast as Los Angeles. If people were going to travel to California, they were most likely to go to the already established and booming population centers (Robinson 1955). Thus, surrounding counties like Ventura County did not attract as many in-migrants. Santa Barbara entered into a system of ranchos in the early 19th century, but their population grew rather slowly because the draw was to Los Angeles (Phillips 1927). The missions in San Luis Obispo County utilized two nearby ranchos called San Marcos and El Paso de los Robles (San Luis Obispo County Historical Museum website). Fruit trees, grapevines, and livestock also abounded in this area. One unique thing about San Luis Obispo County was that a market in the dairy business was instituted. The county was

also known for its gristmills and wheat mills (Thompson 1966). Most of the areas that had once been thriving Spanish colonies were divided into the Mexican ranchos.

Some of the inland counties were also converted into ranchos. The San Bernardino Mission was converted into a rancho in 1842, known as the Rancho of San Bernardino (Elliot 1965). Riverside County ended up having sixteen ranchos, the first, Jurupa Rancho, was established in 1838. In 1844, Louis Rubidoux settled with his family in Riverside County. He was a wealthy, educated man who quickly bought and subdivided the ranchos contributing to growth of the county. Settlers came to plant fields and vineyards (Robinson 1957).

The first organized settlement in Kern County came in 1842 with the establishment of Rancho San Emidio, which is now present day Maricopa. Between 1842 and 1846, five more ranchos were organized. Like many of the other counties in the city-system, Kern County got its real start with the rancho system. However, unlike Los Angeles, the rancho system did not bring major growth. Because of continual problems with Native Americans in this area and the fact that many of the people in charge of the ranchos lived in other counties, the rancho system did not flourish in Kern County. In 1844, the famous explorer John C. Fremont and his topographer, Edward M. Kern (for whom the Kern River and Kern County were named), explored the San Joaquin Valley. With the discovery of gold in the north, many people traveled through Kern County, but it had yet to attract its first permanent settlers. However, permanent settlement would occur within the next few years (Robinson 1961). The other more peripheral counties were unaffected by the rancho system and had yet to experience any permanent European settlement.

Summary

Various Native American tribes occupied this region prior to the coming of Spanish settlers. Some of these tribes were hospitable, while others were very antagonistic toward the newcomers. Most of the tribes had communal centers, and therefore were most likely fairly concentrated. However, they may have been less concentrated than the Spanish and Mexican settlers because all of the tribes were not dependent on water ways or other site-specific land characteristics. Spanish missionaries began to colonize many of the future counties within the region in a pattern similar to the settlement of Los Angeles. The first settlers were largely Spanish or Spanish-American. The mission and rancho systems were the first organized communities in these counties. Most of the growth occurred in the coastal counties because they had access to the ocean and had more conducive trade opportunities. Agriculture and livestock were the primary sources of attraction and livelihood for these first Southern Californian settlements. Thus, it can be assumed that early concentration levels were high, and the major attractions for new settlement were the fertile land, open space for livestock raising, and the proximity to the ocean.

CHAPTER 5

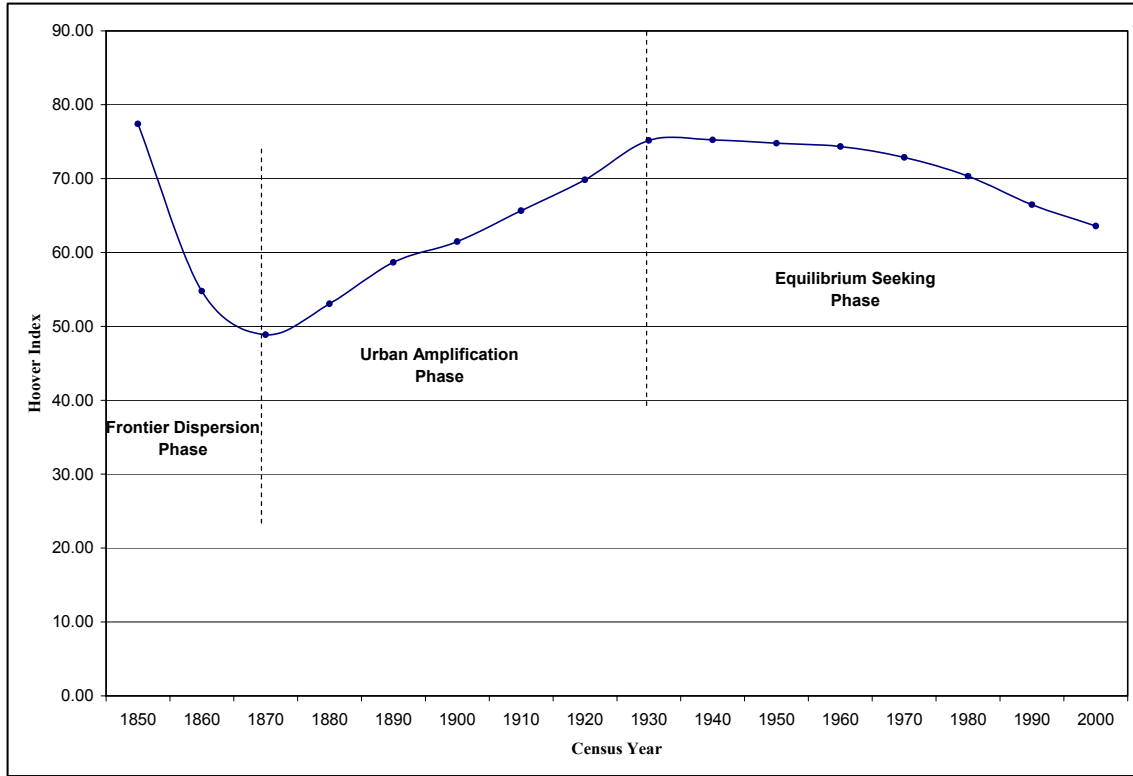
Results and Discussion

With the previous chapter ending when California acquired statehood in 1850, the following chapter begins with 1850 and continues through the year 2000. This chapter will include a presentation of the results of this study and a discussion of how these findings compare to those presented in previous research. In order to present the findings with the most clarity, the results section will be organized by the stages of city-system concentration. First, there will be a broad overview of the concentration trends of both the total population concentration and the concentration of employees in the different economic sectors from 1850-2000. Then the steps of the methodology will be completed within each concentration stage. For example, a discussion of when, where, and why people settled in the region during the “frontier dispersion stage” will be presented. Then the same steps will be followed for the succeeding two stages. The modified Hoover Index of city level concentration will then be presented and related to the overall findings of this research during the final stage of concentration. The historical concentration trends of the Los Angeles city-system will then be compared to the national concentration trends. The result of this chapter will be an improved understanding of the historical geography of the Los Angeles area and the dynamics of the relationship between Los Angeles and its hinterland.

Broad Overview, 1850-2000

By examining the concentration of the Los Angeles city-system, the stages of population concentration (Otterstrom 2001; 2003) are apparent (see Table 5.1 and Figure 5.1). The “Frontier Dispersion Phase” spans from the first decade of available data to

FIGURE 5.1: LOS ANGELES CITY-SYSTEM POPULATION CONCENTRATION, 1850-2000



Source: Raw population size and land area for each county was obtained from the U.S. Census

TABLE 5.1: HOOVER INDEX VALUES FOR THE LOS ANGELES CITY-SYSTEM

CENSUS YEAR	HOOVER INDEX (%)	CENSUS YEAR	HOOVER INDEX (%)
1850	77.41	1930	75.16
1860	54.78	1940	75.25
1870	48.87	1950	74.77
1880	53.07	1960	74.34
1890	58.66	1970	72.86
1900	61.47	1980	70.33
1910	65.65	1990	66.48
1920	69.83	2000	63.58

Source: Raw population size and land area for each county was obtained from the U.S. Census

1870, where population concentration reached its lowest point. There was significant population growth during this time period in the city-system from 5,849 total people in 1850 to 47,489 in 1870 (see Table 5.4 for county population size table). In 1850, not only was the number of people living in the region very small,

but they were very concentrated having a Hoover Index value of 77.41%. This was typical of a newly settled area. Because the region was fairly unexplored and unknown, people tended to cluster along the coastline and around established settlements. In the case of Southern California, people were generally concentrated around those areas that once thrived as Spanish missions, as stated in the previous chapter. Once people began to explore the area more and move to other inhabitable regions, concentration decreased rapidly.

The second stage of “Urban Amplification” extended from 1870 to 1930, where population concentrated constantly until 1930 where it began to level off. During this period, the population was concentrating or urbanizing in city centers. The growth that occurred within the whole city-system was unprecedented, increasing from 47,489 in 1870 to 3,074,304 in 1930 (see Table 5.4). With this increase of over 3 million people, the region, and specifically, Los Angeles, became a metropolitan hearth in the West. Of the 3,074,304 people living in the city-system, nearly 72% of them lived in Los Angeles County, which demonstrates the dominance of the most urbanized county.

Almost as suddenly as the concentration shifted to rapid increase in 1870, it changed to constant deconcentration between 1930 and 1940. This began the third stage of the model known as “Equilibrium-Seeking.” Although the total population size increased by nearly 20 million people during this phase, from 3,074,304 in 1930 to 22,223,875 in 2000, the region became less concentrated (see Table 5.4). Of the over 22 million people living in the city-system in 2000, 43% of them lived in Los Angeles County, and a higher percentage of people were living in counties surrounding Los Angeles than in previous decades. This is further evidence of population growth in other

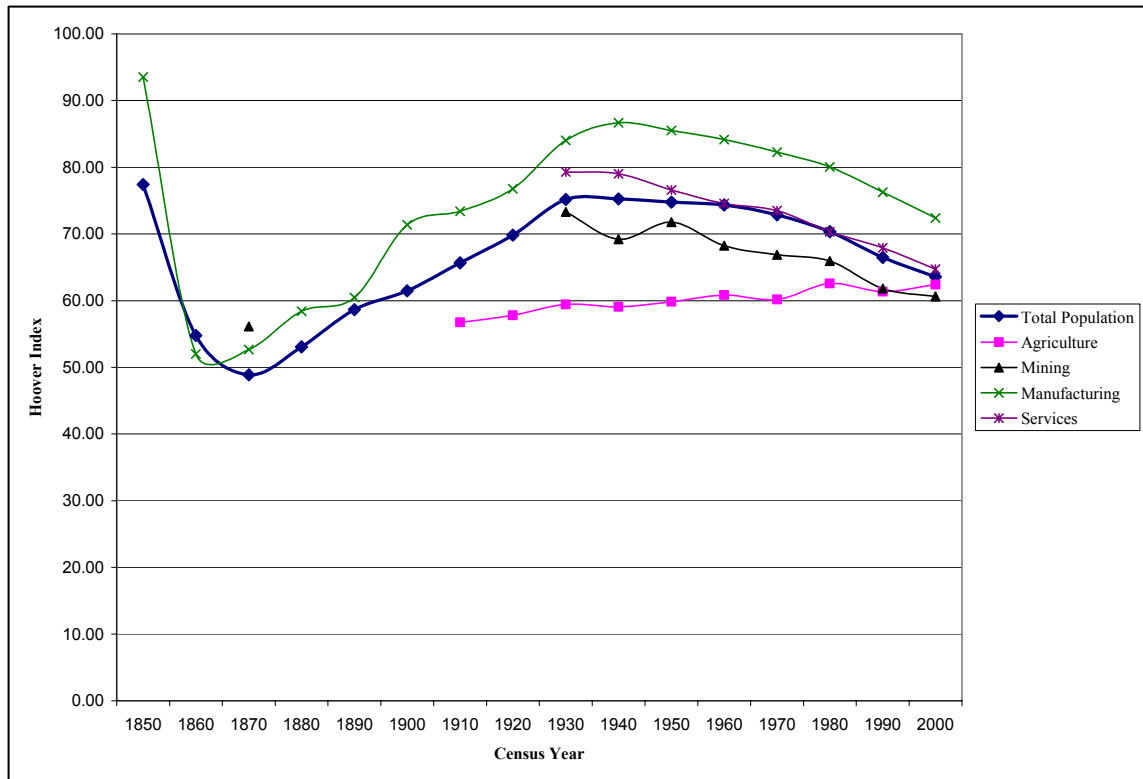
counties in the city-system. Since 1930, the population deconcentration has occurred as people have moved from city centers into the suburbs and the more peripheral areas of the region.

This change from concentration to deconcentration occurred noticeably earlier than national trend. Vining and Strauss (1977) found that deconcentration had begun at the national level only after 1970. It is the unique characteristics of the Los Angeles region that have caused this difference. The decline in concentration in the Los Angeles city-system has become even more pronounced since 1970, as people have moved to nonmetropolitan areas. It is noteworthy that the percentage of the total city-system population that has lived in Los Angeles County has followed the exact same trend as the total city-system concentration as far as the timing of major shifts. In 1850, most of the people lived in Los Angeles County (60.35%), but that percentage decreased until 1870 (32.24%). After 1870, the percentage increased quite dramatically until it reached its highest level in 1930 (71.84%). Since then, the percent of people living in Los Angeles County has dropped. This is further confirmation of the dominating impact of Los Angeles on the concentration trends of the entire city-system.

Despite how powerful these numbers are in showing the concentration trends in total population, analysis of other data can expand our understanding of how this region has evolved over time. By looking at the concentration of employees in different economic industries, we can see how various sectors of the economy have gone through these similar phases of concentration.

Using the available census data, the population concentrations of employees in agriculture, mining, manufacturing, and services were calculated. Figure 5.2 and Table

FIGURE 5.2: LOS ANGELES CITY-SYSTEM CONCENTRATION OF EMPLOYEES IN ECONOMIC SECTORS, 1850-2000



Source: Raw numbers of employees in each economic sector was obtained from the U.S. Census, the U.S. Census of Agriculture, and the U.S. Census of Manufacturing¹

5.2 depict the Hoover Index values for the employees in the four major economic sectors in the Los Angeles City-system compared with the overall population concentration. In examining the concentration trends overall, it is interesting that the concentration of employees in each of the economic sectors has generally followed that of the total population. With the exception of the concentration of employees in agriculture, all of the concentration curves demonstrate deconcentration since about 1930 or 1940. It is also interesting to note that concentration appears to be converging as time progresses. Although all of the concentration curves appear to be following the same general trend, it is the differences between the curves that provides for an interesting discussion and greater insight into the overall population concentration changes. By examining when

TABLE 5.2: HOOVER INDEX VALUES FOR THE CONCENTRATION OF EMPLOYEES IN ECONOMIC SECTORS, 1850-2000

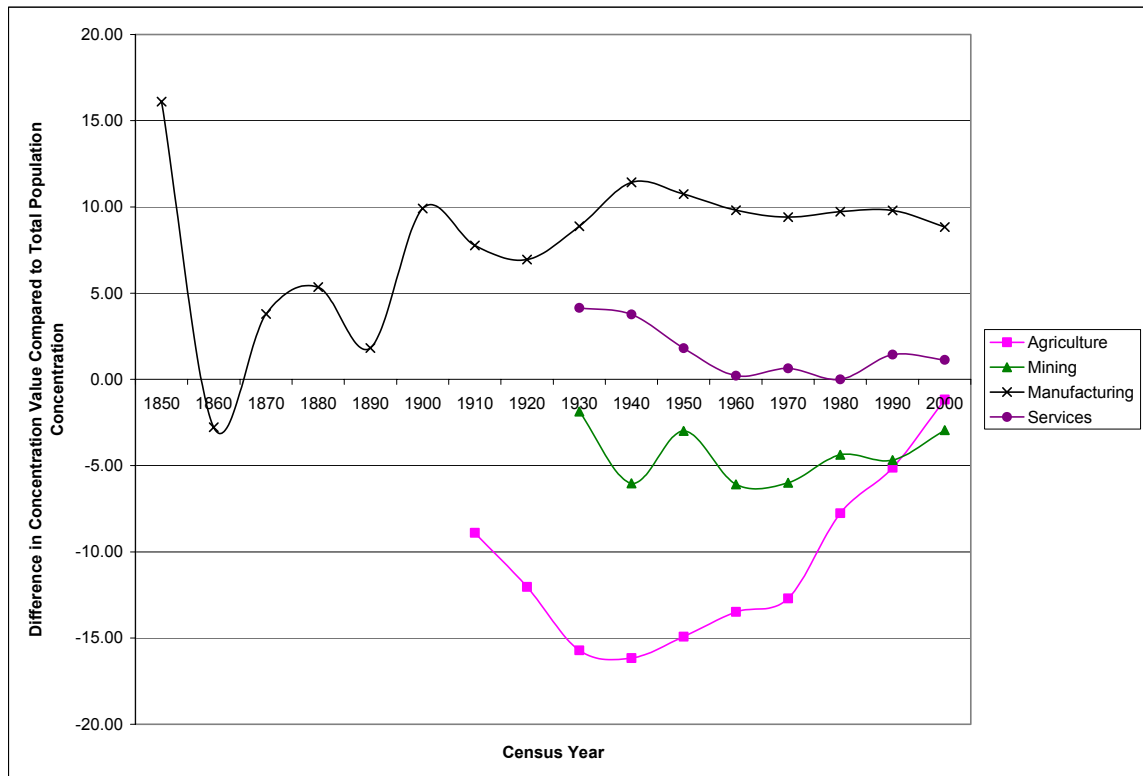
HOOVER INDEX CONCENTRATION VALUES					
CENSUS YEAR	TOTAL POPULATION	AGRICULTURE	MINING	MANUFACTURING	SERVICES
1850	77.41	--	--	93.53	--
1860	54.78	--	--	52.00	--
1870	48.87	--	56.14	52.66	--
1880	53.07	--	--	58.42	--
1890	58.66	--	--	60.48	--
1900	61.47	--	--	71.38	--
1910	65.65	56.75	--	73.41	--
1920	69.83	57.80	--	76.77	--
1930	75.16	59.44	73.30	84.04	79.30
1940	75.25	59.08	69.22	86.67	79.01
1950	74.77	59.85	71.78	85.52	76.58
1960	74.34	60.85	68.25	84.15	74.55
1970	72.86	60.16	66.87	82.27	73.49
1980	70.33	62.57	65.95	80.06	70.33
1990	66.48	61.35	61.80	76.27	67.91
2000	63.58	62.41	60.64	72.41	64.71

Source: Raw numbers of employees in each economic sector was obtained from the U.S. Census, the U.S. Census of Agriculture, and the U.S. Census of Manufacturing

concentration of employees differed from the overall population concentration, it is possible to better understand what types of employment people had over time and where those people were located (see Figure 5.2).

Being the most different of all the population curves, the concentration of agricultural employees had the lowest population concentration until the 1990s. Unlike the concentration of all the other economic sectors, which have deconcentrated in the last few decades, employees in agriculture have concentrated steadily since 1910. It is also the only economic sector that experienced concentration between 1990 and 2000. The concentration of employees in agriculture can be explained by the fact that there are fewer farmers locating in fewer places. In addition, the farming industry is very land dependent. In other words, farms cannot simply be located anywhere because of the

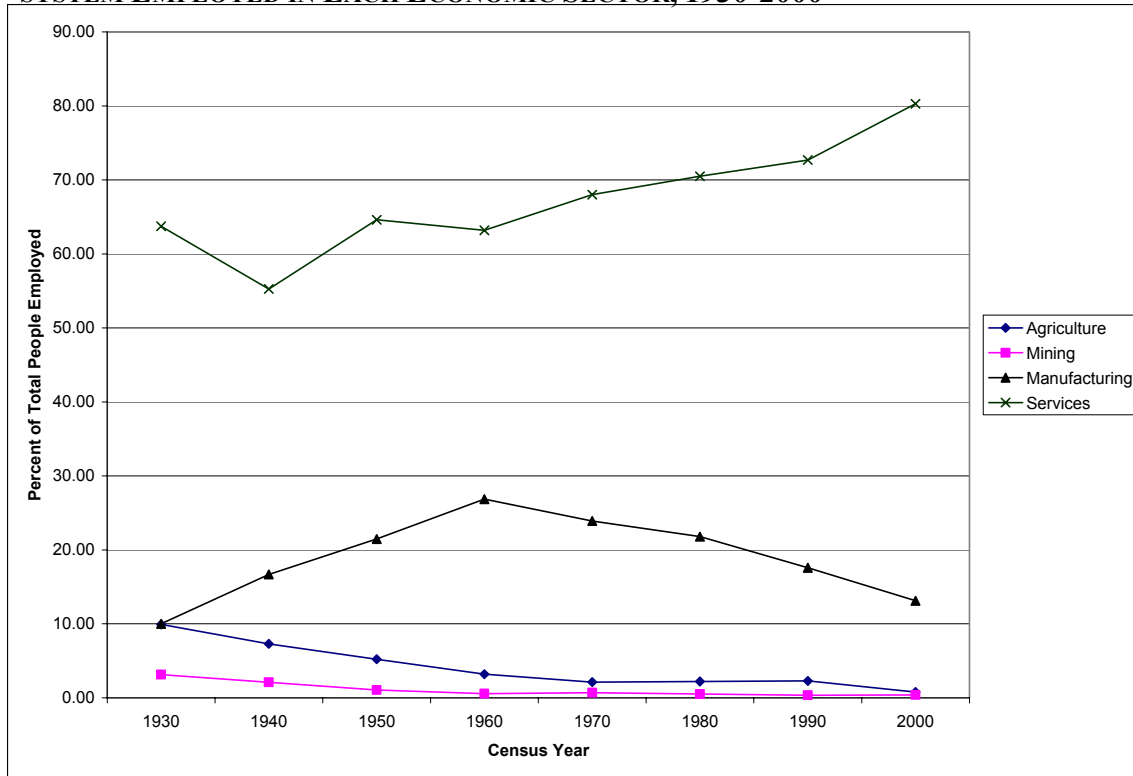
FIGURE 5.3: DIFFERENCES BETWEEN HOOVER INDEX VALUES FOR THE CONCENTRATION OF EMPLOYEES IN ECONOMIC SECTORS COMPARED TO TOTAL POPULATION CONCENTRATION



Source: Raw numbers of employees in each economic sector was obtained from the U.S. Census, the U.S. Census of Agriculture, and the U.S. Census of Manufacturing

availability of water and fertile soil. Thus, farmers must locate their farms wherever the land permits. This can cause concentration around areas where there is fertile land and available water. According to the 1997 Census of Agriculture, the number of farms and the number of acres of land used for farming had decreased in most of the counties in the city-system since 1987, while the average size of farms had generally increased (National Agricultural Statistics Service). With the total number of farms decreasing but the average size increasing, it makes sense that the people working in agriculture would be concentrating, but it still was lower than other sectors until recently (see Figure 5.3). As total population has been deconcentrating and agricultural employees have been concentrating, their concentration values are converging. As of 2000, there were over 9

FIGURE 5.4: PERCENT OF TOTAL PEOPLE EMPLOYED IN THE LOS ANGELES CITY-SYSTEM EMPLOYED IN EACH ECONOMIC SECTOR, 1930-2000



Source: Raw numbers of employees in each economic sector was obtained from the U.S. Census, the U.S. Census of Agriculture, and the U.S. Census of Manufacturing

million people over the age of 16 that were employed in the city-system, and only .98% of them were employed in the agricultural sector (see Figure 5.4).

Many researchers have found similar trends at the national level (Richter 1985; Johnson 1989; Johnson and Beale 1994). These researchers found that in the 1980s and 1990s, counties that were based on agriculture were the least likely to gain population and more likely to experience lower levels of net migration. Although the concentration trend of employees in agriculture is diverging from the overall population concentration, there are so few people employed in this industry that the overall population concentration is not noticeably affected.

Although mining is a primary economic industry like agriculture, its concentration trend has been noticeably different. In general, the concentration of

employees in mining or other extractive industries has followed the concentration of the total population. With the exception of 1950, mining concentration has been declining since 1930. As of the year 2000, mining concentration had the lowest of all the concentration values at 55.44%. It would seem that mining would be a very location-dependent industry like agriculture, and therefore, the employees would be more concentrated. However, so few people are employed in the mining industry relative to the total population that employees involved in mining are actually deconcentrating. Only .21% of the total number of people employed in 2000 was involved in the industry (see Figure 5.4). Similar patterns were found by Johnson and Beale (1994) and Fuguitt and Beale (1996) in the 1990s. They showed that counties that were heavily reliant on mining for their economic well-being were the least likely to gain population, and mining counties experienced outmigration.

Because so few people are involved in mining now, their deconcentration is not having a large impact on overall population deconcentration (see Figure 5.4). This is similar to what Perloff, et al. (1960) showed in that agriculture and mining were often a cause of growth in the early settlement period, but as a region became more populated and economically developed, an agriculturally or resource extraction based economy eventually led to slow population growth.

The concentration of manufacturing employees has been the highest of all the concentration curves since 1890. Manufacturing concentration generally parallels that of total population. All of the people employed in manufacturing were located in Los Angeles County in 1850. Then other parts of the region began to develop needs for manufacturing, and employees began to disperse by 1860 to other counties like San

Bernardino and San Diego. Although it is hard to determine if manufacturing caused population to concentrate (as argued by Pred 1965; Beale 1975; Morrill 1980; Abbott 1992; and Walker 2001b) or if urbanization of people caused manufacturing to concentrate (Fogelson 1967), it is apparent that manufacturing and population concentrated together. Many manufacturing operations were dependent on some sort of transportation. Whether it was by barge or by railroad, there were very specific locations that manufacturing plants had to be located in order to operate, similar to what Muller (1977) found at the national level. This is demonstrated in the fact that manufacturing concentration has always had the highest concentration levels, and those levels were higher than that of total population in nearly every decade (see Figures 5.2 and 5.3).

The concentration of manufacturing employees did not peak until after total population concentration hit an apex, and it was the last of all the curves to start deconcentrating. This could be due to the fact that manufacturing still was very tied to specific locations because of transportation needs and the agglomeration of industry. Like the total population concentration, the population employed in manufacturing has been dominated by the manufacturing employment in Los Angeles County. In 1940, the percentage of total manufacturing employees that lived in Los Angeles County was 87.2%. This was also the year that manufacturing concentration reached its peak at 86.67%. Since 1940, the percentage of manufacturing employees has decreased in Los Angeles County and increased in counties such as Orange and San Bernardino. This deconcentration is similar to the deconcentration of the other economic sectors, and it appears to be converging with the other curves. Manufacturing is now deconcentrating into the suburbs just as population has done (Morrill 1979). Because so many people

have been employed in manufacturing historically, manufacturing concentration has had an impact on overall population concentration. People urbanized because there was employment available in the cities. Much of this employment involved manufacturing, and thus, the high concentration of employees in this industry positively impacted overall population concentration.

In 1960, over a quarter of the total people employed was involved in manufacturing. The percentage of people employed in manufacturing has steadily decreased since then for the city-system as a whole, and in 2000, it employed only 13% of the total working population (see Figure 5.4). However, in most of the more urban counties of the region, the percent of people employed in manufacturing increased until about 1970 or 1980 and has decreased since then. This is consistent with what Frey and Speare (1992) found in that the demand for manufacturing decreased in the 1980s. As the total percentage of people involved in manufacturing has declined over the last two decades, the percent of people employed in services has increased. Perloff, et al. (1960) found a similar trend during his studied of the nation. They found that when the demand for manufacturing declined the demand for services increased. The employment in the services industry in the Los Angeles city-system has followed this same trend.

Of all the concentration curves, the concentration of employees in the services industry has most closely paralleled the concentration of the total population, nearly matching it for the last seven decades². The differential between population concentration and services concentration has never exceeded five percent on the Hoover Index (see Figure 5.3). Unlike the other economic industries, services are not generally tied to specific locations. Therefore, most services tend to move where people move,

explaining the reason for the close concentration levels for the total population and for employees in the services industry. Without a strong tie to certain areas, the services industry is generally freer to move where they are needed. In the case of this city-system, the services industry has followed the total population into the periphery of the region and has contributed to the deconcentration of the overall population. The percent of people employed in services has increased in nearly every decade for every county in the city-system. Of the over 9 million people employed in the city-system in 2000, over 80% of them are employed somewhere in the services industry (see Figure 5.4).

Part of this increase in employment and decrease in concentration is due to the increase in the recreation and amenities industry. In 2000, of the total population employed in services, 12.7% were employed in the recreation and amenities industry. At the national level, Beale (1975) and Morrill (1979) found that nonmetro growth could be explained by the amenity opportunities within the nonmetro counties in the 1970s. Similarly, Morrill (1992) and Johnson and Beale (1994) found that in the 1990s, as regions became more technologically advanced, the population no longer had to be tied to the city or the suburbs in order to work. Therefore, more people chose to locate in environmentally attractive areas. This was especially the case in the West where recreation and amenities and the tourism associated with them have positively influenced the population density (Booth 1999). With many natural and man-made amenities, some population in the Los Angeles city-system has likely located closer to these environmentally attractive areas. Thus, it is probable that the trend in the Los Angeles city-system has generally followed that of the national level in terms of having a growing reliance on high amenity services.

In order to explore the impact of employment in these economic sectors in more depth, a series of correlations were conducted between the decadal change in total population density for each county and the decadal change in density of employees in the economic sectors. Table 5.3 shows these correlations using the available data for each decade. The correlation between population density and densities of agriculture and mining employees has been inconsistent over time indicating less of an impact on overall population concentration. However, it is important to note the decade of the 1930s. This was the decade in which population concentration shifted to deconcentration. The correlations for all economic sectors during the 1930s were negative with the exception of manufacturing. This demonstrates the great impact of manufacturing employment on the deconcentration of population, which is also showing in Figure 5.2. Shortly after total population began deconcentrating, manufacturing employment deconcentrated as well.

TABLE 5.3: CORRELATIONS BETWEEN DECADAL CHANGE IN POPULATION DENSITY AND EMPLOYMENT DENSITIES

	Agriculture	Mining	Manufacturing	Services
1850-1860			.205	
1860-1870			.881**	
1870-1880			.594*	
1880-1890			.727**	
1890-1900			.983**	
1900-1910			.989**	
1910-1920	.846**		.976**	
1920-1930	.773**		.981**	
1930-1940	-.742**	-.696**	.998**	-.922**
1940-1950	.057	-.894**	.986**	.998**
1950-1960	-.449	-.291	.982**	.996**
1960-1970	-.476	.827**	.984**	.994**
1970-1980	.874**	.550*	.991**	.986**
1980-1990	.969**	-.821**	.743**	.997**
1990-2000	-.972**	-.780**	-.812**	.990**

* p < .05 , ** p < .01

The correlations also show the great impact of the manufacturing industry on population density has been very strong, especially since 1890. In the first few decades, both population and manufacturing densities were up and down, but as of 1880, the changes in manufacturing density and population density was highly correlated until the 1980s. Although the correlation was still significant at the .01 level in 1980, it did decrease notably. In the 1990s, the density of manufacturing employees in each county actually decreased while population density still increased, explaining the negative correlation. Comparing the correlation between manufacturing density and population density and the concentration curves (Figure 5.2), we see that during those years where the correlations are the highest, population concentration and manufacturing concentration closely paralleled each other. Manufacturing intensified during the Urban Amplification phase, and then deconcentrated into the suburbs during the Equilibrium-seeking phase.

Since 1940, the change in the density of services has been very highly correlated with population density change. The density of employees in manufacturing and services has driven the changes in population concentration. As also demonstrated in the concentration of services employees (see Figure 5.2), the expansion of services away from the core has been closely tied to population deconcentration. In the 1990s, all of the correlations are negatives, with the exception of the services sector. This is further demonstration of the economic nature of the city-system.

It has been possible to gain a general understanding of where people were locating by examining the various concentration trends, but knowledge of where people were specifically locating within the city-system remains unknown. In order to better

show where people were settling during each concentration stage, population densities and growth rates were examined for each county (graphs of both county densities and growth rates can be seen in Appendix C). Changes in density and growth rates can also be further explained by what was happening with each county economically and historically. By combining concentration data already briefly discussed, population density and growth rate, and historical information, a more complete understanding of the changes in concentration for the city-system is apparent. Therefore, the remainder of this chapter will focus on what was happening during each concentration stage in the context of concentration and growth trends.

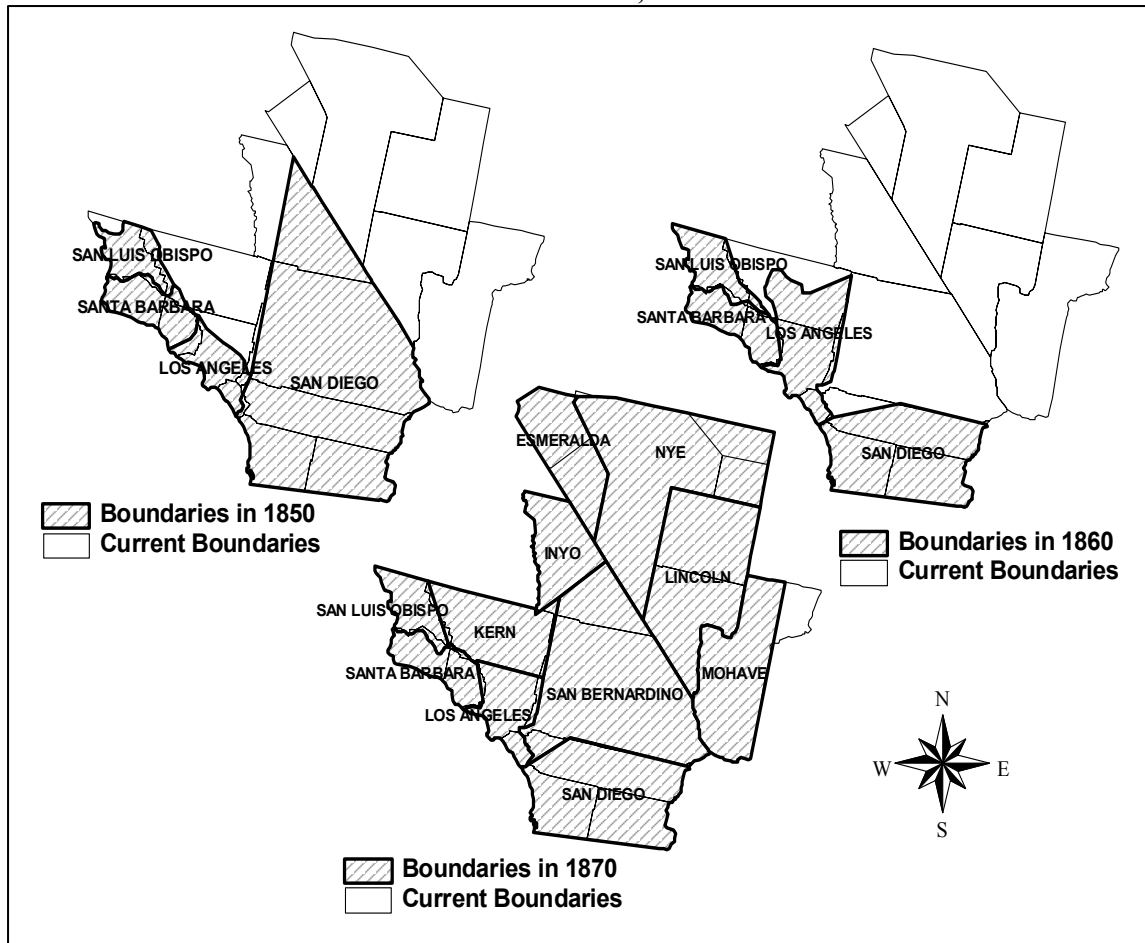
Frontier Dispersion Stage, 1850-1870

This phase is characterized by rapid deconcentration as the population dispersed across the region. There were not many people living in the region during this time period, but several of the counties experienced their first settlements while those areas already established continued to grow. In 1850, California became a state and Los Angeles was incorporated as a city. Prior to gaining statehood, California had been divided by the Mexican government into ranchos as discussed in the previous chapter. Once the rancho system was overthrown, private land owners bought the land. This resulted in the diversification of agriculture and the opening of an agricultural frontier. The economic opportunities, physical geography, and transportation innovations were the most influential factors that affected concentration during this period.

Between 1850 and 1870, the only counties that had been established in the city-system were Los Angeles, San Diego, Santa Barbara, San Bernardino, and San Luis Obispo (see Figure 5.5). Density in all these counties was very low because so few

people had settled in the region; therefore it was more useful to look at growth rates of these counties (see Appendix C). The only county that experienced a positive growth rate between 1850 and 1860 was Los Angeles County, while San Diego and San Bernardino both grew between 1860 and 1870. Originally, 60.35% of the total population lived in the Los Angeles area, but as the population moved into the frontier, other nearby counties experienced growth as well. This is evidence of the decreasing concentration during this time period. Between 1850 and 1870, the number of counties in the city-system increased, which increased the total area from about 52,000 square miles to nearly 125,000 square miles.

FIGURE 5.5: HISTORICAL COUNTY BOUNDARIES, 1850-1870

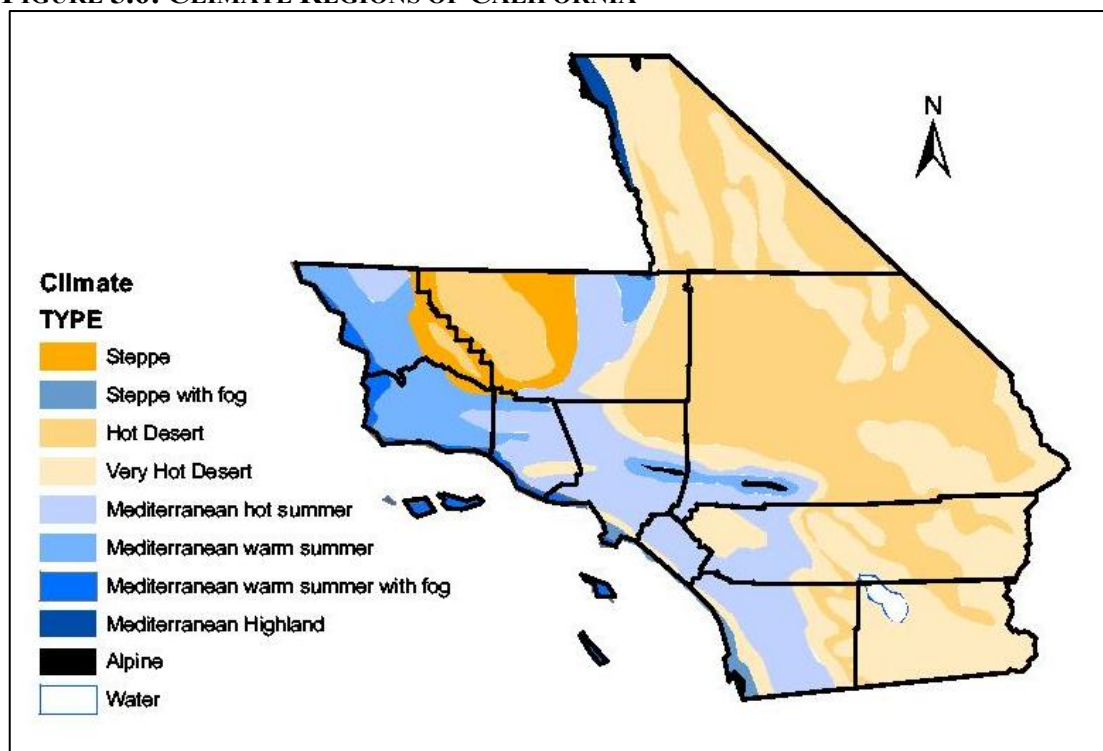


Source: Earle, et al. 1999

This expansion of governmental jurisdiction also contributed to the deconcentration of the region.

The primary attraction this area initially was the open land available for agriculture and mining. Much of coastal Southern California had very fertile soil and an ideal climate for growing a variety of crops (see Figure 5.6). Most of the counties have Mediterranean climates, which are conducive to agriculture. Because the economic base of much of the area was in agriculture, many counties experienced international immigration of agricultural workers during this period, especially the Chinese (Parker 1963; San Luis Obispo County Historical Museum; Santa Barbara County Historical Museum). For example, Ah Louis, a Chinese labor contractor, settled in San Luis Obispo County in 1870 and constructed a store where he sold agricultural goods (see Picture 5.1). San

FIGURE 5.6: CLIMATE REGIONS OF CALIFORNIA



Source: Digitized from a map in Hornbeck 1983



Picture 5.1: The Ah Louis Store in San Luis Obispo.

Bernardino County was settled by Mormon colonists in 1851 and began as an agricultural community. The Mormons utilized available natural resources by constructing saw and grist mills as well as grazing cattle and other livestock (Elliot 1965). Los Angeles was also established as an agricultural colony by the Spanish, thus its growth was very dependent on the success of the agricultural industry.

Mining was also an important factor in the settlement and growth of many areas in the Los Angeles

city-system during the phase. Just prior to the beginning of the frontier dispersion stage, the Gold Rush struck Northern California. The discovery of gold in the north brought people from all over the United States, and some settlers eventually settled in Southern California (Bigger and Kitchen 1952). Minor gold strikes in San Diego County also attracted people to the area (Alvena 1927), as did the discovery of silver, coal, and copper in the Santa Ana Valley and in San Luis Obispo County (Parker 1963; Thompson 1966). The majority of the more peripheral counties were first settled because of mining discoveries (Chalfant 1933; Davis 1984; Robinson 1961; Hulse 1971). Population growth during these first three decades often fluctuated with the mining booms and busts, especially in the less populated peripheral counties.

People also migrated to the region because of the impact of the Civil War as people fleeing the effects of the war moved west into parts of Southern California

demonstrating the effect of historical events external of the city-system (Bigger and Kitchen 1952).

The mountainous terrain of some of the region and the deserts in southeastern California helped keep this land isolated for many years (see Figure 5.6). Nearly 70% of the California counties in the city-system is classified as having a desert climate, which was not only difficult to traverse, but also nearly impossible to inhabit (Hornbeck 1983). Transportation improvements encouraged the deconcentration of population characteristic of this phase as people had better means to travel to other areas the region. Stagecoach lines (see Appendix D) connected Los Angeles and San Francisco resulting in settlements along routes in counties like Ventura County in 1868 (Robinson 1955). Similarly, stagecoach routes between Tucson, San Francisco, and Los Angeles contributed to the settlement of many in Riverside County (Robinson 1957). Las Vegas was also established along a route from Salt Lake City to Los Angeles by Mormon colonists in 1855. Stagecoach routes went through Kern County, and many people traveled through the county in transit from San Francisco to Los Angeles. The city of Bakersfield was first established in 1863 along the Kern River, and much of the growth in the county came because of mining and agricultural opportunities (Robinson 1961).

A stagecoach line known as the Old Spanish Trail also contributed to the settlement of Inyo County. This route was used by people traveling from Salt Lake City to Southern California. While transportation innovations overcame some of the geographical barriers and allowed for population dispersal, other areas continued to be less desirable and uninhabitable because of their physical geography, such as Inyo County (Chalfant 1933). Figure 5.6 shows Inyo County as being almost entirely desert

climate. The building of wharves along the coast brought economic development to many counties as transportation and trade by ship became a means of economic improvement during the 1860s (Phillips 1927; Pryde 1992). Again the effect of physical geography is evident as well as the impact of transportation improvements on population concentration. The more peripheral areas became more accessible to the more populated areas, resulting in the dispersion of population throughout previously unsettled parts of the region.

During this time period, population growth was occurring in the coastal counties, especially in Los Angeles and San Diego (see Appendix C). The population was also spreading out over the available land to produce agriculture, raise livestock, and participate in natural resource extraction. The more inland counties were experiencing some growth, but that growth was largely from migration of people from coastal counties demonstrating the connectivity between the centers of population and their periphery. While Los Angeles and the coastal counties were growing and establishing small cities, the rural counties were experiencing their first growth. Kern, Inyo, Mohave, Esmeralda, Lincoln, and Nye counties all were established between 1860 and 1870 (see Table 5.4). The combined population of these counties was 22.5% of the total city-system population in 1870, showing the contribution of these peripheral counties to the deconcentration of the city-system.

Like many of the other peripheral counties, the discovery of gold and silver brought first settlement in Inyo County. However, conflict with the Native Americans and the physical geography of the county kept growth slow in this area. Inyo County contains both the lowest (Death Valley at 282 feet below sea level) and highest (Mt.

TABLE 5.4: TOTAL COUNTY AND CITY-SYSTEM POPULATION FOR THE LOS ANGELES CITY-SYSTEM, 1850-2000. WITH PERCENT OF EACH COUNTY POPULATION OF THE TOTAL CITY-SYSTEM POPULATION

	LOS ANGELES	ORANGE	SAN DIEGO	SAN BERNARDINO	RIVERSIDE	CLARKE	VENTURA	KERN	SANTA BARBARA
1850	3,530		798						1,185
	60.35		13.64						20.26
1860	11,333		4,324	5,551					3,543
	42.71		16.30	20.92					13.35
1870	15,309		4,951	3,988				2,925	7,784
	32.24		10.43	8.40				6.16	16.39
1880	33,381		8,618	7,786			5,073	5,601	9,513
	36.70		9.47	8.56			5.58	6.16	10.46
1890	101,454	13,589	34,987	25,497			10,071	9,808	15,754
	42.61	5.71	14.69	10.71			4.23	4.12	6.62
1900	170,298	19,696	35,090	27,929	17,897		14,367	16,480	18,934
	48.45	5.60	9.98	7.95	5.09		4.09	4.69	5.39
1910	504,131	34,436	61,665	56,706	34,696	3,321	18,347	37,715	27,738
	59.81	4.09	7.32	6.73	4.12	.39	2.18	4.47	3.29
1920	936,455	61,375	112,248	73,401	50,297	4,859	28,724	54,843	41,097
	64.49	4.23	7.73	5.05	3.46	.33	1.98	3.78	2.83
1930	2,208,492	118,674	209,659	133,900	81,024	8,532	54,976	82,570	65,167
	71.84	3.86	6.82	4.36	2.64	.28	1.79	2.69	2.12
1940	2,785,643	130,760	289,348	161,108	105,524	16,414	69,685	135,124	70,555
	71.75	3.37	7.45	4.15	2.72	.42	1.79	3.48	1.82
1950	4,151,687	216,224	556,808	281,642	170,046	48,289	114,647	228,309	98,220
	69.10	3.60	9.27	4.69	2.83	.80	1.91	3.80	1.63
1960	6,038,771	703,925	1,033,011	503,591	306,191	127,016	199,138	291,984	168,962
	63.22	7.37	10.81	5.27	3.21	1.33	2.08	3.06	1.77
1970	7,036,463	1,420,386	1,357,782	681,092	459,074	273,288	376,430	329,162	264,324
	56.62	11.43	10.92	5.48	3.69	2.20	3.03	2.65	2.13
1980	7,477,503	1,932,709	1,861,846	895,016	663,166	463,087	529,174	403,089	298,694
	50.32	13.01	12.53	6.02	4.46	3.12	3.56	2.71	2.01
1990	8,863,164	2,410,556	2,498,016	1,418,380	1,170,413	741,459	669,016	543,477	369,608
	46.29	12.59	13.05	7.41	6.11	3.87	3.49	2.84	1.93
2000	9,519,338	2,846,289	2,813,833	1,709,434	1,545,387	1,375,765	753,197	661,645	399,347
	42.83	12.81	12.66	7.69	6.95	6.19	3.39	2.98	1.80

TABLE 5.4 CONTINUED: TOTAL COUNTY AND CITY-SYSTEM POPULATION FOR THE LOS ANGELES CITY-SYSTEM, 1850-2000, WITH PERCENT OF EACH COUNTY POPULATION OF THE TOTAL CITY-SYSTEM POPULATION

	SAN LUIS OBISPO	MOHAVE	IMPERIAL	NYE	INYO	LINCOLN	ESMERALDA	TOTAL CITY-SYSTEM
1850	336							5,849
	5.74							
1860	1,782							26,533
	6.72							
1870	4,772	179		1,087	1,956	2,985	1,553	47,489
	10.05	0.38		2.29	4.12	6.29	3.27	
1880	9,142	1,190		1,875	2,928	2,637	3,220	90,964
	10.05	1.31		2.06	3.22	2.90	3.54	
1890	16,072	1,444		1,290	3,544	2,466	2,148	238,124
	6.75	0.61		0.54	1.49	1.04	0.90	
1900	16,637	3,426		1,140	4,377	3,284	1,972	351,527
	4.73	0.97		0.32	1.25	0.93	0.56	
1910	19,383	3,773	13,591	7,513	6,974	3,489	9,369	842,847
	2.30	0.45	1.61	0.89	0.83	0.41	1.11	
1920	21,893	5,259	43,453	6,504	7,031	2,287	2,410	1,452,136
	1.51	0.36	2.99	0.45	0.48	0.16	0.17	
1930	29,613	5,572	60,903	3,989	6,555	3,601	1,077	3,074,304
	0.96	0.18	1.98	0.13	0.21	0.12	0.04	
1940	33,246	8,591	59,740	3,606	7,625	4,130	1,554	3,882,653
	0.86	0.22	1.54	0.09	0.20	0.11	0.04	
1950	51,417	8,510	62,975	3,101	11,658	3,837	614	6,007,984
	0.86	0.14	1.05	0.05	0.19	0.06	0.01	
1960	81,044	7,736	72,105	4,374	11,684	2,431	619	9,552,582
	0.85	0.08	0.75	0.05	0.12	0.03	0.01	
1970	105,690	25,857	74,492	5,599	15,571	2,557	459	12,428,226
	0.85	0.21	0.60	0.05	0.13	0.02	0.00	
1980	155,435	55,865	92,110	9,048	17,895	3,732	777	14,859,146
	1.05	0.38	0.62	0.06	0.12	0.03	0.01	
1990	217,162	93,497	109,303	17,781	18,281	3,775	1,344	19,145,232
	1.13	0.49	0.57	0.09	0.10	0.02	0.01	
2000	246,681	155,032	142,361	32,485	17,945	4,165	971	22,223,875
	1.11	0.70	0.64	0.15	0.08	0.02	0.00	

Source: U.S. Census, 1850-2000

Whitney at 14,496 feet in elevation) elevations in the contiguous U.S (Beck and Haase 1974) (see Pictures 5.2 and 5.3).



Picture 5.2: Mt. Whitney

The diverse terrain made much of the region uninhabitable (Chalfant 1933). Esmeralda, Lincoln, and Nye Counties were all first settled because of mining



Picture 5.3: Sand dunes at Death Valley

opportunities, and some the first settlers in Mohave County were Mormons under the command of President Brigham Young (Hulse 1971; Davis 1984; Dreyfuss 1978).

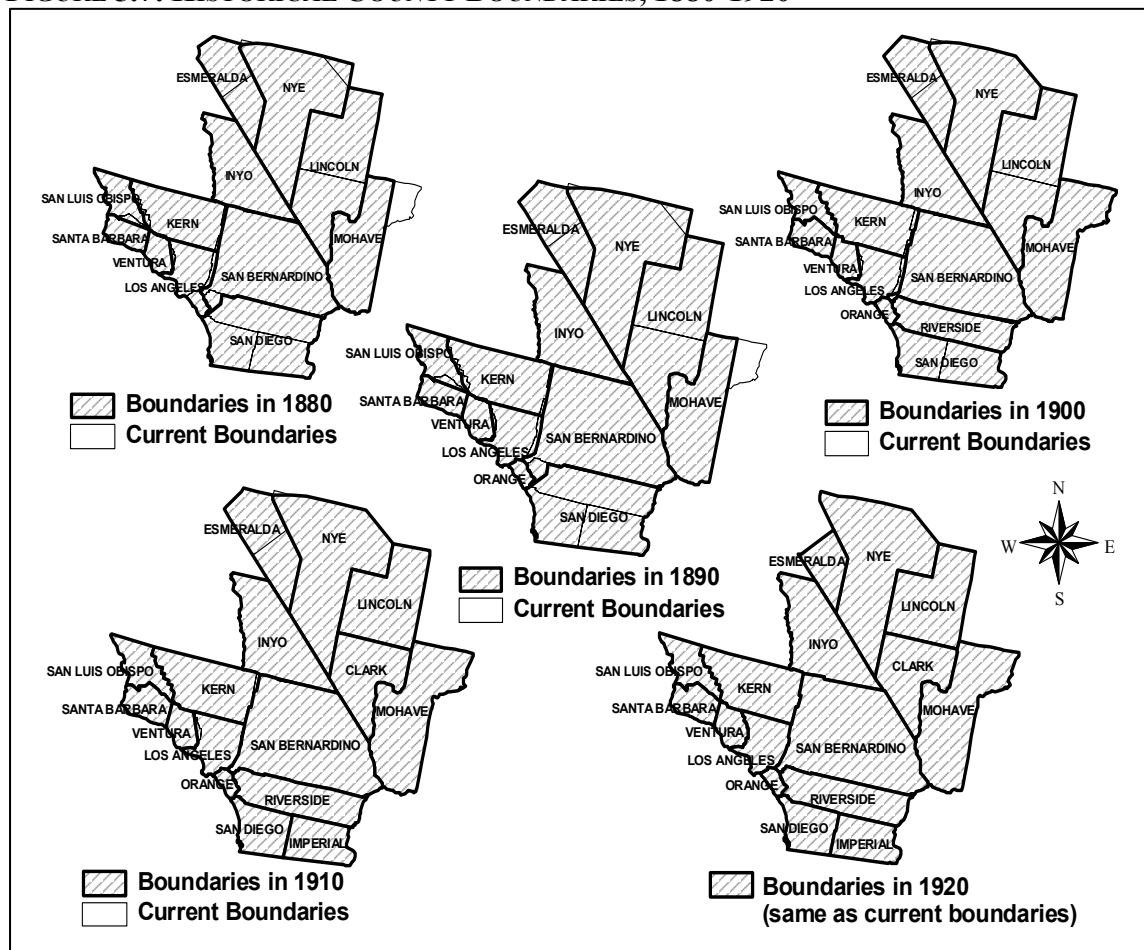
Even though coastal communities were growing and people were concentrating in these counties, the population was also spreading out to areas previously unsettled. The growth and settlement of counties away from the coast in the periphery of the region caused the deconcentration typical of the Frontier Dispersion Phase. The spread of population into the periphery was influenced by economic opportunities, such as agriculture and mining, and the improvement of transportation routes between counties. At the end of this phase, there were only 47,489 people living in the entire city-system. Even though population size was over eight times larger than it was in 1850, this growth was minimal compared to what would be experienced in the next stage of concentration.

Urban Amplification Stage, 1870-1930

The Urban Amplification Phase was a time of rapid urbanization and concentration for the Los Angeles city-system. The remainder of the counties were

established during this time period, including Ventura, Orange, Clark (NV), and Imperial counties (see Figure 5.7). During this time, the major core counties, like Los Angeles and Orange, were the only counties to begin to have noticeable increases in density (see Table 5.5). Compared to the average growth rate for the entire city-system, Los Angeles County was the only county to have growth rates constantly higher than the average during the period (see Appendix C). Other counties that experienced growth included Ventura, Santa Barbara, San Diego, and San Bernardino counties. Thus, it is evident that most of the growth during this time period occurred in coastal counties (with the

FIGURE 5.7: HISTORICAL COUNTY BOUNDARIES, 1880-1920



Source: Earle, et al. 1999

TABLE 5.5: COUNTY POPULATION DENSITIES, 1870-1930

COUNTY	POPULATION DENSITY (# PEOPLE/SQ. MI.)						
	1870	1880	1890	1900	1910	1920	1930
Mohave	0.02	0.10	0.12	0.25	0.28	0.39	0.42
Imperial					3.32	10.63	14.89
Inyo	0.32	0.28	0.34	0.43	0.70	0.70	0.66
Kern	0.35	0.66	1.15	2.05	4.71	6.85	10.32
Los Angeles	<i>3.17</i>	<i>6.91</i>	<i>24.48</i>	<i>40.53</i>	<i>123.96</i>	<i>227.57</i>	<i>536.69</i>
Orange			<i>19.77</i>	<i>26.26</i>	<i>43.32</i>	<i>77.20</i>	<i>149.28</i>
Riverside				2.44	4.79	6.96	11.22
San Bernardino	0.16	0.38	1.26	1.40	2.81	3.64	6.64
San Diego	0.33	0.57	2.33	4.14	<i>14.61</i>	<i>26.59</i>	<i>49.67</i>
San Luis Obispo	1.41	2.95	5.19	5.03	5.81	6.57	8.88
Santa Barbara	1.93	4.39	7.27	7.19	10.12	<i>15.00</i>	<i>23.78</i>
Ventura		2.73	5.42	8.35	9.77	<i>15.46</i>	<i>29.59</i>
Clark					0.41	0.60	1.06
Esmeralda	0.20	0.42	0.28	0.22	1.26	0.71	0.32
Lincoln	0.18	0.14	0.13	0.17	0.33	0.22	0.34
Nye	0.05	0.10	0.07	0.07	0.41	0.36	0.22
Total City-system	0.38	0.74	1.94	2.79	6.79	12.08	25.58

Source: U.S. Census, italicized numbers highlight those counties with high population densities relative to the other counties during each decade

exception of San Bernardino), which is demonstrated in the rapid concentration of the city-system as a whole. Many of the coastal counties experienced increasing growth rates, especially after 1890 (see county density and growth rate graphs in Appendix C).

By 1930, nearly 91% of the total population lived in these six counties (Los Angeles, Orange, San Diego, San Bernardino, Ventura, Santa Barbara), and of the population in these counties, 80% were in Los Angeles County alone. Excluding San Bernardino because of its very large size, these counties were also the top five densest counties in the city-system. This early growth and concentration led to the formation of a core metropolitan area within the region, namely the area from Los Angeles to San Diego. This core growth shows why concentration occurred during this time period.

Many of the factors identified in the literature were influential in attracting people to these coastal counties, including transportation innovations, an increase in manufacturing and industry, tourism, historical and political events, and migration.

One of the most influential growth factors was the coming of the railroad into the region. People settled in areas close to the railroads and around railroad hubs. Not only did the people that were already living the region concentrate, but the railroad permitted thousands of people to migrate there. The railroads broke the geographic barriers that had once isolated the region. “In the two decades that followed [1868], construction of the transcontinental railroads stimulated the flow of settlers and tourists from the East. Flamboyant advertising, pleasing climate, a new ‘frontier’, and, later, expanding opportunities in business and industry have brought a stream of newcomers, sometimes as flood crest, sometimes at a mere trickle, but never ending” (Bigger and Kitchen 1952, 2). The Southern Pacific railroad connected Los Angeles to San Francisco in 1876, and the Santa Fe railroad connected to Los Angeles in 1885 (see Appendix E).

The advent of the railroad resulted in a great land boom as land speculation and real estate promotion reigned. Many new towns developed during this land boom contributing to the local concentration of population (Bigger and Kitchen 1952). In Los Angeles County, total population exploded from 15,309 in 1870 to 101,454 in 1890, an increase of more than 500%. The more urban counties absorbed most of the growth, especially the counties along the coast, while the rural counties experienced little growth (see Appendix C).

While agriculture was still the mainstay of the economic focus in the region, the railroad began to change that focus to manufacturing, commerce, and tourism. The

tourism industry began to grow in the 1870s. The pleasant climate and natural amenities, especially along the coast, attracted visitors from all over the nation, many of whom settled permanently in the city-system. Most of the concentration focused on those areas with the Mediterranean climate (see Figure 5.6). The moderate climate and amenities brought people from Europe to Asia, not to mention thousands of people from eastern U.S. states. The motion pictures industry also began to proliferate during this time with the first motion picture being filmed in Los Angeles in 1909 (Lewin 1949). The varied topography and climate of Southern California became the focal point of the movie-making industry. The oil industry that boomed in the first decades of the 1900s, and the airplane manufacturing industry and military facilities that were established during World War I also spawned more migration (Lewin 1949; Pryde 1992). This is reflected in the increase of manufacturing employees from only 15,122 in 1900 to 132,221 in 1930.

By the early 1900s, the industrial sector began to rival the agricultural sector as people migrated to the urban areas of the region in search of better economic opportunities (Bigger and Kitchen 1952). “No longer were people just coming to southern California for farms, retirement, or tourism, although these still were strong motives which lured many new residents. The city had acquired major metropolitan status, not only in terms of population – San Francisco was passed by in 1920 – or transportation, but in the diversified industries and businesses that contributed impressively to the region’s economic growth” (Grenier 1978, 33). As cities grew and became centers of trade, they attracted manufacturing. This is apparent in the concentration of employees in the manufacturing industry during this time period (see Figure 5.2). In 1870, 40% of total people employed in manufacturing lived in Los

Angeles County. By 1930, that number had increased to 87%, and Los Angeles County had twice as many people employed in manufacturing than any other county. Large cities often had the best access to transportation routes into the periphery and to other nodal cities, which was important for the growth of manufacturing (Muller 1977). This was most likely the reason for the success of Los Angeles County in attracting so much manufacturing.

One of the greatest hindrances to population growth during this time was the lack of water supply. A relatively dry climate and growing cities placed overwhelming demands on the water supplies. Los Angeles was forced to look outside of its boundaries at various possibilities of bringing more water into the Los Angeles Basin (see Appendix H). Aqueducts were built in the early 1900s from the hinterland into the core of the city-system in order to support Los Angeles's growth (see Pictures 5.4 and 5.5). Once there was a more stable water supply, population began to grow and concentrate even more quickly (Fogelson 1967; Nelson 1983).

Another major municipal improvement in Los Angeles was the construction of the harbor in San Pedro in 1910. Los Angeles did not have a natural deep harbor, and the construction of the harbor provided employment,



Picture 5.4: California Aqueduct in Kern County



Picture 5.5: California Aqueduct going south through Kern County over the Grapevine into the Los Angeles Basin

and the harbor became a great trade and commerce center along the coast (Grenier 1978).

During the first two decades of the 20th century, the population of Los Angeles County grew from 170,298 to 936,455 in 1920 (see Table 5.4). This increase in population came not only from in-migration, but also the annexation of land by the city of Los Angeles (see Appendix G). It was at about this time that Mexican agricultural workers started to migrate to California. In 1900, there were 642 people living the California counties of the city-system that were born in Mexico. By 1920, that number had increased to 67,730 (U.S. Census). The influence of Mexican immigrants had expanded outside of the agricultural sector into manufacturing and services by the 1920s (Lewin 1949; Fogelson 1967; Muller and Espenshade 1985).

While the Los Angeles area was experiencing rapid growth, the other more urban counties began to experience growth as well. San Diego was connected to Los Angeles by a spur line of the Santa Fe Railroad in 1881, contributing to its development. Like Los Angeles, it took a major transcontinental railroad connection to initiate a population boom, and then it was the intercity rail network and street car system that did much of the in-filling (Pryde 1992). It increased in population from 4,951 in 1870 to 209,659 in 1930 (see Table 5.4). The growth of San Diego County was above the total city-system growth rate for most of the decades during this stage (see Appendix C). The coming of the Southern Pacific Railroad also sparked the first noticeable population growth in Orange, Ventura, Santa Barbara, and San Luis Obispo Counties. This railroad connected San Francisco to Los Angeles and traveled through these counties. Many of the most populous cities that exist in these counties now were first settled because of the arrival of this railroad (Parker 1963; Robinson 1955; Phillips 1976; Thompson 1966).

Thus, it is seen that while Los Angeles was booming in population growth, surrounding areas were also growing. However, it was often their connection with Los Angeles by rail that determined their amount of growth and development.

Although industry was beginning to dominate the economic structure of Los Angeles County, agriculture and mining were still very important to many counties in the region. Because of the climate in Southern California, certain crops could be grown there that could not be grown anywhere else. Lima beans, sugar beets, celery, and fruit were all critical to the economic well-being of Orange County. Although tourism and resort communities were being established during this time, Orange County remained an agriculturally-based area (Parker 1963). Agriculture, especially oranges, was also crucial to the economy of Riverside and San Bernardino Counties (see Pictures 5.6 and 5.7). The



Picture 5.6: Orange orchard in San Bernardino County



Picture 5.7: Agriculture in San Luis Obispo County

Washington oranges that thrived in Riverside County were in demand all over the nation (Robinson 1957; Riverside County Historical Museum). Vineyards and wine, as well as oranges, were also important to agricultural growth in San Bernardino County (Elliot 1965). Livestock raising and agriculture were crucial to initial development of Kern County (Robinson 1961). Agriculture was also key to the

growth of many of the other more peripheral counties in the city-system.

Once the lack of water was resolved with the aqueduct and canal system that connected much of Southern California, including Los Angeles, the agricultural sector of Imperial County flourished, and became the main source of income in the county (Henderson 1968) (See Appendix F). Railroad connections permitted the shipment of these crops all over the nation and contributed to the growth of all the agricultural counties. Booms in Inyo County, resulted in a rail connection with Los Angeles to transport minerals from the county (Chalfant 1933).

The oil industry also began to grow during this time as many different discoveries in Ventura, Santa Barbara, and Kern Counties contributed to more employment

opportunities in these areas (Robinson 1955; Phillips 1976; Robinson 1961). Oil continues to be a very important resource in Kern County. Today, it is one of the nations leading oil-producing counties (see Pictures 5.8 and 5.9 and Appendix H). The most peripheral counties in Arizona and Nevada experienced little urbanization and population increases. Their fortunes fluctuated with mining's ups and downs (Dreyfuss 1978; Moreno 2000; Hulse 1971; Davis 1984). The connectivity



Picture 5.8: A field of oil derricks in Kern County



Picture 5.9: An oil derrick in an office complex parking lot in Bakersfield (Kern County)

within the region permitted Los Angeles to further industrialize while depending more on its hinterland for agricultural goods and natural resources. The expansion of the rail network permitted these interconnections.

One of the most influential reasons for the sudden shift from concentration to deconcentration at the end of this phase was the innovation of the automobile. During the 1920s, the number of automobiles began to increase substantially. Settlement before the automobile had been tied to the railroad and street-car system, but the automobile permitted more growth and settlement away from the urban centers. This resulted in a spatial dispersion of population beginning in 1930. For example, the advent of the automobile impacted the growth of San Diego County connecting it to Los Angeles and permitting population dispersal into new areas of the county (Pryde 1992).

The increase in motorized vehicles also influenced the dispersal of manufacturing. “The triumph of motor transport facilitated the decentralization of industry too. The extensive county highway and city street systems enabled manufacturers – long dependent on the railroads – to move freight throughout the region by trucks. Widespread automobile ownership, combined with sprawling suburban subdivisions, also rendered to hitherto remote and still cheap residential locations accessible to the working force” (Fogelson 1967, 153). The impact of the automobiles was especially felt in the most populous urban areas like Los Angeles, San Diego, and Orange counties. The total population of Los Angeles County alone increased from 936,455 in 1920 to 2,208,492 just a decade later (see Table 5.4).

While the majority of the growth occurred in Los Angeles County, other Southern California counties also experienced great population growth. It was during the Urban

Amplification Phase that a real division began to form between the core and the periphery. Los Angeles and surrounding counties became great urban centers, while the peripheral counties were still very dependent on agriculture and mining activities. The tremendous growth of the urban counties explains the concentration that occurred during this phase. The Hoover Index increased from 48.87% in 1870 to 75.16% in 1930, meaning that over 75% of the population would have to resettle in order to have a uniform distribution across the whole city-system. As the population in the region began to deconcentrate at the end of this phase, the growth of the counties adjacent to the urban counties began.

Equilibrium-Seeking Stage, 1930-2000

During the Equilibrium-seeking stage, counties other than Los Angeles and the coastal urban counties began to experience growth. Los Angeles County had growth rates above the city-system average in the Urban Amplification phase, but during this phase, it had growth rates constantly lower than the average (see Appendix C). Because Los Angeles, as the core of the region, was not growing as fast as other counties were, the concentration of the city-system decreased. This is an indication of the dominance that Los Angeles County plays in the concentration of the region. Orange County experienced its highest growth rates during this phase, as did Clark, Ventura, San Bernardino, and Riverside counties. In 1970, Orange County passed Los Angeles County as being the densest county (see Table 5.6). This is partly due to its smaller size, but this can also be attributed to the tremendous population growth. The only counties that had growth rates over the average for the whole city-system during this time period were San Diego, Clark, Ventura, San Luis Obispo, San Bernardino, and Riverside counties. Most

TABLE 5.6: COUNTY POPULATION DENSITIES, 1930 - 2000

COUNTY	POPULATION DENSITY (# PEOPLE/SQ. MI.)							
	1930	1940	1950	1960	1970	1980	1990	2000
Mohave	0.42	0.65	0.64	0.58	1.96	4.21	7.04	11.67
Imperial	14.89	13.94	14.70	17.00	17.56	22.07	26.19	34.11
Inyo	0.66	0.76	1.16	1.15	1.54	1.75	1.79	1.76
Kern	10.32	16.54	27.94	35.82	40.38	49.58	66.85	81.39
Los Angeles	<i>536.69</i>	<i>684.27</i>	<i>1,019.82</i>	<i>1,484.09</i>	<i>1,729.29</i>	<i>1,837.22</i>	<i>2,177.68</i>	<i>2,338.90</i>
Orange	<i>149.28</i>	<i>167.21</i>	<i>276.50</i>	<i>900.16</i>	<i>1,816.35</i>	<i>2,421.94</i>	<i>3,020.75</i>	<i>3,566.78</i>
Riverside	11.22	14.70	23.69	42.67	63.97	91.93	162.24	214.22
San Bernardino	6.64	8.00	13.99	25.03	33.86	44.61	70.69	85.20
San Diego	<i>49.67</i>	<i>67.95</i>	<i>130.77</i>	<i>242.38</i>	<i>318.65</i>	<i>442.03</i>	<i>593.07</i>	<i>668.05</i>
San Luis Obispo	8.88	10.00	15.46	25.45	33.20	46.99	65.65	74.57
Santa Barbara	23.78	25.70	35.78	61.71	96.57	108.70	134.5	145.32
Ventura	29.59	37.53	61.74	106.89	202.06	284.20	359.3	404.51
Clark	1.06	2.07	6.09	16.13	34.71	58.76	94.08	174.56
Esmeralda	0.32	0.44	0.17	0.17	0.13	0.22	0.37	0.27
Lincoln	0.34	0.39	0.36	0.23	0.24	0.35	0.35	0.39
Nye	0.22	0.20	0.17	0.24	0.31	0.50	0.98	1.79
Total City-system	25.577	32.258	49.915	79.539	103.49	123.47	158.86	184.40

Source: U.S. Census, italicized numbers highlight those counties with high population densities relative to the other counties during each decade

of these counties are adjacent to the to Los Angeles and Orange counties, thus,

demonstrating the suburbanization of population in the region. Many of the factors of regional growth, such as historical and political events, transportation innovations, and migration, contributed to the growth of the hinterland.

One of the most noticeable differences between this phase and the previous phases for the Los Angeles city-system was the proliferation of the automobile and the highway system (see Appendix I for a map of the freeway highway systems of the region). During the 1930s, the automobile became much more commonplace, and transportation developments had to accommodate the growing number of automobiles.

The advent of the automobile not only permitted more movement into the city-system,

but it also allowed for more movement within the city-system. Los Angeles County, for one, had at least been connected with surrounding counties by the Pacific Electric rail system, but the development of the highway system permitted even more interaction between Los Angeles and the rest of the city-system (see Picture 5.10).

Some examples will illustrate these transportation effects. The construction of the Santa Ana Freeway (Interstate 5 in the Los Angeles area) between Orange County and Los Angeles County contributed more to the growth of Orange County more than any other single event in its history thus far (Parker 1963). Interstate 5 connected Los Angeles with San Francisco 1952, and it also went through Kern County, on its way (Robinson 1961). The automobile has had the biggest impact on Inyo County growth because the diverse and harsh physical geography became less of a barrier (Chalfant 1933). At the national level, Lichter and Fuguitt (1980) found that the interstate highway system permitted movement from metro counties to nonmetro counties. That was definitely the case in the Los Angeles city-system. With the spread of roads and highways, subdivisions began to cover the landscape, erasing acres of land previously used for agriculture. “The metropolis grew slowly in the era of the horse car, rapidly during the period of the electric railway, and even faster in the age of the private automobile” (Fogelson 1967, 142-43). The tremendous growth and the connection between the core and periphery made the automobile and the highway system one of the most influential factors in the



Picture 5.10: Freeway interchange in San Bernardino County

population deconcentration of the region.

In examining the California history of highways and interstates, the first interstates were approved in the late 1950s. Interstates 5, 8, 10, 15, and 40 were all submitted in 1945 and approved in 1958. As already mentioned, I-5 connect Los Angeles with San Francisco, which also went through Kern County. Interstate 8 connected San Diego with Imperial County and Arizona, and I-10 connected Los Angeles with Arizona as well. Interstates 15 and 40 connected Los Angeles with Nevada. All of these interstates totaled over 900 miles. As population grew, there was more demand for highway connections. In 1955, more proposals for more interstate highways were submitted and approved with the previous proposals in 1958. These new proposals improved I-10 by connecting Los Angeles to Santa Monica. Interstates 405, 210, and 605 were also approved during this time further improving the connection within the Los Angeles area. These additions added nearly 150 miles to the existing highway system. These interstates formed the major arteries that exist in the city-system today. In 1965, some belt routes were added in Los Angeles and San Diego, and some of the existing interstates were improved. In 1968, I-15 was extended to connect San Diego to San Bernardino, and I-605 connected I-10 to I-210. These additions added over 100 more miles to the highway system. Interstate 110 connected the San Pedro to Los Angeles in 1978 (Fagin, 2003).

These figures only account for the interstate highways. Many state highways were also constructed, including state highway 101, which is known in Southern California as the Hollywood Freeway. This freeway is what remains of the Camino Real

that once connected all of the California missions. Appendix I shows many of the interstates and highways that connect Los Angeles with its hinterland today.

The advent of the automobile and the highway system allowed the population to be more independent from the urban centers and to settle in places that had not been settled before (Foster 1975). Even though the total population of the city-system was growing rapidly during this period, it was dispersing across the landscape. Because most of the population growth in this region occurred during phase when the automobile dominated transportation, Los Angeles grew outward instead of upward like most other metropolises. Because housing prices and cost of living tend to be higher in the urban centers, people have to be able to live farther away from the city at lower costs and commute into the city for employment (Goodenough 1992). However, the abundance of automobiles has had many negative repercussions, including traffic and air pollution.

Historical and political events, especially during the first few decades of this stage contributed to the growth of the city-system. The economic demand of World War II attracted people to the region as industrial growth increased in Los Angeles and San Diego creating new jobs. The total population of the city-system nearly doubled between 1930 and 1950, increasing from 3,074,304 to 6,007,984 (see Table 5.4). Of the total population in 1950, 86% lived in either Los Angeles or San Diego County. Los Angeles experienced an economic boom in the early 1940s becoming the “center of the steel and aluminum production, aircraft and ship building, military training and overseas embarkation” (Lewin 1949, 40). In Los Angeles, manufacturing was the most important source of employment during the early to mid 1900s, the period of its most rapid

urbanization (Preston 1971). It continued to grow economically after WWII, becoming a center of such industries as missiles, aerospace, and electronics.

In 1950, after the end of WWII, 86% of the city-system's manufacturing employees worked in Los Angeles County. The city-system experienced its highest concentration levels of manufacturing employees during this time reaching as high as 86.67% on the Hoover Index, and the largest differential between the concentrations of manufacturing employees and total population occurred during the 1940s and 1950s (see Figures 5.2 and 5.3). The percentage of people employed in manufacturing also reached its peak during 1960 with just over 25% of the people employed. With the availability of employment, people flooded into the county at rate of about 1,000 people per day during the 1940s. Not only did immigrants settle in Los Angeles, but also in San Diego and the other coastal counties. Newcomers were from all ethnic and socioeconomic backgrounds – African American, Caucasian, Mexican, Japanese, Filipino, Korean, Thai, Samoan, Native American, rich, poor, and so on (Lewin 1949; Muller and Espenshade 1985). The majority of these immigrants came because of the economic opportunities available in the region.

The total population of Los Angeles County alone grew from 2,208,492 in 1930 to 7,036,463 by 1970 (see Table 5.4). After the concentration of manufacturing employees peaked in 1940 and 1950, it began to deconcentrate just as the total population had done. Los Angeles County went from having a high of 86% of the total manufacturing employees in 1950 to having just 48% in 2000. Other surrounding counties have consistently attracted more manufacturing employees over time, including Orange, San Diego, Riverside and San Bernardino counties. As of 2000, 42% of the

manufacturing employees lived in these four counties. This is evidence of the influence of Los Angeles on its hinterland.

San Diego became the location of the many aircraft industries which employed hundreds of workers. The war brought thousands of military personnel, and many of these people returned to permanently settle in the San Diego area after the war. It was not only the city of San Diego that experienced this growth, but also many of the suburban cities, further explaining the deconcentration of this phase (Pryde 1992). In Orange County, farms and orchards were overtaken by military installments and factories (Parker 1963). The number of people employed in agriculture decreased from 11,118 in 1930 to 7,545 in 1970, and the number of manufacturing employees increased from 2,038 in 1930 to 156,762 in 1970. Ports in other counties also became the site of military establishments, such as Point Magu in Ventura County where a Naval Air Missile Test Center was located (Robinson 1955). The prevalence of military establishments in the city-system can be seen in Appendix J. This map not only shows many areas that have been impacted by military presence, but also the amount of land area occupied by these establishments. As growth dispersed from Los Angeles to other parts of the region, the percent of employees in the manufacturing sector has become more similar among the urban counties.

In the late 1960s, the service industry was the second leading employment category in Los Angeles after manufacturing (Preston 1971). The growth of services was quite large in the Los Angeles area. For example, the number and distribution of retail centers in the area were growing at rate never previously witnessed (Preston and Griffin 1968). Of the total number of employees in the services industry in 1960, 66% lived in

Los Angeles County. The changing geography of services was a sign of metropolitan development, as the suburbanization of service companies to Los Angeles's periphery occurred more often (Soja 1996). This is evident in that the percent of the total number of employees in services in Los Angeles County has progressively decreased since the beginning of this final stage of concentration. Los Angeles County had 77% of the total employees in services in 1930, and by 2000, it had only 42% of the total employees. While the total number of employees in services has constantly grown for the city-system as a whole (see Figure 5.4), fewer of them are living in Los Angeles.

The growth of the services industry is often characteristic of deconcentration in a region, which is evident with deconcentration levels that have closely paralleled that of the overall population concentration level (see Figure 5.2). As with manufacturing employment, the employment in services in other urban counties is becoming more similar to that of Los Angeles County. This is further explanation for the converging concentration values of the economic sectors compared to the overall population concentration (see Figures 5.2 and 5.3). As more people are employed in the economic sectors in the counties surrounding Los Angeles, the distribution becomes more even and concentration levels become more similar.

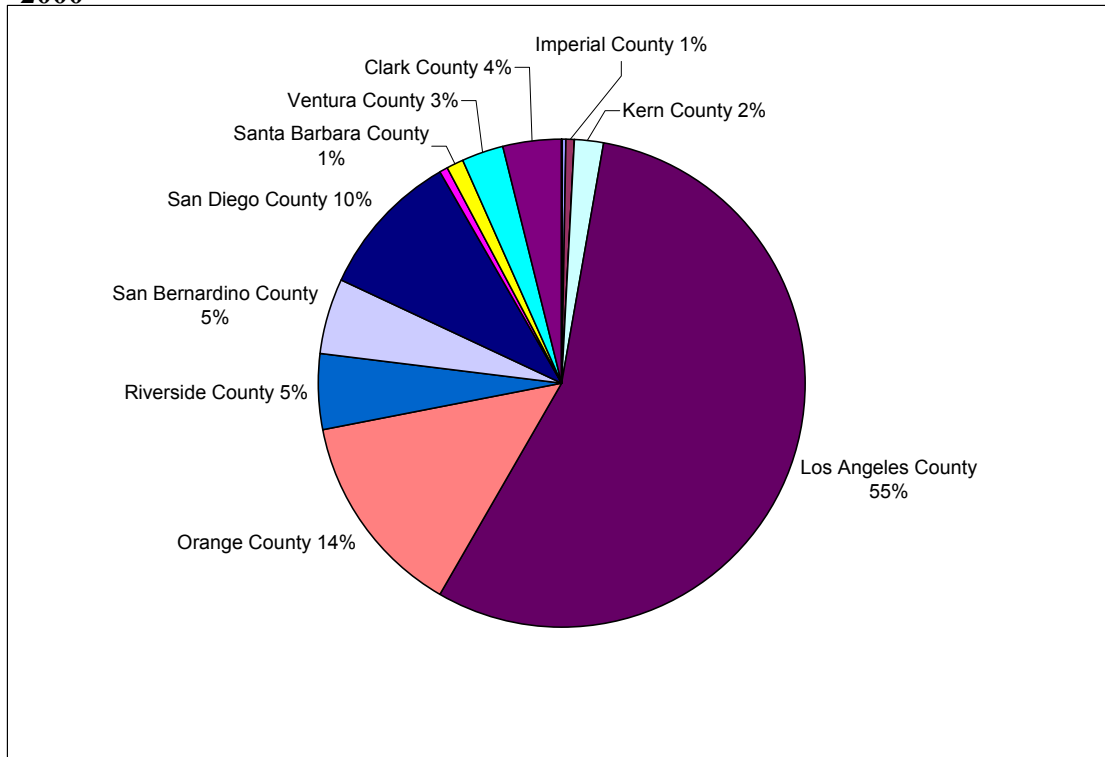
It is evident that Los Angeles County was not the only county growing during this time. Many of the other counties in the city-system experienced their most rapid growth during these same years. In examining the county growth rates, most counties that surround Los Angeles County have experienced growth rates not only above the average for the city-system, but also above that of Los Angeles County (see Appendix C). Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Ventura, and Clark

Counties all experienced growth rates higher than the city-system average during this time period. At the beginning of this time period 3,074,304 people lived in the city-system, 72% of which lived in Los Angeles County. As of the year 2000, 22,223,875 people lived in the city-system, with only 43% of that living in Los Angeles County. Other parts of the region have experienced substantial growth in this last stage of concentration, which helps explain the deconcentration of population.

A main source of growth during this final phase was the in-migration of people from other parts of the U.S. and from abroad. During the 1930s, many people migrated to Southern California from the Midwest due to the Dust Bowl and unemployment. Many of these people came to Southern California because of economic opportunity and moderate climate. These immigrants predominantly settled in San Diego and Kern Counties within the city-system (Pryde 1992; Robinson 1961). The 1930s and 1940s were also the time of the “bracero” program, which brought Mexican workers into the area to work in agriculture and other areas where labor was needed (Pryde, 1992). This added to the growth of the minority population.

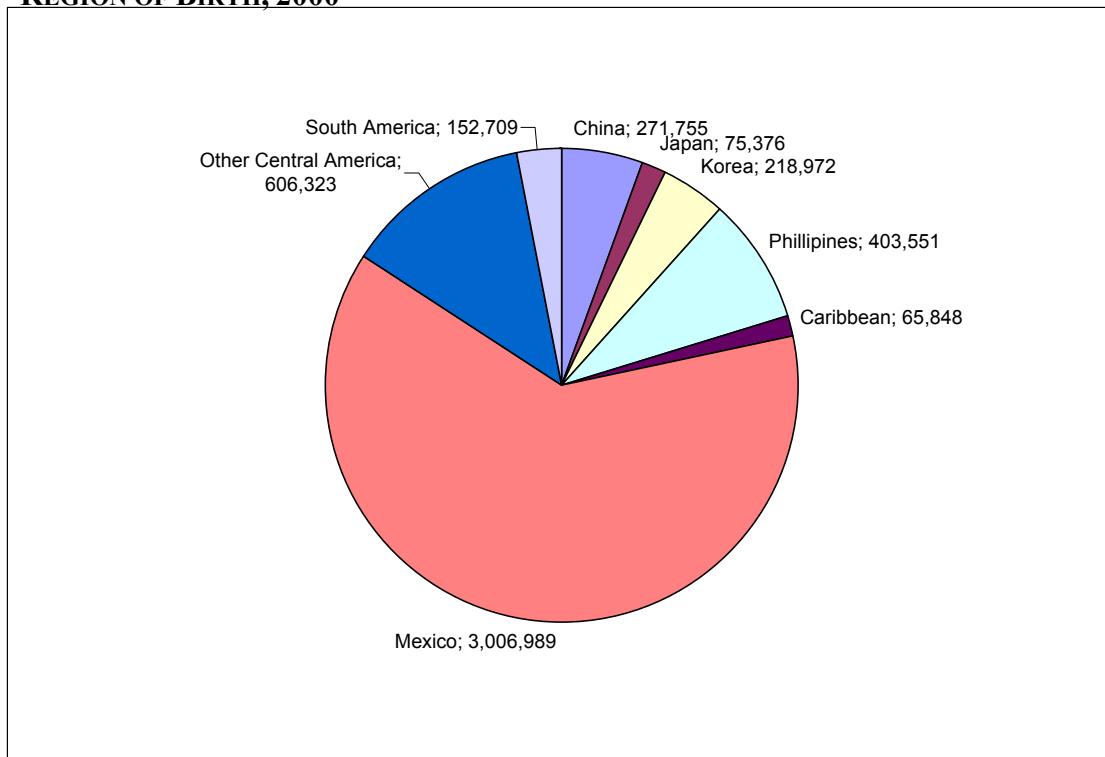
Migration, especially international migration, continues to heavily impact the region. Migrants from Latin American, mainly Mexico, and Asia continue to migrate to the Los Angeles and surrounding area as minorities became the majority in the state’s population in 2000 (see Figures 5.8 and 5.9) (Muller and Espenshade 1985; Nelson and O’Reilly 2000). It is apparent from these graphs that Los Angeles had the most foreign born residents (55%) in 2000, and that most of the foreign born residents in the region come from Latin American, specifically Mexico (see Pictures 5.11 and 5.12). The moderate climate and amenities available in the area also attracted many people to this

FIGURE 5.8: PERCENT OF FOREIGN BORN POPULATION LIVING IN EACH COUNTY, 2000



Source: U.S. Census Bureau, 2000

FIGURE 5.9: TOTAL NUMBER OF FOREIGN BORN POPULATION, BY COUNTRY OR REGION OF BIRTH, 2000



Source: U.S. Census Bureau, 2000

area. Once transportation was more affordable, people moved there because of its nice weather and beautiful surroundings. The tourism industry capitalized on the natural and man-made amenities in the area (Preston 1971). The opening of Disneyland in 1955, also added to the great population growth in Orange County (Parker 1963). Knott's Berry Farm is also in Orange County (see Picture 5.13). During the 1960s, San Diego became a major tourist destination with man-made attractions like Sea World opening during this time (Elliot 1965).



Picture 5.11: Ethnic influence in Los Angeles, downtown L.A. in the background



Picture 5.12: Ethnic influence in Los Angeles, signs in Spanish, English, and Korean

During the 1960s, the moderate climate in the area attracted health seekers (Vance 1972). The pleasant climate of the region also contributed to the growth of the motion picture industry. Orange County became the location for many motion picture productions because of its surroundings (see Picture 5.14). There are many recreation and tourist attractions in the Los Angeles city-system, including many theme parks, beaches, mountain resorts, and professional athletics (see Picture 5.15 – 5.17) that attract



Picture 5.13: Knott's Berry Farms, Orange County



Picture 5.14: Paramount Picture Studios, Los Angeles County

tourism which improve the economic growth of the region. Tourism and movie-making continue to be important to the economy in many parts of the city-system, especially along the coast. While the physical geography has generally attracted people to this region, it has also greatly contributed to the high population concentration of the city-system because of the limited amount of land that people can easily inhabit and because of the lack of economically productive land (Nelson and Clark 1976). With nearly 70% of the land being either very hot or hot desert (Hornbeck 1983), these regions have remained fairly uninhabited because the land is unproductive (see Figure 5.6).

One of the most profound phenomena that occurred during this final stage was the growth of Las Vegas. Prior to this stage, Clark County was hardly existent with a population of nearly 9,000. As of the year 2000, Clark County had a total population of 1,375,765 people. The eventual growth of Las Vegas was primarily the result of specific types of tourism. Gambling was legalized in 1931 and divorce requirements were reduced shortly thereafter. Ever since this time, Clark County has almost doubled in population ever decade (see Table 5.4). The Hoover Dam was constructed during the 1930s providing significant numbers of jobs and creating Lake Mead, which became a



Picture 5.15: Edison Field, home of the Anaheim Angels, Orange County



Picture 5.16: Staples Center, home of the Los Angeles Lakers and Clippers, Los Angeles County



Picture 5.17: Santa Monica Beach and Pier, Los Angeles County

recreation destination. The first high-rise hotel was completed in 1946, and by the 1960s, the hotels and casinos in Las Vegas were known around the world (Moreno 2000). Clark County thrives on the gambling and tourism

industries, and now Las Vegas is one still of the fastest growing cities in the United States.

The population and economic separation between urban cores and hinterland continued to widen during this time period. While agricultural land was overtaken by suburbanization in core areas like Los Angeles, San Diego, and Orange Counties, agriculture and oil extraction continued to be crucial the economic well-being of more peripheral counties like Kern, Imperial, Ventura, San Luis Obispo, Riverside, and Santa Barbara (Robinson 1955; San Luis Obispo County Museum 2003; Santa Barbara County Museum 2003). In 2000, over 70% of the city-system's agricultural employees resided in these counties, with Kern County having the most at 27.5%. Even though agriculture was still very important to these counties, the majority of employment was in services. In

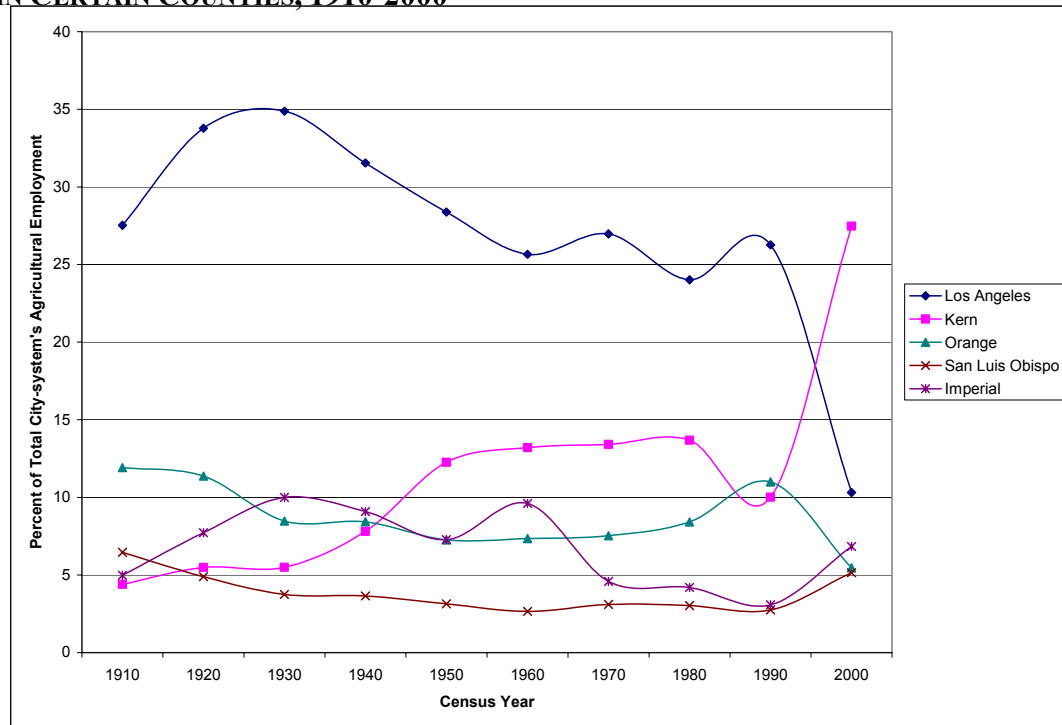
nearly every county in the city-system, over 75% of their employment was in services. This has been the case since the 1940s and 1950s.

Counties such as Riverside and San Bernardino have grown during this time because of their proximity to Los Angeles County. The majority of the population in both of these counties is located close to the borders of Los Angeles County in the Mediterranean climates zones (see Figure 5.6) and act as bedroom communities to those who work in Los Angeles County. Part of the reason for this is the climate of these two counties. Most of the land area of San Bernardino and Riverside counties is desert climate (about 90% and 85% respectively). Another reason for this growth was termed “spillover effect” by the literature (Morrill 1979; Johnson 1989; Morrill 1992; Frey 1995) Counties, like Riverside, San Bernardino, and Kern experience some of the spillover growth of the Los Angeles area, whereas more peripheral counties, such as those in Nevada, were still experiencing little growth. A reason for recent growth in peripheral Mohave County has been the influx of retirees (Goodykoontz, 1991). However, when examining the number of employees in each economic sector, the total population, and overall population density, it is apparent that the more urban counties are becoming more similar and distancing themselves from the more peripheral counties in the city-system (see Table 5.4 and Appendix C). Even though Los Angeles County still has the highest percentage of total population (see Table 5.4) and of employment in manufacturing and services, those percentages have all reached their highest levels and then constantly decreased during this period (see Figures 5.10 through 5.13).

Figure 5.10 shows the percent of agricultural employees in certain counties since 1910. For the more urban counties like Los Angeles Orange, the percent of agricultural

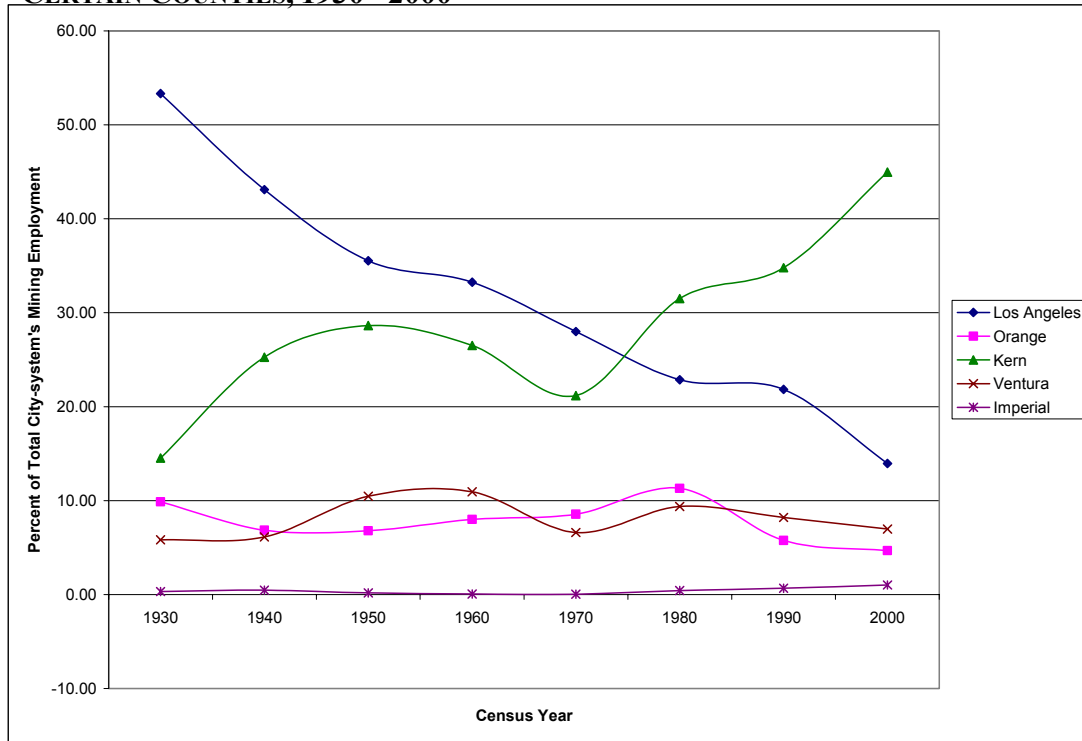
employees has generally decreased over time, while in the more peripheral counties, where agriculture is still very important to the economy, percentages increased in the last decade. In the 1920s and 1930s, around 35% of the city-systems manufacturing employees lived in Los Angeles County. Once there were demands for manufacturing and services created by the war, that percentage has generally decreased. Figure 5.11 shows similar trends for the employment in mining within the city-system. The percentage of people living in Los Angeles County who were employed in mining has decreased, while it has increase for counties like Kern. Counties in close proximity to Los Angeles have also experienced declines, but those declines have started later in time as the core areas become more urbanized and these types of activities are pushed into the periphery.

FIGURE 5.10: PERCENT OF TOTAL CITY-SYSTEM AGRICULTURAL EMPLOYMENT IN CERTAIN COUNTIES, 1910-2000



Source: Raw numbers of employees in each economic sector was obtained from the U.S. Census, the U.S. Census of Agriculture, and the U.S. Census of Manufacturing

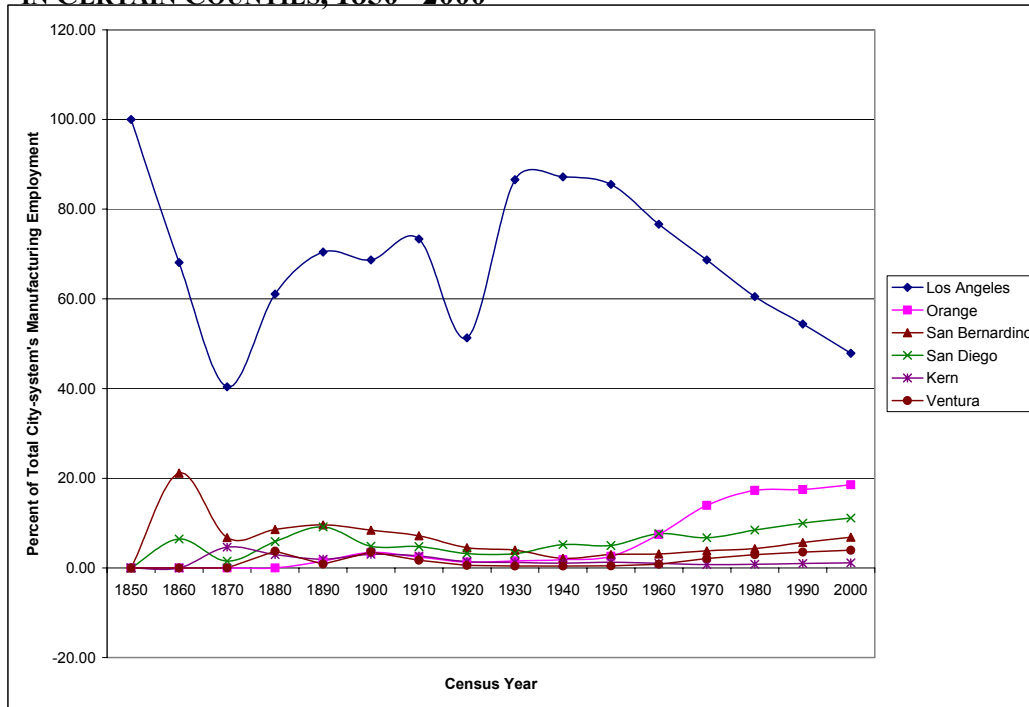
FIGURE 5.11: PERCENT OF TOTAL CITY-SYSTEM MINING EMPLOYMENT IN CERTAIN COUNTIES, 1930 - 2000



Source: Raw numbers of employees in each economic sector was obtained from the U.S. Census, the U.S. Census of Agriculture, and the U.S. Census of Manufacturing

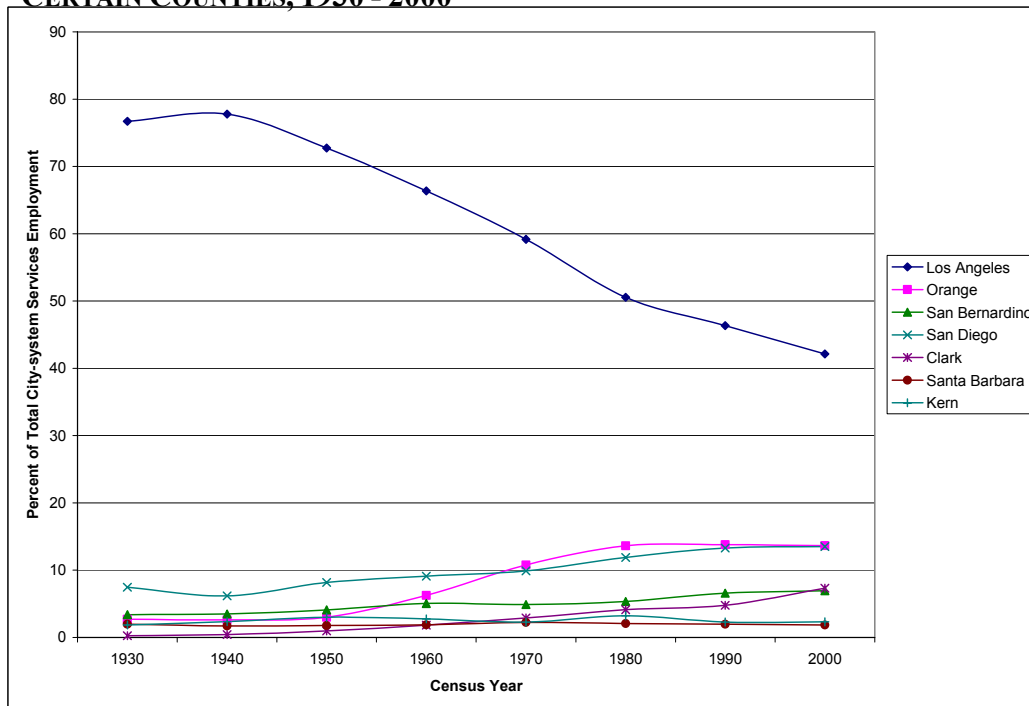
Figures 5.12 and 5.13 show the percentages of people working in manufacturing and services in the city-system. In examining the manufacturing employment, Los Angeles still has the most employees involved in manufacturing, but that percent has declined in the last six decades, while percentages have increased in adjacent counties such as Orange and San Diego. This demonstrates the decentralization of industry. Similar to manufacturing employment, the employment in services also shows the spillover of services into counties adjacent to Los Angeles. Even though most of the people employed in services lived in Los Angeles County, the percentage has declined over time. In other urban counties like San Diego, Orange, and San Bernardino, the

FIGURE 5.12: PERCENT OF TOTAL CITY-SYSTEM MANUFACTURING EMPLOYMENT IN CERTAIN COUNTIES, 1850 - 2000



Source: Raw numbers of employees in each economic sector was obtained from the U.S. Census, the U.S. Census of Agriculture, and the U.S. Census of Manufacturing

FIGURE 5.13: PERCENT OF TOTAL CITY-SYSTEM SERVICES EMPLOYMENT IN CERTAIN COUNTIES, 1930 - 2000



Source: Raw numbers of employees in each economic sector was obtained from the U.S. Census, the U.S. Census of Agriculture, and the U.S. Census of Manufacturing

percentage has increased. These figures show that not only is population deconcentrating, but economic demand is deconcentrating as well.

The connectivity between the city-system counties was also apparent in the county-to-county migration within the city-system collected by the 2000 U.S. Census between 1995 and 2000. Tables 5.7 and 5.8 show the in-migration to the city-system as well as the out-migration from the city-system as a whole, and it also shows the movement between counties within the city-system. This data demonstrates that most of the in-migrants into the city-system went to the major core counties (Los Angeles-22.12%, San Diego-15.21%, Orange-13.04%, Clark-12.93%, Riverside-11.04%, and San Bernardino-11.08%). However, most of these counties also had the highest percentages of out-migration (Los Angeles-37.72%, Orange-13.49%, and San Diego-13.71%). In fact, all of the counties experienced net out-migration except for Clark County (NV), the peripheral counties in Nevada, Mohave County (AZ), and Riverside County (CA), with Los Angeles County experiencing the most out migration. It is expected that a city-system in the deconcentration stage would have more out-migration from its core areas and less in its peripheral areas. This was precisely the case for the Los Angeles city-system. An examination of migration within the city-system further illuminates the connection between the core and periphery.

For most counties over half of their in-migrants came from other city-system counties. Counties with lower percentages of in-migrants from city-system counties were usually those that attracted many international in-migrants or in-migrants from all over the United States (i.e. Los Angeles, San Diego, and Clark County). In examining the out-migration from the city-system, similar trends and patterns are found. Most of the out-

TABLE 5.7: TOTAL CITY-SYSTEM IN-MIGRATION BETWEEN 1995 AND 2000

	TOTAL IN-MIGRATION TO CITY-SYSTEM	NET MIGRATION	PERCENT OF TOTAL CITY-SYSTEM IN-MIGRATION	TOTAL IN-MIGRANTS FROM OTHER CITY-SYSTEM COUNTIES	NET MIGRATION WITHIN CITY-SYSTEM	PERCENT OF TOTAL COUNTY IN-MIGRATION THAT CAME FROM OTHER CITY-SYSTEM COUNTIES
All counties	2,789,361	-350,058				
California counties	2,368,024	-575,271	84.90			
Nevada counties	375,963	209,257	13.50			
Arizona county	45,374	15,956	1.60			
Mohave	45,374	15,956	1.60	17,057	7,819	37.59
Imperial	20,402	-2,183	0.73	11,168	-1,839	54.74
Inyo	3,454	-1,534	0.12	1,875	-86	54.28
Kern	86,466	-18,334	3.10	42,708	11,569	49.39
Los Angeles	616,948	-567,271	22.12	255,951	-300,081	41.49
Orange	363,701	-59,686	13.04	227,848	14,221	62.65
Riverside	309,017	80,854	11.08	225,087	99,450	72.84
San Bernardino	301,255	-2,700	10.80	216,250	45,230	71.78
San Diego	424,318	-5,987	15.21	129,692	10,789	30.56
San Luis Obispo	59,895	15,388	2.15	24,765	8,156	41.35
Santa Barbara	68,583	-12,549	2.46	31,777	-1,874	46.33
Ventura	113,985	-1,148	4.08	68,857	17,398	60.41
Clark	360,931	-203,228	12.93	118,226	84,505	32.76
Esmeralda	280	-48	0.01	135	62	48.21
Lincoln	1,162	101	0.04	568	19	48.88
Nye	13,590	-6,082	0.49	7,367	4,662	54.21

Source: U.S. Census, 2000

TABLE 5.8: TOTAL CITY-SYSTEM OUT-MIGRATION BETWEEN 1995 AND 2000

	TOTAL OUT-MIGRATION FROM CITY-SYSTEM	NET MIGRATION	PERCENT OF TOTAL CITY-SYSTEM OUT-MIGRATION	TOTAL OUT-MIGRANTS TO OTHER CITY-SYSTEM COUNTIES	NET MIGRATION WITHIN CITY-SYSTEM	PERCENT OF TOTAL COUNTY OUT-MIGRATION THAT WENT TO OTHER CITY-SYSTEM COUNTIES
All counties	3,139,419	-350,058				
California counties	2,943,295	-575,271	93.80			
Nevada counties	166,706	209,257	5.30			
Arizona county	29,418	15,956	0.09			
Mohave	29,418	15,956	0.93	9,238	7,819	31.40
Imperial	22,585	-2,183	0.72	13,007	-1,839	57.59
Inyo	4,988	-1,534	0.16	1,961	-86	39.31
Kern	104,800	-18,334	3.34	31,139	11,569	29.71
Los Angeles	1,184,219	-567,271	37.72	556,032	-300,081	46.95
Orange	423,387	-59,686	13.49	213,627	14,221	50.46
Riverside	228,163	80,854	7.27	125,637	99,450	55.06
San Bernardino	303,955	-2,700	9.68	171,020	45,230	56.26
San Diego	430,426	-5,987	13.71	118,903	10,789	27.63
San Luis Obispo	44,507	15,388	1.42	16,609	8,156	37.32
Santa Barbara	81,132	-12,549	2.58	33,651	-1,874	41.48
Ventura	115,133	-1,148	3.67	51,459	17,398	44.70
Clark	157,703	203,228	5.02	33,721	84,505	31.47
Esmeralda	232	48	0.01	73	62	48.21
Lincoln	1,263	-101	0.04	549	19	48.88
Nye	7,508	6,082	0.24	2,705	4,662	54.21

Source: U.S. Census, 2000

migrants leaving the city-system were leaving from core counties (Los Angeles-35.19%, Clark-12.93, San Diego-12.79%, and Orange-12.58). Los Angeles has the most negative net migration, losing over 300,000 people to other city-system counties, while Clark (NV), Riverside, and San Bernardino counties had the most positive net migration. The percent of the out-migrants going to city-system counties was generally less than the percent of the in-migrants coming from city-system counties. This shows that more people migrated to areas outside of the city-system. However, most of the counties with highest percentage of out-migrants going to city-system counties were again the core counties, such as Los Angeles, Riverside, Orange, and San Bernardino.

When looking at Table 5.9, Los Angeles was the number one source of in-migrants for all counties in the city-system except Imperial, Esmeralda, Lincoln, and Nye Counties. This demonstrates the very peripheral nature of these counties, and shows the strong relationship Los Angeles has with those counties in its closest proximity. In general, counties tend to get most of their in-migrants from those counties with which they share a border. Another pattern in this data is the great exchange between Los Angeles, Riverside, San Bernardino, Orange, and San Diego Counties. Most in-migrants to each of these counties come from one of these other core counties.

The analysis of the within city-system movement (Table 5.9 and 5.10) showed that Los Angeles County was one of the top destination counties for most out-migrants in the city-system. However, it was not the top destination county for all counties, demonstrating the out-migration trend to other counties in the city-system. The in-migration and out-migration of people within the Los Angeles city-system demonstrate the important connections that exist between Los Angeles and its hinterland. According

TABLE 5.9: COUNTY-TO-COUNTY MIGRATION IN-MIGRATION BETWEEN 1995 AND 2000

		County of Residence in 1995 (Migrated From)																
		Mohave	Imperial	Inyo	Kern	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Clark	Esmeralda	Lincoln	Nye	Total In-migrants
County of Residence in 2000 (Migrated to)	Mohave		203	26	508	4,539	2,011	1,835	3,172	1,158	162	143	444	2,774	0	0	82	17,057
			1.19	0.15	2.98	26.61	11.79	10.76	18.60	6.79	0.95	0.84	2.60	16.26	0.00	0.00	0.48	
	Imperial	54		0	181	1,695	2,872	1,339	2,010	2,581	77	77	142	119	0	8	13	11,168
		0.48		0.00	1.62	15.18	25.72	11.99	18.00	23.11	0.69	0.69	1.27	1.07	0.00	0.07	0.12	
	Inyo	33	65		145	741	197	90	183	183	35	51	55	44	0	0	53	1,875
		1.76	3.47		7.73	39.52	10.51	4.80	9.76	9.76	1.87	2.72	2.93	2.35	0.00	0.00	2.83	
	Kern	344	454	241		19,476	2,986	2,190	7,821	2,828	1,138	1,417	2,849	910	0	0	54	42,708
		0.81	1.06	0.56		45.60	6.99	5.13	18.31	6.62	2.66	3.32	6.67	2.13	0.00	0.00	0.13	
	Los Angeles	1,132	1,883	349	11,882		77,760	27,965	59,614	30,156	3,126	8,808	24,090	9,021	0	0	165	255,951
		0.44	0.74	0.14	4.64		30.38	10.93	23.29	11.78	1.22	3.44	9.41	3.52	0.00	0.00	0.06	
	Orange	570	355	236	2,068	146,044		27,901	19,368	19,487	1,510	2,574	4,525	3,186	0	0	24	227,848
		0.25	0.16	0.10	0.91	64.10		12.25	8.50	8.55	0.66	1.12	1.99	1.40	0.00	0.00	0.01	
	Riverside	998	2,792	234	1,649	74,919	57,495		48,431	31,090	705	1,397	2,587	2,781	0	0	9	225,087
		0.44	1.24	0.10	0.73	33.28	25.54		21.52	13.81	0.31	0.62	1.15	1.24	0.00	0.00	0.00	
	San Bernardino	1,242	925	220	2,514	135,657	21,342	36,742		9,233	778	2,305	1,755	3,408	7	5	117	216,250
		0.57	0.43	0.10	1.16	62.73	9.87	16.99		4.27	0.36	1.07	0.81	1.58	0.00	0.00	0.05	
	San Diego	530	5,222	96	3,287	51,287	26,963	15,281	11,522		2,024	3,836	5,118	4,442	6	8	70	129,692
		0.41	4.03	0.07	2.53	39.55	20.79	11.78	8.88		1.56	2.96	3.95	3.43	0.00	0.01	0.05	
	San Luis Obispo	132	184	92	2,046	7,686	2,872	1,209	1,177	2,541		4,197	2,249	374	0	0	6	24,765
		0.53	0.74	0.37	8.26	31.04	11.60	4.88	4.75	10.26		16.95	9.08	1.51	0.00	0.00	0.02	
Santa Barbara	77	130	123	1,434	12,053	3,067	1,079	2,215	2,589	5,009		3,548	426	0	8	19	31,777	
	0.24	0.41	0.39	4.51	37.93	9.65	3.40	6.97	8.15	15.76		11.17	1.34	0.00	0.02	0.06		
Ventura	248	154	77	2,149	45,419	3,399	1,700	2,219	4,254	1,367	7,014		846	0	0	11	68,857	
	0.37	0.23	0.11	3.18	67.30	5.04	2.52	3.29	6.30	2.03	10.39		1.25	0.00	0.00	0.02		
Clark	3,827	640	167	3,112	55,857	12,283	8,109	12,779	12,548	631	1,749	4,016		37	508	1,963	118,226	
	3.24	0.54	0.14	2.63	47.25	10.39	6.86	10.81	10.61	0.53	1.48	3.40		0.03	0.43	1.66		
Esmeralda	4	0	17	5	0	3	6	13	5	0	0	0	13		12	57	135	
	2.96	0.00	12.59	3.70	0.00	2.22	4.44	9.63	3.70	0.00	0.00	0.00	9.63		8.89	42.22		
Lincoln	7	0	0	6	18	23	0	25	40	0	0	0	387	0		62	568	
	1.23	0.00	0.00	1.06	3.17	4.04	0.00	4.40	7.04	0.00	0.00	0.00	68.13	0.00		10.92		
Nye	40	0	83	153	641	354	191	471	210	47	83	81	4,990	23	0		7,367	
	0.54	0.00	1.12	2.08	8.70	4.80	2.59	6.39	2.85	0.64	1.13	1.10	67.73	0.31	0.00			

Source: U.S. Census, 2000 Note: Bold percentages indicate the top three in-migrant source counties

TABLE 5.10: COUNTY-TO-COUNTY MIGRATION OUT-MIGRATION BETWEEN 1995 AND 2000

County of Residence in 2000 (Migrated to)	County of Residence in 1995 (Migrated from)															
	Mohave	Imperial	Inyo	Kern	Los Angeles	Orange	Riverside	San Bernardino	San Diego	San Luis Obispo	Santa Barbara	Ventura	Clark	Esmeralda	Lincoln	Nye
Mohave		203	26	508	4,539	2,011	1,835	3,172	1,158	162	143	444	2,774	0	0	82
		1.56	1.33	1.63	0.82	0.94	1.46	1.85	0.97	0.98	0.42	0.86	8.23	0.00	0.00	3.03
Imperial	54		0	181	1,695	2,872	1,339	2,010	2,581	77	77	142	119	0	8	13
	0.58		0.00	0.58	0.30	1.34	1.07	1.18	2.17	0.46	0.23	0.28	0.35	0.00	1.46	0.48
Inyo	33	65		145	741	197	90	183	183	35	51	55	44	0	0	53
	0.36	0.50		0.47	0.13	0.09	0.07	0.11	0.15	0.21	0.15	0.11	0.13	0.00	0.00	1.96
Kern	344	454	241		19,476	2,986	2,190	7,821	2,828	1,138	1,417	2,849	910	0	0	54
	3.72	3.49	12.29		3.50	1.40	1.74	4.57	2.38	6.85	4.21	5.54	2.70	0.00	0.00	2.00
Los Angeles	1,132	1,883	349	11,882		77,760	27,965	59,614	30,156	3,126	8,808	24,090	9,021	0	0	165
	12.25	14.48	17.80	38.16		36.40	22.26	34.86	25.36	18.82	26.17	46.81	26.75	0.00	0.00	6.10
Orange	570	355	236	2,068	146,044		27,901	19,368	19,487	1,510	2,574	4,525	3,186	0	0	24
	6.17	2.73	12.03	6.64	26.27		22.21	11.32	16.39	9.09	7.65	8.79	9.45	0.00	0.00	0.89
Riverside	998	2,792	234	1,649	74,919	57,495		48,431	31,090	705	1,397	2,587	2,781	0	0	9
	10.80	21.47	11.93	5.30	13.47	26.91		28.32	26.15	4.24	4.15	5.03	8.25	0.00	0.00	0.33
San Bernardino	1,242	925	220	2,514	135,657	21,342	36,742		9,233	778	2,305	1,755	3,408	7	5	117
	13.44	7.11	11.22	8.07	24.40	9.99	29.24		7.77	4.68	6.85	3.41	10.11	9.59	0.91	4.33
San Diego	530	5,222	96	3,287	51,287	26,963	15,281	11,522		2,024	3,836	5,118	4,442	6	8	70
	5.73	40.15	4.90	10.56	9.22	12.62	12.16	6.74		12.19	11.40	9.95	13.17	8.22	1.46	2.59
San Luis Obispo	132	184	92	2,046	7,686	2,872	1,209	1,177	2,541		4,197	2,249	374	0	0	6
	1.43	1.41	4.69	6.57	1.38	1.34	0.96	0.69	2.14		12.47	4.37	1.11	0.00	0.00	0.22
Santa Barbara	77	130	123	1,434	12,053	3,067	1,079	2,215	2,589	5,009		3,548	426	0	8	19
	0.83	1.00	6.27	4.61	2.17	1.44	0.85	1.30	2.18	30.19		6.89	1.26	0.00	1.46	0.70
Ventura	248	154	77	2,149	45,419	3,399	1,700	2,219	4,254	1,367	7,014		846	0	0	11
	2.68	1.18	3.93	6.90	8.17	1.59	1.35	1.30	3.58	8.23	20.84		2.51	0.00	0.00	0.41
Clark	3,827	640	167	3,112	55,857	12,283	8,109	12,779	12,548	631	1,749	4,016		37	508	1,963
	41.43	4.92	8.52	9.99	10.05	5.75	6.45	7.47	10.55	3.80	5.20	7.80		50.68	92.53	72.57
Esmeralda	4	0	17	5	0	3	6	13	5	0	0	0	13		12	57
	0.04	0.00	0.87	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.04		2.19	2.11
Lincoln	7	0	0	6	18	23	0	25	40	0	0	0	387	0		62
	0.08	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.03	0.00	0.00	0.00	1.15	0.00		2.29
Nye	40	0	83	153	641	354	191	471	210	47	83	81	4,990	23	0	
	0.43	0.00	4.23	0.49	0.12	0.17	0.15	0.28	0.18	0.28	0.25	0.16	14.80	31.51	0.00	
Total Out-migrants	9,238	13,007	1,961	31,139	556,032	213,627	125,637	171,020	118,903	16,609	33,651	51,459	33,721	73	549	2,705

Source: U.S. Census, 2000 Note: Bold percentages indicate the top three in-migrant source counties

to this data, the peripheral Nevada counties appear to be more connected with Clark County than with Los Angeles. This suggests that Las Vegas may become its own city-system soon, but as of 2000, it was still very tied to Los Angeles. Nearly 50% of Clark County's in-migrant came from Los Angeles County alone – a total of over 55,000 people.

It has been just in the last few decades that many of the counties surround Los Angeles County have grown to over 1 million people (see Table 5.4). While none of these counties rival Los Angeles in total population size, overall population is spreading out and this urban agglomeration has grown. The urban core has rapidly expanded beyond the borders of Los Angeles County. Other counties in the city-system have grown economically and coalesced with Los Angeles to form a dominant core along the southern coast. These counties include San Diego, Orange, Ventura, San Bernardino, and Riverside. This is evident in the more noticeable decline of concentration in the last two decades as population growth has occurred more in counties surrounding Los Angeles, declining from 70.33% in 1980 to 63.58% in 2000.

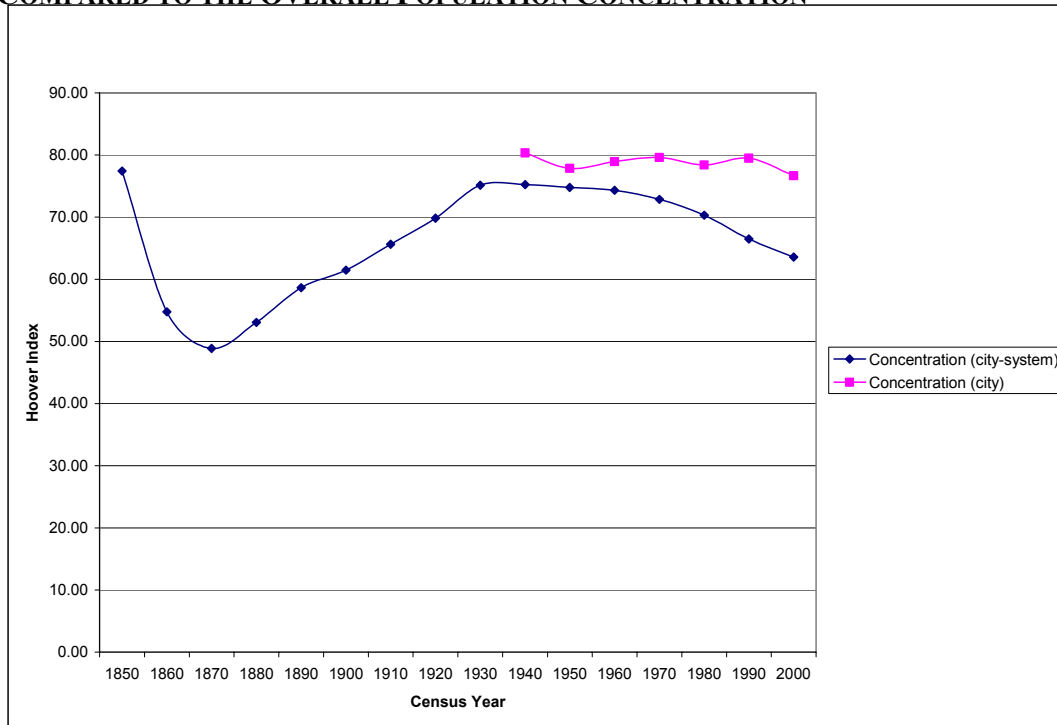
Because most of the counties within the Los Angeles city-system are very large and many areas are uninhabitable, an examination of population concentration at the city level further illuminates how concentration has changed in the region. The population data available from the U.S. Census for cities of population greater than 25,000 has only been available since 1940, thus the reason this city level Hoover Index is discussed only in the Equilibrium-seeking phase. The concentration of the city-system at the city level has been higher in every decade compared to the city-system as a whole (see Figure 5.14). This is expected since people generally concentrate in established urban areas.

However, the population concentration at the city level has followed a slightly different trend than the city-system. There has been a divergence between two concentrations since 1950. From 1950-1970, concentration increased at the city level but decreased at the county level. The number of incorporated cities of greater than 25,000 people more than quadrupled during this time, increasing from 21 in 1950 to 91 in 1970 (see Figure 5.15). The changing areal units affected the Hoover Index calculation by increasing the area occupied by cities.

The concentration at the city level followed the overall national trend, deconcentrating in the 1970s, concentrating in the 1980s and then deconcentrating again in the 1990s (Vining and Strauss 1977; Frey 1988; Frey and Speare 1992; Frey 1993; Fuguitt and Beale 1996; Long and Nucci 1997). The periods of deconcentration in the 1970s and 1990s are significant in that the number of cities in the city-system increased in the 1970s and stayed the same in the 1990s. Although the number of units was the same between 1990 and 2000, the concentration of the city-system experienced quite a significant drop in the last decade falling almost three percent. This could be a result of population spillover into surrounding unincorporated areas or completely out of the city-system (Morrill 1992; Frey 1995).

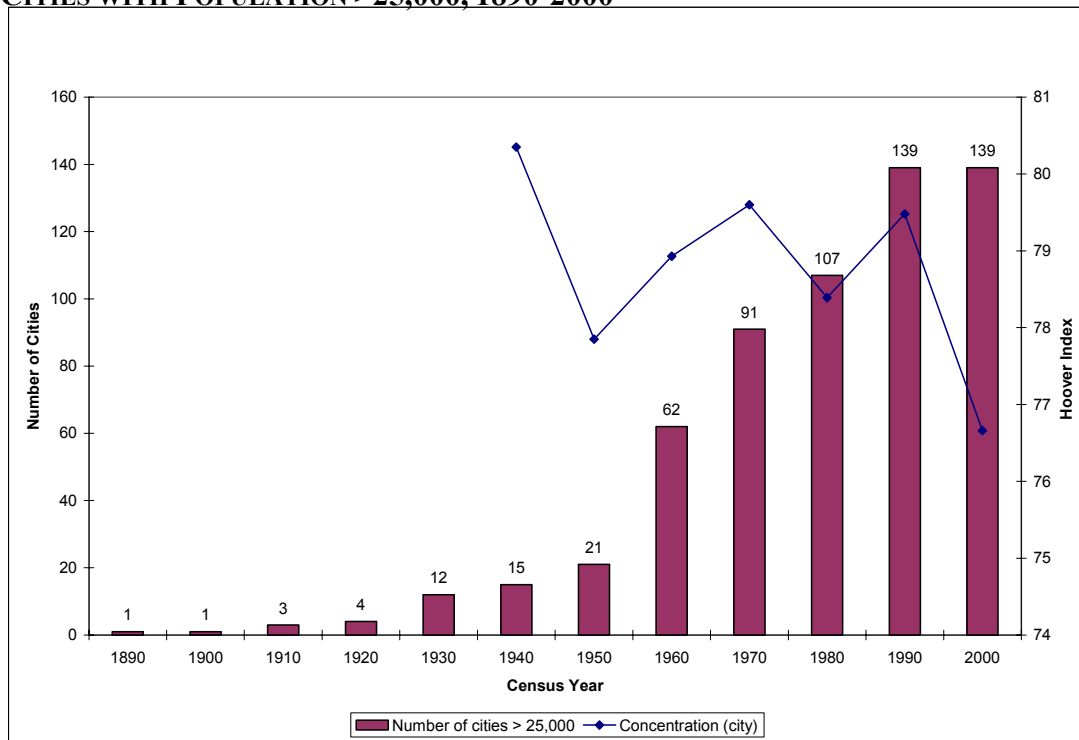
By examining the density of the different cities and the change in density between each decade, it was possible to see how many cities became less dense in each decade. Table 5.11 indicates how many cities became less dense in each decade. It is evident from this table that more cities became less dense in those decades where deconcentration was experienced. Of the 24 cities that became less dense in the 1970s, 16 of them (67%) were in Los Angeles County, the core of the region. During the 1990s, only 7 of the 27

FIGURE 5.14: POPULATION CONCENTRATION OF CITIES WITH POPULATION >25,000 COMPARED TO THE OVERALL POPULATION CONCENTRATION



Source: Raw population size and land area for each city was obtained from the U.S. Census City and County Data Books

FIGURE 5.15: POPULATION CONCENTRATION OF CITIES AND THE NUMBER OF CITIES WITH POPULATION >25,000, 1890-2000



Source: Raw population size and land area for each city was obtained from the U.S. Census City and County Data Books

TABLE 5.11: NUMBER OF CITIES THAT BECAME LESS DENSE BETWEEN 1940 AND 2000

CENSUS YEAR	NUMBER OF CITIES THAT BECAME LESS DENSE
1940-50	1
1950-60	5
1960-70	17
1970-80	24
1980-90	12
1990-2000	27

Source: Raw population size and land area for each city was obtained from the U.S. Census City and County Data Books

cities (26%) that became less dense were in Los Angeles County. In other words, most of the cities that declined in density were in counties other than the core county. In fact, at least one city became less dense in every county except in Clark County. This shows that is it not only the core area that was deconcentrating, but many of the surrounding areas were deconcentrating as well. The extensive suburbanization and

land annexations by cities could be a possible explanation for this. This further explains the deconcentration of population during the Equilibrium-seeking stage of the model. Los Angeles suburbanized into surrounding counties, and then those counties grew and began suburbanizing farther outward creating this urban agglomeration previously mentioned.

Summary

In this discussion, I have attempted to show how the factors influencing growth and concentration have contributed to the changes in population concentration since 1850 within the Los Angeles city-system. During the Frontier Dispersion Phase, the physical geography both negatively and positively affected concentration. The deserts and mountains were geographical barriers to in-migration during this period, as well as for the early Indian and Spanish inhabitants. It was simply too difficult to travel by stagecoach or horse to the region, therefore most of the in-migration came by sea or from Mexico.

This kept the population very concentrated along the coastline with a Hoover Index of 77.41%. The physical geography also had a positive effect on concentration because the region has so much fertile and resource-rich land. This attracted people because of the agricultural and mineral extraction opportunities. People eventually dispersed out into the region causing deconcentration from the Los Angeles core. Sea trade and commerce also contributed to the economic growth and population deconcentration of the region as wharves opened up all along the coast. By the end of the Frontier Dispersion Phase, the city-system had its lowest Hoover Index level of 48.87%. Physical geography and economy were the most influential factors affecting concentration during this first phase.

Many factors affected population concentration during the Urban Amplification Phase, resulting in the expansion of population in the urban centers. The advent of the railroad in the 1870s and 1880s began much of the concentration as people were more easily able to move into the area. The railroad brought many of the region's first migrants from within the United States and ignited a land boom. During this phase, the economic structure shifted from agriculture to industry, commerce, and tourism for the urban centers. The manufacturing and services sector grew at this time. World War I also impacted the economy and growth of the region creating employment opportunities and demand for the manufacturing of war materials. The manufacturing employment increased from 28,070 in 1910 to 120,197 in 1920, with over 50% of the manufacturing employment being in Los Angeles County.

While the physical geography was still attracting people to the area because of the moderate climate and beautiful surroundings, it also created a big problem. The lack of water in the area was a major concern at this time as the demand far outweighed the

availability of water. Political decisions were made about how to resolve the problem, and an expansive aqueduct and canal system was developed. This allowed people to continue to concentrate in the Los Angeles region. Migration from abroad, especially from Mexico and Asia, caused some of the concentration during this time as well. The Hoover Index increased from 48.87% in 1870 to about 75% in 1930. The core areas of the region, especially Los Angeles, separated themselves from the periphery of the city-system during this stage. Most of the population and economic growth occurred in Los Angeles County and the other counties along the Pacific coast. Physical geography, economy, transportation, historical and political events, and migration all played important roles in the rapid population concentration during this time period.

The final phase, Equilibrium-seeking, was also impacted by many factors similar to the factors of the previous phase. The major difference was that these factors were causing population deconcentration rather than concentration. While the growth of the urban centers was characteristic of the Urban Amplification Phase, the growth of surrounding communities was characteristics of the Equilibrium-Seeking Phase. One of the most important contributors to this was the advent of the automobile. This permitted the dispersal and infilling of population in places previously less settled. World War II and the Cold War created employment opportunities and economic growth that the region had never seen before. The number of people employed in manufacturing increased from 132,221 in 1930 almost 1 million in 1960. These historical events further transformed the urban areas of the region from agriculturally-based economies to economies based on manufacturing and services. Suburbanization also was a result of this influx of people brought about by the improved economy.

Tourism and the motion picture industry contributed to the economic growth and development of the region too. The varied physical geography of the coastal counties attracted movie makers, and the beaches, mountains, and amusement parks brought tourists from all over the world. In-migration caused by the Dust Bowl and the continued arrival of immigrants from other countries also contributed to the region's growth.

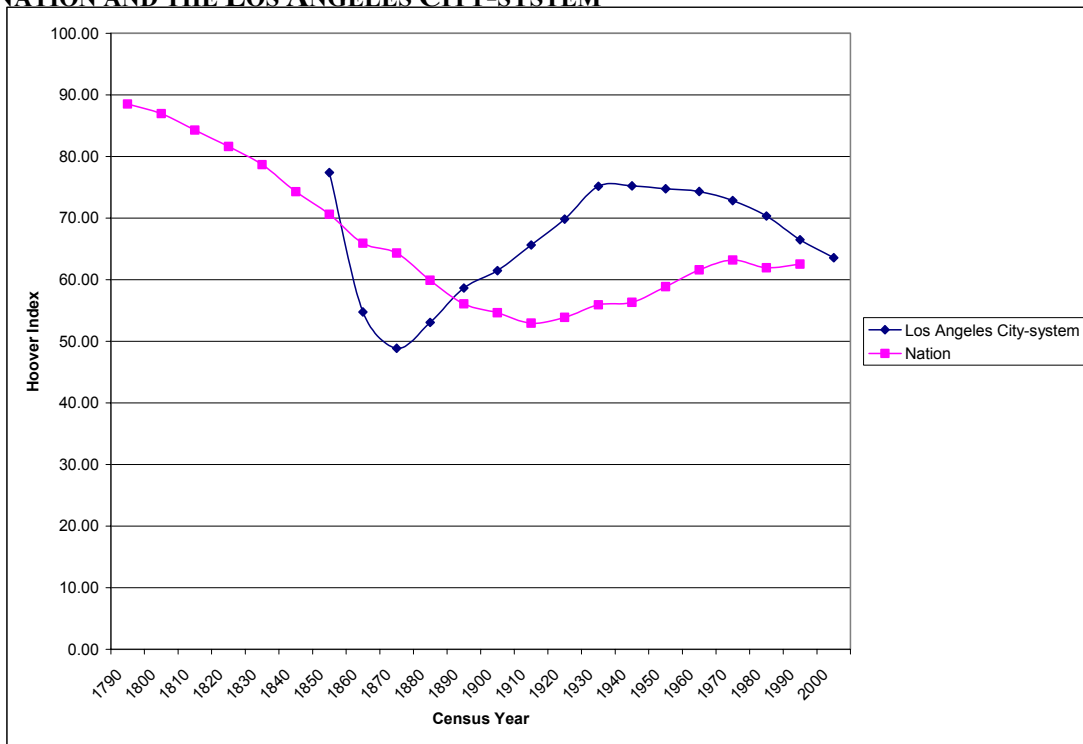
While the urban areas continued to grow, the peripheral counties' expansion helped cause the concentration to decline. The city level Hoover Index showed this in terms of deconcentration from incorporated cities to more peripheral areas. Counties around Los Angeles began to grow because of their proximity to the city, and other areas like Las Vegas began to grow as well. These surrounding counties began to become more similar to Los Angeles in population density and in percentage of people employed in manufacturing and services, creating an urban agglomeration, while the most peripheral counties became even more different as far as population and economic growth.

Thus, we see that the Los Angeles city-system is currently in a stage of seeking equilibrium between concentration and deconcentration. Many factors have contributed to the changing concentration of the Los Angeles city-system over time, including its physical geography, transportation innovations, historical and political events, and migration. All of these factors have played a role in making Los Angeles one of the most dominant cities of the West. The magnitude and timing of these factors have made the Los Angeles city-system unique in its growth and concentration. By comparing the Los Angeles city-system with national trends, this uniqueness is further explained.

Comparing Los Angeles City-System to National Trends

In comparing the Los Angeles city-system with the entire nation in terms of population concentration trends, there are some distinct differences (see Figure 5.16). While the Los Angeles city-system has gone through the same three stages of the population concentration model as the nation (see Otterstrom 2001), the timing of the shifts between phases has been very different. First, the shift between the Frontier Dispersion Phase and the Urban Amplification Phase occurred at the national level in 1910 with a Hoover Index of 52.94% (Otterstrom 2001). It was then that the frontier closed and urbanization began. Up until this point, the population had been dispersing into the largely unsettled West. In the Los Angeles city-system, this occurred much

FIGURE 5.16: COMPARISON BETWEEN THE POPULATION CONCENTRATION OF THE NATION AND THE LOS ANGELES CITY-SYSTEM



Source: see Otterstrom 2001

sooner in 1870 with a Hoover Index of 48.87%. The physical geography of the nation kept the West from being settled for many decades just as in the Los Angeles city-stem. Because of the physical geography of the Los Angeles region, much of the region was uninhabitable, which is similar to the West. However, the difference in the timing of the advent of the railroad provides a contrast between the national trends and the regional trends. Much of the Eastern U.S. could be traversed by rivers, and the railroad network formed much earlier in the East in order to connect population and economic centers in the East. Once the railroad connected the Los Angeles region to the rest of the nation and people could migrate more easily to the area, it did not take them long to realize which parts of the region were the most conducive to economic growth. The hinterland of the Los Angeles city-system was settled very quickly compared to the hinterland of the U.S. Those areas with fertile land and accessibility were the first to grow, which were plentiful in the Los Angeles area.

Another reason that the Los Angeles region began to experience concentration earlier was that it was settled so much quicker than the nation as a whole. By the time California became a state, the eastern portion of the nation was about to experience the Industrial Revolution. Those people coming from the East by train simply continued the way of life that they were familiar with in the East. This meant that the Los Angeles city-system did not have an extended Frontier Dispersion phase because it experienced its growth simultaneously with industrialization. By the time the railroad reached the region, the nation was industrializing. Therefore, the Los Angeles city-system essentially began as an industrializing and concentrating city.

The second shift between Urban Amplification and Equilibrium-seeking also occurred much earlier in the Los Angeles city-system than at the national level. Nationally, the transition from concentration to deconcentration occurred in 1970 with a Hoover Index of 63.19% (Vining and Strauss 1977; Otterstrom 2001). In the Los Angeles city-system, the shift from rapid concentration to deconcentration happened in 1930 with a Hoover Index of 75.16%. It was at this time that the region was experiencing some of its most intense growth. It was also the time of the automobile. Most cities in the East had experienced great population growth prior to the invention of the automobile which kept cities dense and people tied to the urban centers. The inundation of the automobile permitted the growth of the city-system to go outward rather than upward, as much of the eastern cities had done. California was seen by many to be a fulfillment of the American dream with single family houses and yards (Vining 1972). Thus, the population dispersed around Los Angeles and into surrounding counties fulfilling that American dream. Not only did the automobile permit them to do this, but there was also room for the expansion outward.

Since 1930, population concentration has continued to decline in the city-system as growth in the suburbs and more peripheral parts of the region has continued. However, at the national level, there was an increase in concentration in the 1980s as there was a metropolitan rebound increasing from 61.95% to 62.55% (Frey 1988; Long and DeAre 1988; Johnson 1989; Frey and Speare 1992; Frey 1993). Although this increase is minimal, it is not apparent in the Los Angeles city-system (except at the city level). Los Angeles and its surrounding counties continue to grow and expand outward. In general, the growth of the Los Angeles city-system has followed similar trends as

those experienced at the national level in passing through these phases of concentration, but the timing of concentration shifts has differed (Otterstrom 2001; 2003).

The factors discussed, as identified in the literature as influential to population growth, have greatly impacted the rapid growth of the Los Angeles city-system. It is astounding to think that this city-system has grown from just a few thousand people concentrated in a mission and governed by a different country to an ever-expanding megacity of over 22 million people that is important to not only the national economy, but the global economy as well. By examining the shifts in population concentration and the historical geography of the city-system, a clearer understanding the *when*, *where*, and *why* behind this population and economic growth has been presented.

CHAPTER 6

Conclusion

Review

This study has presented the historical geography of the Los Angeles city-system in the context of changes in population growth and concentration from 1769-2000. The introduction chapter introduced the purpose, objectives, and importance of this study. The second chapter reviewed past literature about regional growth and the history of Los Angeles and its surrounding counties. Previous research provided a framework for the remainder of my research. By studying past research, the main factors that have affected regional growth and concentration were identified. This provided a foundation for understanding how regions grow and how urban areas are connected with their periphery. The review of the literature also revealed a gap in previous research as far as connecting regional concentration with its history, which this thesis has filled for the Los Angeles city-system.

The third chapter discussed the data used in this research and the methods used to analyze this data. Most of the data came from the U.S. Census Bureau, while historical background of each county came from state and county histories and other resources. The Hoover Index of population concentration was used to calculate the population concentration of the Los Angeles city-system at the county and city levels, as well as the concentration of employees in the main economic sectors. The U.S. Census data was also used to calculate county population densities and growth rates. This data allowed me to better understand what areas of the region were growing and concentrating in the different decades under study. The historical information sources permitted me to

connect the factors of regional growth with the concentration and growth of region while also making connections between the growth of the core area of the region with its periphery. An introduction to a model of city-system stages of population concentration was also presented in the third chapter (Otterstrom 2001). This provided the basis for identifying the major concentration stages for the Los Angeles city-system. The fourth chapter was a review of the historical background of the region prior to California acquiring statehood. A brief overview of the Native Americans living in the area was included, as well as a discussion of the Spanish and Mexican occupations of the region. Because no numerical data was available as far as total population, only assumptions could be made concerning the concentration of people in the region during this time. It was assumed the concentration levels were fairly high during this time, as people concentrated along the coast.

The fifth chapter presented the results of the study, in addition to a discussion of how my results compared to those found by previous studies. During the first stage of population concentration (Frontier Dispersion), it was found that physical geography, economic opportunities in agriculture and mining, and transportation by stagecoach were the main factors attracting people to the area and dispersing them throughout the region. The Hoover Index decreased during this stage from 77.41% to 48.87% as population deconcentrated from the core to the periphery.

The second stage of population concentration (Urban Amplification) was driven by the advent of the railroad into the region which brought thousands of people into the Los Angeles area. Industrialization and growth in the manufacturing sector also influenced the concentration of population in the urban centers. Historical events, such

as World War I, and political improvements, like the aqueduct system, also brought people into the region. This time period was a time of extensive growth in Los Angeles and other urban areas such as San Diego and Orange Counties. The stage was a period of constant population concentration in the core counties, and the Hoover Index increased from 48.87% in 1870 to 75.16% in 1930.

The final stage of population concentration (Equilibrium-seeking) was most impacted by the proliferation of the automobile, as well as World War II. Many people migrated to the area because of the economic demands of World War II, but because of the automobile and a growing highway system, people could live in previously uninhabited land far from the core cities. Migration, especially from other nations, also played a major role in the growth of the region during time. The growth of the services industry characterized this final stage. The growth of counties surrounding Los Angeles caused population deconcentration during the third stage of population concentration as the Hoover Index decreased from 75.16% to 63.58%. The fifth chapter also included a discussion of a modified city-level Hoover Index of Population Concentration, which further supported the deconcentration of population during the Equilibrium-seeking stage.

The factors that affect regional growth, as identified in the literature, were identified during most of the growth course of the Los Angeles city-system. The population concentration of the Los Angeles city-system generally followed the same trends as identified at the national and broad regional levels with exception to the timing of the concentration shifts. The last section of the fifth chapter compared the Los Angeles city-system to the national concentration trends. The unique characteristics of the Los Angeles city-system, such as its physical geography and its location on the West

coast, were identified as the reasons for the differences between the Los Angeles area and the nation.

Review of Research Objectives

This thesis began with four main objectives. The first objective was to explain *when* population settled in this area and *when* changes in the concentration of population occurred throughout the history of the city-system. This was accomplished by studying county histories and calculating the Hoover Index of Population Concentration. The dates of first settlements as well as decades of great growth were identified by using historical documents and U.S. Census data. The second objective was to determine *where* the population settled and how the location of population contributed to the changes in overall concentration. By calculating the population concentration, a relative understanding of where population was located in the city-system was gained.

Population densities and growth rates for each county were calculated in order to obtain a more detailed understanding of which counties were growing in each decade. By looking at which counties became denser or had increasing growth rates, it was possible to identify where population was concentrating.

The third objective was to illuminate the first two objectives by explaining *why* people located when and where they did in both the core and the periphery. This was achieved by studying county histories and visiting county historical sites and museums. With specific attention to the factors of growth identified in the literature review, the main reasons for growth and concentration (or deconcentration) were identified in each stage of population concentration. This provided a further understanding of city-hinterland growth economics. This objective tied the research together and specifically

fulfilled the purpose of this thesis. The final objective was to compare the trends in population concentration of the Los Angeles city-system to the national trends and explain why differences may exist between the two. This was accomplished in the final section of chapter 5, where the unique characteristics of the Los Angeles region were identified as the reason for discrepancy between the regional and national concentration trends.

By fulfilling the research purpose and objectives, I have an understanding of the Los Angeles region that has been unavailable before. The history and geography of the region were connected providing a greater understanding of what factors have been the most influential in the changes of population concentration. Connections were made between the core and periphery of the region, which further clarified the core/periphery growth economics of the region. By examining the growth of the Los Angeles city-system in the context of population concentration, the dominance of Los Angeles in the growth and concentration of the region was determined. The changing focus of growth from Los Angeles specifically to its surrounding counties and cities was also presented. While Los Angeles is still the core of the region, the core has grown to encompass such counties as Orange and San Diego counties as well as parts of Riverside and San Bernardino counties.

Because the core continues to expand, its influence reaches further into the periphery of the region. Counties such as Ventura, Kern, Santa Barbara, San Luis Obispo, and Clark have all experienced substantial growth in the last few decades. Most of the counties in the city-system are becoming more similar over time in the context of population growth rates and employment in the different economic sectors. Other parts

of the city-system are becoming more different, specifically the rural Nevada counties. This suggests that at some point they could become part of a different city-system.

Suggestions for Future Research

There are many more factors that could be considered for future research similar in nature to this research. This study has largely neglected the impact of demographic trends, such as age structure and natural increase. The impact of migration trends and the influence of migration on growth and concentration could be studied more in depth by looking at the nature of in-migrants. Specifically, a closer examination of the ethnicity of in-migrants and the age structure of in-migrants would further explain growth trends as certain ethnic groups and people of certain age groups tend to have more children and tend to settle in urban areas rather than the periphery.

Economic factors other than the employment in the different economic sectors could also be explored. The unemployment rate, average household income, property value, and other economic variables also impact where people decide to live. Within the economic sectors, more detailed variables, such as productivity of farmland, natural resource yields, number of manufacturing plants, or the different types of services within the services industry, could be examined. A study of these variables would lend further insight into the complex economic structure of the region. The impact of all of these variables would have changing effects on the growth and concentration of a region during different periods of history, which could lead to a complete understanding of the historical and economic geography of the Los Angeles city-system.

Summary

In conclusion, I refer back to the quote that began this thesis:

“As I wandered about Los Angeles, looking for the basic meaning of the place, the fundamental source of its wealth and its economic identity, I found myself quite at sea. The Chamber of Commerce people told me about the concentration of fruit, the shipping, the Western branch factories put up by concerns in the East. But none of these things seemed the cause of a city. They seemed rather the effect, rising from an inexplicable accumulation of people - just as the immense dealing in second-hand automobiles and the great turnover of real estate were an effect. It struck me as an odd thing that here, alone of all the cities in America, there was no plausible answer to the question, ‘Why did a town spring up here and why has it grown so big?’” (Fogelson 1967, 3)

The agriculture, commerce, industry, and transportation associated with Los Angeles and its city-system have all contributed separately and collectively to make Los Angeles what it is today. The research presented here has made this “inexplicable accumulation of people” clearer by examining the growth and concentration of the Los Angeles city-system from a geographic perspective. Likewise, answers can now be given to why this region has grown to be so big. The Los Angeles city-system contains a geographical and economic uniqueness unavailable anywhere else in nation. Its moderate climate attracts citizens nationally and internationally, its physical location attracts industry and commerce, and its potential for growth, both economically and in population, remains to be experienced.

NOTES

¹ Because of the nature of the data available in the U.S. Census, the number of employees in agriculture also included employees in forestry and fishing because in some census, these were all grouped together. The number of employees in mining included both employees in mining and any other extractive industry. The number of employees in manufacturing included both nondurable and durable goods. Employees in the services industry included people employed in nearly all the other occupations besides the three just mentioned and construction. Thus, the number of people employed in services included people employed in transportation, wholesale trade, retail trade, finance, insurance, and real estate, services, and public administration.

² For the purposes of this study, employment in services includes employment in wholesale and retail trade, government, transportation and communication, finance, real estate, entertainment, public administration, and all other professional services.

BIBLIOGRAPHY

- Abbott, C., 1992. Regional city and network city: Portland and Seattle in the Twentieth Century. *Western Historical Quarterly* 23:293-319.
- Aguilar, A.G., 1999. Mexico City growth and regional dispersal: the expansion of largest cities and new spatial forms. *Habitat International* 23(3):391-412.
- Alvena, S. 1927. *Historical Geography of San Diego*. Master's Thesis, Department of Geography, University of California at Berkeley.
- Bachus, E.J., 1981. Who took the oranges out of Orange County?: The Southern California citrus industry in transition. *Southern California Quarterly* 63(2):157-173.
- Beale, C.L. 1975. *The revival of population growth in nonmetropolitan America*. ERS-605. Washington, D.C. Economic Research Service, U.S. Department of Agriculture.
- Beck, W.A. and Y.D. Haase. 1974. *Historical Atlas of California*. Norman, OK :University of Oklahoma Press.
- Berry, B.J.L. 1991. *Long-Wave Rhythms in Economic Development and Political Behavior*. Baltimore: The Johns Hopkins University Press.
- Bigger, Richard and James D. Kitchen. 1952. *Metropolitan Los Angeles: How the Cities Grew*. Los Angeles: The Haynes Foundation.
- Booth, D.E., 1999. Spatial patterns in the economic development of the Mountain West. *Growth and Change* 30:384-405.
- Borchert, J.R., 1967. American Metropolitan Evolution. *The Geographical Review* 57:301-332.
- Chalfant, W.A. 1933. *The Story of Inyo*. Los Angeles: Citizens print shop.
- Cohen, D.T. and K. Debbage., 2003. Towards an effective subcounty settlement classification: comparative density revisited. Presented at the 99th Annual Meeting of the Association of American Geographers, March 4-8, 2003.
- Cronon, W. 1991. *Nature's Metropolis, Chicago and the Great West*. New York : W.W. Norton & Company.
- Davis, Sam P., ed. 1984. *The History of Nevada*, vol.2. Las Vegas: Nevada Publications.
- Dreyfuss, John J., ed. 1978. *A History of Arizona's Counties and Courthouses*. Tucson, AZ: The National Society of the Colonial Dames of America in the State of Arizona.

- Durrenberger, R.W. 1967. *Patterns on the Land*. Palo Alto, CA: National Press Books.
- Duncan, O.D., R.P. Cuzzort, and B. Duncan. 1961. *Statistical Geography*. Illinois: The Free Press of Glencoe, p.82-87.
- Earle, C., Otterstrom, S., and J. Heppen. 1999. HUSCO– 1790 - 1999. [Historical United States County Boundary Files on CD-Rom]. *Geoscience Publications*, Louisiana State University.
- Easterlin, R.A. 1968. *Population, Labor Force, and Long Swings in Economic Growth*. New York: Columbia University Press.
- Elliot, Wallace W. 1965. *History of San Bernardino and San Diego Counties*. Riverside, CA: Riverside Museum Press.
- Fagin, D.P. “California Highways: Interstate Highway Types and the History of California’s Interstates. <<http://www.pacificnet.net/~faigin/CA-HWYS/itypes.html>> (2003).
- Fogelson, Robert M. 1967. *The Fragmented Metropolis, Los Angeles, 1850-1930*. Cambridge, MA : Harvard University Press.
- Fonesca, J.W. and D.W. Wong, 2000. Changing patterns of population density in the United States. *Professional Geographer* 52(3):504-517.
- Forbes, J. 1982. *Native Americans of California and Nevada*. Naturegraph Happy Camp, CA: Publishers, Inc.
- Foster, M.S., 1975. The Model T, the hard sell, and Los Angeles’s Urban Growth: The decentralization of Los Angeles during the 1920’s. *Pacific Historical Review* 44:459-484.
- Frey, W.H., 1988. The re-emergence core region growth: A return to the metropolis? *International Regional Science Review* 11(3):261-267.
- 1993. The new urban revival in the United States. *Urban Studies* 30(4/5):741-774.
- 1995. Immigration and internal “flight”: A California case study. *Population and Environment* 16(4):353-374.
- and A. Speare, Jr., 1992. The revival of metropolitan population growth in the United States: An assessment of findings from the 1990 census. *Population and Development Review* 18(1):129-146.

- Friedmann, J. and J. Miller, 1965. The urban field. *Journal of the American Institute of Planners* 31:312-319.
- Fuguitt, G.V. and C.L. Beale, 1996. Recent trends in nonmetropolitan migration: Toward a new turnaround? *Growth and Change* 27:156-174.
- Goodenough, R., 1992. The nature and implications of recent population growth in California. *Journal of Geography* 77(2):123-133.
- Goodykoontz, B., 1991. Arizona's high-stakes county, *Planning* 57(9):16-18.
- Grenier, J.A., ed. 1978. *A Guide to Historic Places in Los Angeles County*. Dubuque, IA: Kendall/Hunt Publishing Company.
- Griffin, P.F. and R.N. Young. 1956. *Atlas of California: A Living Geography*. San Francisco: Fearon Publishers.
- Harris, C.D. 1940. *Salt Lake City A Regional Capital*, University of Chicago: Dept. of Geography.
- 1997. "The nature of cities" and urban geography in the last half century. *Urban Geography* 18(1):15-35.
- and E.L. Ullman. 1945. The nature of cities. *The Annals of the American Academy of Political and Social Science* 242:7-17.
- Henderson, Tracey. 1968. *Imperial Valley*. San Diego: Neyenesch Printers, Inc.
- Hise, G., 2001. 'Nature's Workshop' industry and urban expansion in Southern California, 1900-1950. *Journal of Historical Geography* 27(1):74-92.
- Hoover, E.M., 1941. Interstate redistribution of population, 1850-1940. *Journal of Economic History* 1:199-205.
- Hornbeck, D. 1983. *California Patterns: A Geographical and Historical Atlas*. Palo Alto, CA: Mayfield Publishing Company.
- Hulse, James W. 1971. *Lincoln County Nevada: 1864-1909*. Reno, NV: University of Nevada Press.
- Johnson, K.M., 1989. Recent population redistribution trends in nonmetropolitan America. *Rural Sociology* 54(3):301-326.
- and C.L. Beale, 1994. The recent revival of widespread population growth in nonmetropolitan areas of the United States. *Rural Sociology* 59(4):655-667.

- Keuhn, J. and J. West, 1971. Highways and Regional Development. *Growth and Change* 2:23-28.
- Kirsch, S.L. 1993. California's redistributive role in interstate migration, 1935-1990. *California Geographer* 33:59-78.
- Kondratieff, N.D., 1935. The long waves in economic life. *Review of Economic Statistics* 17(6):105-115.
- Kuznets, S., 1958. Long swings in the growth of population and related economic variables. *Proceedings of the American Philosophical Society* 102:25-52.
- Lewin, Molly, ed. 1949. *City of Los Angeles: The First 100 Years*. Los Angeles: Police Printing Bureau.
- Lichter, D.T., and G.V. Fuguitt, 1980. Demographic response to transportation innovation: the case of the interstate highway (United States), *Social Forces* 59(2):492-512.
- Long, L. and D. DeAre, 1988. US population redistribution: A perspective on the nonmetropolitan turnaround. *Population Development Review* 14(3):433-450.
- Long, L. and A. Nucci, 1997. The 'clean break' revisited: Is US population again deconcentrating? *Environment and Planning A* 29:1355-1366.
- Meinig, D.W., 1972. American Wests: Preface to a geographical interpretation. *Annals of the Association of American Geographers* 62:159-184.
- Meyer, D.R., 1980. A dynamic model of the integration of frontier urban places into the United States system of cities. *Economic Geography* 56(2):120-140.
- Moehring, E., 1997. The Comstock urban network. *Pacific Historical Review* 66(3):337-362.
- Moreno, Richard. 2000. *Roadside History of Nevada*. Missoula, MT: Mountain Press Publishing Company.
- Morrill, R.L., 1979. Stages in patterns of population concentration and dispersion. *Professional Geographer* 31(1):55-65.
- 1980. The spread of change in metropolitan and nonmetropolitan growth in the United States, 1940-1976. *Urban Geography* 1,2:118-129
- 1992. Population redistribution within metropolitan regions in the 1980s: core, satellite, and exurban growth. *Growth and Change* 23:277-302.

- Muller, E.K., 1977. Regional urbanization and the selective growth of towns in North American regions. *Journal of Historical Geography* 3(1):21-39.
- Muller, T. and T.J. Espenshade. 1985. *The Fourth Wave: California's Newest Immigrants*. Washington, D.C.: The Urban Institute.
- Nelson, H. J. 1983. *The Los Angeles Metropolis*. Dubuque, IA : Kendall/Hunt Publishing Company.
- and W.A.V. Clark. 1976. *The Los Angeles Metropolitan Experience: Uniqueness, Generality, and the Goal of the Good Life*. Cambridge, MA: Ballinger Publishing Company.
- Nelson, S.S. and R. O'Reilly. "Minorities Become Majority in State, Census Officials Say." *Los Angeles Times*, 30 August 2000.
- Otterstrom, S.M., 1997. An analysis of population dispersal and concentration in the United States, 1790 – 1990: The frontier, long waves, and the manufacturing connection. Doctoral Dissertation, Louisiana State University.
- 2001. Trends in national and regional population concentration in the United States from 1790 to 1990: from the frontier to the urban transformation. *The Social Science Journal* 38:393-407.
- 2003. Population concentration in United States city-systems from 1790 to 2000: Historical trends and current phases. *Tijdschrift voor Economische en Sociale Geografie* 94(4):281-315.
- Page, B. and R. Walker, 1991. From settlement to Fordism: The agro-industrial revolution in the American Midwest. *Economic Geography* 67(4):281-315.
- Parker, C.E. and M. Parker. 1963. *Orange County: Indians to Industry*. Santa Ana, CA: Orange County Title Company.
- Perloff, H.S., Dunn, Jr., E.S., Lampard, E.E., Muth, R.F. 1960. *Regions, Resources, and Economic Growth*. Baltimore, MD: The Johns Hopkins Press.
- Phillips, Michael James. 1927. *History of Santa Barbara County*. Los Angeles: The S.J. Clark Publishing Co.
- Pred. A., 1965. Industrialization, Initial Advantage, and American Metropolitan Growth. *The Geographical Review* 55:158-185.
- Preston, R.E., 1971. The changing form and structure of the Southern California metropolis. *The California Geographer* 12:5-20.

- and D.W. Griffin, 1968. The pattern of major retail centers in the Los Angeles area. *California Geographer* 9:1-27.
- Pryde, Philip R., 3rd ed. 1992. *San Diego: An Introduction to the Region*. Dubuque, IA: Kendall/Hunt Publishing Company
 - Rand McNally and Company, 2000. *Rand McNally Commercial Atlas and Marketing Guide*. Rand McNally & Co., 131th Edition: Chicago.
 - Richter, K., 1985. Nonmetropolitan growth in the late 1970s: The end of the turnaround? *Demography* 22(2): 245-263.
 - Riverside County Historical Museum, Riverside, CA, visited June 2003.
 - Robinson, W. W. 1955. *The Story of Ventura County*. Los Angeles: Title Insurance and Trust Company.
 - 1957. *The Story of Riverside County*. Los Angeles: Title Insurance and Trust Company.
 - 1961. *The Story of Kern County*. Los Angeles: Title Insurance and Trust Company.
 - San Luis Obispo County Historical Museum, San Luis Obispo, CA, visited June 2003.
 - San Luis Obispo County Historical Museum, "A Little More History." City of San Luis Obispo. < <http://www.ci.san-luis-obispo.ca.us/history.asp> > (2003).
 - Santa Barbara County Historical Museum, Santa Barbara, CA, visited July 2003.
 - Soja, E.W., Los Angeles, 1965-1992: From crisis-generated restructuring to restructuring-generated crisis. In: Scott, A.J. and E.W. Soja, eds. 1996. *The City: Los Angeles and Urban Theory at the End of the Twentieth Century*. University of California Press: Berkeley, CA, p. 426-462.
 - Smith, W.S., 1986. Interactions between transportation and high-rise, high-density living. *Ekistics* 53:336-44.
 - Taaffe, E. J., R.L. Morrill, P.R. Gould, 1963. Transport expansion in underdeveloped countries: A comparative analysis. *Geographical Review* 53(4):503-529.
 - Thompson, T.H. and A.A. West. 1966. *History of San Luis Obispo County*. Berkeley, CA: Howell-North Books.
 - Tout, Otis B. 1931. *The First Thirty Years in Imperial Valley, California*. Holtville, CA: Holtville Printing & Graphics.

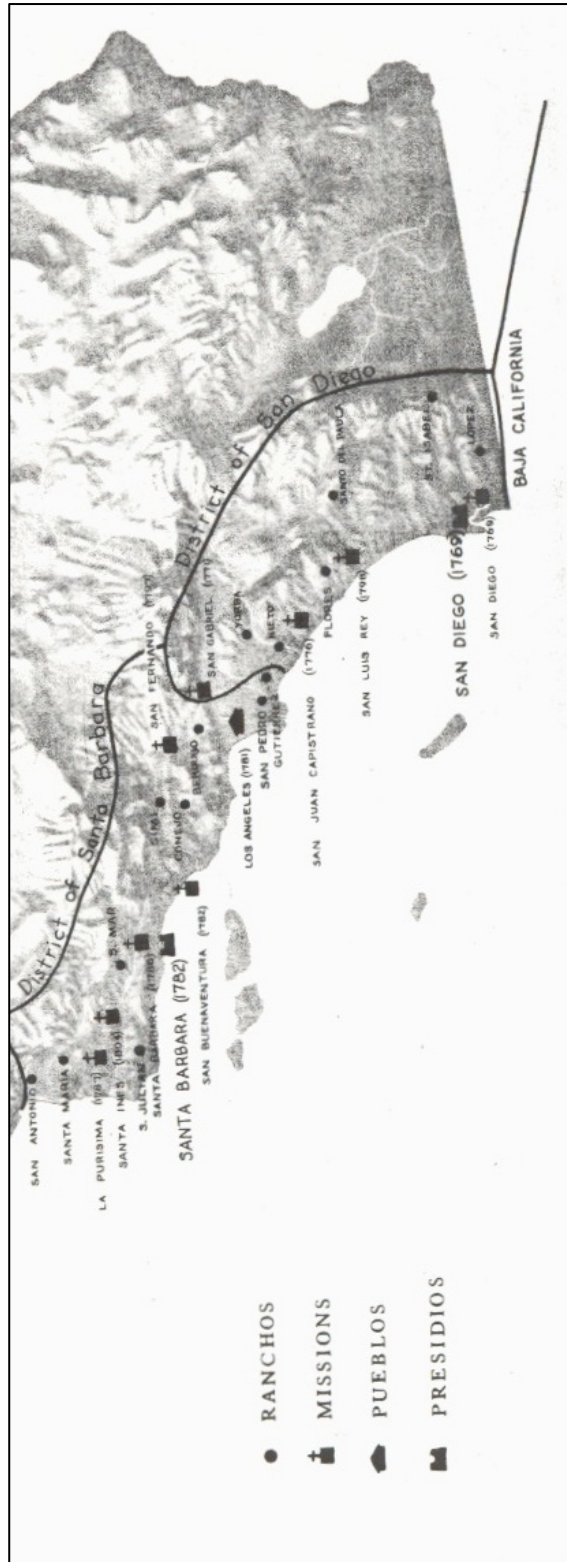
- U.S. National Resources Committee, 1937. *Our Cities – Their Role in the National Economy: Report of the Urbanism Committee*. Washington, D.C.: Government Printing Office.
- U.S. Department of Agriculture, National Agricultural Statistics, Census of Agriculture, 1987, 1992, 1997.
- Vance, Jr., J.E., 1972. California and the ideal. *Annals of the Association of American Geographers* 62:185-210.
- Vining, Jr., D.R. and A. Strauss, 1977. A demonstration that the current deconcentration of population in the United States is a clean break with the past. *Environment and Planning A* 9:751-758.
- Walker, R.A., 2001a. California's golden road to riches: Natural resources and regional capitalism, 1848-1940. *Annals of the Association of American Geographers* 91(1):167-199.
- 2001b. Industry builds the city: the suburbanization of manufacturing in the San Francisco Bay Area, 1850-1940. *Journal of Historical Geography* 27(1):36-57.

APPENDIX A: MAP OF NATIVE POPULATION



Source: Beck and Haase (1974)

APPENDIX B: CALIFORNIA MISSIONS AND PICTURES, MAP OF RANCHOS



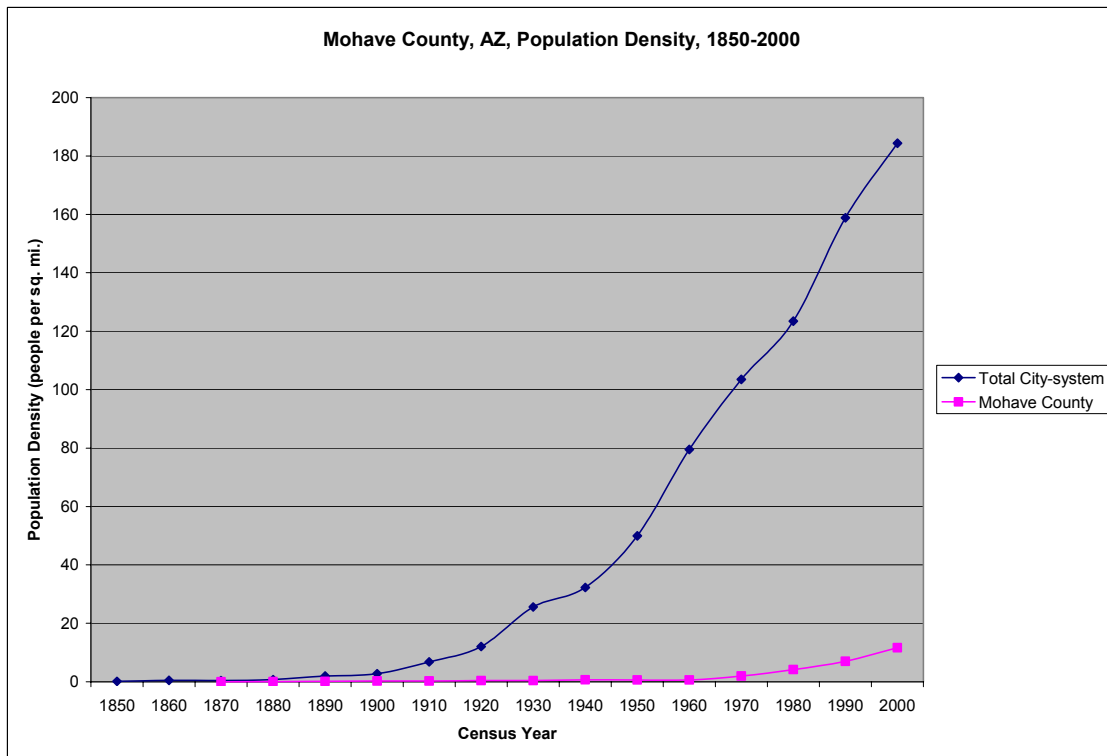
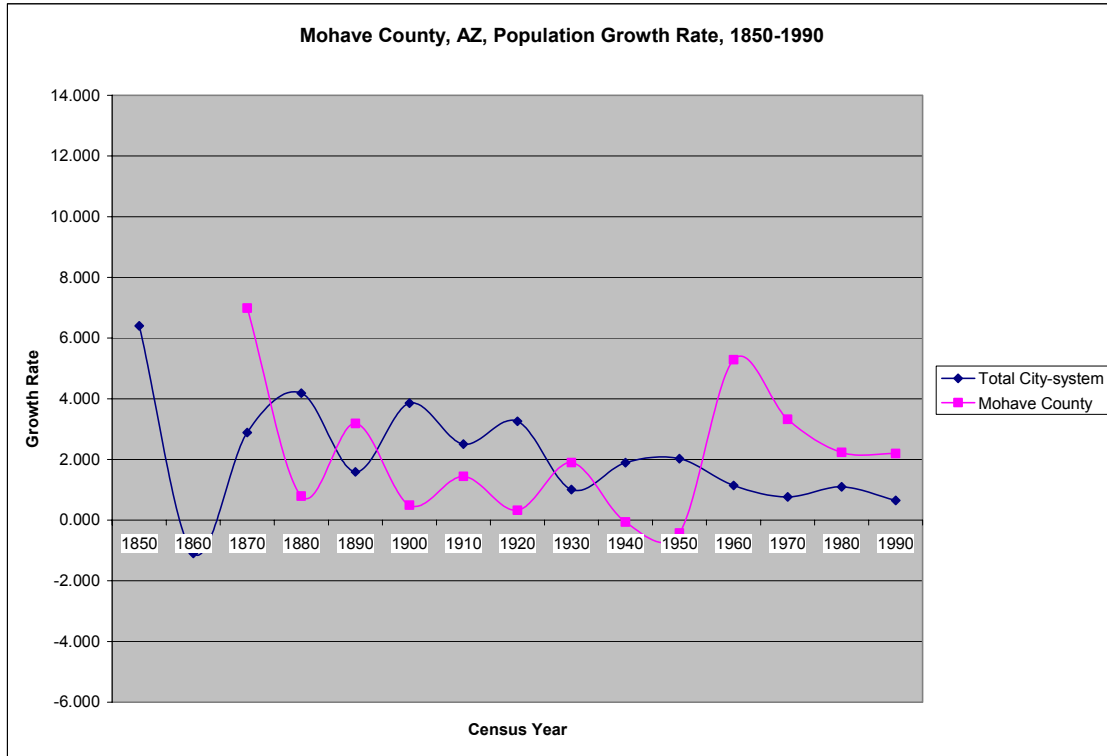
Source: Durrenberger (1967)

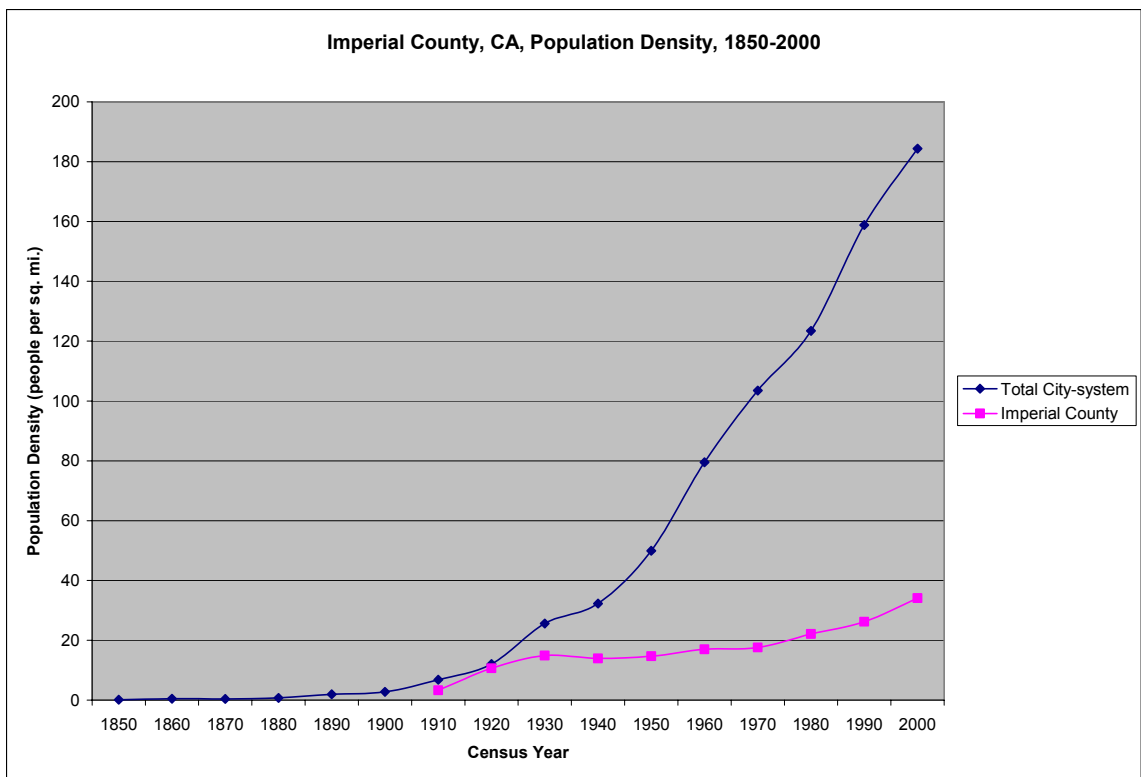
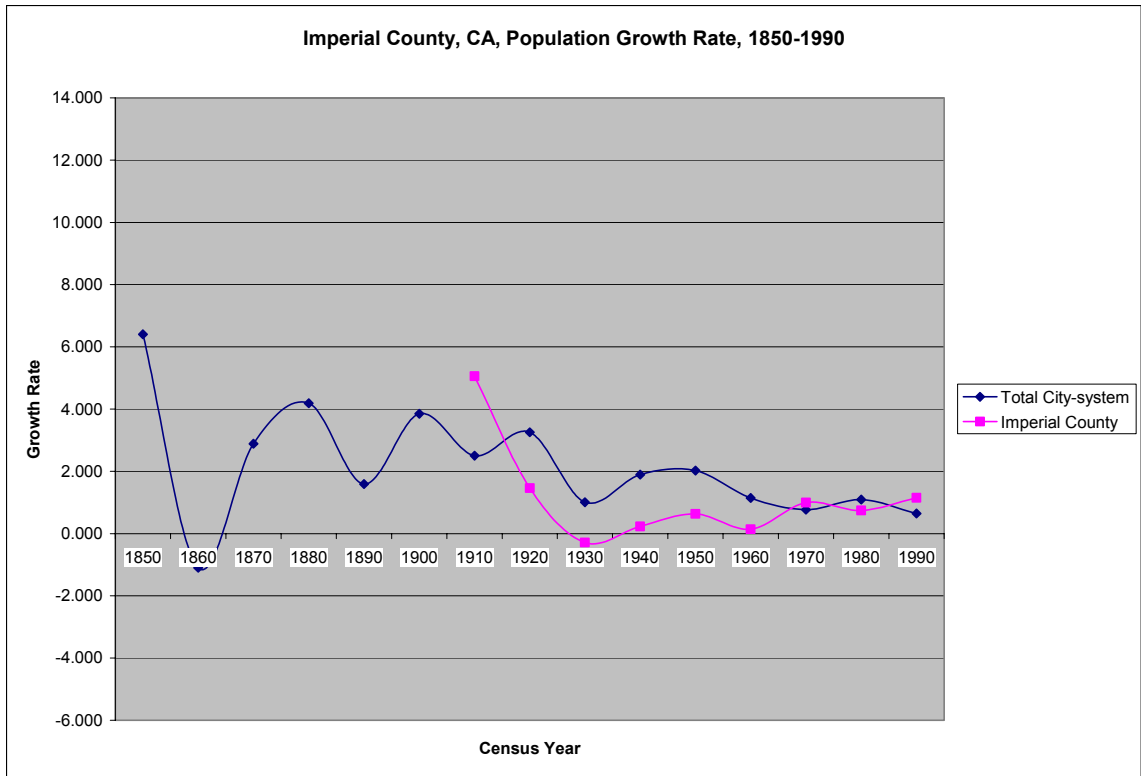
MEXICAN LAND GRANTS IN SOUTHERN CALIFORNIA

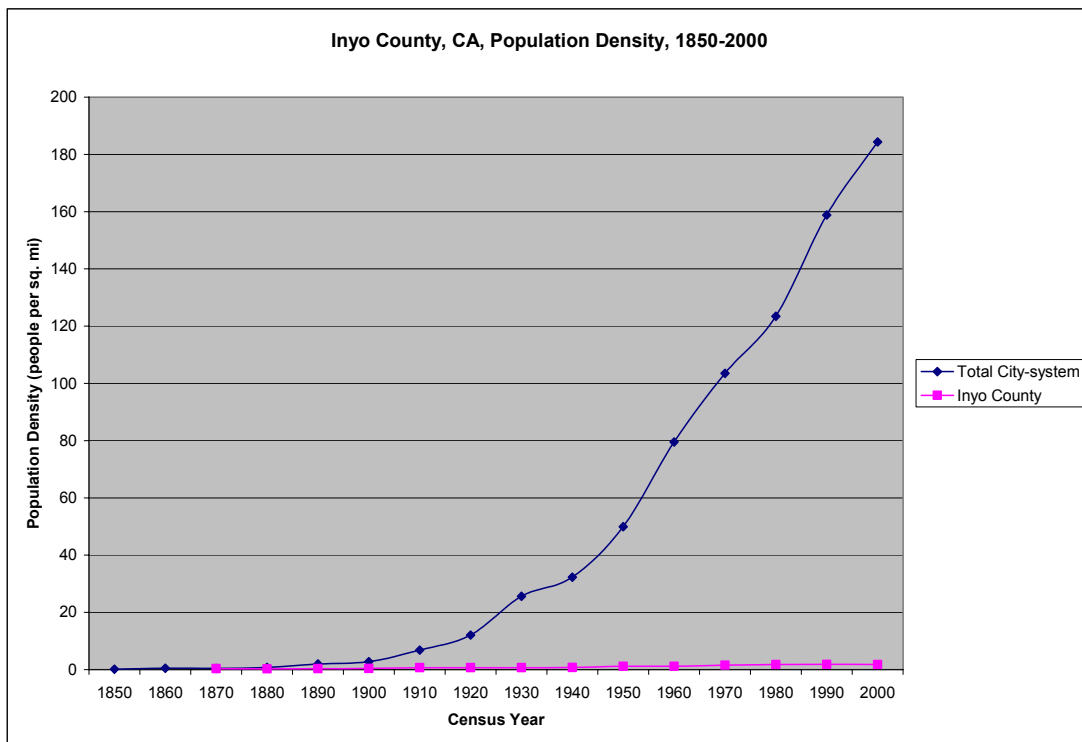
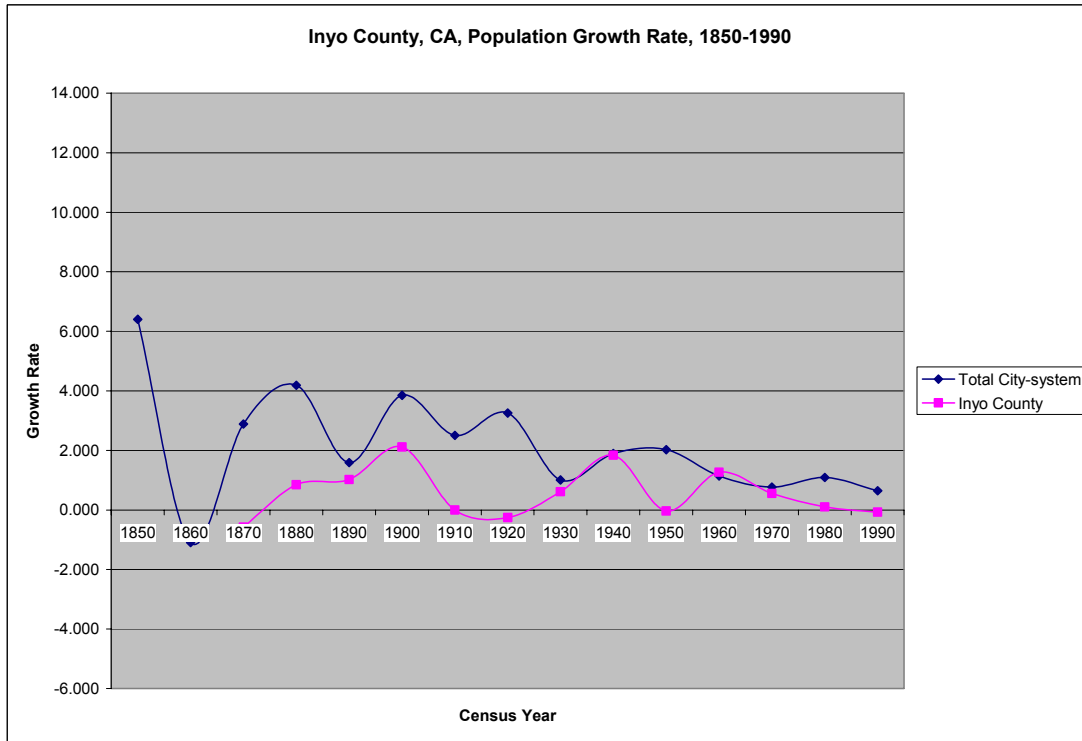


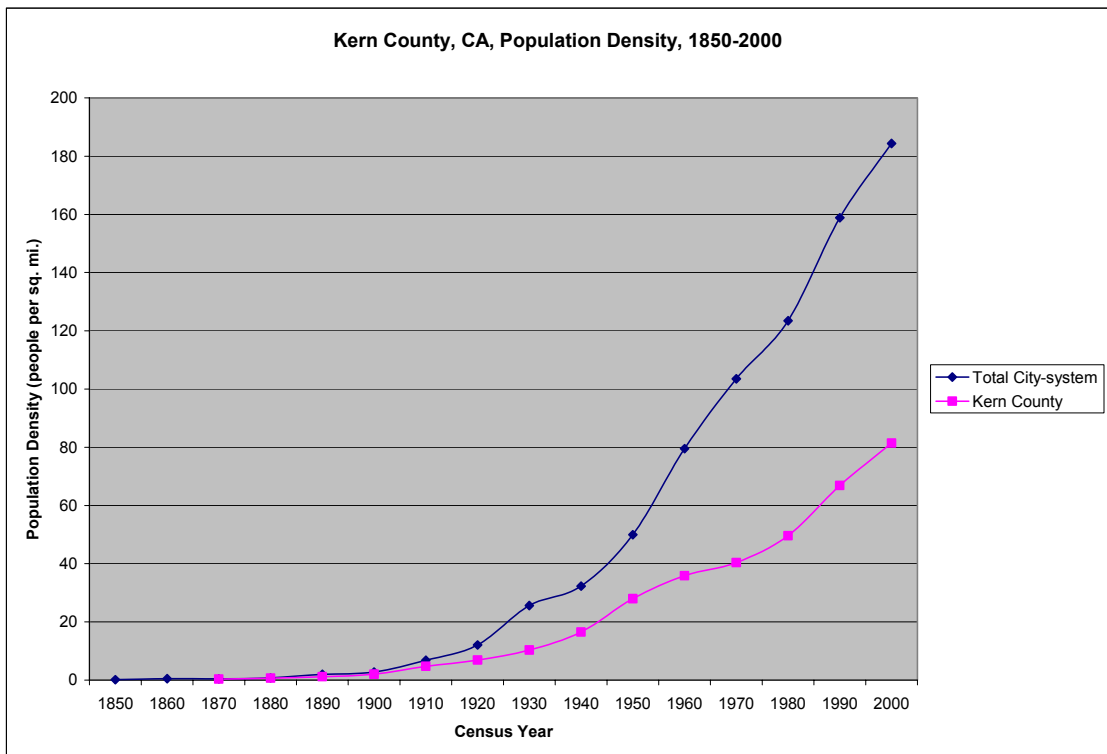
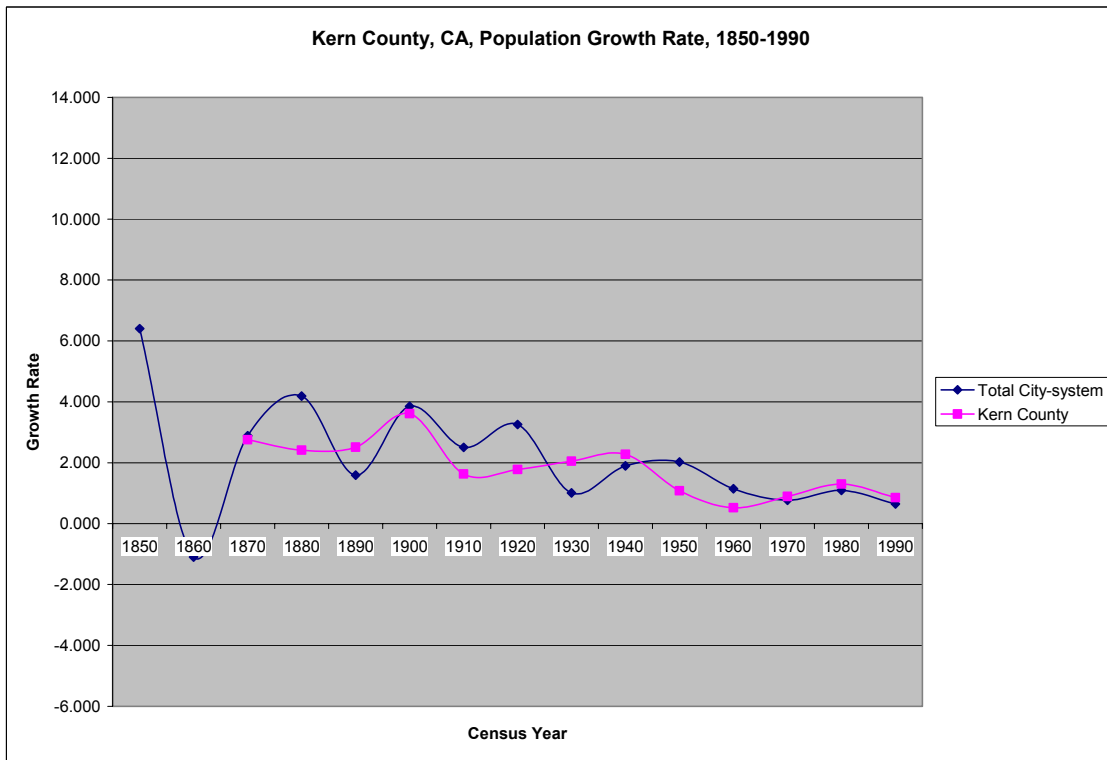
Source: Beck and Haase (1974)

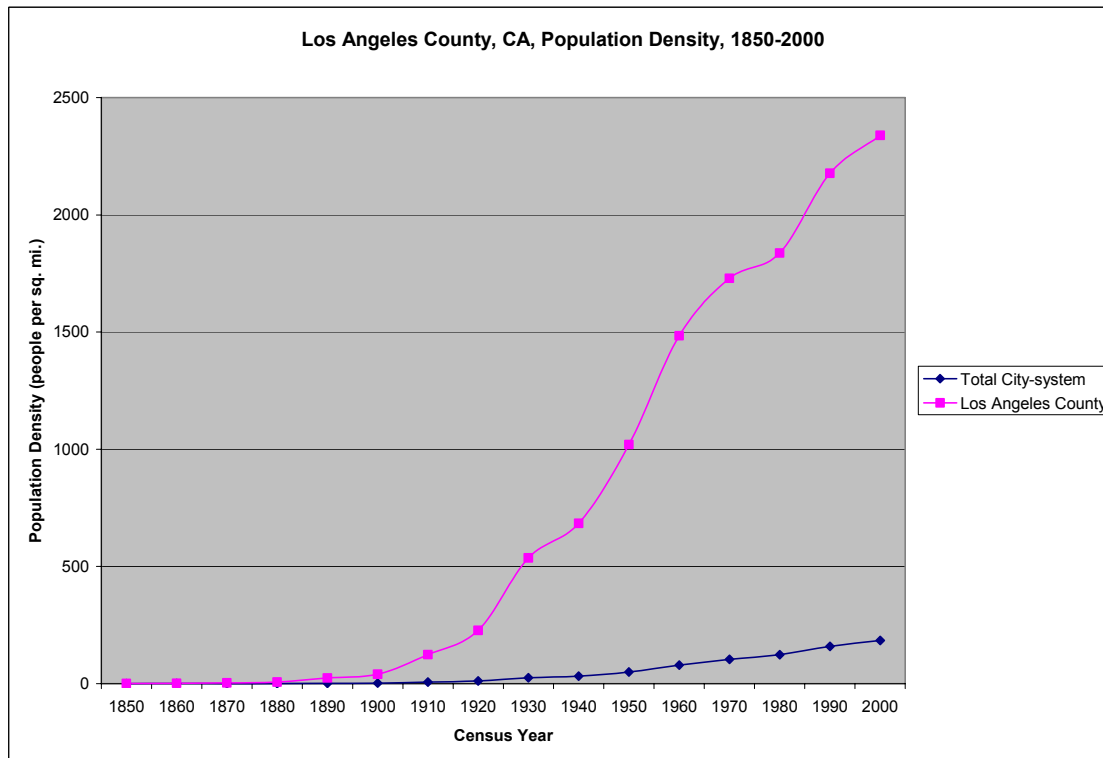
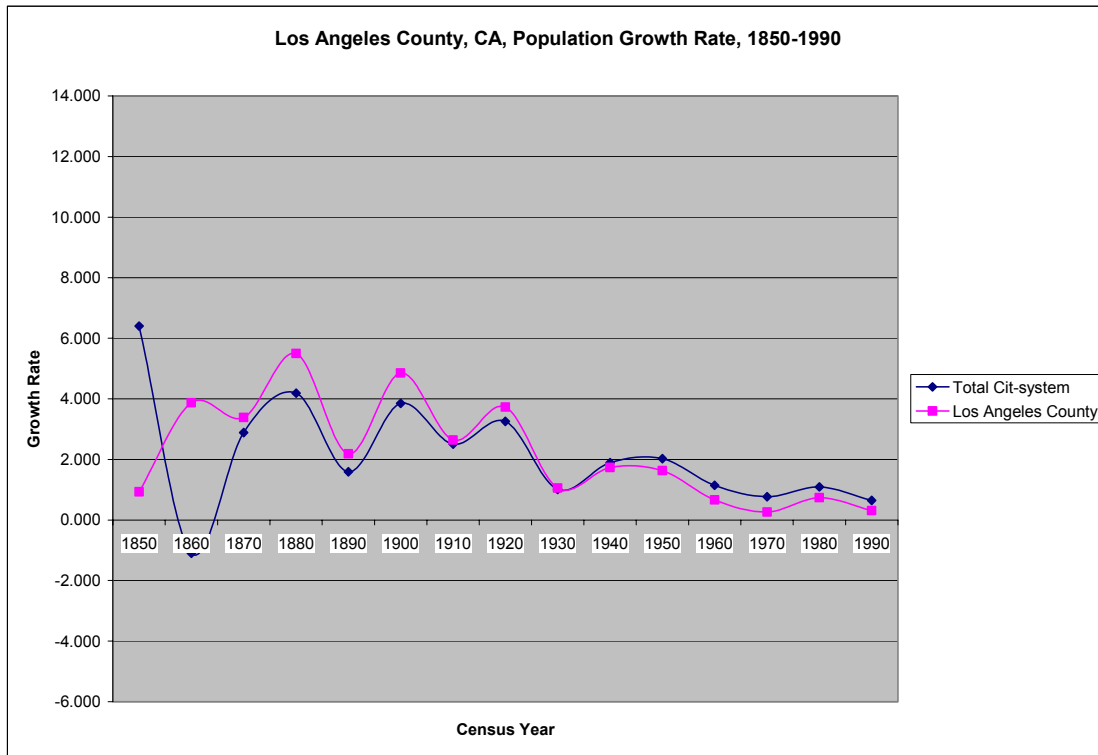
APPENDIX C: COUNTY GROWTH RATES AND DENSITIES, 1850-2000

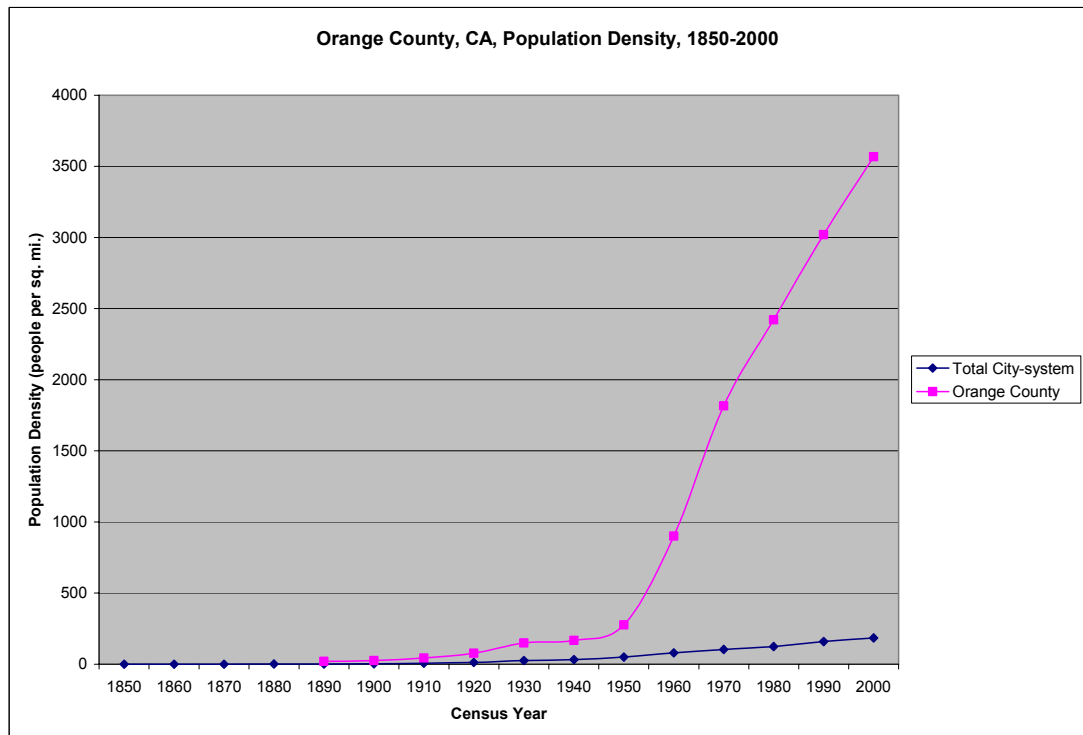
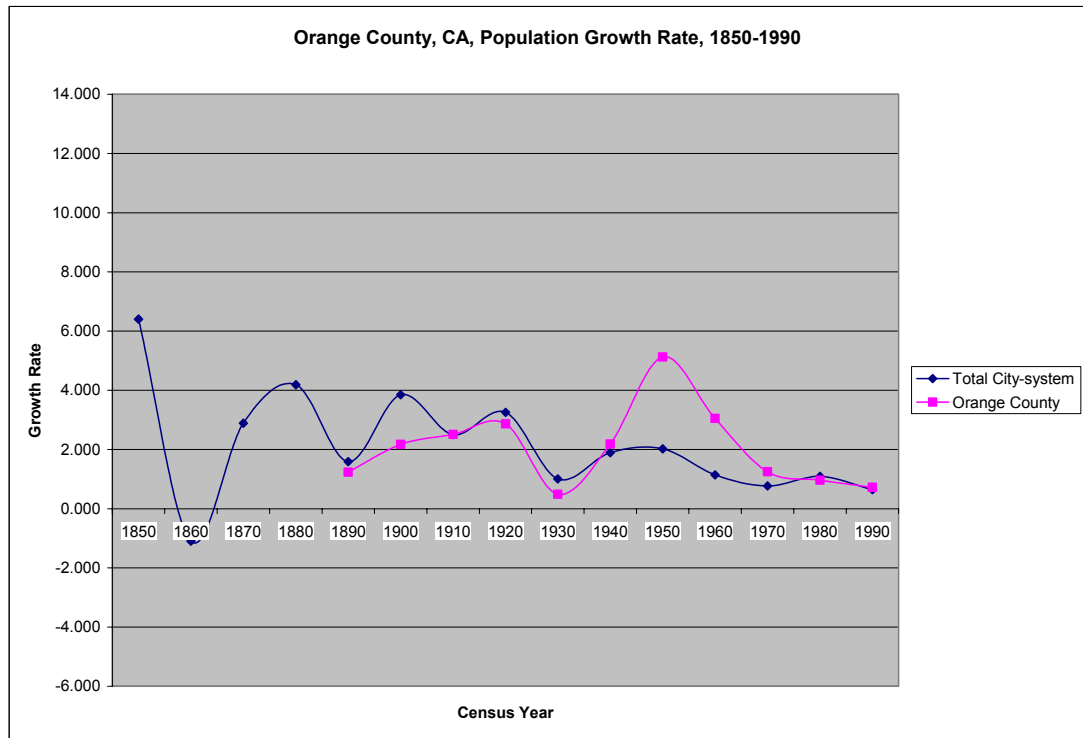


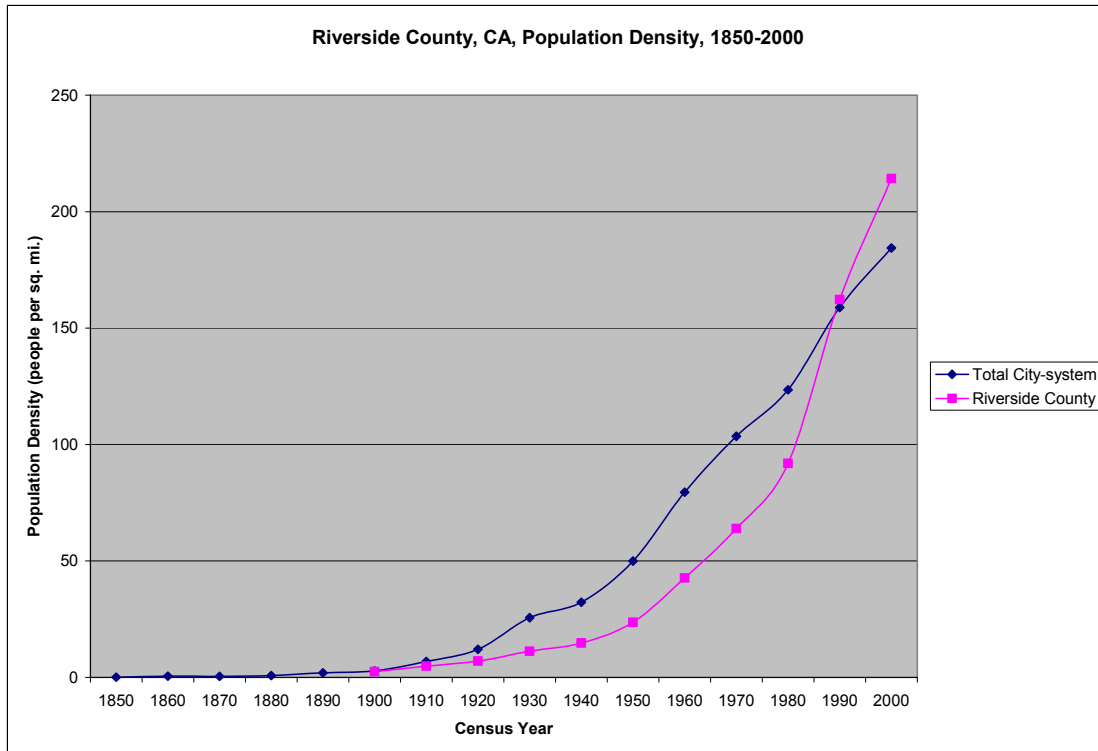
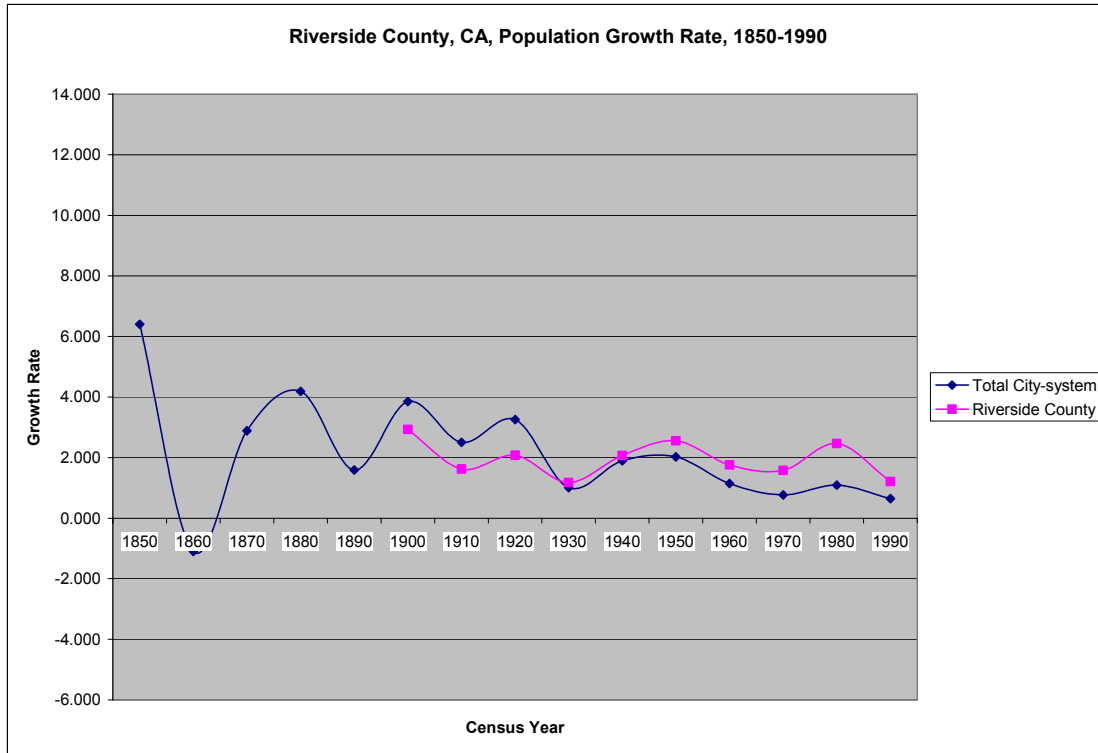


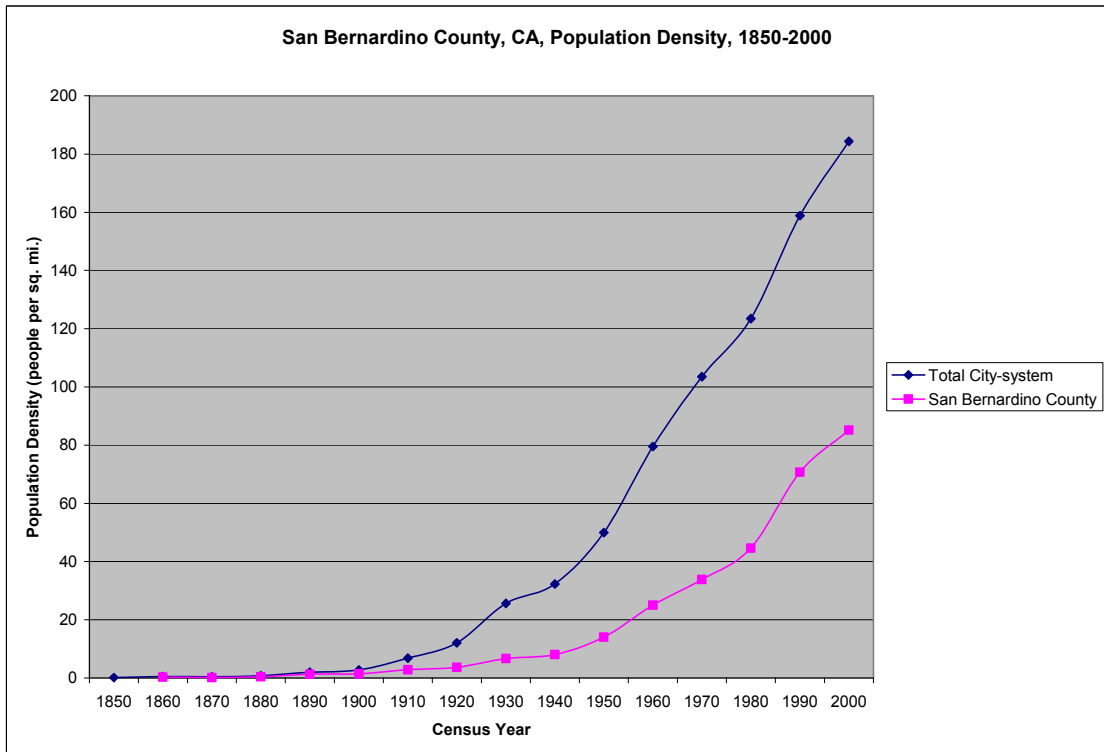
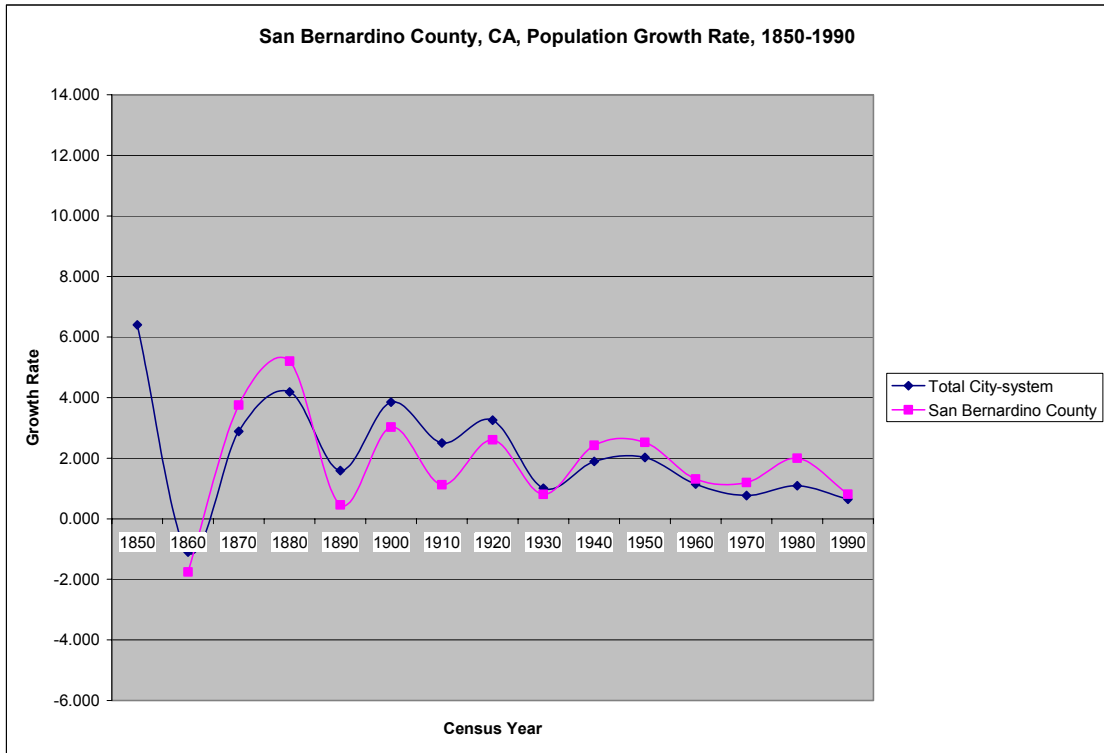


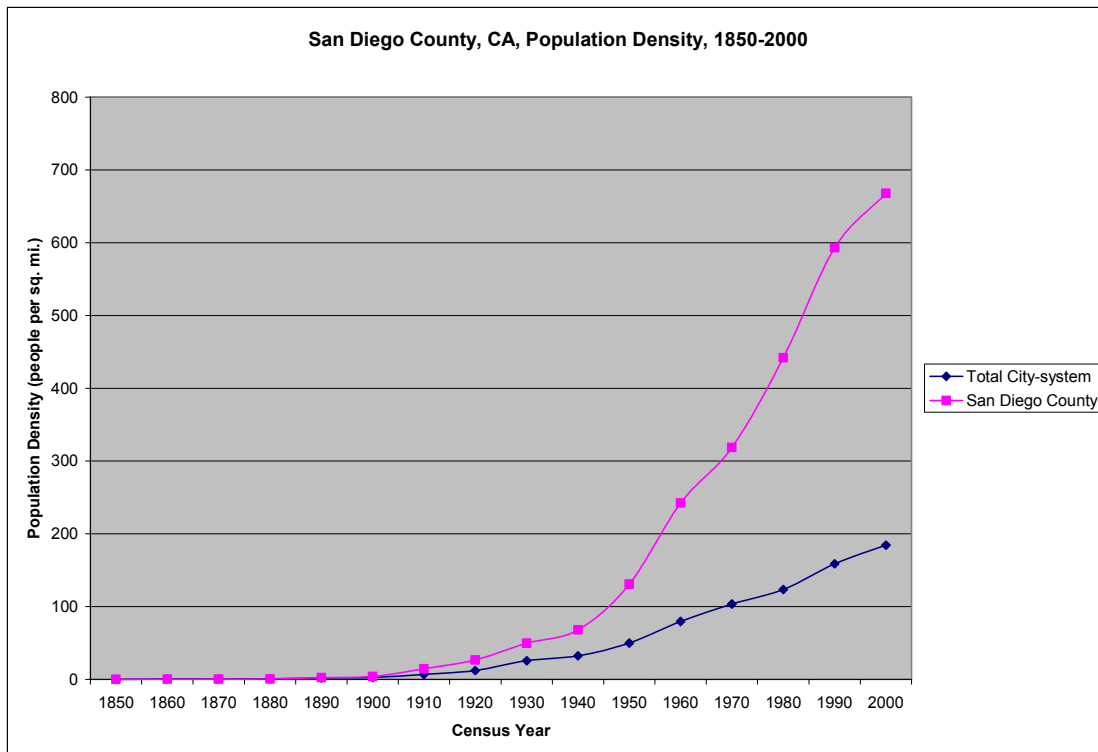
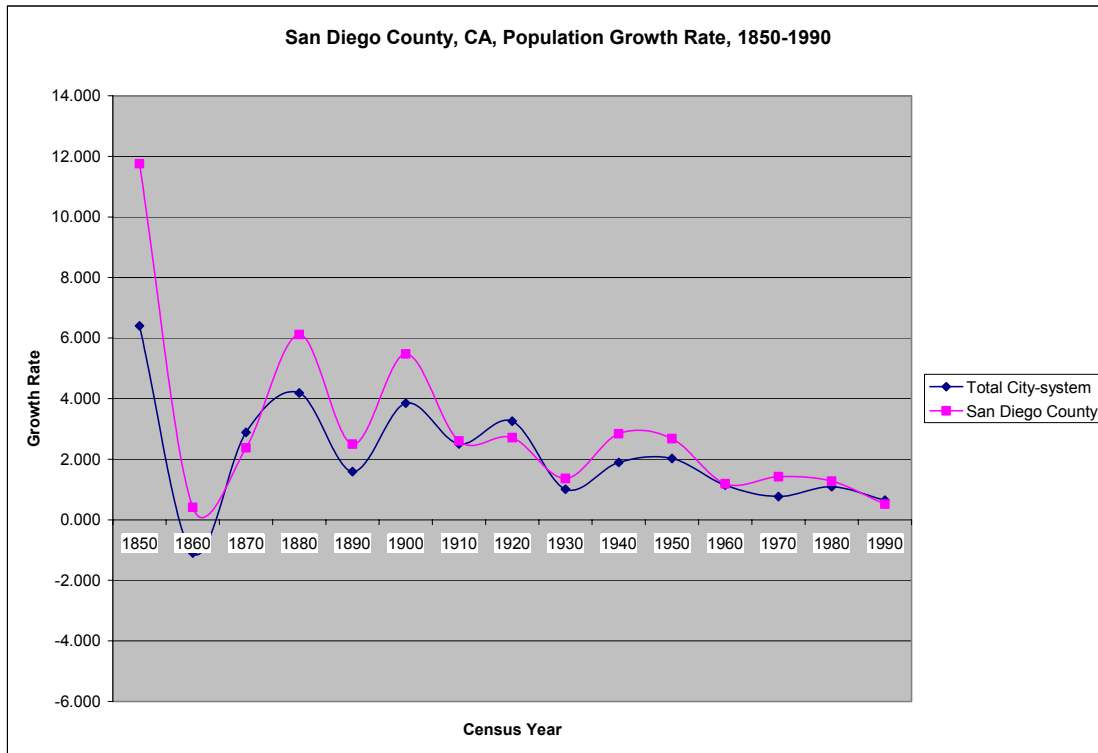


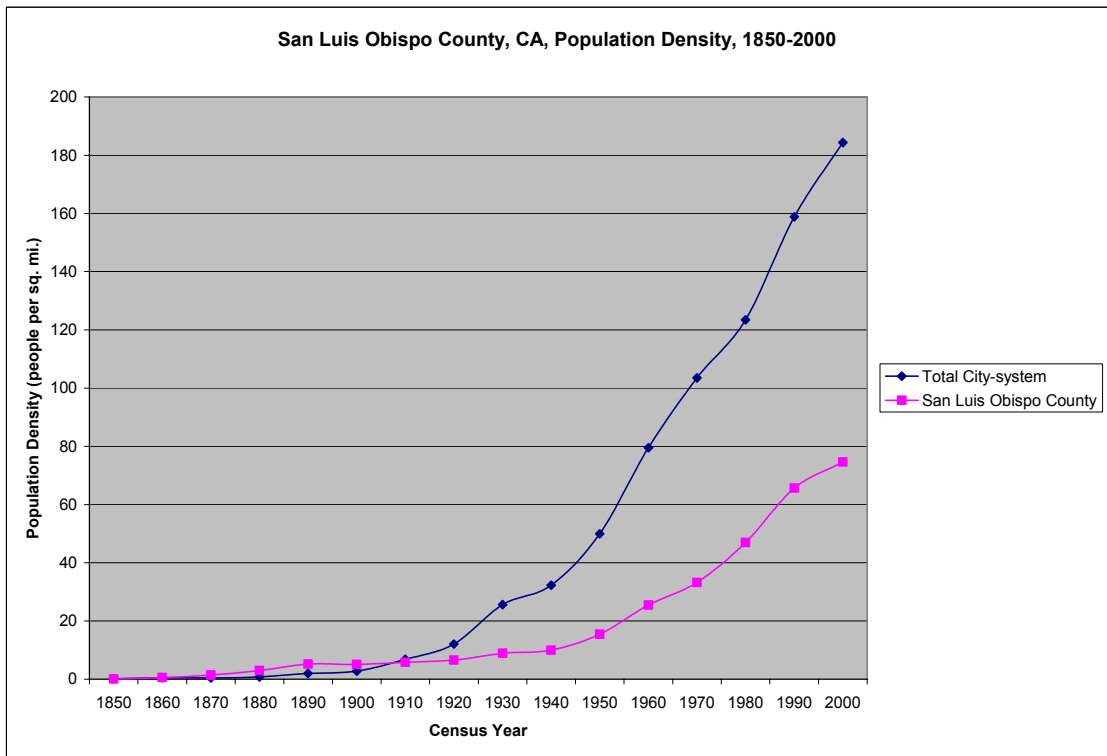
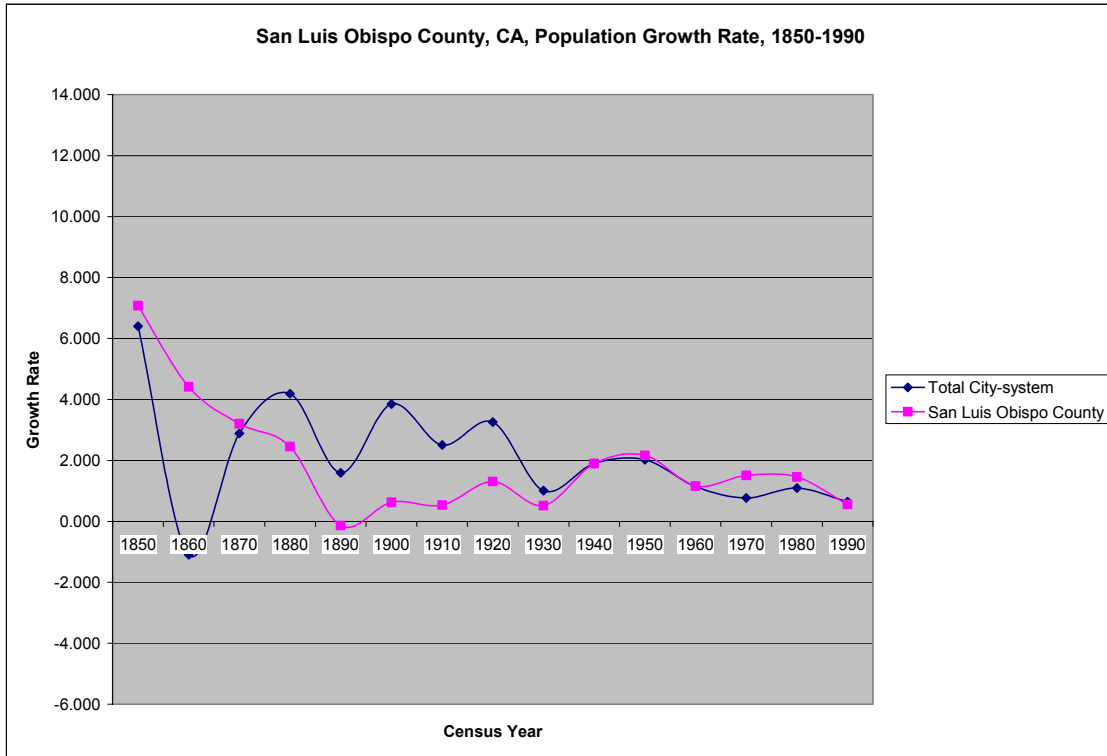


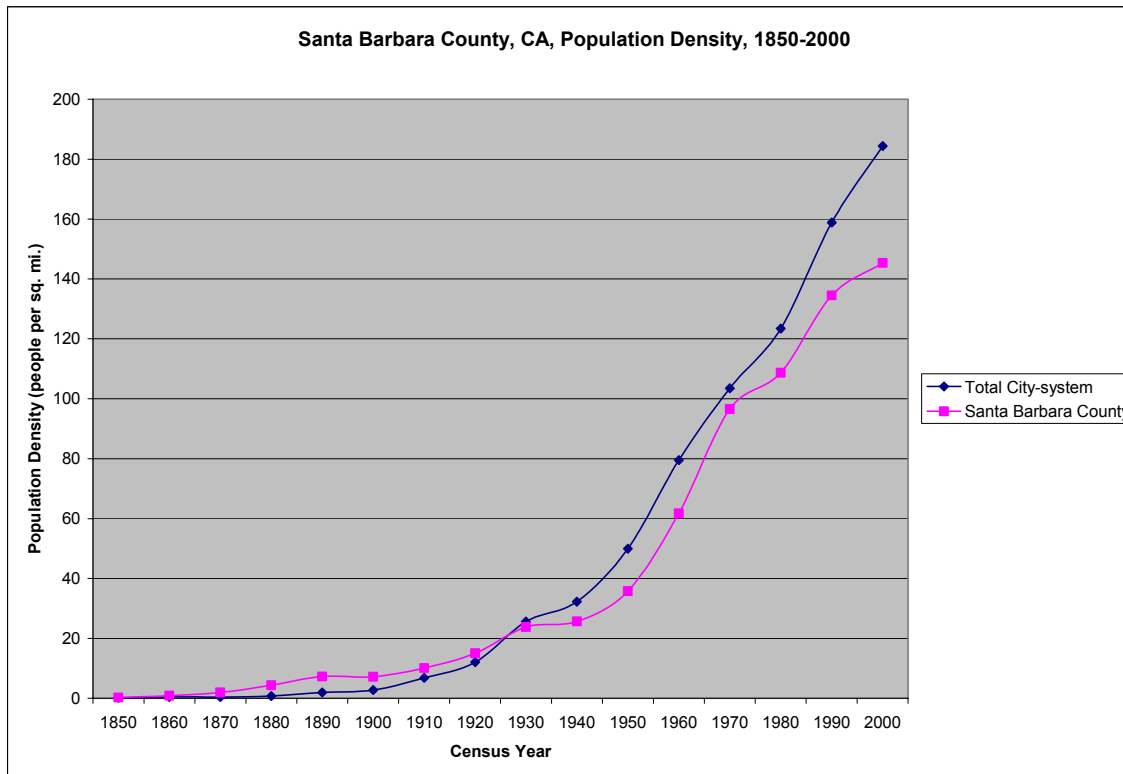
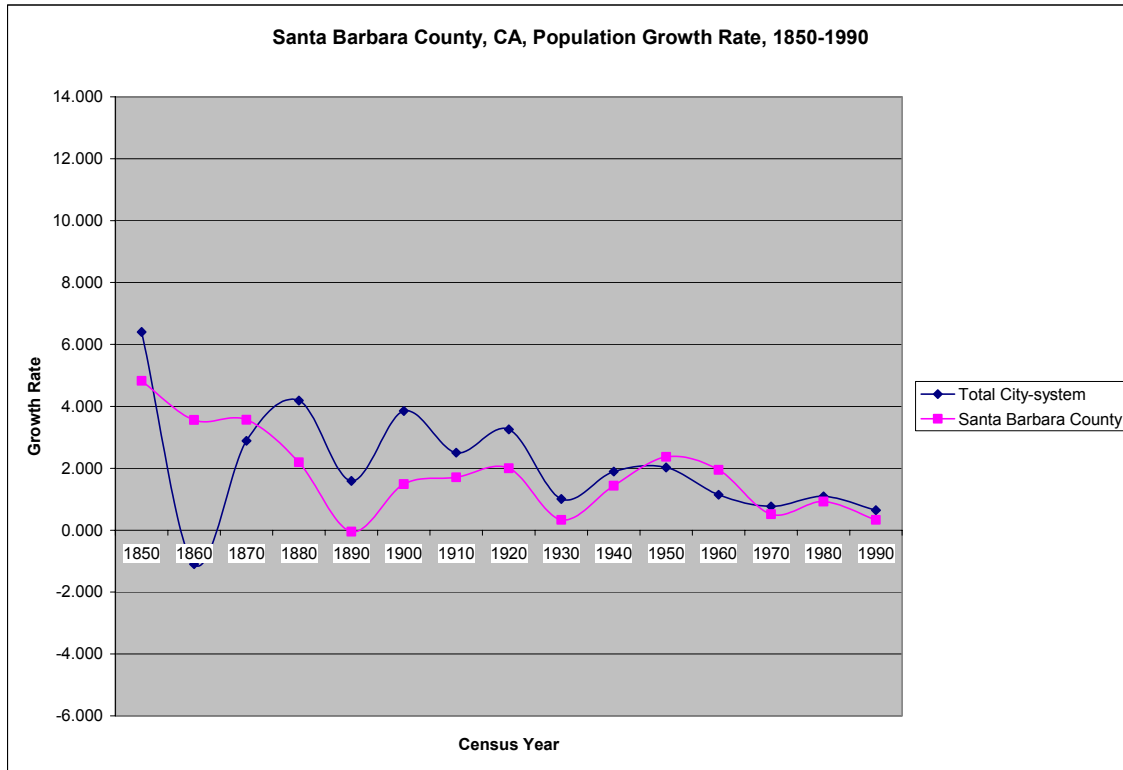


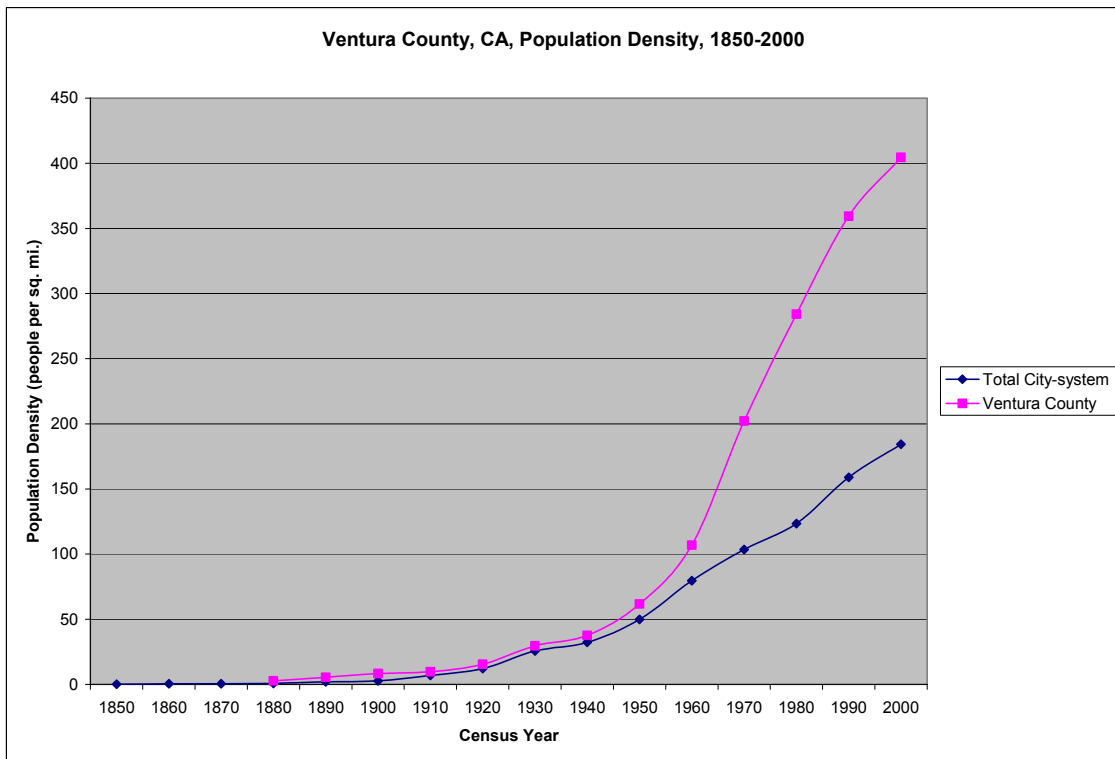
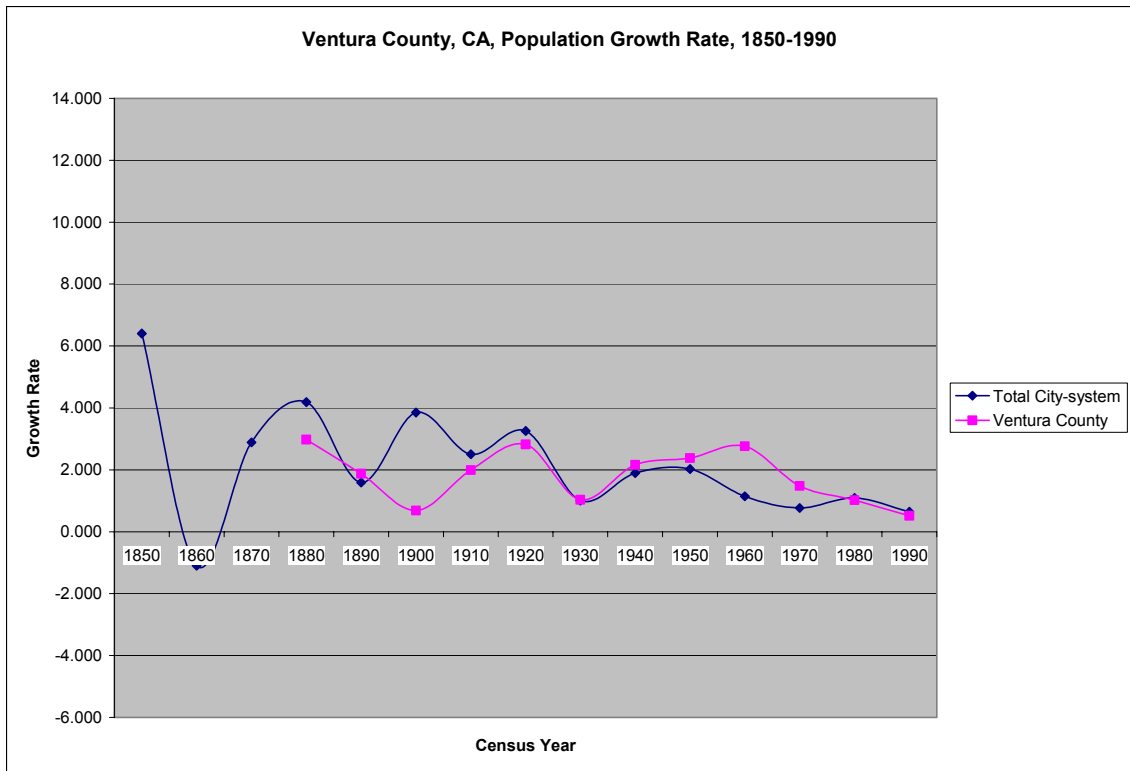


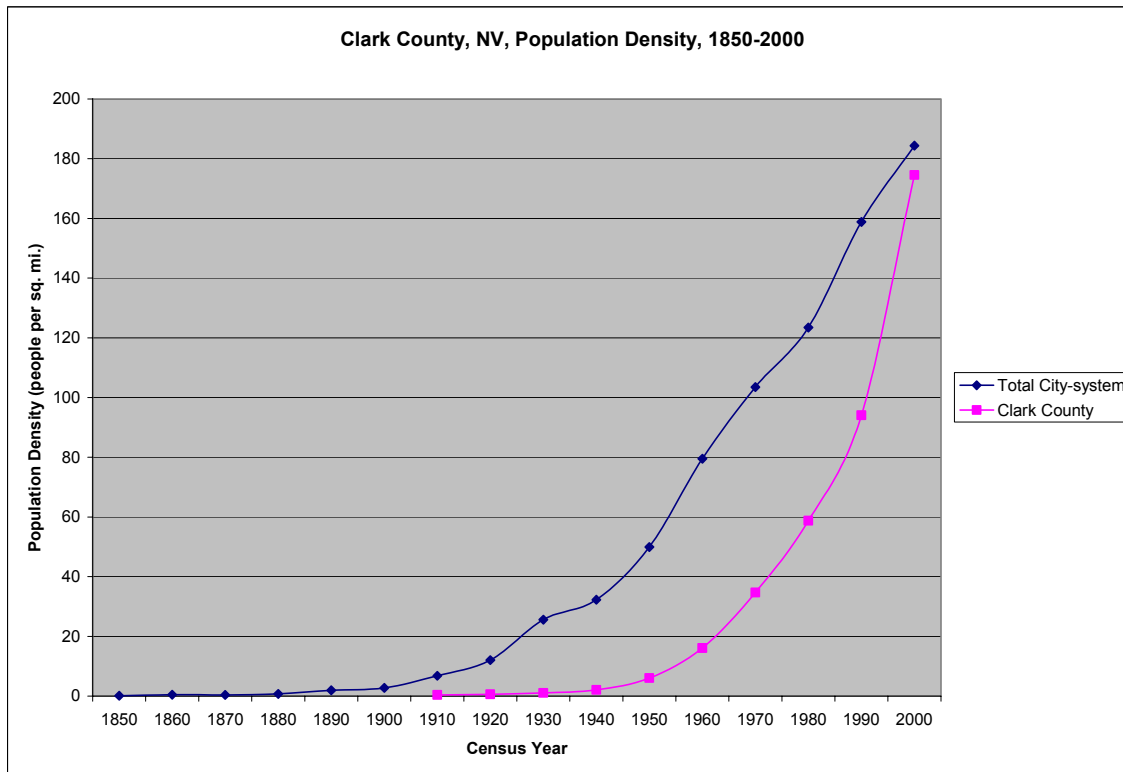
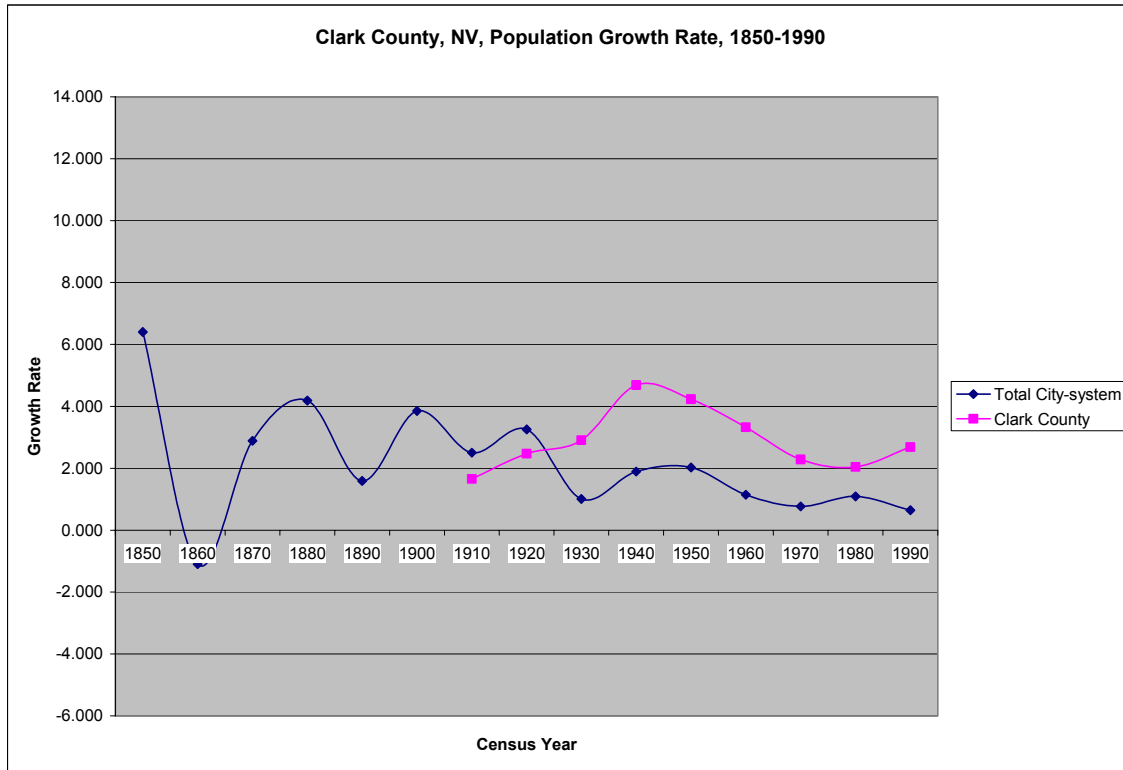


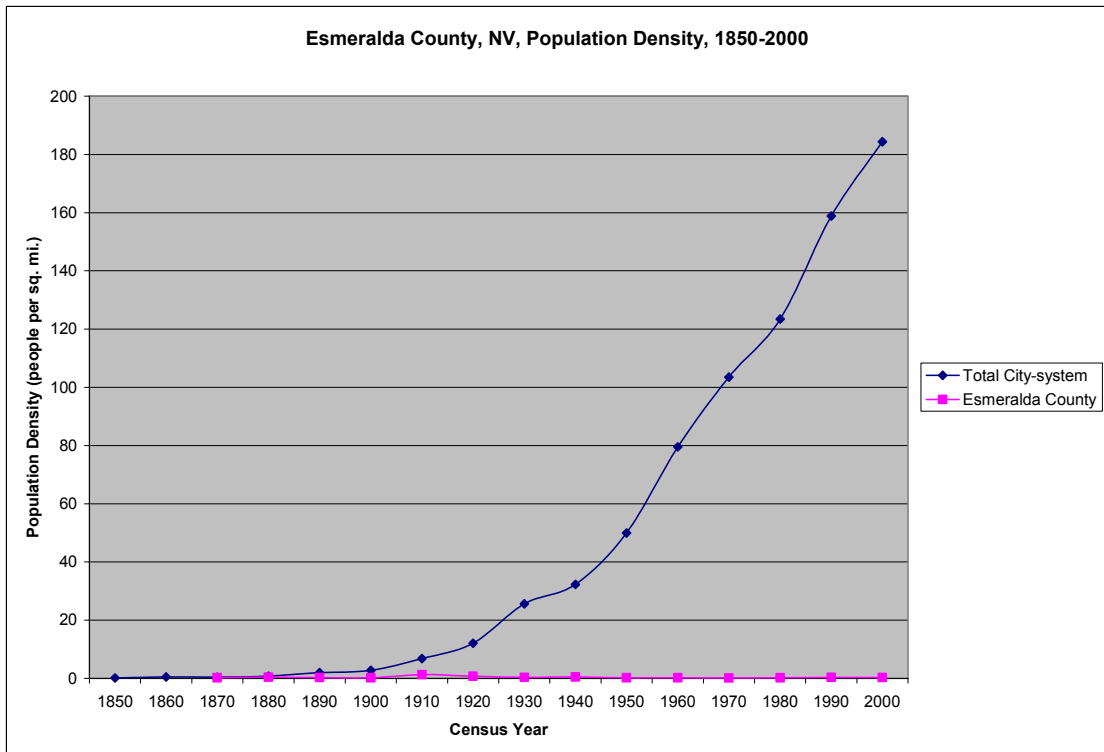
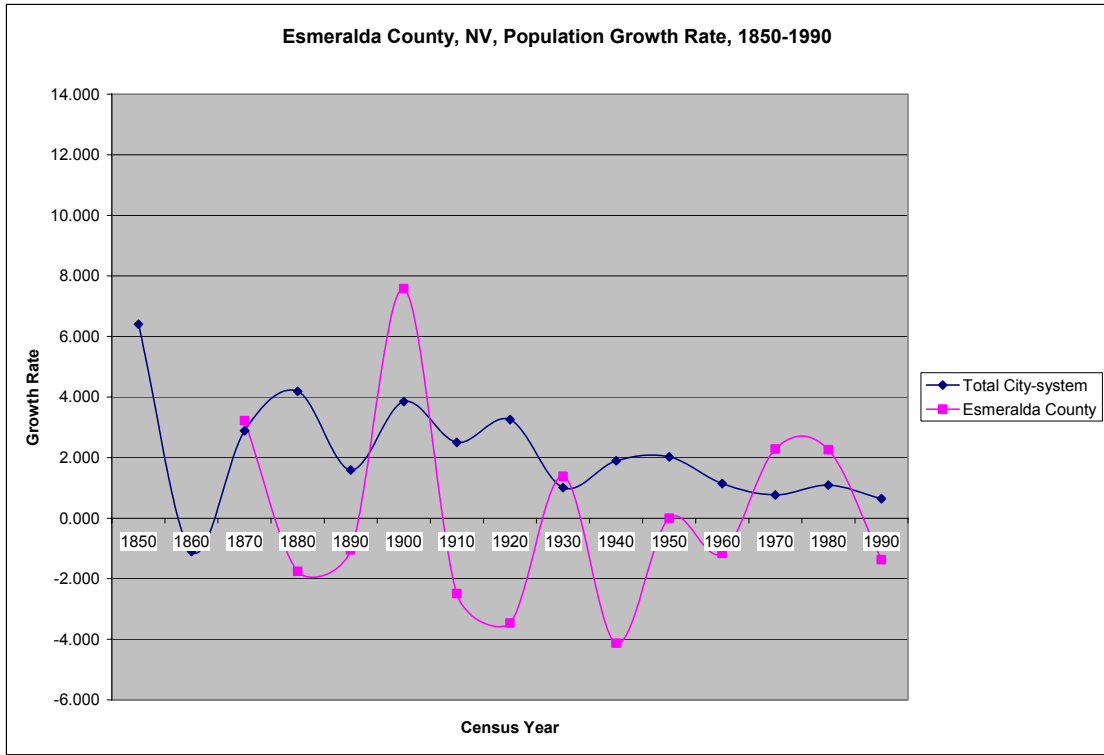


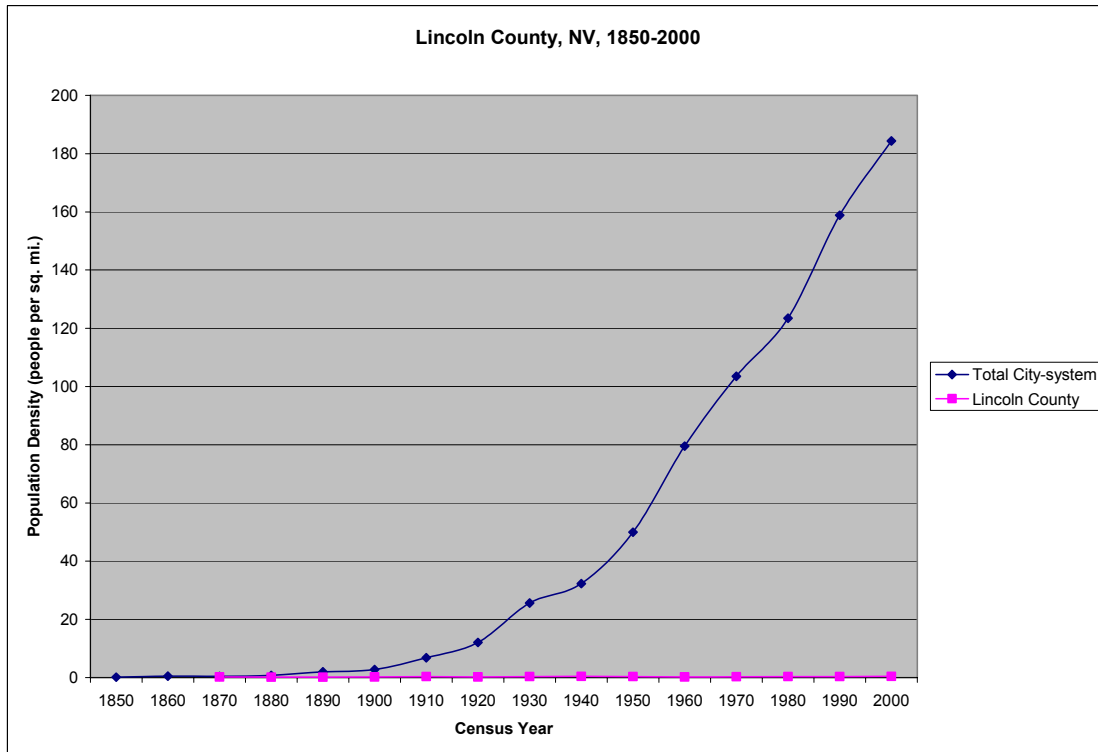
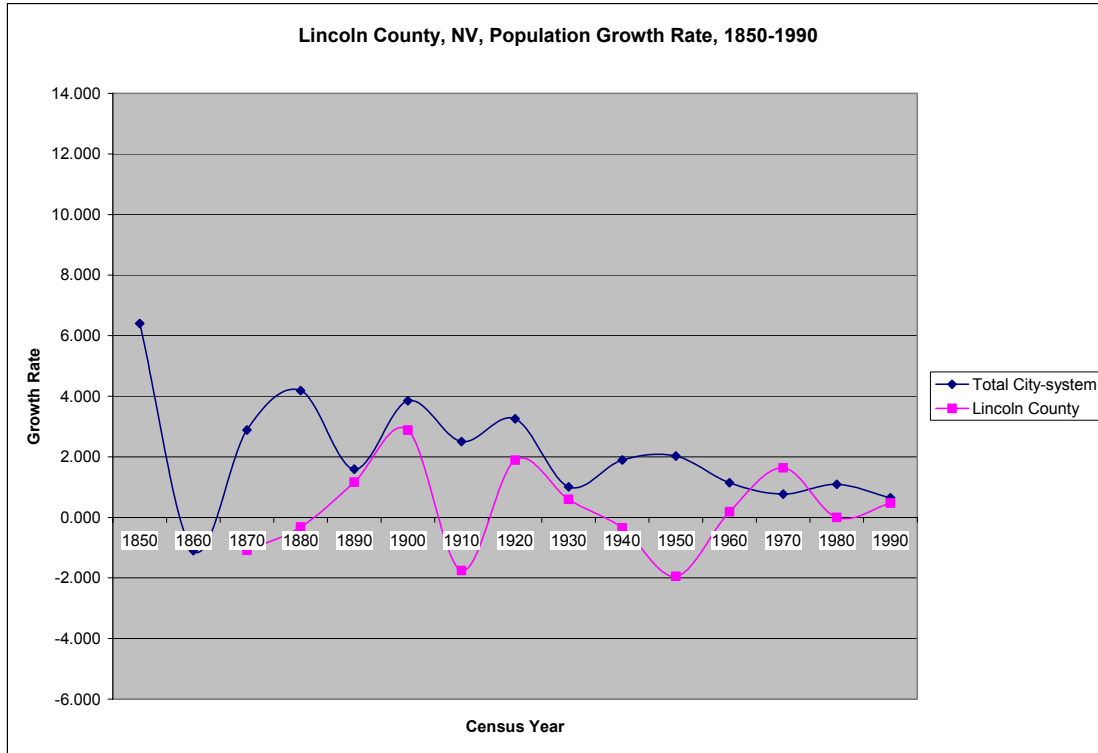


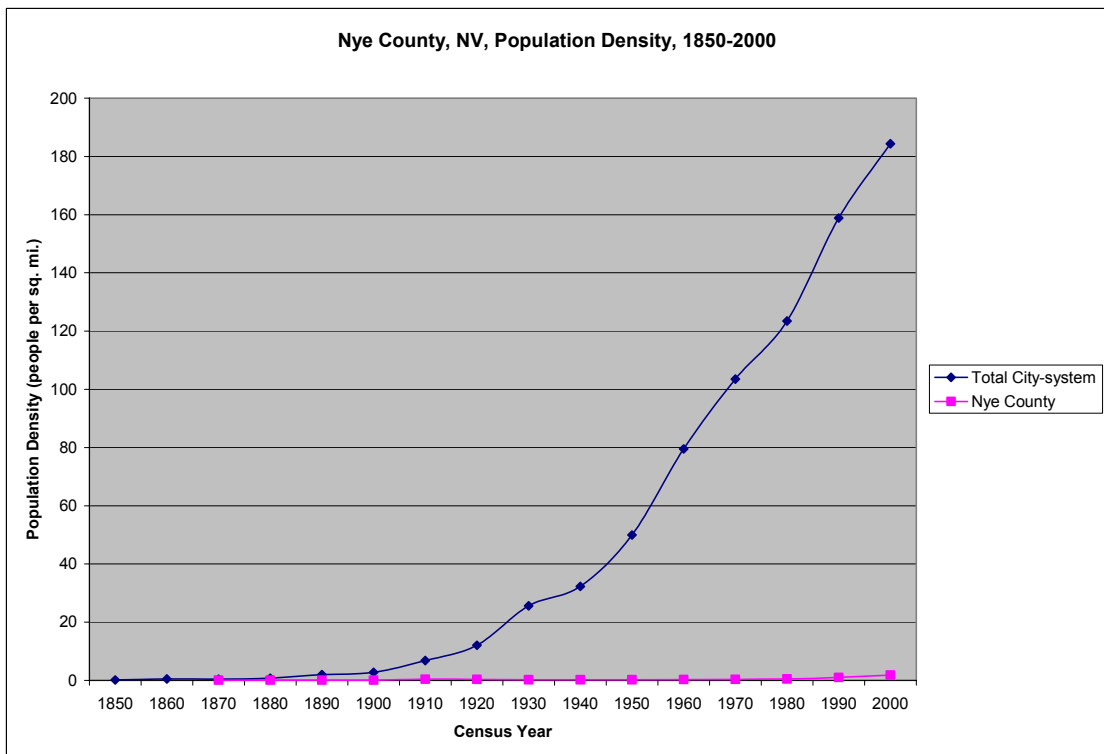
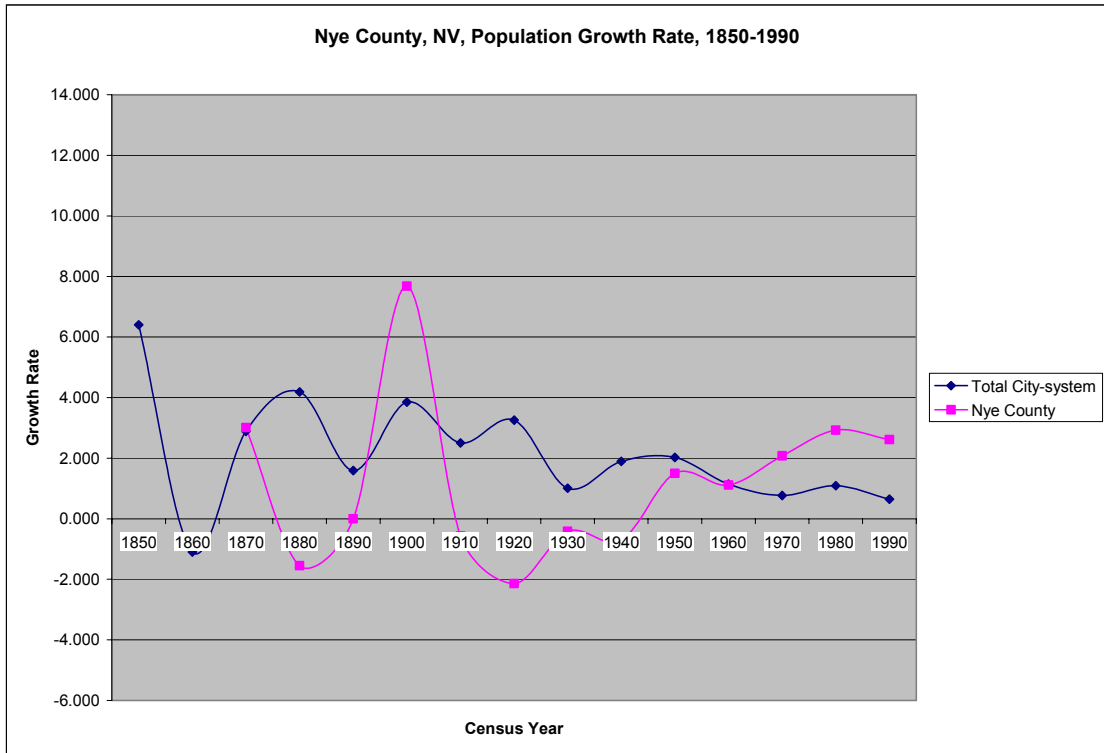






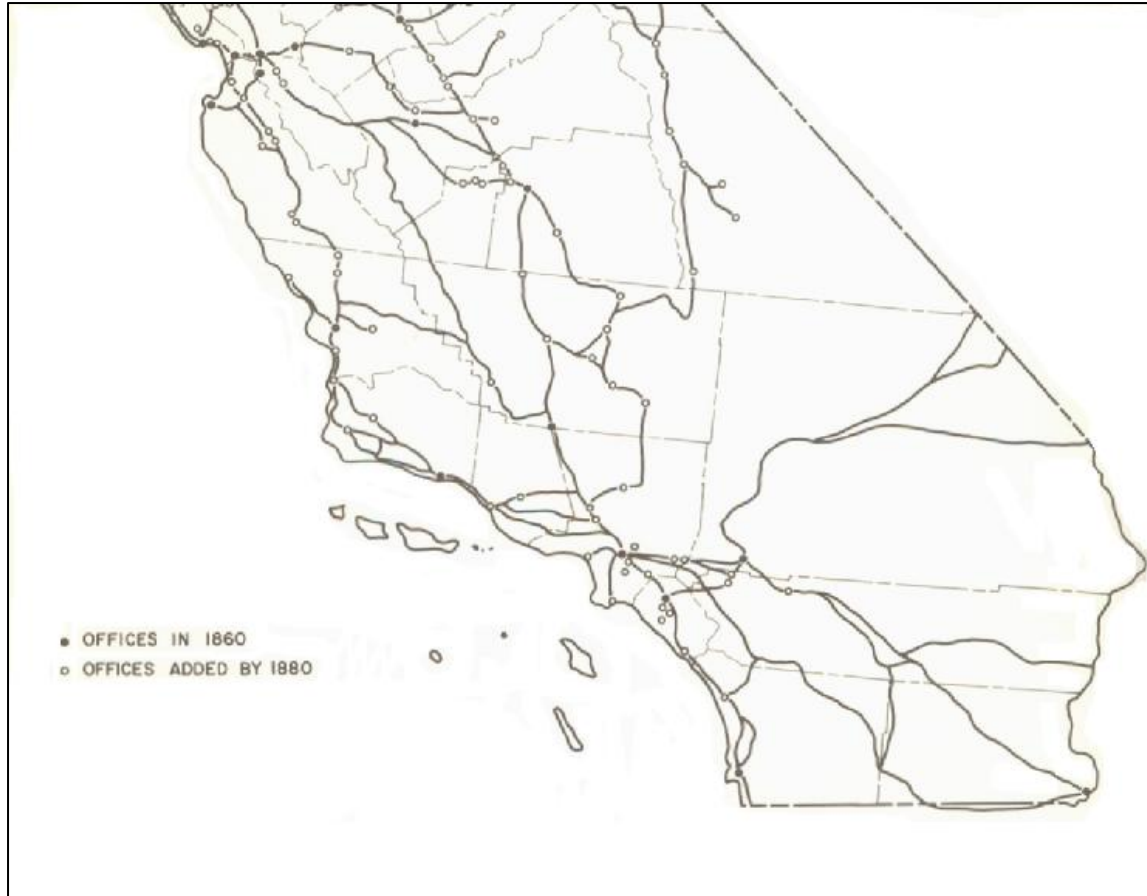






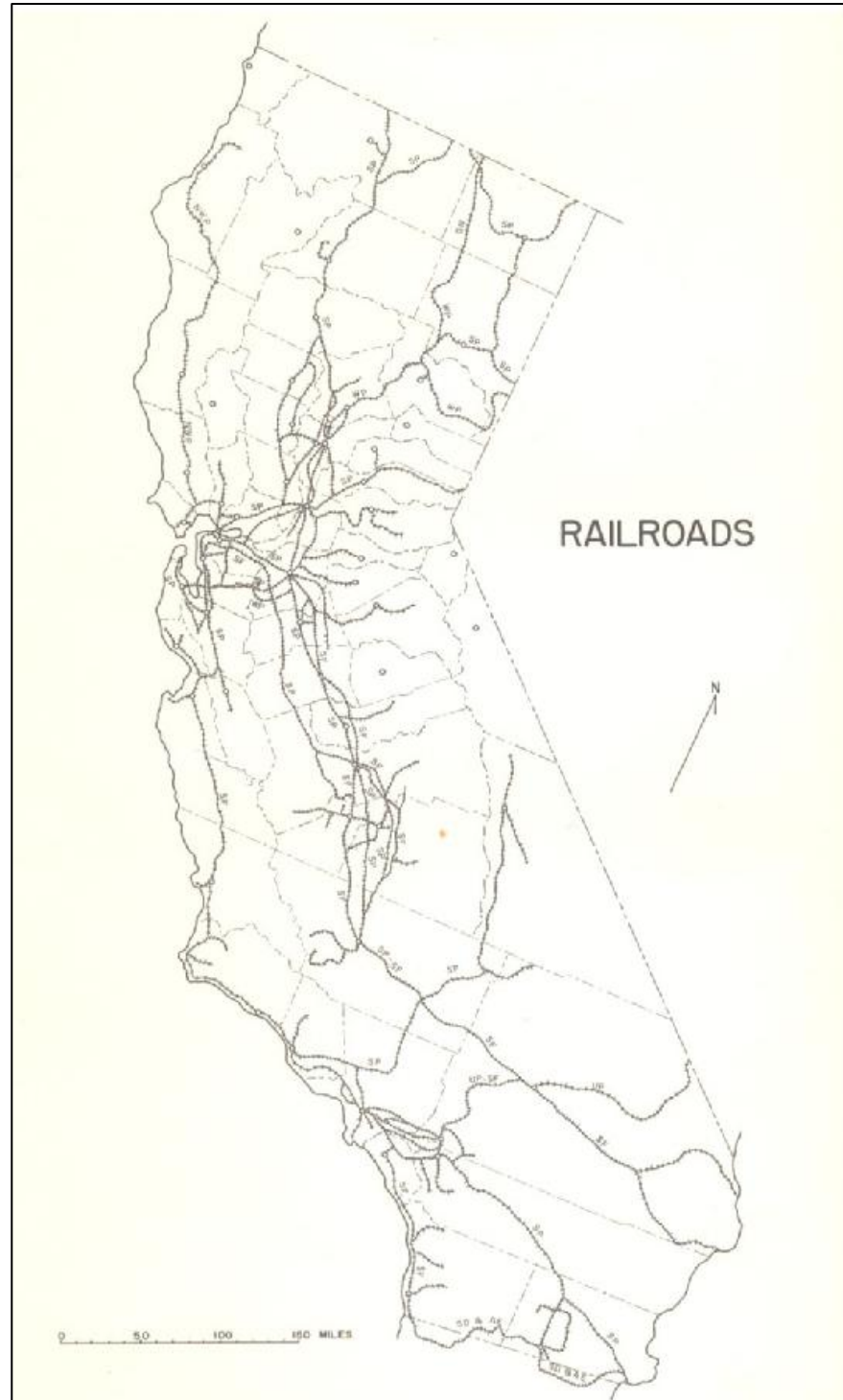
Source: All raw population data came from the U.S. Census, calculations were made by author

APPENDIX D: MAIN STAGECOACH ROADS AND WELLS FARGO OFFICES, 1860-1880



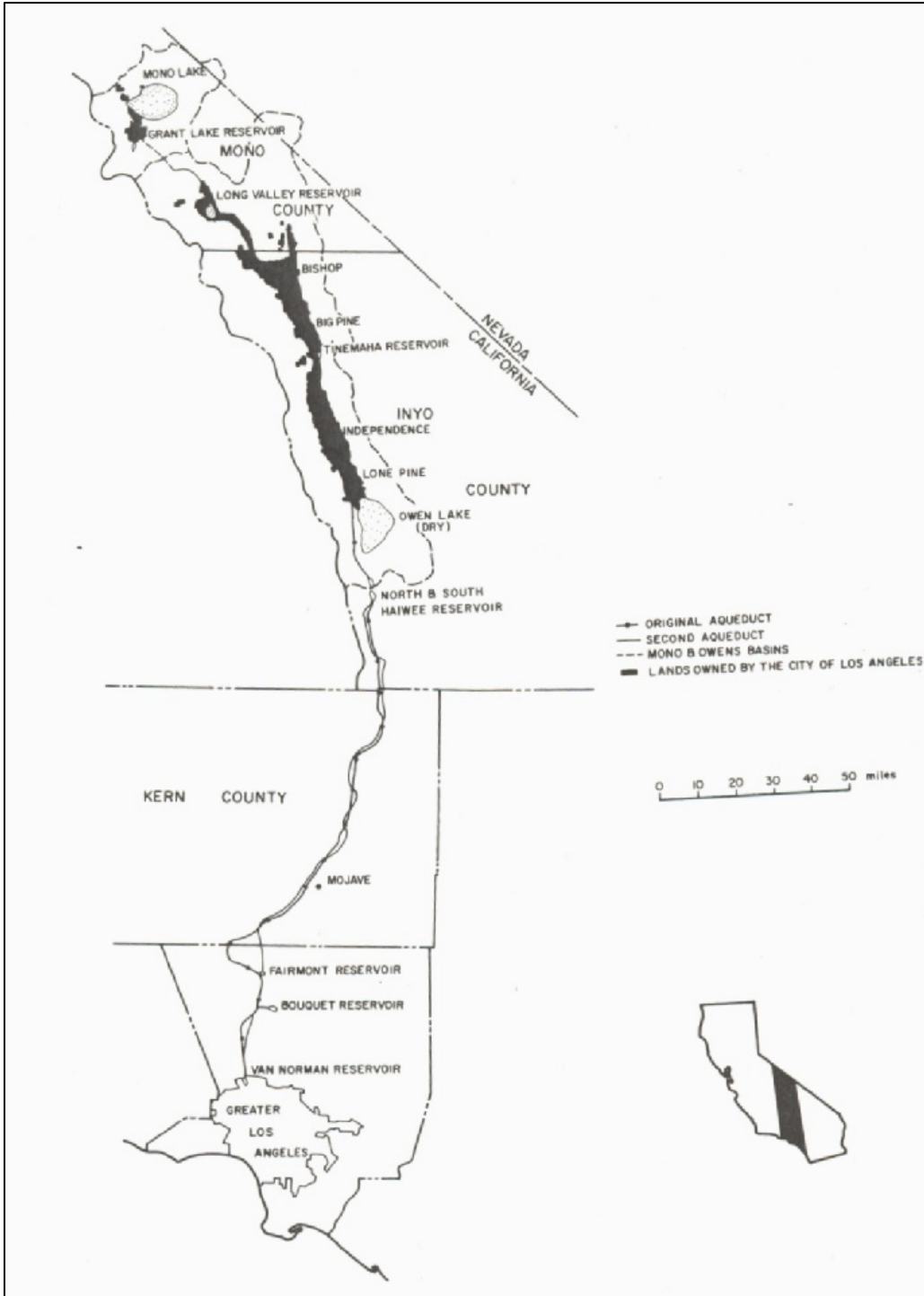
Source: Beck and Haase 1974

APPENDIX E: RAILROADS



Source: Griffin and Young 1956

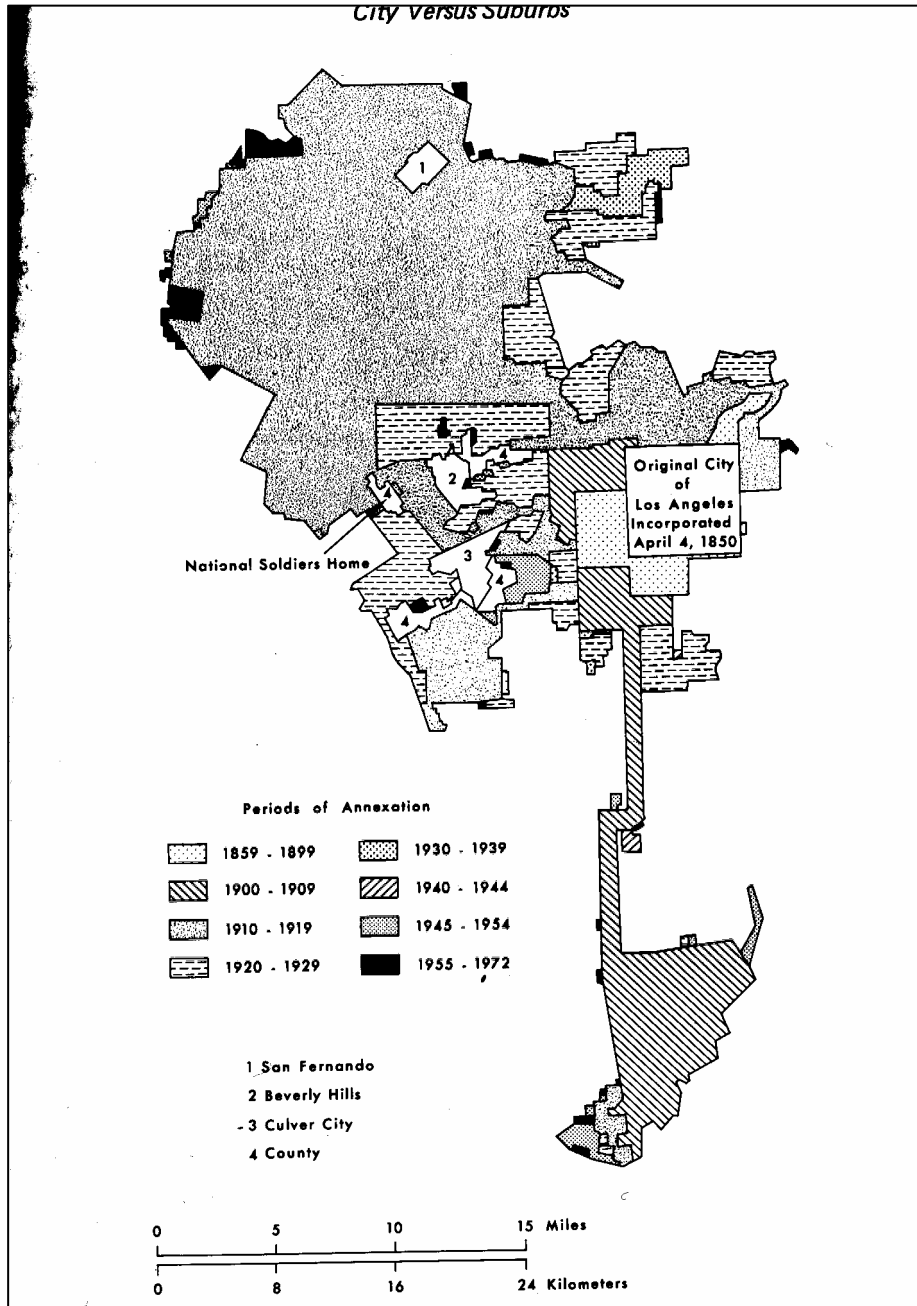
APPENDIX F: AQUEDUCTS





Source: Beck and Haase (1974)

APPENDIX G: LOS ANGELES CITY ANNEXATIONS



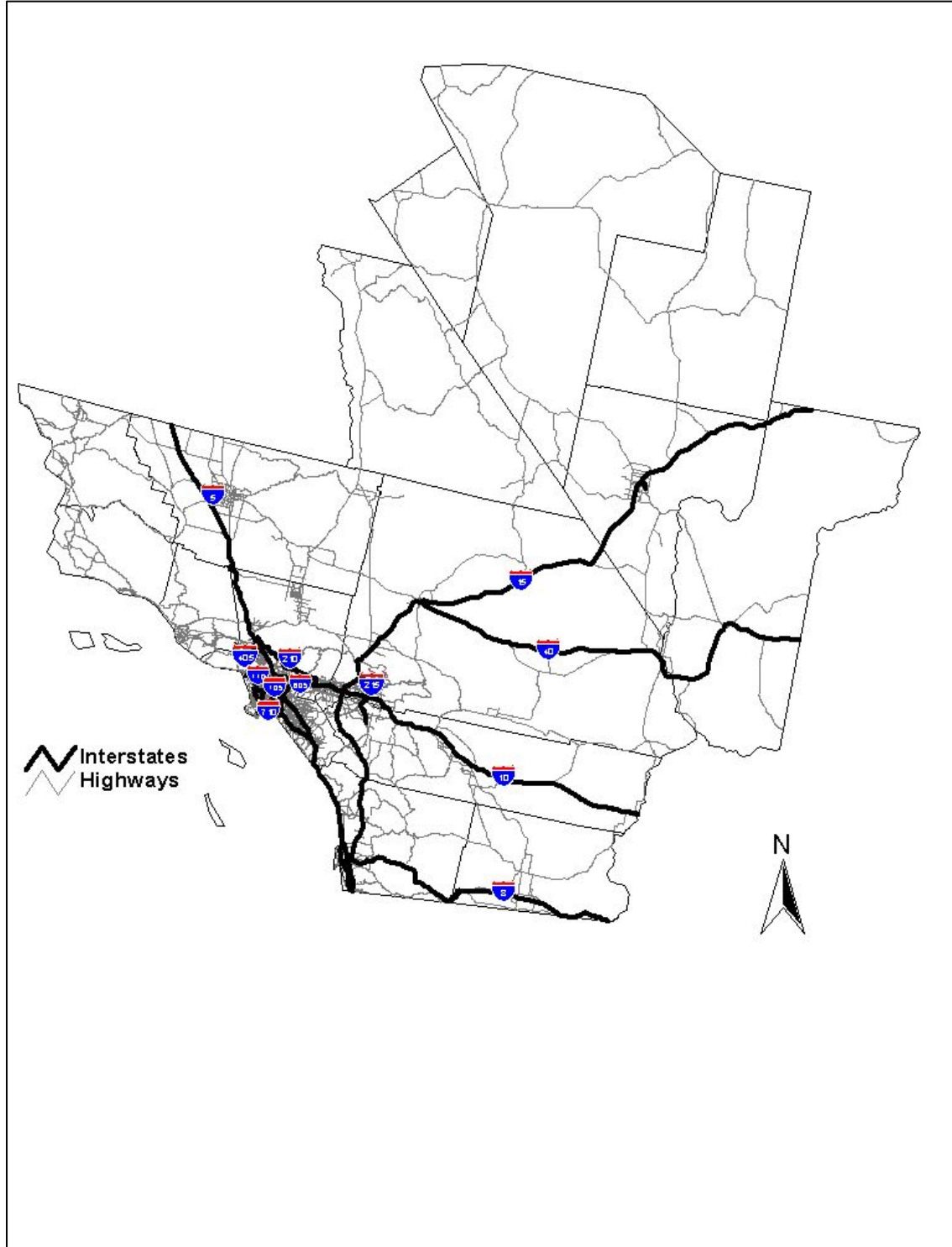
Source: Nelson (1983)

APPENDIX H: OIL FIELDS IN SOUTHERN CALIFORNIA



Source: Beck and Haase (1974)

APPENDIX I: FREEWAY AND HIGHWAY SYSTEM





Source: Maps.com, http://www.maps.com/reference/thematic/sthematic/tst_catranss.html

APPENDIX J: CURRENT MILITARY ESTABLISHMENT WITHIN THE LOS ANGELES CITY-SYSTEM

