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Omaha Area Projections to 2050 The 2007 Update FINAL REPORT

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A Bureau of Business Economic Research Report
From the University of Nebraska–Lincoln

Omaha Area Projections to 2050 The 2007 Update FINAL REPORT

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Prepared for
The City of Omaha

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Lincoln

Executive Summary

The Omaha area is in a period of sustained expansion. Population, employment, housing stock, and commercial and industrial space are growing together both in the City of Omaha and in surrounding communities and counties. This pattern of growth is likely to continue over the next few decades, but the pace and nature of growth is in question. In particular, it is unclear whether growth in the Omaha area will accelerate from its current pace, or moderate. Also in question is the degree to which growth will occur in core counties like Douglas and Sarpy or suburban and exurban areas of neighboring counties.

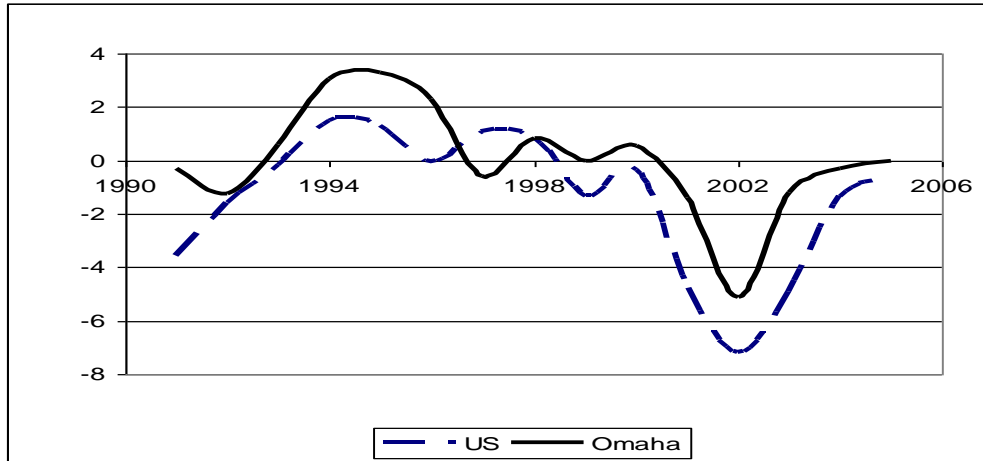
To address these questions, the City of Omaha contracted with the University of Nebraska-Lincoln Bureau of Business Research to prepare a long-term outlook for the Omaha Area economy. This report updates previous studies by the Bureau of Business Research that provided an economic outlook for the Omaha area. Following up on the most recent study in 2003, we estimate growth in a 12-county region in both Nebraska and Iowa through the year 2050. The region includes Douglas, Sarpy, and 6 other adjacent Nebraska Counties, and Pottawattamie County and 3 adjacent Iowa counties.

Our analysis begins by tracking the progress of the Omaha area economy over the last few decades and by studying a group of peer metropolitan areas from the middle-part of the United States. Omaha's recent performance has been characterized by strong employment growth, and a moderate tendency for population to diffuse outward within the Omaha area. The latter point must be tempered, however, with the observation that the central county of the Omaha area (Douglas) has continued to add population at a healthy rate, in contrast to the pattern in some metropolitan areas.

Figure ES.1 shows an example of the strength of the Omaha economy. The figure shows manufacturing job growth in the Omaha area and the United States. Omaha has had periods of both job loss and job gain from 1990 to 2006, but has consistently outperformed the nation. There were only two years out of the 17-year period when national employment grew faster. This is the sort of consistent strength we have seen in many of Omaha's key industries. Along with the relative strength of key industries such as manufacturing, there has been rapid growth in employment in services, finance,

construction, and retail trade industries. The net result is that the Omaha metropolitan area has averaged 1.8% employment growth since 1969.

Figure ES.1
Annual Job Growth in the Manufacturing in Omaha MSA and United States 1990-2005



Source: U.S. Department of Labor, Current Employment Survey.

At the same time that employment has grown, population has increased. Population in the Omaha metropolitan area grew by an average of 0.8% annually since 1969. The difference between the employment and population growth rates reflects an increase in female labor force participation during the period and also a growing tendency towards multiple job holdings, or towards individuals both holding a wage and salary job and also operating a separate business.

There also has been a tendency for population growth to spread away from Douglas County, the employment center of the Omaha area. Table ES.1 shows the change in commuting patterns within the 12-county area between the 1990 and 2000 Census. The figure shows the percentage of workers who are employed in the same county where they reside (i.e., the percentage of non-commuters). There was a substantial decline in the share of workers employed in their county of residents. The percentage fell by 9% in Sarpy and Saunders counties and 5% in Washington County in just 10 years. As we show later in the report, this has been coupled with an increase in the number of workers commuting into Douglas and Sarpy counties. These results confirm that the Omaha area is experiencing that same time of population spread common to most metropolitan areas.

Table ES.1
Percent of Resident Workers Who Work in the Same County

County	Percent Who Work in the Same County		
	1990	2000	Change
Burt	75.5%	61.5%	-14.0%
Cass	39.5%	33.8%	-5.7%
Dodge	78.9%	73.6%	-5.3%
Douglas	92.3%	90.2%	-2.1%
Otoe	78.9%	68.2%	-11.7%
Sarpy	49.5%	40.6%	-8.9%
Saunders	51.9%	43.0%	-8.9%
Washington	52.5%	47.4%	-5.1%
Fremont, IA	66.0%	54.8%	-11.2%
Harrison, IA	60.7%	54.6%	-6.1%
Mills, IA	60.9%	50.1%	-10.8%
Pottawattamie, IA	56.6%	55.6%	-1.0%

Source: Bureau of Census, U.S. Department of Commerce

This tendency for population to spread out within the Omaha area, and the history of solid job growth in the region provide the background for the economic and demographic outlook through the year 2050. In particular there is reason to believe that Omaha will continue to experience solid employment growth during the outlook period. We analyzed a group of mid-size metropolitan areas to assess how employment in various industries grows as metropolitan areas grow. We found that for most services industries, employment growth will continue to match, or nearly match population growth. Further, there was a set of industries such as management of companies, wholesale trade, finance and insurance, information, and transportation and warehousing, where employment growth will exceed population growth. This occurs because businesses in these industries: 1) are able to expand their base of customers around the nation faster than they expand their local customer base, and 2) become increasingly important to local business customers in a larger, more sophisticated metropolitan area. These tendencies within metropolitan areas, along with Omaha’s relative strength in key industries like manufacturing, create a relatively optimistic outlook for employment growth in the Omaha area. Omaha may not be a boom town like Denver, CO or Austin, TX, but there is reason to expected solid, sustained growth.

Each of these trends is evident in our outlook for the Omaha area economy over the next four decades. As seen in Table ES.2, solid population growth is expected for

Douglas County through 2050, and rapid growth in Sarpy County. The cumulative population growth rate of the two counties combined is nearly 60% from 2000 to 2050. However, the population growth rate of the other 10 “suburban” counties in the 12-county region is also expected to be around 60% cumulatively. Finally, the rate of population growth expected for Douglas County, while solid at just under 1% per year, is less than the growth rate expected for the 10 “suburban” counties as well as for Sarpy County. As a result, Douglas County’s share of population will fall over time as population spreads out into suburban areas.

Table ES.2
Percent Change in Total Population, All Counties, 2000 to 2050

Counties	Average Annual Percent Change by Decade					Percent Change
	2000-2010	2010-2020	2020-2030	2030-2040	2040-2050	2000-2050
Douglas	1.0%	0.8%	0.6%	0.5%	0.6%	41.1%
Sarpy	2.5%	2.0%	1.6%	1.3%	1.0%	130.3%
Douglas and Sarpy Total	1.3%	1.1%	0.9%	0.7%	0.7%	59.7%
Suburban Counties Total	0.5%	0.8%	1.0%	1.1%	1.2%	59.4%
12-County Total	1.1%	1.0%	0.9%	0.8%	0.9%	59.6%

Source: UNL Bureau of Business Research

At the same time, employment growth is expected to be strong, and to remain relatively concentrated in Douglas County, and particularly in Douglas and Sarpy counties combined, as is seen in Table ES.3. In Douglas and Sarpy counties, employment growth will be more rapid than population growth. In the 10 “suburban” counties, population growth will be more rapid than employment growth.

Overall, the outlook is promising for the Omaha area economy. Employment and population growth will be strong, slightly exceeding national averages for growth through the year 2050. Omaha’s central county, Douglas County, will continue to experience strong employment growth as well as solid population growth.

Table ES.3
Percent Change in Total Employment, All Counties, 2000 to 2050

Counties	Annual Average Percent Change By Decade					Percent Change 2000-2050
	2000-2010	2010-2020	2020-2030	2030-2040	2040-2050	
Core Counties						
Douglas	0.4%	1.6%	1.2%	0.9%	1.0%	66.4%
Sarpy	4.2%	2.3%	1.7%	1.3%	1.2%	190.5%
Core Counties Total	1.0%	1.7%	1.3%	1.0%	1.1%	81.4%
Suburban Counties Total	0.5%	0.9%	0.7%	0.5%	0.7%	38.2%
Grand Total All Counties	0.9%	1.5%	1.2%	0.9%	1.0%	72.5%

Source: UNL Bureau of Business Research

Finally, we acknowledge that the outlook presented in Tables ES.2 and ES.3, or any outlook, is subject to some forecast error. Actual growth rates may exceed or fall short of what is predicted. This said, the reader should have confidence in underlying picture which the outlook paints - solid, geographically balanced growth over the next four decades.

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1. Introduction

The Omaha area is in a period of sustained expansion. Population, employment, housing stock, and commercial and industrial space are growing together both in the City of Omaha and in surrounding communities and counties. Growth is solid in Douglas County, and very rapid in Sarpy County. Further, the expansion of Omaha is effectively improving the fortunes, to varying degrees, of at least 10 other counties in Nebraska and Iowa. There is even a growing tendency for residents from as far away as Lincoln to commute to work in Douglas County.

Each of these trends are likely to continue over the next few decades. But, there is uncertainty about the pace and direction of future expansion. Will expansion continue at its current pace or moderate? How much growth will occur in Douglas County versus Sarpy County, or other surrounding counties?

This report provides a detailed economic, demographic, and real estate forecast for the City of Omaha, Douglas County overall, Sarpy County, and 10 other adjacent counties in Nebraska and Iowa through the year 2050. We begin with an analysis of growth trends in Omaha over the last three decades. Our analysis includes a comparison of growth in Omaha with growth in 20 other mid-size and large cities in middle portion of the United States. We also examine commuting patterns in Omaha, the fortunes of 3 key Omaha industries, and the trends in the growth of retail and service industries in growing metropolitan areas. This analysis suggests that Omaha should be able to continue its recent pattern of solid growth over the next four decades, but that trends towards increased commuting and diffusion of population will continue.

These trends are confirmed in the results generated by our forecasting model for the Omaha area economy. The outlook model predicts that growth in Omaha area employment and population will slightly exceed national averages over the next four decades. The cumulative effect is a 60% or greater increase in population, employment, and housing in the Omaha area by 2050. Commercial and industrial square footage in Douglas County will grow by 25% during the period. In our base model, employment will remain relatively concentrated in Douglas County, but a significant share of population growth will spread to Sarpy and other surrounding counties. In our alternative scenario, both employment and population growth are concentrated in Douglas County.

2. Trends in the Omaha Economy

The Omaha outlook is influenced by larger trends in the national economy, in particular, the trend towards a concentration of growth and wealth creation in America's mid-size and large cities. Such cities are increasingly able to attract, and raise the skill level of young, highly educated residents. In part because of this, some of America's most rapidly growing high-wage industries tend to concentrate in larger cities.

Omaha may not be as large as regional centers such as Denver, Minneapolis-St. Paul, or Kansas City, but it has still benefited from many of these trends that favor mid-sized and larger cities, particularly in the last 15-years. This section of the report explores the progress of the Omaha economy for the period from 1969 to 2004, and when data are available, through to the year 2005. We examine three key indicators of economic performance: population growth, total employment growth, and growth in per capita personal income. We compare growth in Omaha with national averages. We also examine the relative performance of Omaha with the performance of a set of peer metropolitan areas from middle part of the country.

This relative strength of the Omaha economy provides insights into our outlook for the region's economy. We also will explore how the industrial structure of the Omaha metropolitan area will evolve as the region grows during the outlook period from the present through 2050. Omaha currently has a concentration of employment in retail trade, health care, transportation and warehousing, professional and business services, finance and insurance, and several other service industries. By examining the evolution of peer metropolitan area economies over the last 15 years, we explore whether the concentration of these industries tends to increase or decline as metropolitan areas grow over time.

A. Trends in the Omaha Metropolitan Area Economy

Table 2.1 lists the peer metropolitan areas. The peers are initially ranked according to their 1969 population. The list of peers includes metropolitan areas roughly the size of Omaha as well as larger metros such as Kansas City and Minneapolis.¹ The list also is geographically diverse, containing southern and Midwestern metros, as well as

¹ These are the same Tier metropolitan areas that have been studied in previous outlook reports by the Bureau of Business Research for the Omaha economy.

several mid-sized metros from upstate New York. The metropolitan areas are divided into “Tiers” based on their 1969 population. Omaha is located on the border between Tier 3 and Tier 4.

As seen in Table 2.1, the Omaha metropolitan area added 200,000 residents between 1969 and 2004, going from approximately 600,000 residents to 800,000. The average annual population growth was 0.8%. This annual growth was below the national average of 1.1% but Omaha did well relative to its peers in Tier 3 and Tier 4. In particular, Omaha has maintained its ranking among the peer metropolitan areas. In 1969, Omaha had the 18th largest population among the 23 peer metropolitan areas. By 2004, Omaha had moved up to 17th rank. During the period, Omaha passed Syracuse, NY and Toledo, OH, but fell behind Tulsa, OK.

**Table 2.1
Tier and Rank of Metropolitan Statistical Areas 1969 and 2004**

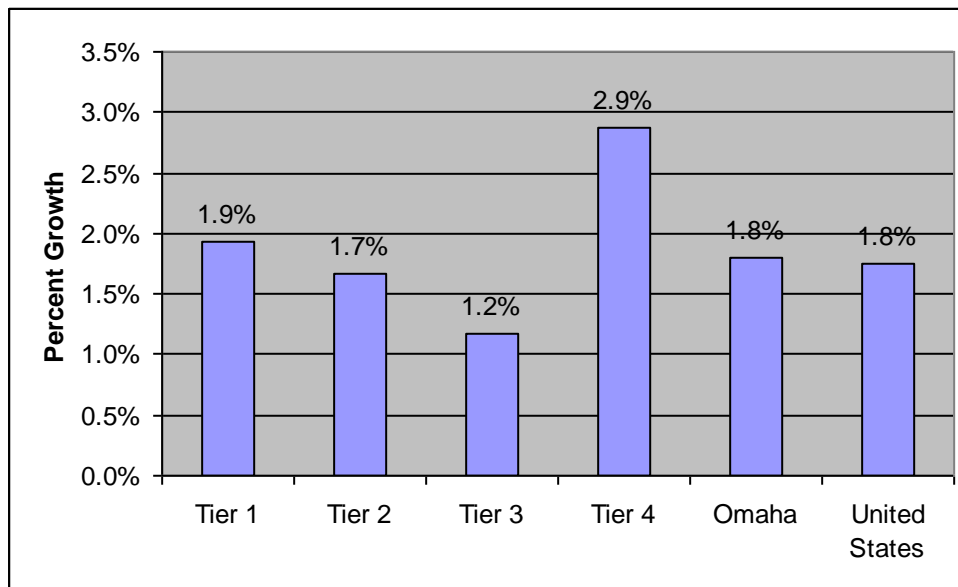
Metropolitan Area	Tier	1969		2004	
		Population	Rank	Population	Rank
Dallas-Fort Worth, TX	Tier 1	2,335,871	1	5,696,045	1
Minneapolis-St. Paul, MN	Tier 1	1,991,610	2	3,112,877	2
Cincinnati-Hamilton, OH	Tier 1	1,679,291	3	2,056,843	3
Kansas City, MO-KS	Tier 1	1,417,780	4	1,927,240	4
Milwaukee-Racine, WI	Tier 1	1,395,326	5	1,513,319	8
Columbus, OH	Tier 2	1,149,003	6	1,690,721	6
Indianapolis, IN	Tier 2	1,128,175	7	1,617,414	7
Hartford, CT	Tier 2	1,021,033	8	1,182,817	11
Louisville, KY-IN	Tier 2	978,369	9	1,199,424	10
Rochester, NY	Tier 2	947,352	10	1,041,060	13
San Antonio TX	Tier 2	941,515	11	1,852,508	5
Memphis, TN	Tier 2	903,251	12	1,248,492	9
Dayton-Springfield, OH	Tier 3	844,392	13	844,850	16
Albany-Schenectady-Troy, NY	Tier 3	741,040	14	844,961	15
Oklahoma City, OK	Tier 3	697,691	15	1,142,390	12
Toledo, OH	Tier 3	638,675	16	657,925	19
Syracuse, NY	Tier 3	631,763	17	653,128	21
Omaha, NE-IA	Tier 3	608,907	18	802,247	17
Tulsa, MSA	Tier 4	567,032	19	880,713	14
Knoxville, TN	Tier 4	431,501	20	646,979	22
Little Rock- North Little Rock, AR	Tier 4	390,798	21	635,764	23
Albuquerque, NM	Tier 4	377,600	22	781,380	18
McAllen-Edinburg-Mission, TX	Tier 4	179,187	23	657,310	20

Source: Bureau of Economic Analysis, U.S. Department of Commerce.

Population data indicate that Omaha kept pace with peer metropolitan areas in Tier 3 and Tier 4, even if it lagged national averages in annual growth. Omaha’s performance was even stronger according to the other measures of job growth and per capita personal income growth. As is seen in Figure 2.1, Omaha matched national averages in terms of job growth. Employment grew at an annual average rate of 1.8% in both Omaha and the United States from 1969 to 2004. Job growth rates in Omaha also exceeded average job growth in Tier 2 and Tier 3 and nearly matched growth of Tier 1 metropolitan areas.

Note that during the 1969 to 2004 period annual employment growth in Omaha and the nation was much greater than average population growth. This was possible due to rapid increases in female labor force participation during the period, and multiple job holdings. In the future outlook, employment growth rates will exceed population growth rates by a much smaller margin.

Figure 2.1
Average Annual Employment Growth Omaha and Peer MSAs
1969-2004

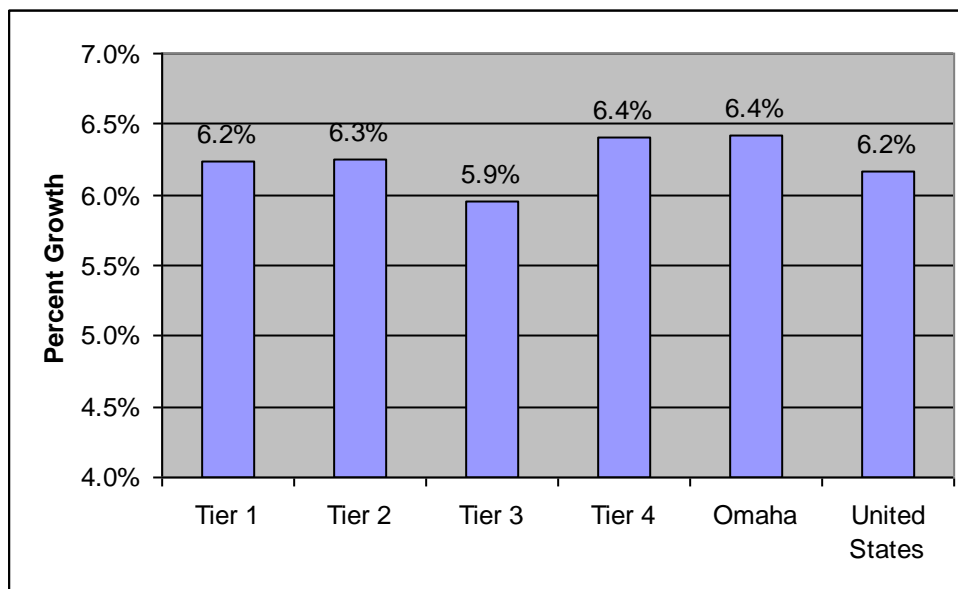


Source: Bureau of Economic Analysis, U.S. Department of Commerce

The Omaha metropolitan area also had rapid growth in per capita personal income during the last 35 years, as is evident from Figure 2.2. Note that the average annual growth rates are so high in Figure 2.2 because of high inflation rates during the late 1960s

and 1970s. The average annual inflation rate grew by around 4% during the period, meaning that real per capita personal income – a key measure of the standard of living – grew by roughly 2%. The standard of living was growing especially rapidly in the Omaha metropolitan area. Growth in per capita personal income averaged 6.4% in Omaha, above the national average of 6.2%. Income growth in Omaha matched or exceeded averages for all Tiers of metropolitan areas.

Figure 2.2
Average Annual Growth in Per Capita Personal Income
Omaha and Peer MSAs 1969-2004



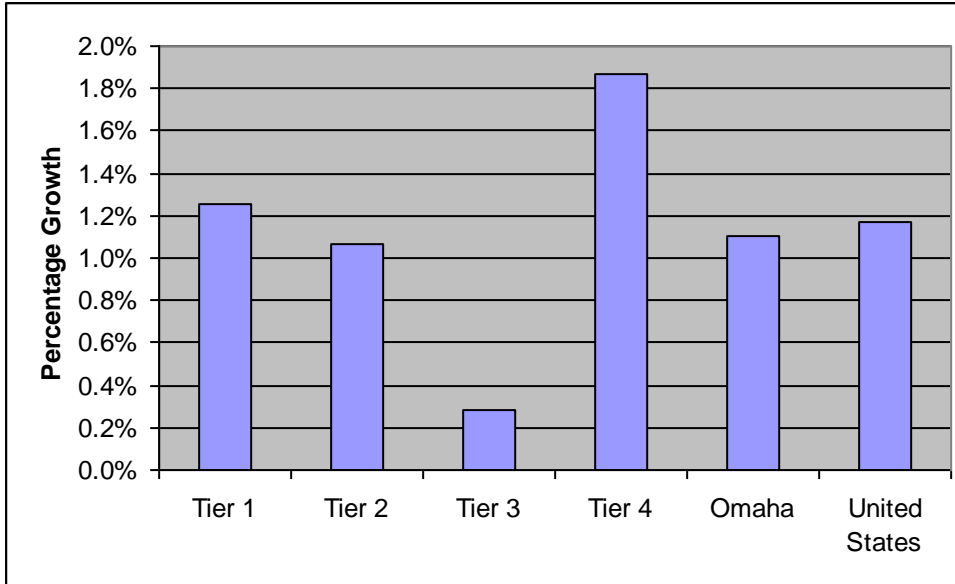
Source: Bureau of Economic Analysis, U.S. Department of Commerce

The overall picture is of solid growth in Omaha’s economy from 1969 to 2004. While population growth lagged, employment growth was average, and per capita personal income growth was rapid. This is strong record over an extended period of time. Omaha has been able to keep up with the national economy and on average with its peers. Further, there is more recent data suggesting that Omaha may be able to modestly exceed national growth rates going forward. In particular, data from the most recent 15 years are very strong for Omaha.

Figure 2.3 below shows that Omaha was able to match national population growth rates since 1990. Omaha’s annual population growth was 1.1% per year, equal to the growth rate of Tier 2 metros, and just below the national growth rate and the rate for Tier

1 metros. Employment growth rate data in Figure 2.4 show a similar picture with growth rates in Omaha exceeding Tier 2 growth rates and the national average and falling just below the growth rates of Tier 1 cities. In recent decades, Omaha has been able to catch the nation in terms of population growth and maintain its strong employment growth.

Figure 2.3
Average Annual Population Growth Omaha and Peer MSAs
1990-2004



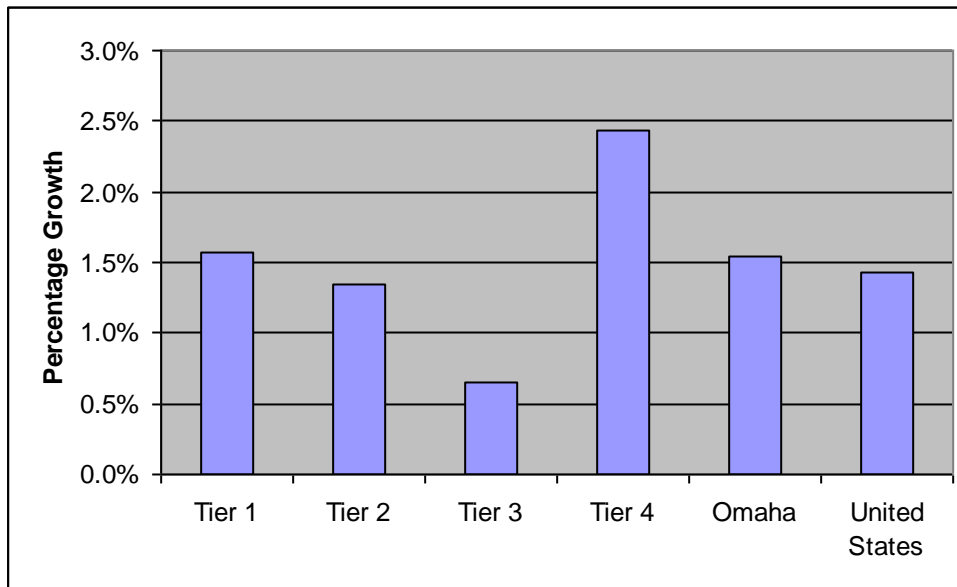
Source: Bureau of Economic Analysis, U.S. Department of Commerce

As seen in Figure 2.5, income growth also was very strong in Omaha during the 1990 to 2004 period.² Average annual growth rates in per capita income in Omaha exceeded the national average by nearly 0.5% per year. Income growth in Omaha was well above the average in any of the Tiers as well.

Overall, this strong performance over the last 15 years, combined with solid growth over the last 35 years, is a positive sign for Omaha's long-term economic outlook. The metropolitan area has strong key industries and as a regional center has a strong ability to attract and retain population and business growth.

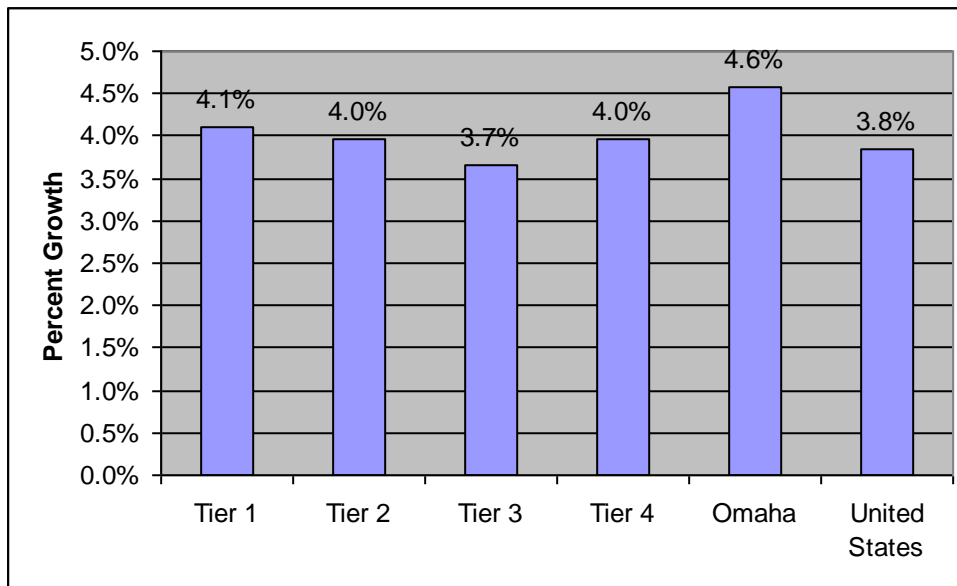
² Note that while average annual growth rates are lower for the 1990 to 2004 period, this is because inflation was lower during the period as well.

Figure 2.4
Average Annual Employment Growth Omaha and Peer MSAs
1990-2004



Source: Bureau of Economic Analysis, U.S. Department of Commerce

Figure 2.5
Average Annual Growth in Per Capita Personal Income
Omaha and Peer MSAs 1990-2004



Strong population growth over the last 15 has changed the Omaha metropolitan area. In the first place, the larger counties in the Omaha metropolitan area are now

“young” counties, with an average age below the national average. The average age in several other counties is only slightly above the national average. Such counties typically have higher natural population growth rates, with more births and fewer deaths. Strong natural population growth means that population in a metropolitan area can grow rapidly even with modest in-migration to the region. Table 2.2 below shows the estimated average age of the United States and selected counties in the Omaha metropolitan area in the year 2005.

Table 2.2
Average Age for United States and Selected Omaha Area Counties 2005

County	Average Age
Douglas	35.2
Sarpy	32.8
Cass	37.1
Washington	37.7
Pottawattamie, IA	37.8
United States	36.6

Source: Bureau of Census, U.S. Department of Commerce

In the second place, while the City of Omaha and Douglas County have had strong population growth, it is also true that population in the metropolitan area has begun to spread out to outlying counties, particularly to Sarpy County. And, with employment still concentrated in Douglas County, this has led to increased county-to-county commuting within the 12-county region. There even has been an increase in commuting from outside of the area, such as from Lincoln/Lancaster County.

Table 2.3 below shows the tendency for out-commuting for the 12 counties. These include the 8 counties in the Omaha metropolitan area plus 4 other adjacent counties. For each county, the table shows the share of workers who work in the same county rather than commuting to work in a different county. The table shows which counties are “bedroom” counties in the sense that a large share of employed residents work elsewhere. In 2000, over 90% of employed residents of Douglas County worked in Douglas County. Burt and Otoe each had over two-thirds of employed residents working in the same county. Cass, Sarpy, Saunders, and Washington County had the greatest tendency for commuting with less than 50% of employed residents working in the same county. In

Cass County, just one in three was employed in the same county. The 4 Iowa counties each had between 50% and 55% working in the same county.

The other key point is that these shares dropped consistently in nearly all counties from 1990 to 2000. An additional 9% of employed Sarpy County residents commuted outside the county from 1990 to 2000 (the share dropped from 45.6 to 40.6%). The share commuting rose by 14% in Burt County, 12% in Fremont County, IA, 10% in Otoe County, and Mills County, IA, and 8% in Saunders County. The share of out-commuters rose by 5% in most other counties. These patterns show a significant increase in commuting to Douglas County over the 10-year period. Though, it is interesting to see that out-commuting also rose in Douglas County, so the pattern also shows an overall increase in commuting to work. The one notable exception to this pattern was Pottawattamie County, IA. The share out-commuting rose by less than 1%, perhaps reflecting the strong job growth in the county during the period.

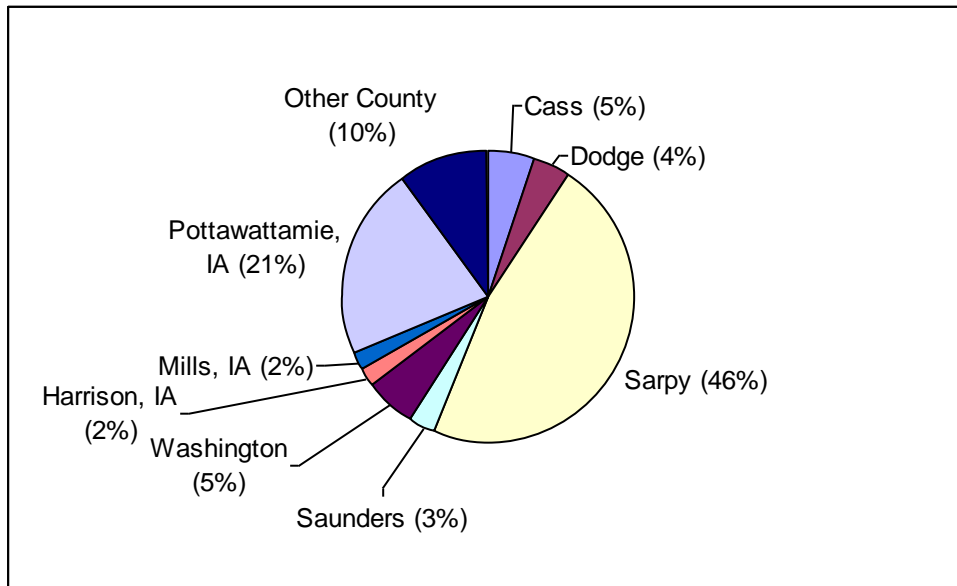
Table 2.3
Percent of Resident Workers Who Work in the Same County

County	Percent Who Work in the Same County		
	1990	2000	Change
Burt	75.5%	61.5%	-14.0%
Cass	39.5%	33.8%	-5.7%
Dodge	78.9%	73.6%	-5.3%
Douglas	92.3%	90.2%	-2.1%
Otoe	78.9%	68.2%	-11.7%
Sarpy	49.5%	40.6%	-8.9%
Saunders	51.9%	43.0%	-8.9%
Washington	52.5%	47.4%	-5.1%
Fremont, IA	66.0%	54.8%	-11.2%
Harrison, IA	60.7%	54.6%	-6.1%
Mills, IA	60.9%	50.1%	-10.8%
Pottawattamie, IA	56.6%	55.6%	-1.0%

Source: Bureau of Census, U.S. Department of Commerce

Pottawattamie County residents, however, remained a key part of the workforce for Douglas County in 2000. Figure 2.6 shows the origin of in-commuters to Douglas County in 2000. Sarpy County accounted for the largest share, nearly one-half, while Pottawattamie County accounted for around one-fifth. Cass and Washington also accounted for approximately 5%. Commuters from other counties outside of the 12-county region accounted for roughly 10% of in-migrants.

Figure 2.6
Share of In-Commuters into Douglas County 2000



Source: Bureau of Census, U.S. Department of Commerce
 Note: Burt, Otoe, and Fremont County, IA each had less than 1%.

Just in the 10 years from 1990 to 2000, there was a substantial increase in in-commuting into Douglas County. Table 2.4 shows that in-commuting grew by 20,000, more than a one-third increase. Half of that increase came from Sarpy County, but there were substantial increases from elsewhere. The number of residents commuting from Cass to Douglas County increased by 1,600, or nearly 70%, in just 10-years. An additional 1,000 residents commuted to Douglas County from both Washington County and Dodge County. These represented substantial increases. Other counties did not have as many new commuters but also showed a substantial increase from their base level, particularly Saunders County, and Fremont, Mills, and Harrison Counties in Iowa. Finally, the number of commuters from outside of the 12-county region rose by 2,600 in just 10-years. This increase was fueled in part by increased commuting from Lincoln/Lancaster County into Douglas County.

It also should be noted that Sarpy County also has been receiving many new in-commuters, even as Sarpy County has continued to send more commuters to Douglas County. This reflects the general increase in inter-county commuting in the region. But, it also reflects that Sarpy and Douglas County together increasingly form the central core of the Omaha region. As a result, Table 2.4 also lists the increase in in-commuting into

Sarpy County between 1990 and 2000. Douglas County is excluded to focus on Sarpy County's contribution in drawing commuters into the two counties. In-commuters into Sarpy County grew by 2,800. Most of this increase, 1,700, came from commuters from outside of the region, primarily Lancaster County.

The total number of in-commuters into Douglas and Sarpy County combined was nearly 49,000 in the year 2000. The total number of in-commuters (excluding commuting between Douglas and Sarpy counties) increased by 12,000 during the 10-year period, from 37,000 to 49,000. This trend points to an increasing tendency of population to spread out within the Omaha region, with in-commuting increasingly fueling job growth in Douglas and Sarpy County.

Tables 2.4
Commuting Flows Into Douglas and Sarpy Counties

County	Number Commuting Into Douglas County			Number Commuting Into Sarpy County		
	1990	2000	Change	1990	2000	Change
Burt	184	399	215	8	36	28
Cass	2,438	4,042	1,604	1,640	1,703	63
Dodge	2,282	3,206	924	41	169	128
Douglas						
Otoe	161	270	109	27	130	103
Sarpy	25,882	36,245	10,363			
Saunders	1,647	2,142	495	206	376	170
Washington	3,156	4,177	1,021	113	135	22
Fremont, IA	139	349	210	15	34	19
Harrison, IA	1,348	1,729	381	61	55	-6
Mills, IA	1,174	1,626	452	131	278	147
Pottawattamie, IA	15,204	16,473	1,269	736	1,214	478
Other County	5,194	7,815	2,621	840	2,512	1,672
Total	58,809	78,473	19,664	3,818	6,642	2,824

Source: Bureau of Census, U.S. Department of Commerce

Such commuting trends are a key factor in Omaha's future development. Another key factor is the performance of Omaha's basic industries, the large industries containing businesses with a national or international customer base. Manufacturing, insurance, and transportation are three key industries in the Omaha regional economy. In this section, we provide a brief overview of each one of these sectors' recent economic patterns and activity, starting from 1990 up through to 2005.

Manufacturing

Manufacturing in Omaha has been a significant contributor to the city’s economy, on average accounting for 4.5% of the city’s population between 1990 and 2005 (see Table 2.5). This amounts to about 33, 900 jobs in the metro area. While this is less than the 6.0% percent average share for the nation as a whole, this somewhat smaller percent contribution may be of some benefit to the city. Consider the following.

It is well understood that, while US employment has been growing at a healthy clip over the last few decades, most of these jobs have been in the non-manufacturing sectors of the economy, notably services. This general trend is also true of Omaha’s economy, but to a much lesser extent. Particularly with the presence of ConAgra Foods, Inc.’s headquarters in the city, the manufacturing sector, particularly food processing, continues to contribute substantially to the local economy. Indeed, as we see from Table 2.5, employment growth in manufacturing fell over 19% for the US as a whole between 1990 and 2005, and the share of manufacturing fell over 32%. However, in Omaha manufacturing share fell only 15% over the same time period and in actual jobs created; the Omaha metropolitan area actually added a few more jobs than it lost over the last 15 years. Moreover, the volatility in manufacturing employment growth exhibits a pattern more favorable to the local economy than the pattern that exists for the nation.

Tables 2.5
Employment in Key Industries, Omaha, NE versus the US

Industry	% Growth 1990-2005	Average Employment Share, 1990- 2005	Employment Share Growth, 1990-2005
Manufacturing			
Omaha	0.3%	4.5%	-15.2%
United States	-19.6%	6.0%	-32.3%
Transportation & Warehousing			
Omaha	40.2%	3.1%	18.6%
United States	25.0%	1.5%	5.3%
Finance & Insurance			
Omaha	25.8%	3.8%	6.4%
United States	20.8%	2.0%	1.7%

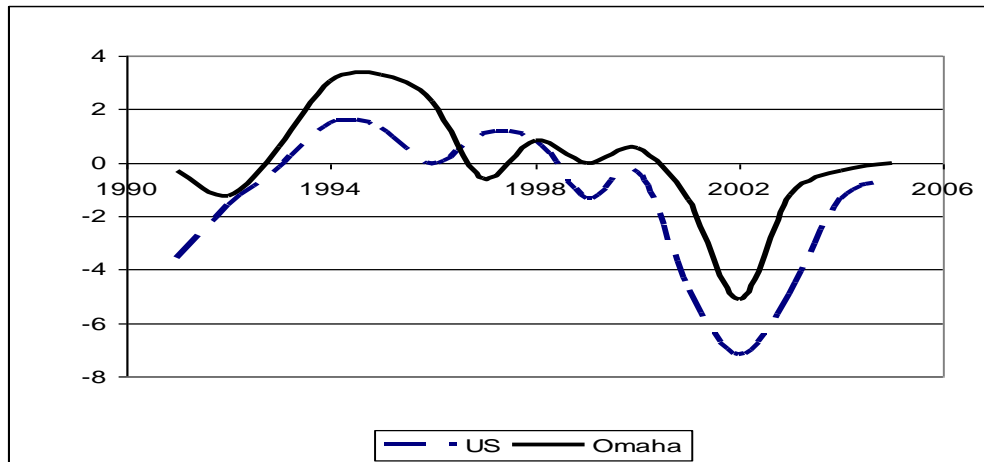
Source: U.S. Department of Labor, Current Employment Series

Note: Average employment share refers to industry jobs per person

Figure 2.7 plots annual growth rates in manufacturing employment for Omaha and the US. Over the period 1990 to 2005, when manufacturing was adding jobs in the mid-1990s, Omaha experienced percentage increases in employment that were faster than the US. Moreover, when manufacturing jobs were in decline in the 2001-2002 period the percent reduction in manufacturing jobs in Omaha was less than the corresponding percent reduction in jobs for the nation as a whole. Hence, downside manufacturing employment cycles in Omaha have been muted relative to the US in recent years and growth cycles have been stronger than the nation. In short, manufacturing has been a major engine of growth for the local economy.

In the future, we expected the Omaha manufacturing sector will continue to do well. With a focus on food processing, Omaha’s manufacturing industry is less vulnerable to foreign competition and to relocation to foreign countries than manufacturing in most parts of the county. Employment levels may decline slowly through the year 2050, but industry employment will avoid sharper declines expected in other parts of the nation.

Figure 2.7
Annual Job Growth in the Manufacturing in the Omaha MSA and United States 1990-2005



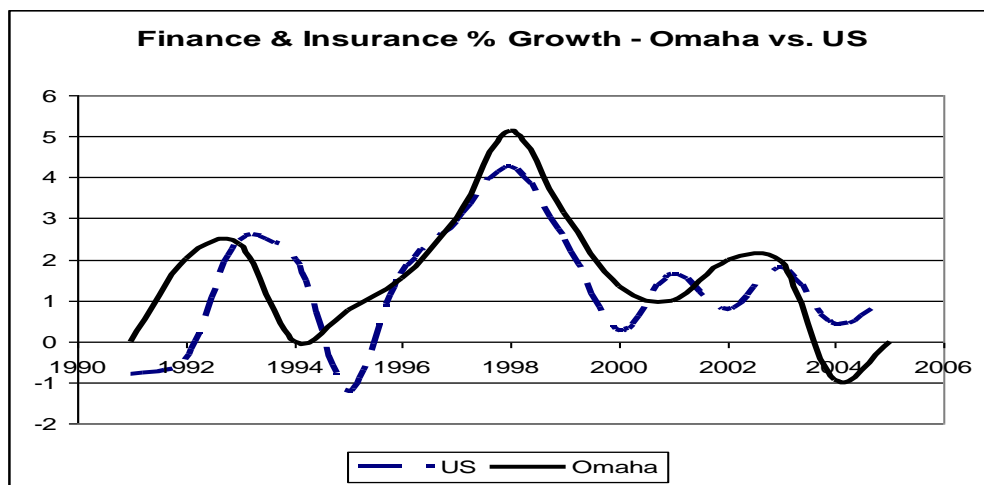
Source: U.S. Department of Labor, Current Employment Series

Finance and Insurance

Like manufacturing, the finance and insurance sector has been a major contributor to the Omaha economy. Given the presence of insurance companies with nation-wide

reputations such as Woodman of the World, and Mutual of Omaha, this is not too surprising. Accounting for 4% of total city population, much more than the less than the 2% share recorded for the US as a whole, employment in this sector as grown substantially since 1990 (see Table 2.5). Unlike manufacturing, however, this is both a national and local growth industry. That said, as a growth sector, Omaha is out-pacing the nation from nearly every perspective. Indeed, between 1990 and 2005, employment in this sector grew from 24,800 to 31,200, an overall increase of 25.8%, quite a bit larger than the 20.8% increase in US employment in this sector. Indeed, as a share of Omaha's population, this sector is contributing substantially more than it did in 1990. Its share has increased 6.4% percent between 1990 and 2000, much more than the 1.7% percent increase for the nation. This pattern is re-enforced in Figure 2.8 where we see metropolitan growth in this sector generally outperforming the nation as a whole in nearly every year, with the notable exception of 2004. This sector has been and will continue to be a major component of Omaha's local economy. There is reason to expect that Omaha's insurance carriers can continue to prosper. A key consideration is whether the State of Nebraska can act to keep its competitive climate for the industry on a par with competitor states such as Iowa.

Figure 2.8
Annual Job Growth in the Finance and Insurance Industry
in Omaha MSA and United States 1990-2005



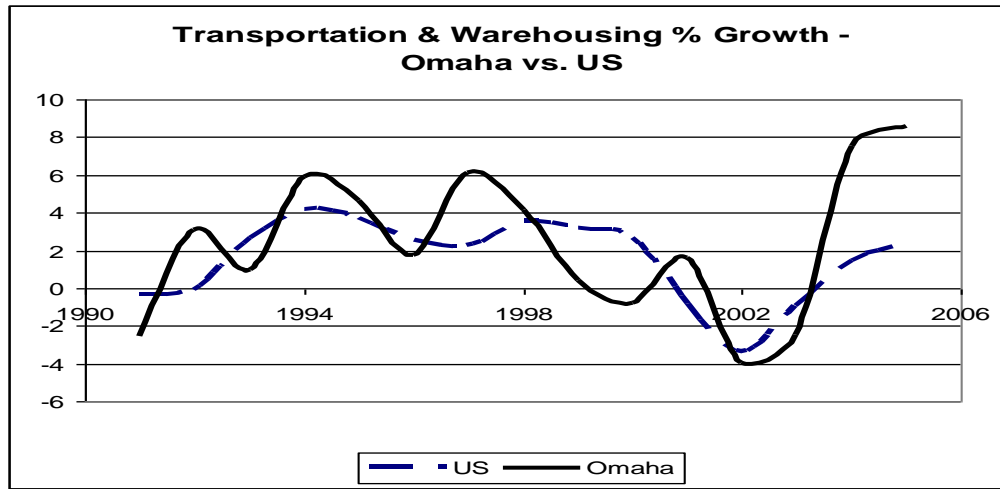
Source: U.S. Department of Labor, Current Employment Series

Transportation and Warehousing

Transportation and warehousing has not only been a key sector for Omaha it has been perhaps the most robust in terms of recent growth. Both rail and trucking employment are critical to the city's economic well-being. With respect to rail, the presence of Union Pacific Railroad corporate headquarters speaks to the sector's importance to the metropolitan area economy. Indeed, much of the 40% increase in transportation-related employment in Omaha over the last 15 years can be linked to UP. During the latter 1990s UP reduced its workforce substantially. However, starting in 2002, with a steady nation-wide economy recovery in place, it began hire aggressively again, consistently adding to payrolls year over year at an annual rate of between 5% and 8%.

Moreover, the freight trucking sector has been a major source of growth for not only this transportation sector, but for the city and state of Nebraska as a whole. Indeed, the Nebraska Department of Economic Development (DED) has targeted this sector as being a key to the future success of the state's economy. Given the presence of 2 of the top 10 major truck freighting companies, Werner Enterprises and Crete Carrier Corp. located in the Omaha area or in nearby Lincoln, this targeting has contributed and will continue to contribute to this sector's success and thus stimulate the local economy. Omaha's central location within the nation, easy access to both the east-west Interstate 80 corridor and the north-south Interstate 29 corridor, and increased flow of north-south goods due to NAFTA have made this area an attractive location for logistics-oriented enterprise. This is perhaps why not only employment in this sector has been so robust, but also why there has been an 18.6% increase in transportation employment's share of Omaha population over the period 1990 to 2005 as well. Hence, it's not too surprising then that this industry has been a major contributor to Omaha's economic export base. Looking forward, we anticipate that the state of Nebraska will continue to foster employment growth in transportation logistics, exploiting the state's geographic advantages.

Figure 2.9
Annual Job Growth in the Transportation and Warehousing Industry
in Omaha MSA and United States 1990-2005



Source: U.S. Department of Labor, Current Employment Series

B. Trends in Industry Activity as Metropolitan Areas Grow

Commuting patterns, the performance of key industries, and long-term and recent growth trends point to continued growth in the Omaha metropolitan area economy. This portends growth during the outlook period from the present time through the year 2050. One key question is how will this growth influence the industrial structure of the Omaha area? Will growth lead to strength or weakness in key service sector industries such as: wholesale trade, retail trade, transportation and warehousing, information, finance and insurance, real estate rental and leasing, professional and business services, management of companies and enterprises, administration support and waste management, educational services, health and social services, leisure and hospitality, and other services (except public administration)?³ More to the point, will these industries grow along with population, or will employment growth in these industries lead or lag population growth?

To examine this issue, we calculated “location quotients,” or lq, for the Omaha metropolitan area for every year from 1990 through 2005. These location quotients show

³ There are a few additional important sectors basic to the Omaha economy, such as a number of traditional manufacturing industries like Food Processing. These are not addressed here but in other sections of the report.

the relative concentration of employment in an industry in a particular metropolitan area. For a given economic concept (usually employment), an lq for industry k in a particular metropolitan area i , is defined as:

$$lq_{k,i} = \frac{emp_{k,i} / pop_{k,i}}{emp_{k,US} / pop_{k,US}} .$$

These lqs are one means of illuminating the composition of a particular city's export-oriented activities, thereby contributing to a city's economic base. If an lq for a given industry k is greater than 1.0, then the industry's share of employment in metropolitan area i is larger than that same industry's share for the United States. The implication of such a result is that there is more economic activity in industry k within the metropolitan area i than that city can absorb locally. Therefore, some of that industry's production must be being exported outside of metropolitan area i , and therefore contributes to the region's economic base.

A key question is whether these lqs will tend to grow or decline over time as a city grows. If lqs tend to get larger in an industry as a metropolitan areas population grows, this implies that a metro area's share of national employment in that industry will grow faster than the area's share of population.⁴ Such industries should grow very rapidly as population expands. We examined this issue by calculating lqs for all service industries for each of Omaha's 22 peer metropolitan areas from 1990 to 2005. We then estimated the following regression equation for each of the 13 service industries.

$$lq_{i,t} = a_i + b * pop_{i,t-1} + e_{i,t} .$$

⁴ To see this, reorganize the location quotient equation to see that these lqs can be thought of a variable measuring Omaha's employment share in sector k to its share of US population:

$$lq_{k,i} = \frac{emp_{k,i} / emp_{k,US}}{pop_{k,i} / pop_{k,US}}$$

⁵ Specifically, we estimated a fixed effects model from a panel of population and lq data from a set of 23 cities of similar size over a period of between 5 and 15 years.

The “b” coefficient measures the sensitivity of a particular sector’s lq to a metropolitan area’s population level.⁶ Moreover, this sensitivity will vary from industry to industry and it quite possible that some sectors are not sensitive to population levels at all. In Table 2.6 below a summary of these estimation results is provided. The sectors have been ordered depending on the size of “b”. Also included in the table is an indication of statistical significance, indicating which sectors are in fact statistically sensitive to a metropolitan area’s population.

Table 2.6
Relationship between Key Service Sectors and Population Growth
In Metropolitan Areas

Model (fixed effects): $lq_{i,t} = a_i + b \cdot pop_{i,t-1} + e$
(pop is measured in 10,000 residents)

Sector	Coefficient on Population- “b”	Significance Level ¹
Employment share grows much faster than population share²		
Management of Companies & Enterprises	0.251	***
Wholesale Trade	0.113	***
Employment share grows faster than population share²		
Finance & Insurance	0.048	*
Information	0.046	***
Transportation & Warehousing	0.040	***
Employment share unaffected by population share²		
Leisure & Hospitality	0.010	
Professional & Business Services	-0.012	
Real Estate Rental & Leasing	-0.015	*
Employment share grows slower than population share²		
Health & Social Services	-0.035	***
Administration, support, waste management, etc.	-0.049	
Educational Services	-0.066	*
Employment share grows much slower than population share²		
Retail Trade	-0.239	***
Other Services (except Public Administration)	-0.338	***

¹ * - significant at 10 percent, ** - significant at 5 percent, *** - significant at 1 percent

² - delineation is based on the size of the population coefficient.

Source: UNL Bureau of Business Research.

Note that “b”, when statistically significant, can be either positive, such as wholesale trade, or negative, such as retail trade, depending on the sector. A negative

⁶ For each estimation, we had up to 16 years of data for 23 metropolitan areas, which was a potential sample of more than 350 observations.

coefficient should not be taken as evidence that employment in a given sector is declining. In fact, for all sectors, the results indicate employment growth, just a differing rates relative to Omaha's population growth. The following classification of the sectors can be made based on the estimated value of "b":

Employment share grows much faster than population share: For instance, in the management of companies and enterprises and wholesale trade sectors, we find that employment share in these sectors is growing much faster than the metropolitan area's share of total population. These sectors, then, are anticipated to be the "high growth" sectors for the Omaha area in foreseeable future.

Employment share grows faster than population share: In finance and insurance, information, and transportation and warehousing, the metropolitan area's employment share is rising moderately faster than its population. Given that finance and insurance and information have been critical sectors to the Omaha economy for a long time and transportation and warehousing, with the presence of Werner Enterprises located within its borders, has historically been a key economic component and has recently gained substantial ground, this result is not too surprising. Therefore, job growth in these sectors is expected to outpace relative population growth as well.

Employment share unaffected by population share: In the leisure and hospitality, professional services, and real estate sectors, we find that relative employment growth is unaffected by population share.⁷ Under the condition population did not appear to impact the resulting lqs, an investigation of the historical pattern in the data suggested a relatively stable level. In these cases then, the most reasonable projection of these lqs is to extrapolate based on their historical mean or average level.

Employment share grows slower than population share: In the remaining sectors, we find that employment share will grow, but not keep pace with relative population growth.

⁷ While the coefficient on population is statistically significant for the Real Estate sector, the coefficient is quite small, indicating that any changes in population will not impact this sector in any measurable way.

Health and social services, administration support and waste management, and educational Services will witness moderately slower employment share growth than the metropolitan area's relative population growth.⁸

Employment share grows much slower than population share: Finally, as Omaha's share of national population increases relative employment in the retail and other services sectors will increase much more slowly. With respect to the retail sector (and perhaps is true for health and social services and education as well), the result seems to indicate that as a metropolitan area grows in population, the retail sector grows in a manner that focuses more attention towards servicing the local population than to servicing potential customers from surrounding areas outside the metropolitan area limits.

C. Summary

Recent trends suggest continued strong growth in the Omaha region's economy during the outlook period. Several factors support this expectation of growth including commuting patterns, strong natural population growth, and the performance of key industries. If recent trends hold, Omaha may continue to outperform the national economy over the outlook period, creating a pattern of strong growth and allowing the region of over 800,000 to quickly meet and exceed the 1 million person mark by the year 2050. We provide a specific forecast for the Omaha area economy in the next Chapter.

⁸ It is true that the negative coefficient on the Administration support and waste management sectors is not statistically significant. However, in this particular case, given the recent data on Omaha's lq in this sector and that fact that the negative coefficient is relatively sizable, the negative characteristic was retained.

3. Regional Outlook

Our analysis of the Omaha economy demonstrated that trends in population growth, commuting flows, and employment were closely related within the metropolitan area. Any comprehensive regional outlook must address each of these factors. For planning purposes, there also is a need to estimate future growth in both the number of households, housing stock requirements, and requirements for commercial and industrial buildings. In this Chapter, we provide a comprehensive regional outlook for the Omaha area, addressing each of these factors. We begin with a demographic outlook for the Omaha area economy, including an estimate in household growth in Douglas County, and the outlook for increases in the number of single-family and multi-family housing units. We also generate a detailed employment outlook, which is used to estimate future demand for commercial and industrial space.

For population and employment, we provide estimates for each of the 12-counties in the Omaha metropolitan area. There is a focus, however, in the two largest Nebraska counties. We provide more detailed analysis of the outlook for both Douglas County and Sarpy County.

A. Demographic Outlook

Demographic growth underpins progress in all key measures in our outlook for the Omaha economy including housing units, employment, and square footage of business buildings. The description of our regional outlook therefore begins with an analysis of the demographic outlook. Demographic forecasts were developed using a standard cohort-component model for each of the 12 counties. Each model contained data on 9 race/ethnicity categories including: white non-Hispanic, white Hispanic, black non-Hispanic, black Hispanic, American Indian and Native Alaskan, Asian American, Native Hawaiian and Other Pacific Islander, and Two or more races.

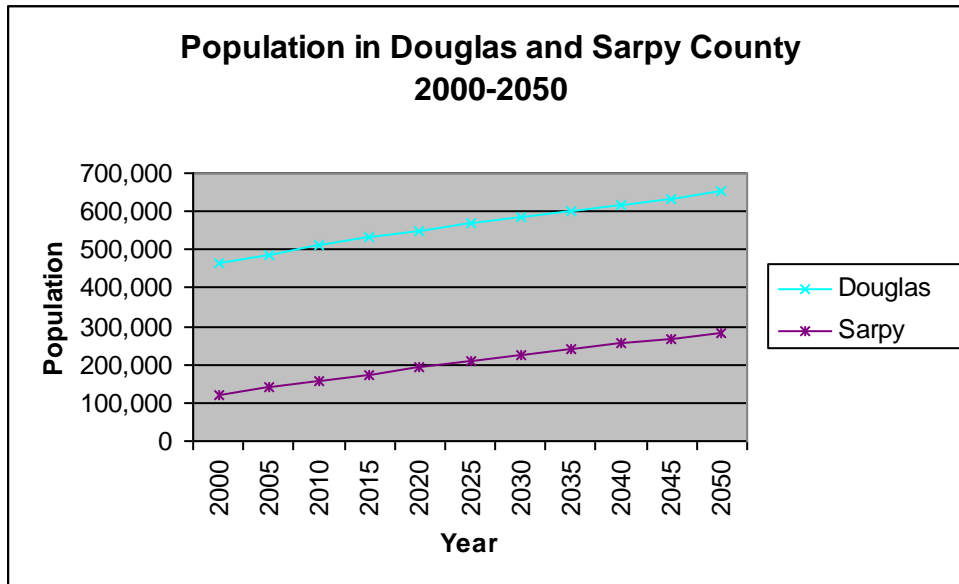
The demographic outlook shows continued strong population growth in the Omaha Metropolitan Area. Growth will be strong in Douglas County, the central county within the metropolitan area. However, population will continue to spread outward, particularly to rapidly growing Sarpy County. There will be a strong percentage growth in Cass, Washington, and Saunders County. Pottawattamie County, Iowa also will add

tens of thousands of new residents by 2050, though the rate of population growth in this large county will be modest. Below, we provide a detailed description of the outlook for Douglas and Sarpy County, as well as aggregate outlooks for the 10 remaining counties.

Douglas and Sarpy Counties

Demographic outlooks are summarized in Figure 3.1 for the two core Nebraska counties: Douglas and Sarpy counties. The Figure indicates that substantial growth is expected in both counties. Douglas County is expected to add 190,000 people from 2000 to 2050, growing from approximately 460,000 to 650,000. Sarpy County will add 160,000 people, growing from a population of roughly 120,000 to 280,000. These figures indicate continued solid growth of 40% for Douglas County but 130% growth for Sarpy County.

Figure 3.1
The Population Growth Path for Douglas and Sarpy Counties



Source: Bureau of Census, U.S. Department of Commerce (historic data) and UNL Bureau of Business Research (outlook)

Tables 3.1 and 3.2 show detailed information about the population outlook for Douglas County. It demonstrates the well-known “aging” of the population that will occur during the outlook period. Population growth will be modest for younger and middle age workers and very rapid for older workers and the elderly.

Table 3.1
Population by Age, Douglas County, 2000 to 2050

County / Age							Percent
	2000	2005	2010	2020	2030	2050	Change 2000-2050
0-4	34,293	38,563	40,727	41,209	42,896	49,988	45.8%
5-9	34,241	33,152	37,701	40,701	41,927	48,254	40.9%
10-14	34,050	33,379	34,884	39,426	41,142	46,582	36.8%
15-19	34,145	33,883	33,815	37,455	40,144	45,027	31.9%
20-24	34,163	36,735	34,749	35,709	38,854	43,994	28.8%
25-29	36,246	37,559	36,304	34,959	37,403	43,039	18.7%
30-34	34,313	35,251	36,454	35,107	36,131	41,878	22.0%
35-39	37,133	34,336	35,435	35,422	35,324	40,502	9.1%
40-44	36,868	36,695	35,312	35,396	34,953	38,995	5.8%
45-49	33,469	36,266	35,669	35,051	34,691	37,393	11.7%
50-54	28,160	32,873	34,586	34,496	34,238	35,782	27.1%
55-59	20,072	27,374	31,145	33,295	33,329	34,100	69.9%
60-64	15,637	18,911	25,175	30,722	31,711	32,215	106.0%
65-69	13,771	13,743	18,537	26,376	29,002	29,839	116.7%
70-74	12,857	12,243	13,713	20,836	25,038	26,782	108.3%
75-79	10,696	10,816	10,628	14,942	19,597	22,404	109.5%
80-84	7,130	7,769	7,842	9,694	13,425	16,753	135.0%
85+	6,341	7,381	8,553	10,122	13,733	20,362	221.1%
Total	463,585	486,929	511,227	550,918	583,538	653,888	41.1%

Source: Bureau of Census, U.S. Department of Commerce (historic data), and UNL Bureau of Business Research (outlook)

Table 3.2 indicates that much of the population growth in Douglas County will occur among the Hispanic population and the non-Hispanic black population. The Other category includes Asian Americans, Native Americans and individuals who declare Two or More Races.

Table 3.2
Population by Race and Ethnic Origin, Douglas County, 2000 to 2050

							Percent
	2000	2005	2010	2020	2030	2050	Change 2000-2050
Total population	463,585	486,929	511,227	550,918	583,538	653,888	41.1%
Hispanic Origin	30,928	40,893	46,382	57,550	70,512	104,898	239.2%
Non-Hispanic White	362,528	368,344	380,704	397,401	406,475	422,169	16.5%
Non-Hispanic Black	52,821	55,962	60,253	68,145	75,164	88,885	68.3%
Other	17,308	21,730	23,889	27,823	31,387	37,937	119.2%

Source: Bureau of Census, U.S. Department of Commerce (historic data), and UNL Bureau of Business Research (outlook)

Table 3.3 shows population growth by geography within Douglas County. Much of the population growth will occur within the City of Omaha. Population will grow in the City both through greater density of development within Omaha and through annexation. On a percentage basis, the fastest rate of growth is expected to occur in the Omaha Planning Jurisdiction, which extends three miles beyond the border of the City.

**Table 3.3
Population Projections for the City of Omaha and the Omaha Jurisdiction**

	2000	2005	2010	2020	2030	2050	Percent Change 2000-2050
Total Population	463,585	486,929	511,227	550,918	583,538	653,888	41.1%
City of Omaha	390,007	408,866	428,451	459,938	485,279	539,568	38.3%
Omaha Jurisdiction	51,735	55,011	58,459	64,521	69,960	81,990	58.5%
Remainder of County	21,843	23,052	24,318	26,459	28,298	32,331	48.0%

Source: Bureau of Census, U.S. Department of Commerce (historic data) and UNL Bureau of Business Research (outlook)

Table 3.4 shows the housing unit projections based on the population growth outlook for the City of Omaha, the Omaha Jurisdiction, and the remainder of the county. Note that the rate of housing unit growth exceeded the population growth rate in Table 3.3. With an aging population, the Omaha area will experience a declining household size, and therefore, more rapid growth in the number of households and housing units.

**Table 3.4
Housing Unit Projections for the City of Omaha and the Omaha Jurisdiction**

Housing Units	2000	2005	2010	2020	2030	2050	Average Growth 2000-2050
Douglas	192,672	203,985	215,420	235,056	251,058	278,587	44.6%
By Location							
City of Omaha	165,809	175,166	184,584	200,518	213,201	234,398	41.4%
Omaha Jurisdiction	20,368	21,910	23,505	26,461	29,146	34,334	68.6%
Remainder of County	6,495	6,909	7,331	8,077	8,711	9,855	51.7%
By Type							
Single-Family Units	132,605	141,033	149,567	163,730	175,121	194,687	46.8%
Multi-Family Units	57,022	59,820	62,611	67,908	72,415	80,298	40.8%
Other Units	3,045	3,131	3,241	3,416	3,521	3,601	18.3%

Source: Bureau of Census, U.S. Department of Commerce (historic data), and UNL Bureau of Business Research (outlook).

Table 3.4 also shows the need for new housing units by type. Most new housing units will be single-family units, but multi-family units will grow almost as quickly as single-family units.

Tables 3.5 and 3.6 show detailed information about the population outlook for Sarpy County. Due to its rapid overall growth rate, Sarpy County has strong growth in all age groups. Strong net migration rates imply relatively rapid (compared to Douglas County) growth among 35 to 44 year-olds in Sarpy County. However, the basic pattern of an aging population continues to hold, with very rapid growth among the elderly population.

**Table 3.5
Population by Age, Sarpy County, 2000 to 2050**

County / Age	2000	2005	2010	2020	2030	2050	Percent Change 2000-2050
0-4	10,112	11,359	12,854	14,955	17,052	21,145	109.1%
5-9	10,615	10,355	11,950	14,481	16,547	20,532	93.4%
10-14	10,652	10,796	11,331	13,774	15,939	19,852	86.4%
15-19	9,227	10,391	11,112	13,121	15,349	19,196	108.0%
20-24	8,278	10,985	11,683	13,376	15,465	19,049	130.1%
25-29	9,388	11,629	12,256	13,777	15,632	18,985	102.2%
30-34	10,163	10,629	12,103	13,884	15,556	18,755	84.5%
35-39	11,615	10,665	11,596	13,646	15,287	18,364	58.1%
40-44	10,251	11,506	11,494	13,158	14,853	17,847	74.1%
45-49	8,370	10,435	11,236	12,531	14,205	17,173	105.2%
50-54	7,086	8,344	10,114	11,814	13,393	16,350	130.7%
55-59	4,836	7,128	8,547	10,844	12,421	15,343	217.3%
60-64	3,879	4,555	6,626	9,479	11,249	14,123	264.1%
65-69	3,016	3,604	4,824	7,757	9,799	12,639	319.1%
70-74	2,024	2,984	3,556	5,913	8,079	10,903	438.7%
75-79	1,472	1,920	2,511	4,118	6,062	8,747	494.2%
80-84	880	1,203	1,580	2,580	4,009	6,283	614.0%
85+	731	883	1,320	2,331	3,814	7,106	872.1%
Total	122,595	139,371	156,696	191,540	224,709	282,393	130.3%

Source: Bureau of Census, U.S. Department of Commerce (historic data), and UNL Bureau of Business Research (outlook)

Table 3.6 indicates that most population growth in Sarpy County will occur among non-Hispanic whites, accounting for approximately 75% of the total population growth in the county. The fastest rate of population growth, however, will occur among the Hispanic population.

Table 3.6
Population by Race and Ethnic Origin, Sarpy County, 2000 to 2050

	2000	2005	2010	2020	2030	2050	Percent Change 2000-2050
Total population	122,595	139,371	156,696	191,540	224,709	282,393	130.3%
Hispanic Origin	5,358	7,105	8,666	12,236	16,556	27,833	419.5%
non-Hispanic White	106,823	120,646	134,663	162,184	187,220	226,832	112.3%
non-Hispanic Black	5,231	5,226	5,990	7,573	9,103	11,840	126.3%
Other	5,183	6,394	7,377	9,546	11,829	15,888	206.5%

Source: Bureau of Census, U.S. Department of Commerce (historic data), and UNL Bureau of Business Research (outlook)

The rapid growth expected for Sarpy County demonstrates a larger pattern. Sarpy County, and selected other counties, will experience rapid expansion as the growing Omaha area expands outward from Douglas County. This pattern is evident in Table 3.7 which shows that population is expected to double in three additional adjacent counties: Cass, Saunders, and Washington. Growth also will be solid in other counties in the region. Growth in most of the other 8 counties will exceed 30% for the 2000-2050 period. Note also that while growth is expected to decelerate in Douglas and Sarpy counties beginning in 2020, growth will accelerate in most other counties after 2020. The outward expansion of Omaha will continue into new areas as the decades pass. As a result, the combined growth rate for the entire 2000 to 2050 period is actually similar (around 60%) for both the core counties of Douglas and Sarpy and the 10 other counties. Note that detailed estimates for five-year intervals are presented in Appendix A.1.

Table 3.7
Percent Change in Total Population, All Counties, 2000 to 2050

Counties	Average Annual Percent Change by Decade					Percent Change 2000-2050
	2000-2010	2010-2020	2020-2030	2030-2040	2040-2050	
United States	0.9%	0.8%	0.8%	0.8%	0.8%	50.7%
Core Counties						
Douglas	1.0%	0.8%	0.6%	0.5%	0.6%	41.1%
Sarpy	2.5%	2.0%	1.6%	1.3%	1.0%	130.3%
Suburban Counties						
Nebraska Counties						
Burt	-0.7%	0.1%	0.7%	1.2%	1.6%	33.4%
Cass	1.3%	1.6%	1.6%	1.6%	1.6%	116.6%
Dodge	0.0%	0.3%	0.6%	0.9%	1.2%	34.3%
Otoe	0.2%	0.4%	0.6%	0.8%	1.0%	34.6%
Saunders	0.7%	1.4%	1.8%	2.0%	2.1%	120.2%
Washington	1.2%	1.7%	1.8%	1.8%	1.8%	130.0%
Iowa Counties						
Fremont	-0.6%	0.0%	0.6%	1.1%	1.4%	28.8%
Harrison	0.4%	0.7%	0.8%	0.9%	1.0%	46.4%
Mills	1.1%	1.1%	0.9%	0.9%	1.0%	64.9%
Pottawattamie	0.5%	0.6%	0.6%	0.6%	0.7%	35.8%
Core Counties Total	1.3%	1.1%	0.9%	0.7%	0.7%	59.7%
Suburban Counties Total	0.5%	0.8%	1.0%	1.1%	1.2%	59.4%
Grand Total All Counties	1.1%	1.0%	0.9%	0.8%	0.9%	59.6%

Source: Bureau of Census, U.S. Department of Commerce (historic data), and UNL Bureau of Business Research (outlook)

Overall, note that the rate of population growth in the 12-county region will exceed national population growth by about 9% cumulatively from 2000 to 2050. These are not large differences. Growth in the area will largely be in step with national growth. But, it is interesting to note that Omaha is expected to be something of a growth pole within the national economy over the outlook period.

Key Assumptions

These population outlooks were developed using cohort-component models for each of the 12 counties in the Omaha region. Birth rates and death rates were key inputs into these cohort models. Birth rate data were based on Nebraska averages for the years

2002-2004. Separate birth rates were calculated by 5-year cohort for women age 15-44. Due to substantial differences in birth rates among racial and ethnic groups, separate birth rates were calculated for each of the nine race/ethnicity categories. The model was tested to verify that it accurately estimated individual county births for the 2001 through 2005 period. Death rate data were taken based on Nebraska averages for the years 2002-2004. Separate death rates were calculated for 5-year cohorts for both men and women. Again, the model was tested to verify that it accurately estimated individual county deaths for the 2001 through 2005 period.

Net migration into the 12-county region in the year 2006 was set at its average value from the years 2001 through 2005. Statistical modeling based on the relationship between net migration and job growth in key industries like manufacturing and insurance were used to develop a forecast that net migration into the 12-county region would grow by approximately 1.5% per year through 2050.

Net migration in individual counties was also influenced by county-to-county migration flows. We developed a database on county-to-county migration rates for the years 1993 through 2003 based on Internal Revenue Service data. The database showed the share of residents in any of the 12 counties that would migrate to another county in a given year. Thus the model captured the greater tendency for residents of Douglas County to move to Sarpy and outlying counties rather than *vice-versa*. This was used to simulate the spreading out of population in the Omaha area. We typically utilized the average county-to-county migration rate for the 1993 to 2003 period, but also modeled the continuation of the recent acceleration in migration from Douglas to Sarpy, Cass, and Washington counties.

Housing unit projections for Douglas County were made based on population growth. We took household headship rates per person for each age and gender cohort for Douglas County from the 2000 Census, and assumed those rates would hold in future years. These rates were applied to population projections to yield the number of households during the outlook period. This methodology did lead to a modest decline in persons per household. We assumed that the housing unit vacancy rate from the 2000 Census for Douglas County also would hold in the future, and this vacancy rates was used to convert estimates of the number of households into estimates of the number of

housing units. Housing units in Omaha were divided between single-family and multi-family based on the current ratio, but we assumed that the share of multi-family units would increase in the Omaha Jurisdiction over time as these areas became more densely developed.

B. Employment and Space Needs

Employment in the Omaha area historically has been concentrated in Douglas County. This concentration has persisted even as population in the region has spread towards suburban areas. Our baseline forecast indicates a continued concentration of employment in Douglas County. Douglas County will maintain its share of national employment throughout the forecast period. With rapid growth in population, Sarpy County will double its share of national employment by 2050. Employment growth in most of the remaining 10 counties will lag national trends, though all counties will grow, and a few will experience rapid growth.

Table 3.8 shows employment growth estimates for Douglas County through 2050. The employment estimates include wage and salary employment, as well as proprietor employment. Some individual may hold multiple jobs, perhaps more than one wage and salary job, or one wage and salary job plus a part-time business.

Douglas County lost employment from 2000 to 2005 due to the national recession in 2001, and the subsequent slow recovery of employment. However, Douglas County employment is forecast to grow through 2050. From 2000 through 2050, total employment in Douglas County will grow by 265,000 jobs. Most job growth will occur in services industries such as health care or business and professional services. The services industry will account for 200,000 of these jobs. Construction, transportation, and government are other growing industries.

Table 3.8
Projected Employment Growth, Douglas County, 2000 to 2050

Employment Category							Average
	2000	2005	2010	2020	2030	2050	Growth 2000-2050
Non-Farm Employment	400,198	387,493	417,590	487,555	549,017	665,869	66.4%
Construction	22,952	22,767	24,422	30,817	36,744	47,158	105.5%
Manufacturing	28,019	23,671	23,775	23,558	22,984	21,073	-24.8%
Trade	67,145	60,076	61,922	65,905	67,368	69,572	3.6%
Transportation	14,656	16,516	18,291	21,338	22,876	24,339	66.1%
Information	14,712	12,062	12,782	15,018	16,678	18,933	28.7%
Financial Industries	43,442	41,804	43,518	47,768	52,639	63,534	46.3%
Services	169,887	170,408	190,595	236,731	281,041	368,787	117.1%
Government	39,385	40,190	42,285	46,420	48,686	52,472	33.2%

Source: Bureau of Economic Analysis, U.S. Department of Commerce (historic data) and UNL Bureau of Business Research (outlook)

Strong employment growth will lead to significant increases in commercial and industrial space in Douglas County. Growth in square footage is listed in Table 3.9 by types of space, and in total. Growth in warehousing activity is tied to growth in the wholesale employment, while growth in service, government, and financial employment determines the growth in office space. Growth in commercial space such as retail or restaurants is tied to population growth.

The rate of growth in commercial and industrial square footage will be significantly below the growth rate in employment. Square footage needs will grow by 25.7% over the 2000 to 2050 period compared to 66.4% employment growth.⁹ The main reason is that shrinking industries such as manufacturing account for a substantial share of square footage, nearly one-quarter in 2000. The decline in manufacturing square footage as industry employment falls in future years will tend to drag down growth in total space needs. Other types of business space will grow more quickly. Growth in commercial office space will reach nearly 60%, while office square-footage will grow by more than 40%.

⁹ Square-footage was estimated based on employment levels by relevant industry and the 1987 Omaha planning department survey. Omaha commercial square-footage was tied to population growth throughout the 12-county region since Omaha is a regional hub for retail and restaurant activity. We assume that office space will be used more efficiently in the future so office square-footage rises with industry employment at half the historic rate.

Table 3.9
Growth in Commercial and Industrial Space, Douglas County, 2000 to 2005

Square Footage (000s)							Average
	2000	2005	2010	2020	2030	2050	Growth 2000-2050
Total	126,274	117,607	123,386	135,273	143,958	158,715	25.7%
Manufacturing	28,108	23,746	23,851	23,634	23,058	21,141	-24.8%
Warehousing	35,816	30,027	32,231	37,366	40,245	44,256	23.6%
Office	33,947	33,716	35,363	38,903	42,074	47,967	41.3%
Commercial	28,403	30,117	31,941	35,370	38,581	45,351	59.7%

Source: UNL Bureau of Business Research

Table 3.10 shows employment growth estimates for Sarpy County. The county is forecast to add 105,000 jobs from 2000 to 2050. All sectors are expected to add employment, though the services industry employment will account for half of this growth. Transportation and utilities and construction also will add over 10,000 jobs.

Table 3.10
Projected Employment Growth, Sarpy County, 2000 to 2050

Employment Category							Average
	2000	2005	2010	2020	2030	2050	Growth 2000-2050
Non-Farm Employment	55,029	74,495	83,392	104,223	123,865	159,860	190.5%
Construction	4,248	5,736	6,607	9,518	12,651	18,439	334.1%
Manufacturing	2,327	2,697	2,701	2,663	2,592	2,370	1.8%
Trade	7,861	9,429	10,368	12,425	13,923	15,744	100.3%
Transportation	8,273	12,467	14,061	16,948	18,640	20,561	148.5%
Information	950	1,282	1,447	1,898	2,280	2,722	186.6%
Financial Industries	3,293	5,560	6,246	7,815	9,494	12,801	288.8%
Services	15,029	21,936	25,960	35,584	45,894	67,486	349.0%
Government	13,048	15,387	16,002	17,372	18,391	19,736	51.3%

Source: Bureau of Economic Analysis, U.S. Department of Commerce (historic data) and UNL Bureau of Business Research (outlook)

Table 3.11 looks at employment growth across all 12 counties. As with population, the rate of job growth across the entire 12-county Omaha area will exceed the national growth rate. The rate of job growth in Douglas and Sarpy Counties combined is twice the rate of the 10 suburban counties, in contrast to population growth, where the rates of growth were quite similar. This result is consistent with the expectation that employment in the Omaha area will continue to concentrate in Douglas County. Rapid job growth also is anticipated for Washington, Saunders, and Cass counties, the same

counties expected to have strong population growth. The 10 suburban counties already were providing a substantial number of commuters to fill jobs in Douglas County. Job growth rates imply that an even larger number of workers will be available from these 10 counties to fill jobs being created in Douglas County. This is in addition to the new in-commuters expected for Sarpy County. We estimate that the number of commuters into Douglas and Sarpy County from outside of the two counties will grow by 85,000 between 2000 and 2050. These new commuters would primarily come from the 10 suburban counties but also would come from further away, such as Lincoln/Lancaster County.¹⁰

Table 3.11
Percent Change in Total Employment, All Counties, 2000 to 2050

Counties	Annual Average Percent Change					Percent Change
	2000-2010	2010-2020	2020-2030	2030-2040	2040-2050	2000-2050
United States	0.8%	1.3%	1.1%	0.8%	0.9%	61.0%
Core Counties						
Douglas	0.4%	1.6%	1.2%	0.9%	1.0%	66.4%
Sarpy	4.2%	2.3%	1.7%	1.3%	1.2%	190.5%
Suburban Counties						
Nebraska Counties						
Burt	-0.6%	0.3%	0.6%	0.8%	1.1%	23.7%
Cass	1.3%	1.6%	1.4%	1.0%	0.9%	85.2%
Dodge	0.1%	0.5%	0.5%	0.4%	0.7%	23.7%
Otoe	0.7%	0.6%	0.5%	0.2%	0.5%	27.6%
Saunders	0.6%	1.3%	1.4%	1.3%	1.3%	81.2%
Washington	1.1%	1.6%	1.5%	1.2%	1.3%	96.2%
Iowa Counties						
Fremont	-1.1%	0.0%	0.2%	0.3%	0.6%	0.6%
Harrison	-0.4%	0.7%	0.6%	0.3%	0.4%	17.6%
Mills	-1.3%	1.1%	0.7%	0.3%	0.4%	12.9%
Pottawattamie	0.8%	0.8%	0.5%	0.2%	0.4%	30.8%
Core Counties Total	1.0%	1.7%	1.3%	1.0%	1.1%	81.4%
Suburban Counties Total	0.5%	0.9%	0.7%	0.5%	0.7%	38.2%
Grand Total All Counties	0.9%	1.5%	1.2%	0.9%	1.0%	72.5%

Source: Bureau of Economic Analysis, U.S. Department of Commerce (historic data) and UNL Bureau of Business Research (outlook)

¹⁰ To estimate, we took the average ratio of jobs per working age population (14-70) in our 12-county region in 2000 and 2050 to get an Omaha area participation rate. We applied that overall rate to the combined Douglas and Sarpy County to determine the number of jobs filled locally versus in-commuters in 2000 and 2050.

Key Assumptions

Estimates for manufacturing employment growth are based on national manufacturing trends, after adjusting for Omaha's larger share of manufacturing activity in stable or growing portions of the industry, such as food processing. Employment growth in other sectors is based on population trends, as well as the long-run relationships between population growth and industry employment summarized in Table 2.6. We took 2005 location quotients for the Omaha area from 2005 and grew these to 2050 based on the "b" coefficients in Table 2.6 in order to determine overall employment by non-manufacturing industries for the 12-county region.

Estimates of square footage assume that square footage of office space will grow at 50% of the rate of combined employment growth in the services, transportation, finance and real estate, and state and local government. Commercial office space in Douglas County is expected to grow at the same rate as population in the 12-county region. This is because Douglas County continues to be a hub for commercial activity within the Omaha area.

C. Summary

Our overall finding is that growth in Omaha area employment and population will slightly exceed national averages over the next four decades. The cumulative effect is more than a 50% increase in population, employment, housing in the Omaha area by 2050. Commercial and industrial space will grow by approximately 25%. In our base model, employment will remain relatively concentrated in Douglas County, but a significant share of population growth will spread to Sarpy and other suburban counties. In our alternative scenario, which is the subject of the next Chapter, both employment and population growth are more concentrated in Douglas County. Note that a detailed analysis of job growth from an occupational perspective is provided in Appendix A.2.

4. Alternative Scenarios for the Regional Outlook

Our baseline outlook for the Omaha economy is based on the expectation that the recent acceleration of the “suburbanization” of population from Douglas into neighboring counties would continue modestly over the next four decades. Population growth would be strong in Douglas County, but new population growth in the Omaha area would not concentrate in Douglas County in the way employment is expected to concentrate. For example, under the baseline scenario, we assume that the percentage of Douglas County population that moves to Sarpy County in any given year would continue to grow, as it did during the 1993 to 2003 period.

The logical alternative scenario is to assume that the recent acceleration of movement from Douglas County to Sarpy County, and other rapidly growing suburban counties was temporary. In this scenario, the share of households moving out of Douglas County would stabilize at current levels. The gross number of households moving out of Douglas County in any given year would continue to grow but at a more moderate pace. This alternative scenario leads to a greater concentration of both population and employment growth in the Omaha area within Douglas County. The overall growth of the entire 12-county region differs little from the baseline scenario but the growth in population and employment is more concentrated in Douglas County.

Table 4.1 shows the outlook for population by age group in Douglas County under this concentrated growth scenario. Table 4.1 is analogous to Table 3.1 from the previous Chapter. Total population in Douglas County grows by 56.6% from 2000 to 2050 relative to 41.1% under the baseline scenario. Growth is more rapid in all age cohorts. The total population of Douglas County would grow from 463,000 in 2000 to 726,000 in 2050, and increase of 260,000.

Table 4.1
Population by Age, Douglas County, 2000 to 2050
Under Alternative, Concentrated Growth Scenario

County / Age	2000	2005	2010	2020	2030	2050	Percent Change 2000-2050
0-4	34,293	38,563	40,836	42,371	45,697	56,175	63.8%
5-9	34,241	33,152	37,791	41,658	44,415	54,077	57.9%
10-14	34,050	33,379	34,956	40,194	43,260	51,958	52.6%
15-19	34,145	33,883	33,894	38,167	42,036	50,017	46.5%
20-24	34,163	36,735	34,921	36,844	41,229	49,215	44.1%
25-29	36,246	37,559	36,492	36,362	40,223	48,546	33.9%
30-34	34,313	35,251	36,603	36,457	39,040	47,457	38.3%
35-39	37,133	34,336	35,545	36,560	38,044	45,975	23.8%
40-44	36,868	36,695	35,394	36,294	37,324	44,217	19.9%
45-49	33,469	36,266	35,727	35,716	36,615	42,203	26.1%
50-54	28,160	32,873	34,628	34,979	35,725	40,058	42.3%
55-59	20,072	27,374	31,176	33,649	34,446	37,762	88.1%
60-64	15,637	18,911	25,200	30,987	32,540	35,226	125.3%
65-69	13,771	13,743	18,557	26,582	29,617	32,209	133.9%
70-74	12,857	12,243	13,729	20,995	25,493	28,566	122.2%
75-79	10,696	10,816	10,639	15,053	19,911	23,645	121.1%
80-84	7,130	7,769	7,848	9,764	13,625	17,535	145.9%
85+	6,341	7,381	8,558	10,181	13,911	21,080	232.4%
Total	463,585	486,929	512,495	562,813	613,149	725,921	56.6%

Source: Bureau of Census, U.S. Department of Commerce (historic data), and UNL Bureau of Business Research (outlook)

Table 4.2 shows the outlook for population in all counties under this concentrated growth scenario. Table 4.2 is analogous to Table 3.7 from the previous Chapter. While population growth increases in Douglas County relative to the baseline scenario, growth is lower in Sarpy, Cass, Washington and Saunders counties, though it remains robust. The decline is greatest in Saunders County as our baseline estimate was most optimistic about acceleration in the rate of migration from Douglas to Saunders County. Population growth rates change for other counties as well, based on the relative strength of their migration links to Douglas County versus Sarpy, Cass, Washington, or Saunders County.

Summary information in Table 4.2 is particularly interesting. It shows that under the alternative scenario the combined rate of population growth in Douglas and Sarpy is significantly faster than the combined rate in the 10 suburban counties. This is in contrast to the baseline scenario where the rates of growth were roughly equal. This is the concentrated growth of the alternative scenario.

Percent Table 4.2
Percent Change in Total Population, All Counties, 2000 to 2050
Under Alternative, Concentrated Growth Scenario

Counties	Average Annual Percent Change by Decade					Percent Change 2000-2050
	2000-2010	2010-2020	2020-2030	2030-2040	2040-2050	
United States	0.9%	0.8%	0.8%	0.8%	0.8%	50.7%
Core Counties						
Douglas	1.0%	0.9%	0.9%	0.8%	0.9%	56.6%
Sarpy	2.4%	1.6%	1.2%	0.9%	0.9%	101.2%
Suburban Counties						
Nebraska Counties						
Burt	-0.7%	0.1%	0.6%	1.0%	1.3%	26.3%
Cass	1.3%	1.5%	1.3%	1.3%	1.2%	92.0%
Dodge	0.0%	0.3%	0.5%	0.7%	1.0%	29.0%
Otoe	0.2%	0.4%	0.6%	0.7%	0.8%	30.9%
Saunders	0.6%	0.7%	0.8%	0.8%	0.9%	45.3%
Washington	1.2%	1.1%	0.9%	0.8%	0.9%	63.7%
Iowa Counties						
Fremont	-0.6%	0.0%	0.6%	1.0%	1.3%	25.9%
Harrison	0.4%	0.7%	0.8%	0.9%	1.0%	46.4%
Mills	1.1%	1.1%	0.9%	0.9%	1.0%	63.9%
Pottawattamie	0.5%	0.6%	0.6%	0.7%	0.8%	37.8%
Core Counties Total	1.3%	1.1%	0.9%	0.9%	0.9%	65.9%
Suburban Counties Total	0.5%	0.7%	0.8%	0.8%	0.9%	45.3%
Grand Total All Counties	1.1%	1.0%	0.9%	0.9%	0.9%	59.8%

Source: Bureau of Census, U.S. Department of Commerce (historic data), and UNL Bureau of Business Research (outlook)

Table 4.3 shows the outlook for employment growth within Douglas County. With population more concentrated in Douglas County, employment also grows more in the county. This is because some portion of job growth in service industries is tied to local population. Douglas County is the center of activity for services industries in the region, but service businesses in the county also rely on local customers. Therefore, as local population increases so does employment in industries such as finance and insurance, services, transportation, construction, and state and local government. The outlook for industries such as manufacturing, which are not tied to local consumers, does

not change. Overall job growth in Table 4.3 is 72.4% compared to 66.4% in the baseline scenario. Employment growth is more concentrated in Douglas County.

Table 4.3
Projected Employment Growth for Douglas County, 2000 to 2050
Under Alternative, Concentrated Growth Scenario

Employment Category							Average
	2000	2005	2010	2020	2030	2050	Growth 2000-2050
Non-Farm Employment	400,198	387,493	416,441	488,764	557,201	689,905	72.4%
Construction	22,952	22,767	24,406	31,222	38,091	51,126	122.7%
Manufacturing	28,019	23,671	23,775	23,558	22,984	21,073	-24.8%
Trade	67,145	60,076	61,634	65,909	68,331	72,538	8.0%
Transportation	14,656	16,516	18,303	21,689	23,846	26,665	81.9%
Information	14,712	12,062	12,767	15,097	16,903	19,149	30.2%
Financial Industries	43,442	41,804	43,503	47,846	52,888	64,057	47.5%
Services	169,887	170,408	189,916	236,840	284,418	379,754	123.5%
Government	39,385	40,190	42,135	46,604	49,740	55,542	41.0%

Source: Bureau of Economic Analysis, U.S. Department of Commerce (historic data) and UNL Bureau of Business Research (outlook)

Table 4.4 shows the outlook for employment in all counties under this concentrated growth scenario. Table 4.4 is analogous to Table 3.11 from the previous Chapter. The overall employment growth rate is the same in the concentrated growth and baseline scenarios, but growth is concentrated more in Douglas County. In the concentrated growth scenario, combined employment growth in Douglas and Sarpy County is more than twice as fast as the combined growth rate in the 10 suburban counties.

Table 4.4
Percent Change in Total Employment, All Counties, 2000 to 2050
Under Alternative, Concentrated Growth Scenario

Area	Annual Average Percent Change					Percent Change 2000- 2050
	2000- 2010	2010- 2020	2020- 2030	2030- 2040	2040- 2050	
United States	0.8%	1.3%	1.1%	0.8%	0.9%	61.0%
Core Counties						
Douglas	0.4%	1.6%	1.3%	1.0%	1.1%	72.4%
Sarpy	4.2%	2.0%	1.4%	1.0%	1.0%	158.1%
Suburban Counties						
Nebraska Counties						
Burt	-0.6%	0.3%	0.6%	0.7%	1.0%	22.2%
Cass	1.3%	1.6%	1.2%	0.8%	0.7%	72.9%
Dodge	0.1%	0.6%	0.5%	0.3%	0.6%	22.4%
Otoe	0.7%	0.7%	0.5%	0.2%	0.4%	27.8%
Saunders	0.5%	0.8%	0.5%	0.3%	0.3%	29.0%
Washington	1.1%	1.3%	0.8%	0.5%	0.5%	51.9%
Iowa Counties						
Fremont	-1.1%	0.1%	0.2%	0.3%	0.6%	1.1%
Harrison	-0.4%	0.8%	0.6%	0.4%	0.5%	21.5%
Mills	-1.2%	1.2%	0.8%	0.4%	0.5%	18.7%
Pottawattamie	0.8%	0.9%	0.6%	0.3%	0.5%	34.6%
Core Counties Total	0.9%	1.7%	1.3%	1.0%	1.1%	82.8%
Suburban Counties Total	0.5%	0.9%	0.6%	0.4%	0.5%	32.6%
Grand Total All Counties	0.8%	1.5%	1.2%	0.9%	1.0%	72.4%

Source: Bureau of Economic Analysis, U.S. Department of Commerce (historic data) and UNL Bureau of Business Research (outlook)

Appendix A1
Outlook for Population and Employment in Five-Year Intervals

Table A1.1
Total Population, All Counties, 2000 to 2050

Counties	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
Core Counties											
Douglas	463,585	486,929	511,227	532,354	550,918	567,702	583,538	599,274	615,742	633,724	653,888
Sarpy	122,595	139,371	156,696	174,201	191,540	208,441	224,709	240,236	254,997	269,023	282,393
Suburban Counties											
Nebraska Counties											
Burt	7,791	7,455	7,240	7,207	7,320	7,550	7,885	8,331	8,897	9,586	10,396
Cass	24,334	25,734	27,733	30,037	32,600	35,385	38,381	41,601	45,060	48,764	52,712
Dodge	36,160	36,078	36,176	36,625	37,367	38,377	39,673	41,296	43,294	45,708	48,565
Otoe	15,396	15,509	15,704	16,005	16,399	16,868	17,414	18,054	18,808	19,694	20,722
Saunders	19,830	20,458	21,220	22,525	24,306	26,500	29,084	32,072	35,487	39,348	43,661
Washington	18,780	19,772	21,235	23,053	25,140	27,460	30,024	32,860	35,994	39,439	43,203
Iowa Counties											
Fremont	8,010	7,759	7,541	7,474	7,546	7,734	8,028	8,429	8,943	9,573	10,317
Harrison	15,666	15,884	16,242	16,752	17,385	18,099	18,879	19,735	20,686	21,750	22,941
Mills	14,547	15,284	16,213	17,164	18,100	18,999	19,879	20,783	21,752	22,816	23,990
Pottawattamie	87,704	89,738	92,378	95,111	97,943	100,850	103,872	107,104	110,663	114,651	119,143
Core Counties Total	586,180	626,300	667,923	706,555	742,458	776,143	808,247	839,510	870,739	902,747	936,282
Suburban Counties Total	248,218	253,671	261,682	271,954	284,105	297,820	313,118	330,265	349,583	371,328	395,652
Grand Total All Counties	834,398	879,971	929,606	978,509	1,026,563	1,073,962	1,121,365	1,169,775	1,220,322	1,274,075	1,331,933

Source: Bureau of Census, U.S. Department of Commerce (historic data), and UNL Bureau of Business Research (outlook)

Table A1.2
Total Employment, All Counties, 2000 to 2050

Counties	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
Core Counties											
Douglas	400,198	387,493	417,590	451,414	487,555	520,347	549,017	574,989	600,782	630,834	665,869
Sarpy	55,029	74,495	83,392	93,581	104,223	114,400	123,865	132,719	141,223	150,219	159,860
Suburban Counties											
Nebraska Counties											
Burt	3,074	2,984	2,889	2,902	2,972	3,058	3,158	3,271	3,409	3,587	3,801
Cass	8,323	8,884	9,461	10,233	11,127	11,967	12,728	13,395	14,041	14,717	15,410
Dodge	21,371	21,390	21,532	22,033	22,733	23,332	23,809	24,198	24,741	25,487	26,426
Otoe	8,042	8,452	8,582	8,833	9,147	9,398	9,569	9,667	9,809	10,009	10,261
Saunders	6,493	6,708	6,874	7,288	7,852	8,448	9,056	9,657	10,297	11,005	11,764
Washington	9,448	10,011	10,585	11,455	12,466	13,471	14,443	15,384	16,350	17,405	18,541
Iowa Counties											
Fremont	4,762	4,358	4,255	4,231	4,270	4,316	4,364	4,411	4,499	4,627	4,790
Harrison	5,991	5,667	5,752	5,945	6,194	6,400	6,549	6,645	6,753	6,887	7,044
Mills	5,596	4,700	4,933	5,214	5,512	5,740	5,898	6,002	6,090	6,196	6,317
Pottawattamie	45,321	47,629	49,075	51,014	53,256	54,924	55,977	56,557	57,228	58,138	59,283
Core Counties Total	455,227	461,989	500,982	544,995	591,777	634,747	672,882	707,708	742,006	781,053	825,729
Suburban Counties Total	118,421	120,782	123,938	129,148	135,528	141,054	145,551	149,186	153,218	158,058	163,638
Grand Total All Counties	573,648	582,770	624,921	674,143	727,306	775,801	818,433	856,894	895,223	939,111	989,367

Source: Bureau of Economic Analysis, U.S. Department of Commerce (historic data) and UNL Bureau of Business Research (outlook)

Table A1.3
Total Population, All Counties, 2000 to 2050
Under Alternative, Concentrated Growth Scenario

Counties	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
Core Counties											
Douglas	463,585	486,929	512,495	537,767	562,813	587,841	613,149	639,131	666,258	695,029	725,921
Sarpy	122,595	139,371	155,779	170,404	183,473	195,287	206,166	216,433	226,412	236,413	246,721
Suburban Counties											
Nebraska Counties											
Burt	7,791	7,455	7,240	7,202	7,300	7,500	7,785	8,159	8,626	9,187	9,839
Cass	24,334	25,734	27,681	29,786	31,987	34,242	36,545	38,919	41,394	43,992	46,726
Dodge	36,160	36,078	36,175	36,609	37,305	38,221	39,356	40,736	42,393	44,353	46,633
Otoe	15,396	15,509	15,704	16,000	16,379	16,818	17,315	17,881	18,534	19,290	20,156
Saunders	19,830	20,458	21,071	21,840	22,692	23,567	24,459	25,396	26,418	27,550	28,808
Washington	18,780	19,772	21,088	22,396	23,628	24,774	25,875	26,986	28,152	29,399	30,740
Iowa Counties											
Fremont	8,010	7,759	7,541	7,472	7,538	7,714	7,987	8,359	8,832	9,409	10,086
Harrison	15,666	15,884	16,242	16,753	17,386	18,102	18,885	19,742	20,693	21,755	22,939
Mills	14,547	15,284	16,213	17,162	18,091	18,978	19,842	20,723	21,665	22,699	23,840
Pottawattamie	87,704	89,738	92,380	95,132	98,017	101,029	104,215	107,679	111,539	115,900	120,835
Core Counties Total	586,180	626,300	668,274	708,171	746,286	783,128	819,314	855,564	892,670	931,442	972,641
Suburban Counties Total	248,218	253,671	261,333	270,352	280,324	290,944	302,264	314,580	328,245	343,533	360,602
Grand Total All Counties	834,398	879,971	929,607	978,523	1,026,610	1,074,072	1,121,578	1,170,143	1,220,915	1,274,976	1,333,243

Source: Bureau of Census, U.S. Department of Commerce (historic data), and UNL Bureau of Business Research (outlook)

Table A1.4
Total Employment, All Counties, 2000 to 2050
Under Alternative, Concentrated Growth Scenario

Counties	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050
Core Counties											
Douglas	400,198	387,493	416,441	450,732	488,764	524,620	557,201	587,366	617,378	651,386	689,905
Sarpy	55,029	74,495	83,391	92,656	101,532	109,427	116,243	122,366	128,187	134,714	142,040
Suburban Counties											
Nebraska Counties											
Burt	3,074	2,984	2,899	2,920	2,997	3,085	3,181	3,285	3,408	3,567	3,757
Cass	8,323	8,884	9,481	10,233	11,061	11,793	12,411	12,914	13,382	13,875	14,389
Dodge	21,371	21,390	21,578	22,120	22,852	23,462	23,925	24,270	24,733	25,364	26,152
Otoe	8,042	8,452	8,600	8,870	9,199	9,461	9,636	9,732	9,864	10,048	10,279
Saunders	6,493	6,708	6,856	7,141	7,461	7,707	7,881	7,990	8,091	8,221	8,378
Washington	9,448	10,011	10,571	11,277	11,977	12,545	12,979	13,311	13,616	13,963	14,353
Iowa Counties											
Fremont	4,762	4,358	4,263	4,246	4,292	4,343	4,393	4,441	4,528	4,654	4,813
Harrison	5,991	5,667	5,770	5,981	6,252	6,482	6,658	6,781	6,920	7,087	7,281
Mills	5,596	4,700	4,954	5,262	5,588	5,849	6,041	6,183	6,312	6,466	6,645
Pottawattamie	45,321	47,629	49,120	51,124	53,461	55,264	56,496	57,301	58,240	59,472	60,996
Core Counties Total	455,227	461,989	499,832	543,388	590,297	634,046	673,445	709,732	745,565	786,101	831,945
Suburban Counties Total	118,421	120,782	124,090	129,173	135,138	139,991	143,601	146,209	149,095	152,717	157,044
Grand Total All Counties	573,648	582,770	623,922	672,561	725,435	774,037	817,045	855,941	894,661	938,817	988,990

Source: Bureau of Economic Analysis, U.S. Department of Commerce (historic data) and UNL Bureau of Business Research (outlook)

Appendix A2

Omaha Employment Growth Potential: An Occupational Perspective¹¹

The future growth trajectory of an urban economy is difficult to identify given the open nature of a metropolitan area to both trade in goods and services and migration of factors of production such as labor and capital. To minimize these difficulties the analyst not only must rely on detailed statistics capturing events of the recent past, but also view these data from various perspectives. To assist in this endeavor economists have developed models grounded in economic theory. At the local level, in terms of frequency and timeliness of data availability, employment data is most frequently used to gauge economic activity. The theory applied is that concerning the working of the urban job or labor market. This appendix continues in that tradition.

Where this appendix departs from tradition is in the perspective, prism or magnifying glass used to view employment data. The focus of much of the existing literature is on employment by industry. Table A2.1, derived from statistics compiled by the Nebraska Department of Labor, shows non-farm employment by major industry in the Omaha Metropolitan Statistical Area (MSA) in May, 2005.¹² These data cover wage and salary employment, but not self-employment; which in large part explains differences between these employment figures and employment figures reported earlier in the report (which did include the self-employed). Industries are classified according to the North American Industry Classification System (NAICS). Table A2.1 contains major two digit industries found in the Omaha area as well as selected three digit and four digit details. Generally speaking, the more detailed the data the more accurate will be any prognosis. Typically such data, in a time series extended version, are combined with economic models (e.g. extrapolation, econometric, export base, industrial filtering, etc.) to inform prognostication. Such analysis, of course, places an emphasis on what workers do, or the

¹¹ Prepared by Roger Riefler, Department of Economics, University of Nebraska-Lincoln

¹² www.dol.state.ne.us/nwd/workserv/jobcareer/wages/ces/om5e.htm.

nature of the product or service produced. Emphasis is on the output produced, not the process of production.

In contrast, the focus of this paper is employment by occupation. Table A2.2 presents May, 2005 employment by major occupational groups for the Omaha MSA. These data were obtained from the Bureau of Labor Statistics, U.S. Department of Labor's Occupational Employment Survey (OES).¹³ The statistics are at the two digit Standard Occupation Classification (SOC) level. As in the case of the NAIC, the SOC can be broken down to some 528 four digit specific occupations found in the Omaha labor market. The focus of the OES, in contrast to the data in Table A2.1, is on who we are rather than what we produce. Emphasis is on the skill composition of the metropolitan area's labor force. The nature of the region's production processes or technology is brought to the forefront.

Unfortunately the BLS's OES is fairly recent in origin.¹⁴ Economic analysts therefore have had a shorter time period to develop growth models based on this classification. No one, for instance, has come up with a list of basic occupations comparable to the identification of basic industries in the literature. No list of high-tech occupations to complement the available list of high-tech industries has been generated. Given this lacuna this paper adopts a rather simple "migration" model to explain or identify possible growth occupations in the Omaha MSA. People are assumed to enter occupations where real wages are higher than average. Entry can be through actual geographic mobility (e.g. interregional migration) or through (re-)training. The future MSA supply of labor in specific occupations will be determined by wage levels adjusted for the cost of living in the Omaha MSA. The demand for labor will be determined by likely capital flows and these, in turn, will respond to the level of unadjusted money wages.¹⁵

Before presenting and analyzing the basic OES statistics, a further difference between focusing on employment by occupation rather than employment by industry

¹³ www.stats.bls.gov/oes/current/oes_stru.htm.

¹⁴ Data are available, on a consistent basis, since 2000. Since 2003 data have been published at six month intervals. Employment by industry statistics are published monthly and have a much longer history.

¹⁵ In essence, we are assuming that firms are labor oriented.

should be mentioned. Predictive models utilizing industrial employment statistics are usually short-run in nature. This is due not only to the volatility of employment levels in large firms, but also the volatility in the number and type of small, especially new, firms. Such models are impact-oriented, addressing questions such as what the multiplier effects of adding a hundred manufacturing jobs to a city's employment base would be on total employment. Occupational analysis, however, tends to take a longer time perspective. Although unemployed or under-employed workers may migrate rather quickly in response to higher real wages in a given area, entry of new workers in to an occupation, especially a skilled occupation, will take more time. But, from a growth perspective, who we are is more important than what we are (currently) doing. However, occupational forecasting at the current time, like long-term weather predictions, is best done in general terms. Hopefully we can identify occupations with growth potential in the Omaha MSA as well as those where decline may be expected.

Although Table A2.2 identifies the 22 major occupational groups and their May, 2005 employment level in the Omaha MSA (so-called two digit SOC data), as was mentioned, there are over 500 specific occupations (four digit) identified in Omaha in the OES. Each occupation is delineated on the basis of homogeneity of education, training and skill required, but not industry of employment. Thus, for instance, a registered nurse is classified in SOC 29-1111 regardless of whether they are employed in a hospital, doctor's office or home health care. As explained below, this assumption of homogeneity in human capital within an occupation enables one to estimate relative costs of living throughout the United States. But this wealth of information means that the analyst must condense the information so as to highlight certain features at the expense of others. It is to this process of simplification that we first turn.

What occupations are relatively concentrated in the Omaha MSA? To answer this question the distribution of Omaha employment by occupation was compared to that of the United States. Location quotients (LQ's) were calculated at the two- and four-digit levels for the Omaha economy.¹⁶ A LQ greater than one indicates that the occupation is relatively more important in the Omaha economy than in the nation as a whole. Table

¹⁶ Location quotients are calculated by dividing the percent of the Omaha labor force that are, say, economists by the percent of the national labor force that are working as economists.

A2.3 identifies the 9 major occupational groups that registered a LQ equal to or greater than 1. Together occupations in these nine two digit groups accounted for 63.6% of Omaha's total employment. Not surprisingly SOC 43, Office and Administrative Support Occupations, was the largest major occupational group with 18.7% of the total employment. The lowest share was registered by SOC 21 (Community and Social Service Occupations) and SOC 27 (Arts, Design, Entertainment, Sports and Media Occupations) – these two groups each accounted for 1.4% of Omaha's employment.

Tables A2.4 to A2.12 present the four-digit occupations within each major occupational group (identified in Table 3) where the LQ exceeded 1. There are a total of 108 occupations listed in these nine tables. This represents approximately half of the total number of four digit occupations listed under the nine major or two digit occupational groups. SOC 15, Computer and Mathematical Occupations, and SOC 29, Healthcare Practitioner and Technical Occupations, had the highest percent of four digit occupations recording LQ's greater than 1. Community and Social Services Occupations (5 of 13 four digit occupations) and Transportation and Material Moving Occupations (7 of 24) had the lowest percent of LQ's greater than 1.

The LQ, of course, identifies not only those occupations relatively concentrated in Omaha in May, 2005, but it can serve as a proxy measure for historical comparative advantage (or disadvantage). In order for a LQ to be greater than 1 (less than 1) Omaha employment in that occupation must have previously grown faster (slower) than national employment. Unfortunately this does not tell us exactly when this relative growth spurt occurred. However, given the relatively short duration of the OES alluded to above, combining analysis of relative (Omaha versus U.S.) occupational growth from 2000 to 2005 with the LQ as a proxy for historical comparative advantage might indicate an occupation's future growth. That is not done in this appendix. Instead another tact is taken.

In addition to those occupations identified in Tables A2.4 to A2.12 there are many other four digit occupations where Omaha records a LQ greater than 1. These specific occupations are more than offset by other specific occupations within the major occupational group where Omaha has less than the national share of employment. Such occupations, however, could be the source of future job growth in Omaha. Unfortunately

they are too numerous to detail here. To narrow the field two criteria were applied. First, an occupation had to have more than 420 workers in the Omaha economy. This cutoff represents about 0.1% of the total employed labor in the MSA. Second, the LQ had to exceed 1.50 indicating that Omaha had more than 50% higher employment in that occupational specialty than the U.S. The result, contained in Table A2.13, is a much more parsimonious list of fourteen occupational specialties. In several instances these results further reinforce the findings of Tables 2 to 12. Thus, SOC 11-9111 (Medical and Health Services Managers) is closely associated with medical occupations found in SOC 29 and SOC 49-2011 (Computer, Automated Teller, and Office Machine Repairers) is similarly consistent with specialization in SOC 15. Other results in Table 13 highlight the importance of the meatpacking industry (e.g. SOC 51-3022, -3023, -9032) and printing and publishing (SOC 51-5022, -5023) within Omaha's manufacturing base.

Tables A2.2 to A2.13 contain one additional column, containing "A's" and "B's", that has not been addressed to this point. This column attempts to identify high- and low-salaried occupations. In May, 2005 the average annual salary for all workers in Omaha was \$35,930. For the United States as a whole the analogous figure was \$37,870. It is estimated, see below, that the cost of living in the Omaha MSA was 94.4% of that for the country as a whole. If we deflate the overall U.S. average wage by 0.944 we see that in Omaha a worker earning \$35,749 would be able to enjoy an average American standard of living.¹⁷ The A's and B's in the final column of Tables A2.2-A2.13 simply indicate whether the actual average wage for the occupation or occupational group were above (A) or below (B) the overall average for the city or country. Since no occupation in these tables recorded an average salary between \$35,749 and \$35,930 the single column distinguishes relatively high wage (A) and low wage (B) occupations versus both city and national norms.

Crucial for determination of cost of living adjusted or real salaries (such as the \$35,749 in the preceding paragraph) is obtaining the deflators (or, in Omaha's case, the 0.944 figure). Unfortunately no consistently calculated regional/urban cost of living data

¹⁷ The similarity of the \$35,749 figure and the actual salary of \$35,930 justifies the assumption that, overall, U.S. labor markets are in equilibrium. See below.

are available.¹⁸ There is no geographic counterpart, for instance, to the national consumer price index. In previous work, however, the OES data has been used to estimate such a relative cost of living index for states and MSA's.¹⁹ The methodology developed rests on two assumptions. First that productivity within an occupation does not vary. Thus a cafeteria server in a school in Seattle has the same productivity as a cafeteria worker in a hospital in Tampa. Second, that overall labor markets in the U.S. are in equilibrium. While for a specific occupation real wages might be higher in city X than in city Y, in other occupations the opposite is likely the case. Thus overall wages will tend to cluster around a number reflecting a true cost of living differential.

Given these two assumptions the calculation of the estimated relative (to the U.S. average) geographic cost of living is straightforward. First re-calculate the average annual salary in every geographic area (state or MSA) assuming that the region has the national mix of occupations. This avoids the problem that some cities have a relatively high skill mix of occupations (e.g. Boston) while others (for example, Laredo, Texas) have a labor force concentrated in low skilled jobs.²⁰ Second, compare the resulting estimated average to the actual U.S. average salary. The result is the deflator used to adjust actual money wages by occupations for differences in regional costs of living. Table A2.14 compares the cost of living in Omaha to that in some other selected Midwestern MSA's.

Since the cost of living in Omaha is less than that for the U.S. as a whole, real wages in Omaha will be higher than money wages for every occupation. Or, put another way, a dollar in wages in Omaha goes further in purchasing goods and services than is typical for the country as a whole. This creates a potential situation that has been called a "favorable crossover".²¹ This is where money wages are below the U.S. average thus attracting, under *ceteris paribus* assumptions, capital formation. Real wages, on the other

¹⁸ See Roger F. Riefler, "Indirect Estimation of Regional Cost-of-Living Indices" presented to the Western Regional Science Association, Santa Fe, February, 2006 for a discussion of previously published data on regional cost of living indices.

¹⁹ In addition to the source cited in the previous footnote see Roger Riefler, "A New Geography for Information Technology Activity?," The Journal of Regional Analysis and Policy, v. 35, n. 2 (2005), pp.47-57 and Roger F. Riefler, "State Patterns of Occupational Earnings: Implications for Long-Term Growth", Economic Development Quarterly, v. 21,n. 1 (2007), pp. 34-48.

²⁰ The fact that Omaha has an actual average salary (\$35,930) that exceeds its average salary based on the national mix of occupations (\$35,749) indicates that Omaha's labor force is slightly biased, overall, toward the high-skill end of the spectrum.

²¹ Roger F. Riefler, "State Patterns of Occupational Earnings...", op.cit., p. 40.

hand, may be above the national average thus attracting labor.²² Table 15 lists, by SOC code, the 122 four digit occupations identified in Table A2.4 to A2.13 as specialized in the Omaha area. The second column in Table A2.15 indicates by an “X” those occupations where the actual money wage in Omaha is less than its U.S. counterpart. The third column identifies, again with an “X”, those occupations where the real Omaha wage exceeds the appropriate average U.S. salary.

Not surprising is the fact that the preponderant share (77%) of Omaha occupations report a money wage less than their U.S. counterpart. Once adjustment for the lower cost of living in Omaha is made, however, fully 46% of these Omaha occupations exhibit a real salary above the U.S. average. These occupations should be attractive to in-migrants and can be expected to increase in importance in the Omaha economy. A total of 26 occupations (21.3%), indicated by red X’s in Table A2.15, report favorable crossovers as defined above. These occupations should attract both labor and capital. Unfortunately five of these crossovers are in the relatively low paying food preparation (SOC 35) occupations. But three favorable crossovers in the high-tech computer and math related occupations (SOC 15) and four in health care occupations (SOC 29) bode well for the future.

A final issue is addressed by this appendix. Although data are available for Omaha employment by industry (e.g. Table A2.1) and by occupation (Table A2.2) there are no cross-tabulations published at the MSA level on occupational employment by industry. Such data would allow an assessment of whether Omaha’s employment in, say, manufacturing is concentrated in headquarters or control occupations, research and development professions, or production line jobs. Occupational statistics by industry are available for the United States as a whole. We can therefore indirectly address the nature of Omaha’s occupational status by industry by assuming that each Omaha industry (at the three-digit NAIC level) has the same mix of occupations as does that industry at the national level. Then, instead of comparing the estimated distribution with the actual

²² A moment’s reflection will explain the necessity of the *ceteris paribus* (or other things equal) assumption in the previous sentence. Although it is reasonable to expect computer software engineers, for instance, to respond to high real wages in Omaha by migrating into that area, it is not necessarily true that firms employing these engineers will establish/expand facilities in the Omaha area. Even assuming that these firms are attracted by low labor costs, what matters are overall labor costs (for all occupations employed).

distribution by industry, the preferred but unavailable comparison, we can aggregate the estimated distribution across all industries. This estimated overall occupational distribution can then be compared to Omaha's actual occupational array. Table A2.16 summarizes the results of such calculations. This table shows the estimated and actual percent distribution of Omaha employment categorized into headquarters or control functions (SOC 11-13), research and development (SOC 15 -19), social overhead occupations (SOC 21-33), and production, sales, distribution and maintenance functions (SOC 35- 53).

Clearly the Omaha labor market is relatively concentrated, when compared to what would be predicted imposing the national occupational mix to the city's industrial composition, in what Table A2.16 labels the research and development and social overhead functions. Omaha has 7 to 8% more jobs in these occupations than would be predicted on the basis of national patterns. At the other extreme Omaha has a 13% deficit in what has been labeled headquarters or control functions. In the final category, productions, sales, distribution and maintenance occupations, Omaha reflects the national pattern.

Table A2.17, constructed in a manner analogous to Table A2.16, presents the two-digit SOC estimated and actual distributions of Omaha employment. Clearly, as this table shows, Omaha's above average performance in R&D occupations is solely attributable to an above predicted number of jobs in computer and math related occupations (SOC 15). Omaha has 38% more jobs in these occupations than it would have if its employment composition, by industry, mirrored that of the United States. Even more impressive is Omaha's performance in education and training occupations. In SOC 25 Omaha has 127% more jobs than would be predicted by national patterns. Certainly the computer/education juxtaposition at the top of the listings in Table A2.17 seems to bode well for Omaha's future.²³ This is a topic we turn to in concluding our analysis.

On the basis of past, present and future likely growth patterns several Omaha occupations or occupational groups seem to warrant further investigation as potential propulsive occupations. This analysis has attempted, in various ways, to identify these

²³ Note that health professions and food service occupations also record actual numbers that exceed those predicted by national industrial patterns. For both occupational groups actual employment exceeded estimated employment by 6%.

occupations. Rather than just summarizing what has been accomplished this concluding section focuses on the role of one occupational group, computer and math related occupations (SOC 15), that has been consistently identified as important for the growth trajectory of the Omaha economy. In forecasting further growth in these occupations are we saying that Omaha is currently, or in the future will become, another Silicon Valley? Is Omaha traveling down the same path traveled by Austin, Texas or Boulder, Colorado?

It is tempting to answer these questions in the affirmative. But to do so would be to confuse occupational analysis with industrial analysis. A final table, Table A2.18, shows the per cent of each major industrial group's employment in computer and math related occupations. What is striking in this table is how ubiquitous computer/math occupations have become across the gamut of American industry. While manufacturing of computer and electronic products (NAIC 334) and computer design and related services (NAIC 5415), two industries closely related to the development Silicon Valley, have, as expected, a higher per cent (10.9 and 53.8% respectively) of their employment in computer/math related occupations, what is probably less recognized is the degree to which American industry, overall, has become "high-technology". Our focus on occupational analysis has emphasized what we do, not what we make. Omaha is well positioned to capitalize on the likely trend in future industrial processes or technology. It will not necessarily replicate the industrial growth trajectory of San Jose, Austin or Boulder.

Table A2.1
Omaha Employment by Industry, May 2005

NAICS CODE	INDUSTRY	MAY, 2005 EMPLOYMENT
11,21,23	Natural Resources, Mining & Construction	25,997
-236	Construction of Buildings	4,586
-238	Specialty Trade Contractors	17,580
31-33	Manufacturing	32,780
	Durable Goods	12,978
	Non-Durable Goods	19,802
-311	Food Manufacturing	10,723
-3116	Animal Slaughtering & Processing	6,866
42,44,45,48,49,22	Trade, Transportation & Utilities	99,605
-42	Wholesale Trade	18,615
-423	Merchant Wholesalers, Durables	10,688
-4234	Professional & Commercial Equip.	2,763
-424	Merchant Wholesalers, Non-Durables	6,045
-44-45	Retail Trade	51,308
-441	Motor Vehicle & Parts Dealers	6,638
-445	Food & Beverage Stores	9,153
-4451	Grocery Stores	8,262
-452	General Merchandise Stores	8,664
-4521	Department Stores	4,497
-48-49	Transportation & Warehousing	28,205
-482	Rail Transportation	5,528
-484	Truck Transportation	15,666
51	Information	13,149
-518	Internet Services, Web Search	6,157
52	Finance & Insurance	31,073
-522	Credit Intermediation & Related	11,190
-5221	Depository Credit Intermediation	6,154
-524	Insurance Carriers & Related Activity	16,666
53	Real Estate & Rental Leasing	5,970
54	Prof., Scientific, & Technical Services	22,023
-5415	Computer Systems Design & Related	6,165
55	Management of Companies & Enterpr.	10,387
56	Administrative, Support & Waste Management & Remediation Services	28,612
-5613	Employment Services	6,632
-5614	Business Support Services	7,818
-5617	Services to Buildings & Dwellings	6,196
61	Educational Services	11,621
-6113	Colleges, Universities, & Prof. Schools	6,866
62	Health Care & Social Assistance	51,517
-621	Ambulatory Health Care Services	15,310
-622	Hospitals	18,769
-623	Nursing & Residential Care Facilities	10,777
72	Accommodation & Food Service	35,867
-721	Accommodation	5,381
-722	Food Services & Drinking Places	30,486
-7221	Full-Service Restaurants	14,300
-7222	Limited-Service Eating Places	12,913
81	Other Services	16,113
92	Public Administration	60,597
	Federal Government	8,750
	State Government	10,417
	- Education	6,937
	Local Government	41,430
	- Education	25,664
	TOTAL NONFARM EMPLOYMENT	452,773

Table A2.2
Omaha Employment by Occupation, May, 2005
By Major Occupational Group

SOC CODE	MAJOR OCCUPATIONAL GROUP	EMPLOYMENT
11	Management Occupations	16,820
13	Business & Financial Operations Occupations	20,650
15	Computer & Mathematical Occupations	14,740
17	Architecture and Engineering Occupations	5,700
19	Life, Physical & Social Science Occupations	3,780
21	Community & Social Services Occupations	6,150
23	Legal Occupations	2,700
25	Education, Training & Library Occupations	23,160
27	Arts, Design, Entertainment, Sports, & Media Occupations	5,890
29	Healthcare Practitioner and Technical Occupations	23,350
31	Healthcare Support Occupations	11,140
33	Protective Service Occupations	7,470
35	Food Preparation & Serving Related Occupations	36,090
37	Building and Grounds Cleaning & Maintenance Occupations	13,530
39	Personal Care & Service Occupations	10,130
41	Sales and Related Occupations	48,160
43	Office and Administrative Support Occupations	81,180
45	Farming, Fishing and Forestry Occupations	480
47	Construction & Extraction Occupations	21,170
49	Installation, Maintenance, & Repair Occupations	15,740
51	Production Occupations	27,050
53	Transportation & Material Moving Occupations	40,030
	TOTAL EMPLOYMENT	435,120

Table A2.3
Major Occupational Groups Specialized in Omaha, May, 2005

SOC CODE	LOCATION QUOTIENT	SALARY LEVEL
13	1.14	A
15	1.50	A
21	1.09	B
27	1.05	A
29	1.07	A
35	1.00	B
41	1.04	B
43	1.07	B
53	1.25	B

Table A2.4
Occupations Specialized in Omaha
Major Group: SOC 13
Business & Financial Operations Occupations, May, 2005

SOC CODE	NAME	LOCATION QUOTIENT	SALARY LEVEL
13-1021	Purchasing Agents & Buyers, Farm Products	4.85	A
13-1022	Wholesale & Retail Buyers, Ex. Farm Products	1.44	A
13-1041	Compliance Officers, Ex. Agric., Construction, Health and Safety and Transportation	1.52	A
13-1051	Cost Estimators	1.19	A
13-1071	Employment, Recruitment & Placement Specialists	1.29	A
13-1072	Compensation, Benefits & Job Analysis Specialists	1.53	A
13-1073	Training & Development Specialists	1.55	A
13-1111	Management Analysts	1.13	A
13-2011	Accountants and Auditors	1.27	A
13-2041	Credit Analysts	2.63	A
13-2051	Financial Analysts	1.06	A
13-2061	Financial Examiners	2.57	A
13-2072	Loan Officers	1.04	A
13-2082	Tax Preparers	1.07	B

Table A2.5
Occupations Specialized in Omaha
Major Group: SOC 15
Computer and Mathematical Occupations, May, 2005

SOC CODE	NAME	LOCATION QUOTIENT	SALARY
15-1021	Computer Programmers	1.73	A
15-1031	Computer Software Engineers, Applications	1.73	A
15-1032	Computer Software Engineers, Systems Software	1.16	A
15-1041	Computer Support Specialists	1.43	A
15-1051	Computer Systems Analysts	1.55	A
15-1061	Database Administrators	1.27	A
15-1071	Network & Computer Systems Administrators	1.15	A
15-1081	Network Systems & Data Communications Analysts	1.70	A
15-2041	Statisticians	1.20	A

Table A2.6
Occupations Specialized in Omaha
Major Group: SOC 21
Community and Social Services Occupations, May, 2005

SOC CODE	NAME	LOCATION QUOTIENT	SALARY
21-1013	Marriage and Family Therapists	1.94	A
21-1015	Rehabilitation Counselors	1.07	B
21-1091	Health Educators	1.27	A
21-1093	Social and Human Service Assistants	2.39	B
21-1099	Community & Social Service Specialists, Other	1.02	B

Table A2.7
Occupations Specialized in Omaha
Major Group: SOC 27
Arts, Design, Entertainment, Sports & Media Occupations, May, 2005

SOC CODE	NAME	LOCATION QUOTIENT	SALARY
27-1011	Art Directors	1.02	A
27-1024	Graphic Designers	1.26	A
27-1025	Interior Designers	1.26	A
27-1026	Merchandise Displayers & Window Trimmers	1.12	B
27-3011	Radio & Television Announcers	1.97	B
27-3022	Reporters and Correspondents	1.02	A
27-3031	Public Relations Specialists	1.61	A
27-3043	Writers and Authors	1.04	A
27-3091	Interpreters and Translators	1.54	B
27-4011	Audio & Video Equipment Technicians	1.04	B
27-4012	Broadcast Technicians	1.27	A
27-4021	Photographers	1.03	B
27-4031	Camera Operators, Television, Video & Motion Picture	1.73	A
27-4099	Media & Communication Equipment Workers, All Other	1.22	A

Table A2.8**Occupations Specialized in Omaha****Major Group: SOC 29****Healthcare Practitioner and Technical Occupations, May, 2005**

SOC CODE	NAME	LOCATION QUOTIENT	SALARY
29-1021	Dentists, General	1.11	A
29-1031	Dietitians and Nutritionists	1.47	A
29-1051	Pharmacists	1.32	A
29-1061	Anesthesiologists	2.27	A
29-1064	Obstetricians & Gynecologists	1.37	A
29-1066	Psychiatrists	1.02	A
29-1071	Physician Assistants	1.28	A
29-1111	Registered Nurses	1.09	A
29-1121	Audiologists	3.48	A
29-1125	Recreational Therapists	2.58	B
29-1126	Respiratory Therapists	1.26	A
29-1127	Speech-Language Pathologists	1.30	A
29-1131	Veterinarians	1.06	A
29-2011	Medical & Clinical Laboratory Technologists	1.99	A
29-2034	Radiologic Technologists & Technicians	1.17	A
29-2051	Dietetic Technicians	1.13	B
29-2052	Pharmacy Technicians	1.14	B
29-2071	Medical Records & Health Information Technicians	1.74	B
29-2081	Opticians, Dispensing	1.11	B
29-9011	Occupational Health and Safety Specialists	1.18	A
29-9012	Occupational Health and Safety Technicians	1.26	A

Table A2.9**Occupations Specialized in Omaha****Major Group: SOC 35****Food Preparation and Serving Related Occupations, May, 2005**

SOC CODE	NAME	LOCATION QUOTIENT	SALARY
35-2014	Cooks, Restaurant	1.13	B
35-3011	Bartenders	1.35	B
35-3021	Combined Food Preparation & Serving Workers, Including Fast Food	1.02	B
35-3031	Waiters and Waitresses	1.10	B
35-9011	Dining Room & Cafeteria Attendants and Bartender Helpers	1.01	B
35-9031	Hosts and Hostesses, Restaurant, Lounge and Coffee Shop	1.31	B

Table A2.10
Occupations Specialized in Omaha
Major Group: SOC 41
Sales and Related Occupations, May, 2005

SOC CODE	NAME	LOCATION QUOTIENT	SALARY
41-1012	First-Line Supervisors/Managers of Retail Sales Workers	1.10	A
41-2012	Gaming Change Persons and Booth Cashiers	2.51	B
41-2031	Retail Salespersons	1.05	B
41-3021	Insurance Sales Agents	1.20	A
41-3031	Securities, Commodities, and Financial Services Sales Agents	1.04	A
41-3041	Travel Agents	1.39	A
41-3099	Sales Representatives, Services, All Other	1.32	A
41-4011	Sales Representatives, Wholesale & Manufacturing, Technical and Scientific Products	1.17	A
41-4012	Sales Representatives, Wholesale & Manufacturing, Ex. Technical & Scientific	1.08	A
41-9041	Telemarketers	2.23	B

Table A2.11
Occupations Specialized in Omaha
Major Group: SOC 43
Office and Administrative Support Occupations, May, 2005

SOC CODE	NAME	LOCATION QUOTIENT	SALARY
43-2099	Communications Equipment Operators, Except Telephone	3.10	B
43-3031	Bookkeeping, Accounting & Auditing Clerks	1.20	B
43-3061	Procurement Clerks	1.22	B
43-4011	Brokerage Clerks	1.20	B
43-4041	Credit Authorizers, Checkers, and Clerks	2.47	B
43-4051	Customer Service Representatives	1.84	B
43-4111	Interviewers, Except Eligibility and Loan	1.35	B
43-4151	Order Clerks	1.61	B
43-4161	Human Resource Assistants, Except Payroll & Timekeeping	1.26	B
43-4171	Receptionists and Information Clerks	1.22	B
43-5031	Police, Fire & Ambulance Dispatchers	1.50	B
43-5032	Dispatchers, Except Police, Fire, Ambulance	1.58	B
43-5053	Postal Service Mail Sorters, Processors, and Processing Machine Operators	1.26	A

43-5061	Production, Planning, and Expediting Clerks	1.36	B
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	1.93	B
43-9011	Computer Operators	1.92	B
43-9021	Data Entry Keyers	1.19	B
43-9041	Insurance Claims and Policy Processing Clerks	1.59	B
43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service	2.54	B
43-9071	Office Machine Operators, Except Computer	2.01	B
43-9081	Proofreaders and Copy Markers	1.16	B

Table A2.12
Occupations Specialized in Omaha
Major Group: SOC 53
Transportation and Material Moving Occupations, May, 2005

SOC CODE	NAME	LOCATION QUOTIENT	SALARY
53-3031	Driver/Sales Worker	1.31	B
53-3041	Taxi Drivers and Chauffeurs	1.12	B
53-6031	Service Station Attendants	1.43	B
53-7011	Conveyor Operators and Tenders	1.46	B
53-7031	Dredge Operators	5.22	B
53-7032	Excavating and Loading Machine and Dragline Operators	1.59	A
53-7061	Cleaners of Vehicles and Equipment	1.31	B
53-7064	Packers and Packagers, Hand	1.05	B

Table A2.13
Other Important Occupations Specialized in Omaha
(not a member of a specialized major group), May, 2005

SOC CODE	NAME	LOCATION QUOTIENT	SALARY
11-9111	Medical and Health Services Managers	1.61	A
17-1011	Architects, Except Landscape and Naval	1.89	A
19-3021	Market Research Analysts	2.04	A
23-2093	Title Examiners, Abstractors, and Searchers	2.78	B
25-1123	English Language and Literature Teachers, Postsecondary	2.65	A
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	1.64	B
47-2051	Cement Mason and Concrete Finishers	2.05	B
49-2011	Computer, Automated Teller, and Office Machine Repairers	1.71	A
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	1.58	B
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	4.29	B
51-3023	Slaughterers and Meat Packers	4.04	B
51-5022	Prepress Technicians and Workers	2.24	B
51-5023	Printing Machine Operators	1.71	B
51-9032	Cutting and Slicing Machine Setters, Operators And Tenders	1.65	B

Table A2.14
Relative Cost of Living in Selected Midwestern MSA's
(U.S. average cost of living = 1.000)

MSA	RELATIVE COL	MSA	RELATIVE COL
Lincoln, Nebraska	0.900	Sioux City, Ia./Ne.	0.836
Topeka, Kansas	0.884	Wichita, Kansas	0.940
Kansas City, Ks/Mo.	1.002	Des Moines, Ia.	0.957
St. Joseph, Mo.	0.860	Sioux Falls, SD	0.876
Chicago, Ill.	1.056	Minneapolis, Mn.	1.107

Table A2.15
Relative Real and Money Wages For
Specialized Occupations in Omaha, May, 2005

SOC CODE	OMAHA MONEY WAGE LESS THAN U.S.MONEY WAGE	OMAHA REAL WAGE GREATER THAN US. MONEY WAGE
13-1021		X
13-1022	X	X
13-1041	X	
13-1051	X	
13-1071		X
13-1072	X	
13-1073	X	
13-1111	X	
13-2011	X	X
13-2041	X	
13-2051	X	
13-2061	X	
13-2072	X	
13-2082		X
15-1021	X	X
15-1031	X	
15-1032	X	
15-1041	X	
15-1051	X	
15-1061		X
15-1071	X	
15-1081	X	X
15-2041	X	X
21-1013	X	
21-1015	X	
21-1091	X	X
21-1093	X	X
21-1099	X	
27-1011	X	
27-1024	X	
27-1025	X	
27-1026		X
27-3011	X	
27-3022	X	
27-3031	X	
27-3043	X	
27-3091	X	
27-4011	X	

27-4012		X
27-4021	X	
27-4031		X
27-4099		X
29-1021		X
29-1031		X
29-1051	X	
29-1061	X	
29-1064		X
29-1066	X	
29-1071		X
29-1111	X	
29-1121		X
29-1125	X	
29-1126	X	X
29-1127	X	
29-1131	X	
29-2011	X	
29-2034	X	
29-2051	X	X
29-2052	X	X
29-2071	X	X
29-2081	X	
29-9011	X	X
29-9012		X
35-2014		X
35-3011	X	X
35-3021	X	X
35-3031	X	X
35-9011	X	X
35-9031	X	X
41-1012	X	
41-2012		X
41-2031		X
41-3021	X	
41-3031	X	
41-3041		X
41-3099	X	
41-4011	X	
41-4012	X	
41-9041	X	
43-2099	X	
43-3031	X	X

43-3061		X
43-4011	X	
43-4041	X	
43-4051	X	
43-4111	X	
43-4151	X	
43-4161	X	X
43-4171		X
43-5031	X	
43-5032		X
43-5053		X
43-5061	X	
43-5111		X
43-9011	X	
43-9021	X	
43-9041	X	
43-9051	X	X
43-9071		X
43-9081		X
53-3031		X
53-3041	X	
53-6031		X
53-7011	X	X
53-7031	X	
53-7032		X
53-7061	X	X
53-7064	X	X
11-9111	X	X
17-1011		X
19-3021	X	
23-2093	X	
25-1123	X	
33-9092	X	
47-2051	X	X
49-2011	X	X
49-3042	X	
51-3022		X
51-3023		X
51-5022	X	
51-5023	X	
51-9032	X	

Table A2.16
Estimated and Actual Omaha Employment
by Major Occupational Type: May, 2005
(Percent of Total)

Occupational Type	Actual Employment Percent	Estimated Employment Percent
Control or Headquarters Functions	0.0861	0.0988
Research & Development Functions	0.0557	0.0518
Social Overhead Functions	0.1835	0.1716
Production, Sales, Distribution & Maintenance Functions	0.6747	0.6779

See text for definition of occupational types.

Table A2.17
Estimated and Actual Omaha Employment
by Occupational Group: May, 2005
(Percent of Total)

Occupational Group	Actual Employment Percent	Estimated Employment Percent
SOC 11	0.0387	0.0477
13	0.0475	0.0511
15	0.0339	0.0245
17	0.0131	0.0176
19	0.0087	0.0097
21	0.0141	0.0147
23	0.0062	0.0089
25	0.0532	0.0234
27	0.0135	0.0130
29	0.0537	0.0505
31	0.0256	0.0260
33	0.0172	0.0350
35	0.0829	0.0782
37	0.0311	0.0316
39	0.0233	0.0269
41	0.1107	0.1076
43	0.1866	0.1960
45	0.0011	0.0015
47	0.0487	0.0510
49	0.0362	0.0426
51	0.0622	0.0604
53	0.0920	0.0820

Table A2.18
Percent of Employment in Computer
And Math Related Occupations
United States, May, 2005

Industry Group	Percent SOC 15
Construction	0.1%
Utilities	3.1
Manufacturing	1.9
Wholesale Trade	2.7
Retail Trade	0.4
Transportation & Warehousing	0.5
Information	13.4
Finance and Insurance	5.0
Real Estate	0.6
Professional, Scientific & Technical Services	13.4
Management of Companies	9.0
Administrative, Support, etc. Services	1.6
Educational Services	1.4
Health Services	0.5
Accommodations and Food Services	0*
Other Services	0.6
Government	2.2
OVERALL	2.4

*0.02%