

A Forecast of Prices, Rents and Construction in the Salt Lake City-Ogden  
Metropolitan Area

By

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Submitted to the Department of Architecture in Partial Fulfillment of the  
Requirements for the Degree of

MASTER OF SCIENCE

In Real Estate Development

At the

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Abstract

This thesis will center on the housing market of the Salt Lake City-Ogden Metropolitan Statistical Area. The paper will explore in detail as much as possible what has driven and continues to drive the SLC-Ogden economy. It will look at historical economic indicators of population, employment and wages and how the housing market has moved in conjunction with these indicators. With this background, it will try to make as educated projection as possible at what rate these economic indicators (and in turn, the area economy) will continue to grow. With these projections, this thesis will then use regression analysis to forecast single family home prices, rents of multi-family units, and future construction of both types of housing for the Salt Lake City-Ogden metro area.

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# 1. INTRODUCTION

## 1.1 Introduction

It has been six months since a worldwide audience watched as the little-known community of Salt Lake City hosted the 2002 Winter Olympics. Outsiders have always viewed the state and its people with a mixture of curiosity and ignorance, and the predominant 'Mormon' religion has had a lot to do with that, as Salt Lake City and the Mormons have been synonymous for much of their shared history. From the humble beginnings of a group of 148 Mormon pioneers arriving into the valley in 1847, the Salt Lake City-Ogden metropolitan area has swelled to approximately 1.33 million residents. Nestled in the Rocky Mountains, the area looks out over its namesake, the Great Salt Lake. There is something more than just a growing religion, however, to the story behind the growth and prosperity of the Salt Lake City area. This paper will try and give an answer to that question.

Cast into the limelight of the Olympics, the media event showcased what many Utahns have known all along: Utah is a pretty, great state to live in. For many years the state remained a well-kept secret--and locals liked it that way. The rustic feel of a small Western town is slowly disappearing, however, as the

region has been “discovered” by more and more people, especially over the last decade. From 1991 to 2001, an average of over 23,000 have migrated into the state every year.<sup>1</sup> The last 10 years have been an unprecedented period of broad growth and prosperity, and not just in net-migration. Growth in income, employment, combined with quality of life issues and cultural draws have all added to the state’s appeal.

While many despair the changes wrought by events (like the Olympics) over the last 10 years, it has nevertheless translated to increased economic prosperity for the state and its inhabitants, a fact that is hard to argue with. The statistics are very telling: Utah ranked fourth among states in the percent of population growth during the 1990’s, and grew twice as fast as the U.S. average. Furthermore, the state is in the top five for annual growth rate in non-agricultural employment over the same period.<sup>2</sup> While one might discount this by pointing out that the nation as a whole has enjoyed fruitful economic times in the 1990’s, it is remarkable, that even during the leanest economic periods in the state’s history, positive population growth has still occurred, something most states cannot claim. Utah could literally shut off its borders and ban all in-migration, and the state’s population would still increase. This is a result of Utah

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<sup>1</sup> Utah Population Estimates Committee

<sup>2</sup> U.S. Bureau of Labor Statistics

having the highest rate of natural increase in the nation (natural increase is total births minus total deaths).

This flurry of growth has, however, brought some very serious issues to the forefront: will this last? And if so for how long? How prepared are we to accommodate such an increase? Or is this part of just another boom-bust cycle?

This paper will try and answer these questions. To do so, it will start with an analysis of the SLC-Ogden economy and what is fundamentally driving it. How broad is the economic base, and how sustainable is continued economic growth long term? This paper will also address the housing market: how has the sharp run-up the last 8-10 years affected its future prospects? Is there any serious chance of a bubble? And where will prices go from here?

\*\*As a disclaimer, the majority of my data has come from the 2000 U.S. Census, data that is tailored for the SLC-Ogden Metropolitan Statistical Area (MSA). However, in other areas I have found it necessary to obtain data from ancillary sources, data which was collected and published by city (i.e. Salt Lake City) or on a state-wide basis. I felt I could justify doing this, given that the differences in the areas in question are statistically insignificant. Salt Lake City makes up 67% and 74% of the MSA's population and employment, respectively; while the population of the state is geographically concentrated in the Wasatch Front Counties: Salt Lake, Utah, Davis, and Weber (the three counties that make up the Salt Lake City-Ogden MSA). Three of these four counties, Salt Lake, Davis, and Weber (Utah County is part of its own MSA, and as such will not be included in this paper), on their own make up 59% of the population and 72% of the employment of the state.<sup>3</sup> I feel comfortable using these figures as proxies to showcase historical trends and/or to illustrate a point, when necessary.

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<sup>3</sup> "Demographic and Economic Analysis," January 2002, Governor's Office of Planning & Budget, State of Utah



## 1.2 Outline of Paper

This paper will be divided into 8 sections: 1) Introduction, 2) History of the Salt Lake-Ogden area, 3) The Economics of Real Estate, 4) Analysis of the Salt Lake City-Ogden Economy, 5) The Unique & Changing Demographics & Economics of the SLC-Ogden Region, 6) Methodology, 7) Forecasts, and 8) Conclusion. The first section, Introduction, has presented the subject of this paper. Part II of the introduction, Outline of Paper, will present the course that will be taken in order to answer this main question. Chapter Two will give a summary outline of the history of the state, so as to more fully understand both the historical and current economic backbone of the state. Chapter Three will briefly delve into the economics of real estate, at least in those areas that relate to our question. Chapter Four analyzes the Utah economy, and the fifth section will highlight some of the changes (demographic and economic) that have taken place. Chapter Six will address the methodology used and how I arrived at my data; leaving Chapters Seven and Eight for my presentation of forecasts, and finally, conclusions.

## **2. HISTORY OF THE SALT LAKE VALLEY**

### **2.1 A Unique Setting**

Utah presents an unusually varied landscape with three major physiographic provinces extending into the state. Arid deserts, ranges of the Rocky Mountains, and the red rock of the Colorado Plateau offer a remarkable range of diversity within one territory. Within these three provinces, Utah ranges in elevation from 2,350 feet above sea level in the southwest corner of the state to 13,528 feet on Kings Peak in the Uinta Mountains. Five major life zones, each with a distinctive community of plants, are found within that elevation range, from the sagebrush and juniper typical of the Sonoran desert to the meadow grass and moss of the alpine tundra. Precipitation in Utah varies from an average of less than five inches in the Great Salt Lake Desert to more than 60 inches in the Wasatch Mountains. The average annual precipitation is between 10-15 inches per year.

### **2.2 American Indians**

The state of Utah is named after the Ute tribe. The Ute once lived over much of Utah and all of western Colorado. In historic times, they ranged well

onto the great plains of eastern Colorado into Nebraska and south into New Mexico. The Ute lived by hunting, fishing, gathering and trading with other Native American groups in the region. During the late 1800s, as European settlers continued their westward movement into more and more lands, the Ute lost most of what had once been theirs and were restricted to reservations in southern Colorado and northeastern Utah.

### **2.3 Explorers, Trappers, and Traders**

Mexicans and Spaniards were the first known non-Indians to enter what is now the state of Utah. In July 1776 just as the American Revolution was beginning in the East a 10-man exploration team left Santa Fe, New Mexico, under the leadership of two Franciscan priests, Dominguez and Escalante. They entered Utah from the east near the present town of Jensen, traversed the Uinta Basin, crossed the Wasatch Mountains, and visited the Indian encampment at Utah Lake. Traveling south, they eventually forded the treacherous Colorado River and returned to Santa Fe in January 1777. Early snows had forced them to give up their attempt to reach Monterey, California. Utahns are indebted to the Dominguez-Escalante expedition because of the detailed diary kept by Father Escalante which describes plant and animal life; geography; and the appearance, dress, food, and life ways-of the Utes and Paiutes, providing the first documents

in Utah history. From 1807 to 1840 mountain men competing for fur explored vast areas of the American West, and their knowledge was eventually passed on to future settlements. In the 1820s trappers explored most of Utah's rivers and valleys as well as some of the desert land. Jedediah Smith, one of the great explorers made several significant journeys through Utah and publicized South Pass in Wyoming, over which thousands of later immigrants traveled. Trapper Jim Bridger reported his sighting of the Great Salt Lake in 1824; the explorations of other trappers including Peter Skene Ogden, Etienne Provost, John H. Weber, William H. Ashley, James P. Beckwourth, the Robidoux brothers, and Joseph R. Walker also contributed to knowledge of the Utah area. So did groups such as the Bartleson-Bidwell party whose wagons crossed Utah in 1841 and the ill-fated Donner party who blazed a trail into the Salt Lake Valley in 1846 that the Mormons followed in 1847. In the 1840s United States government explorers and settlers bound for California came into Utah.

## **2.4 Mormon Settlement**

When Joseph Smith, Jr., founder of the Church of Jesus Christ of Latter-day Saints, and his brother Hyrum were assassinated at Carthage, Illinois, in June 1844, Brigham Young and other Mormon leaders decided to abandon Nauvoo, Illinois, and move west. Their exodus began February 4, 1846. With the

outbreak of the Mexican War, President James Knox Polk asked the Mormons for a battalion of men. Volunteers were recruited and the Mormon Battalion formed. During their famous march of 1846-1847 from Fort Leavenworth, Kansas, to San Diego, California, they forged a wagon route across the extreme Southwest. Their pay and their later explorations helped the pioneer settlers. In April 1847 the pioneer company of Mormons was on its way from Winter Quarters, Nebraska, to Utah. While en route, Brigham Young's party encountered the famous trapper Jim Bridger. Upon hearing their plans to settle in the valley next to the Great Salt Lake, the skeptical mountain man offered to pay \$1,000 for "an ear of corn grown and ripened in the SL Valley". An advance party, including three African-Americans, entered Salt Lake Valley July 22, 1847 and the rest of the company on July 24. Planting and irrigating as well as exploration of the surrounding area began immediately. Although the struggle for survival was difficult in the first years of settlement, the Mormons were better equipped by experience than many other groups to tame the harsh land. They had pioneered other settlements in the Midwest, and their communal religious faith underscored the necessity of cooperative effort. Basic industries developed rapidly, the city was laid out, and building began. Settlement of outlying areas began as soon as possible. Small settlements were frequently forts with log cabins arranged in a protective square. Between 1847 and 1900 the Mormons founded about 500 settlements in Utah and

neighboring states. Utah continued to pioneer in dry farming techniques. At the same time, missionaries traveled worldwide, and thousands of religious converts from many cultural backgrounds made the long journey from their homelands to Utah via boat, rail, wagon train, and handcart.

#### **2.4.1 Territorial Days**

The Treaty of Guadalupe Hidalgo ended the Mexican War in February 1848 and gave the United States title to much of the Southwest, including Utah. The Mormons responded by forming a political government and creating the State of Deseret (1849-1850). Congress would not admit Deseret to the Union and instead created the Territory of Utah, a vast area encompassing, until the 1860s, most of present Nevada and part of present Wyoming and Colorado. Utah would not be granted statehood until almost the turn of the century.

#### **2.4.2 Crossroads of the West**

Mountain Men and settlers had explored much of the West, but the systematic, scientific investigation of this immense land really began when Congress authorized exploration for railroad and wagon routes. Major John Wesley Powell came in 1869 and 1871 to explore the "last frontier" the Green and Colorado rivers by boat. Powell's contributions to our understanding of the arid

Colorado Plateau, water resources, and the life-ways of the area's Indians were monumental. Communication between East and West became increasingly important between 1850 and 1870. On October 24, 1861, the overland telegraph connecting Omaha, Nebraska, and San Francisco was completed in Salt Lake City. On the heels of this came the railroad. In 1868 Brigham Young contracted with Union Pacific to build part of the transcontinental railroad through Echo and Weber canyons. Mormons earned more than two million dollars working on this project. Meanwhile, hundreds of Chinese worked on the Central Pacific line east from Sacramento. Finally, on May 10, 1869, the Central Pacific and the Union Pacific were joined at Promontory Summit, Utah. Mormon isolation was permanently ended. In the 1870s railroad lines were built to connect many Utah settlements, including mining towns, with the capital. The transcontinental railroad and the branch lines spurred commerce and led to the opening of the mines.

## **2.5 Mines and Minorities**

Jews were among the first non Mormons to take up permanent residence in Utah. As merchants, salesmen, and businessmen they stimulated the territory's economic development. However, the immigration and settlement of large numbers of non Mormons began in earnest with the building of the

transcontinental railroad and the subsequent development of mining. Catholics, Episcopalians, Congregationalists, Presbyterians, and others came in the 1860s and 1870s to establish schools, hospitals, churches, and to minister to the large number of non Mormons who had found employment with the railroad or in the mines. The contributions of these ethnic and religious groups to Utah society have been great.

## **2.6 Transition**

In the thirty years from 1860 to 1890, Utah's population jumped from some 40,000 to more than 200,000. Although there was a tendency toward urbanization along the Wasatch Front, Brigham Young and other Mormon leaders continued to direct the settlement of remote areas of Utah, much of this settlement at the expense of the Indians. As many as 90 percent of the total population were Mormon at this time, and their way of life dominated politics, economics, and social life.

## **2.7 Statehood**

Utahns began petitioning Congress for admission to the Union in 1849, but statehood was not achieved until 1896. The main roadblock to achieving this was the Mormon's practice of polygamy. During most of the intervening years



the territory was governed by federal appointees almost exclusively non-Mormons. Residents chafed under these outsiders. While the number of non-Mormons living in Utah was then 10 percent or less, they were mostly concentrated in the urban areas or in mining and railroad towns. A number of factors made this minority feel fearful of Mormon dominance: communitarian economic practices, lack of free public schools, encouragement of immigration by converts to Mormonism, polygamy, church authoritarianism, and the mingling of church and state affairs. In September 1890 LDS President Wilford Woodruff issued the Manifesto renouncing the practice of polygamy, and by 1896 Utah was granted statehood.

## **2.8 Adjustment**

The old ways of life died hard. But gradually, in the period between statehood and World War I, Utah adjusted its economic, social, and political life to that of mainstream America. National parks, monuments, and forests were set aside by the federal government. Urbanization continued, until by 1920 nearly half of the population lived along the Wasatch Front. The percentage of Mormons in the total population declined to 68 percent as the state grew. The development of mining and heavy industry drew an influx of various ethnic groups such as Greeks, Japanese, Hispanics, African-Americans, and others and

ultimately diversified the social and cultural life of the state. A fortune in silver had been taken from the Utah mines in the nineteenth century, but in the early twentieth century the big story was the development of the copper industry at Bingham Canyon under Daniel C. Jackling who made the open pit mining of low-grade ore profitable. Since 1906, more than 6 billion tons of rock have been moved, producing more than 16 million tons of copper, more copper than has been taken out of any mine ever. Bingham Copper Mine has since become the largest open-pit copper mine in the world, and the Kennecott Copper Mine continues to produce today.

### 3. THE ECONOMICS OF REAL ESTATE

What causes growth (or decline) in one region of the country over another? What are the fundamental reasons why Salt Lake City experienced growth in the '90's at a greater rate than other seemingly comparable states, and what's more, what place does this query have in a housing forecast? How and why economic activity chooses to locate among different regions is not a simple question. We ask this question, however, because the size and rate of economic growth in a metropolitan region are the crucial determinants of how its real estate market evolves and changes over time.<sup>4</sup>

Two main forces tend to propel regional economic growth: demand for regional products (which generates jobs), and the supply of regional factors (mainly the work force to fill those jobs). The first, or *demand-induced regional growth*, can be demonstrated with the following example. One major source of economic growth is the sale of products produced within one region to customers outside of that region.<sup>5</sup> Using Utah's ski industry as a case in point, we see that with inputs of precipitation, climate, and lofty mountain peaks, Utah (with some timely help from Mother Nature) "produces" a tangible product. Annual average "production" of this "Greatest Snow on Earth" is 500 inches.

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<sup>4</sup> "Urban Economics and Real Estate Markets", Denise DiPasquale, William Wheaton, Prentice Hall, pg. 149

<sup>5</sup> *Ibid*

This is then sold to customers--many of whom come from outside the state--in the form of skier days, and pumps \$ \_\_\_ into the Utah tourist economy every year (As this example relates to my thesis topic, most of the Utah ski resorts are located in the canyons directly east of S.L. and Ogden). Although our tourism example does not fall into the conventional definition of output of a tangible product (i.e. Idaho potatoes, or silicon chips), these are all examples of "output".

To produce this regional output, however, the primary factors of production (labor, structure, and land) must be readily available within the region. The demographic makeup of an area and the mix of skills embodied in the current workforce provide an important indigenous source of labor. Without local labor, a region must attract workers from other areas, which is generally more difficult than retaining local workers. An area's climate, amenities, and public services all contribute to determining how easy it is to attract (and keep) a supply of labor. Utah's ski resorts must be able to pull from the local population enough skilled workers to operate lifts, run ski patrol, and market the ski resort. If there is not enough local labor to fill these positions, they must attract them from elsewhere.

This brings us to the latter: *supply-induced regional growth*. This means economic growth that occurs as a result of shifts in the supply of resources into a region, most commonly from changes in the supply of labor. This could be a

situation where an area suddenly receives an influx of labor, perhaps because of a desirable climate, or possibly a favorable economy. We see that much of the international migration over the last 10 years not just to Utah, but many states, occurred because economic conditions were better here than in the countries they came from.

A region's labor market can be an important consideration when it comes to stimulating and sustaining economic growth. Firm-level decisions to open up new markets, expansion of existing operations, and wholesale relocations as a result of a region's attractiveness relative to other regions are very clearly strong sources of growth. Much of the empirical research on firm locational choice points to the importance of labor availability and wage costs.<sup>6</sup>

After a ready supply of labor, a metropolitan area's stock of real estate structures (residential, commercial, and industrial), together with its ability to develop land, represents the other important resource. Without affordable housing for the area's workers and buildings for its firms, output cannot be produced. The capacity of a region to readily expand its supply of real estate is a crucial ingredient for ensuring continued economic growth. Without this capacity, real estate rents will rise, eventually increasing both the wages that

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<sup>6</sup> "Why do New Firms Locate Where They Do: An Econometric Model," Carlton, Dennis W. *Interregional Movements and Regional Growth*, ed. William C. Wheaton, pp. 13-50. Washington, DC: The Urban Institute

must be paid to labor and the prices that must be charged for output. Such increases in the cost of local production can eventually choke off economic expansion and stifle long-term growth.<sup>7</sup> The question of how well the Salt Lake City-Ogden area can accommodate this type of desirable long term growth-determining that will be the crux of much of this paper.

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<sup>7</sup>Urban Economics and Real Estate Markets, DiPasquale, Wheaton, pg. 149

## 4. Analysis of the Salt Lake City-Ogden Area Economy

### 4.1 Drivers of Growth

Our first task in analyzing the Salt Lake City-Ogden MSA micro economy is to understand the factors that drive its economic growth, and the impact that this growth will have on the area's housing markets. I will identify the key drivers and economic assets of our MSA and Utah overall, and then how this will affect the future of the area housing.

We will see that Utah, along with much of the nation, has been experiencing an extraordinary growth rate over the last decade. This has been the result of a number of factors:

1. An unprecedented level of construction. Improvements to the area-infrastructure, construction of facilities for the 2002 Olympics, and a substantial amount of private construction all helped fuel this decade of growth.

2. A nationwide boom in economic growth. While some states' growth even surpassed Utah's, the majority lagged behind.

3. A high rate of in-migration. Much of this is attributable to #2. However, on top of this, a growing realization of the quality of life and natural amenities that Utah offers and a highly desirable work environment all served to attract a significant level of in-migration.

While the fantastic rate of growth of the past decade will not likely continue, it would be hoped that the all-too-common boom and bust cycle will be avoided, and that the region's economy is on its way to a "soft landing". In order to forecast future rates of growth, we must first examine the underpinnings of the Salt Lake City and the Utah economy as a whole, and how viable they are over the long term. At that point we will try to make an educated guess as to how sustainable future growth is. A major component of this is answering the question as to why firms choose to locate in Utah.

Some vital statistics that highlight Utah's strengths:

- A highly literate workforce. Utah has the 4<sup>th</sup> highest percentage of high school graduates (90.7%) and the 18<sup>th</sup> highest percentage of college graduates (26.4%).

- Utah is projected to have the nation's fastest growth in college enrollment until the year 2007.<sup>8</sup>

- Utah has nine public universities and four private institutions of higher learning. Of these, three are renowned research universities and two have nationally-ranked law schools and one a nationally ranked medical school.

- World class research is located here: the Huntsman Cancer Institute, partially under the aegis of the University of Utah, is on the cutting-edge of cancer research and treatment. Hundreds of millions of dollars of the funding have come from local philanthropist and cancer

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<sup>8</sup> Department of Public Education, 2002 Economic Report to the Governor



survivor Jon M. Huntsman. The U of U medical school was ranked in the top 50 for Top Medical Schools – Research. Research Park, another first rate research facility, is advantageously located at the foothills of the Wasatch Mountains right next to the University of Utah. Located on 320 acres adjacent to the campus, the park has 34 buildings housing 44 companies and portions of 37 University departments. The park employs an estimated 6,100 people and contributes approximately \$600 million annually to Utah's economy. Various companies conduct joint research with U. departments, use faculty as consultants and/or employ students. Research Park companies have added more than 4,700 jobs to the state's economy.

- The University of Utah Hospitals and Clinics was once again ranked among America's Best Hospitals by a respected news magazine. The article ranks 205 hospitals out of more than 6,000 in the country, and is the ninth time the hospital has made the list<sup>9</sup>.

- A bi-lingual populace. Many young LDS Church members in their early 20's leave to serve a church mission for 2 years, and many of these serve in a foreign country and return home fluent in a second language.

- A plentiful labor market. Especially at the low end of the wage rate spectrum, the abundance of high-school age and college-age kids ensures a steady supply. There are more youths working in Utah than in the nation (159.9% of the national average)<sup>10</sup>

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<sup>9</sup> "America's Best Hospitals," U.S. News and World Report, July 22, 2002

<sup>10</sup> Bureau of the Census 2002

- SLC ranks as among the nation's most Internet accessible cities. The city has jumped from #37 in 1997 to #15 for the year 2000 report, beating out Philadelphia, Portland and Boston, to name a few.

- Utah has been successful as an incubator for high-tech companies. While not in the same league as Silicon Valley or the Seattle-Richmond area of Washington, this is where the first word processing software (WordPerfect), office suite programs and networking software (Novell) were created. While the "brain capital" from these early successes has spilled over locally into new startups, many of these premier high tech companies have been acquired, bought out, or moved out of state, and attracting new technology companies remains a challenge for the state.

- A low cost of doing business (93.3% of the national average); a pro-business regulatory environment; low business taxes (the lowest worker's compensation costs in the nation); and a solid utility, communications, education and transportation infrastructure.<sup>11</sup>

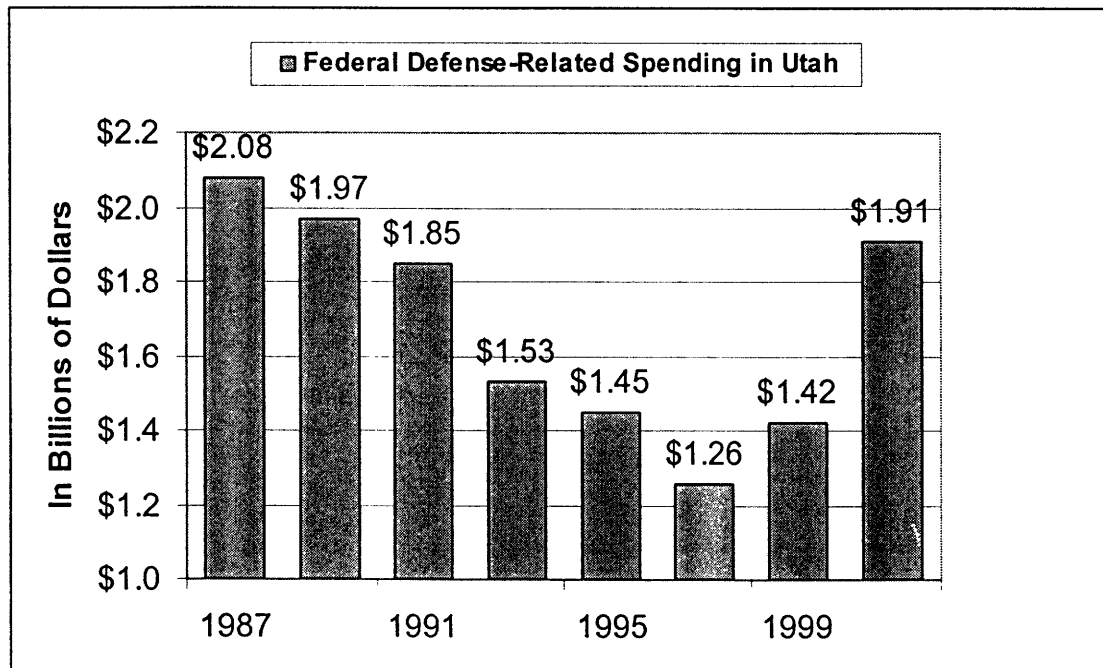
As evidence of the state's attractiveness, Utah's healthy economy has attracted a wide variety of national and international companies including Delta Airlines, Intel, American Express and eBay. Intel has built an R & D Campus in the southwest section of the S.L. valley; 3Com and Dannon have manufacturing operations. Intermountain Health Care, the largest medical insurance firm in the Intermountain West, is headquartered in Salt Lake City.

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<sup>11</sup> "State of Utah Demographic Overview," Economic Development Corp of Utah

Utah's defense industry continues to rebound in 2001, as base closures and realignments in other states shifted jobs and military spending to Utah. Hill Air Force Base, located between Salt Lake and Ogden, has become the Air Force's new "center of excellence" for low-observable technology.<sup>12</sup> See Figure 4.1 below.

Figure 4.1



A major difference between the rural/urban mix in Utah, and most other states, is that Utah's rural population as a share of the total has not declined over

<sup>12</sup> Economic Report to the Governor, 2002

the past 30 years.<sup>13</sup> This statistic by itself may prove little, but it is nevertheless a positive commentary on the diversified strength of Utah's non-urban economy.

(See Figure 2)

**Figure 4.2**

**Location Quotients and Hachman Index for the State of Utah**

Industry	1980	1990	2000	2010
Agriculture	0.89	0.94	0.81	0.69
Mining	3.05	1.86	1.86	1.69
Construction	1.2	0.81	1.3	1.15
Manufacturing	0.73	0.86	0.87	0.83
TCPU	1.13	1.13	1.08	1.01
Trade	1.06	1.01	1.01	0.96
FIRE	0.82	0.77	0.91	0.94
Services	0.88	0.93	0.9	0.97
Government	1.14	1.1	1.02	1.08
Non-Farm Proprietors	1.12	1.21	1.17	1.13
Hachman Index	0.94			

\*Location Quotients are measures of relative shares. The share of a given industry in the subject area (Utah) is compared to that of the reference region (United States). A location greater than 1 indicates specialization in a subject region relative to the reference region.

\*\*The Hachman Index measures how closely the employment distribution of the subject region (Utah) resembles that of the reference region (United States). As the value of the index approaches one, this means that the subject region's employment distribution among industries is more similar to that of the reference region.<sup>14</sup>

**Figure 4.3**

<b>Hachman Index-Counties in the SLC-Ogden MSA</b>				
County	1980	1990	2000	2010
Davis	0.73	0.83	0.89	0.91
Salt Lake	0.93	0.96	0.95	0.96
Weber	0.93	0.94	0.96	0.96

<sup>13</sup> Economy.com, Inc.

<sup>14</sup> Source: Governor's Office of Planning and Budget--Demographic and Economic Analysis Section, UPED Model System

#### 4.1.1 Headquarters of a Worldwide Religion

Since the arrival of the pioneers in 1847, The Mormon Church (more correctly known as the LDS Church) has been headquartered in downtown Salt Lake City, and as such is naturally a large stakeholder in the area (they are the largest landowner in downtown Salt Lake City). While many outsiders still remain ignorant about the church and its teachings, the media has not failed to note the LDS's extraordinary growth. Insert data about future growth projections...

The August 4, 1997, issue of Time magazine devoted 10 pages to an examination of the Mormon Church. The outside cover of the magazine shows a beautiful picture of the Salt Lake City Temple and carries this intriguing headline: MORMONS, INC. The Secrets of America's Most Prosperous Religion.

The following appeared in Time:

*"The church's material triumphs rival even its evangelical advances. With unusual cooperation from the Latter-day Saints hierarchy (which provided some financial figures and a rare look at church businesses), Time has been able to quantify the church's extraordinary financial vibrancy. Its current assets total a minimum of \$30 billion. If it were a corporation, its estimated \$5.9 billion in annual gross income would place it midway through the FORTUNE 500, a little below Union Carbide and the Paine Webber Group but bigger than Nike and the Gap. And as long as corporate rankings are being bandied about, the church would make any list of the most admired: for straight dealing, company spirit,*

*contributions to charity (even the non-Mormon kind) and a fiscal probity among its powerful leaders that would satisfy any shareholder group, if there were one.*

*"THE TOP BEEF RANCH IN THE WORLD IS NOT the King Ranch in Texas. It is the Deseret Cattle & Citrus Ranch outside Ireland, Fla. It covers 312,000 acres; its value as real estate alone is estimated at \$858 million. It is owned entirely by the Mormons. The largest producer of nuts in America, AgReserves, Inc., in Salt Lake City, is Mormon-owned. So are the Bonneville International Corp., the country's 14th largest radio chain, and the Beneficial Life Insurance Co., with assets of \$1.6 billion. There are richer churches than the one based in Salt Lake City: Roman Catholic holdings dwarf Mormon wealth. But the Catholic Church has 45 times as many members. There is no major church in the U.S. as active as the Latter-day Saints in economic life, nor, per capita, as successful at it.... Last year 5.2 billion in tithes flowed into Salt Lake City, \$4.9 billion of which came from American Mormons....*

*"The Mormons are stewards of a different stripe. Their charitable spending and temple buildings are prodigious. But where other churches spend most of what they receive in a given year, the Latter-day Saints employ vast amounts of money in investments that TIME estimates to be at least \$6 billion strong. Even more unusual, most of this money is not in bonds or stock in other peoples' companies but is invested directly in church-owned, for-profit concerns, the largest of which are agribusiness, media, insurance, travel and real estate. Deseret Management Corp., the company through which the church holds almost all its commercial assets, is one of the largest owners of farm- and rangeland in the country, including 49 for-profit parcels in addition to the Deseret Ranch. Besides the Bonneville International chain and Beneficial Life, the church owns a 52% holding in ZCMI, Utah's largest department-store chain.... All told, TIME*

*estimates that the Latter-day Saints farmland and financial investments total some \$11 billion, and that the church's nontithe income from its investments exceeds \$600 million. (Time, pages 52-53)*

*On page 54 of the Time article, we find the following: "The Hotel Temple Square Co. owns much of the real estate around the headquarters in downtown Salt Lake City. Their Polynesian Cultural Center is Hawaii's No. 1 paid visitor attraction, with annual revenues of at least \$40 million. Other holdings include 11,571 meeting-houses and 50 temples around the world...The church owns 16 radio stations and one TV station. 1996 sales: \$172 million. Deseret News circulation: 65,000. Deseret Book Co. owns a chain of about 30 bookstores in Utah."*

*The article also notes that the church has colleges: "B.Y.U. in Provo, Hawaii and Jerusalem, L.D.S. Business and Ricks in Idaho."*

These points are highlighted because they have a distinct bearing on the future economic outlook for the SLC-Ogden area. It becomes evident how intertwined are the futures of both the Salt Lake area and the Church of Jesus Christ of Latter Day Saints.

What about the less tangible ways that the LDS Church affects growth in Utah? There is more of a support network in the case of layoffs, divorces, bankruptcies, not just through family members, but also support from a church member's local congregation. The strong emphasis on families and family ties: staying close to the place of your birth, and/or setting down roots close to

extended family; these may point towards a higher “stay-at-home-rate” than say other comparable states. While none of this can be quantified, it still remains that anyone who has spent time observing the culture would probably agree on some of these points.

#### **4.1.2 Olympics and its Short Term Effect**

For good or for bad, Utah was the recipient of an astonishing amount of federal largesse over the last number of years. While concrete numbers are hard to come by when it comes to the vagaries of federal spending, most realistic estimates put the number between 1.3 to 1.5 billion dollars of federal monies that have poured into the state in the last 4 years. Ostensibly the reason for much of this influx of federal spending is of course the 2002 Winter Olympics, held in February. While this may appear to critics to be simply an outrageous amount of “pork barrel” spending, much of the money would have been coming to the state regardless, as improvements in infrastructure were long overdue; chief among them a widening and reconstruction of the I-15 highway running through the center of the city, and the putting in place of a mass-transit light rail system. While most agree that funds would have been appropriated for these projects at some point, the anticipation of the Olympics certainly accelerated their disbursement, and that has benefited the state. Most figures point to



approximately \$342 million in federal spending that was earmarked specifically for staging of the Games<sup>15</sup>; the point can be made that this figure represents a more or less direct windfall into the state's economy. Looking at the bigger picture, estimates indicate the economic impact from the Games will total \$4.5 billion, including 35,000 job years of employment, \$1.5 billion in earnings to Utah workers, and net revenue of \$76 million to state and local government.<sup>16</sup>

At the same time, when tossing out all such rosy numbers, it must be remembered that the prospect of the congestion of such a large event as the Olympics turns away many tourists who, if the Games were not being held, would have visited the state. Officials estimated a net increase of 50,000 visitors per day as a result of the Olympics, even after accounting for this displacement factor<sup>17</sup>.

## **4.2 Economic Benefits of Improvements to Transportation**

### **Infrastructure**

The benefits of these transportation-artery upgrades are easy to see, and for a few reasons. This has had a two-pronged effect on growth in the state: First,

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<sup>15</sup> "Costs to Plan and Stage the Games in the United States," General Accounting Office, November 2001, GAO-02-140

<sup>16</sup> "2002" Olympic Winter Games – Economic, Demographic and Fiscal Impacts," Governor's Office of Planning & Budget, November 2000

<sup>17</sup> *Ibid*

it has created *demand-induced growth*, as thousands of good-paying construction jobs were created and that brought workers to the state in droves. Secondly, as was mentioned, the significant amount of pre-Olympic construction not only included obvious items like new Olympic venues and upgrades/expansion to existing facilities, but also much in the way of much-needed infrastructure improvements; chief among them a reconstruction and widening of the I-15 highway corridor running through the heart of the SL valley, a light-rail system running down the spine of the metro area, and a number of other smaller scale improvements to the area's transportation infrastructure. The 15 mile North/South TRAX line opened in late 1999. The project was recognized by the General Accounting Office in 1999 as the only major transportation infrastructure project in the nation to be both under budget and ahead of schedule. Separately, the I-15 Highway project was completed three months ahead of schedule and \$32 million under budget. When presented with a solid track record of on-time, under-budget performance, lawmakers are probably inclined to view more favorably than otherwise subsequent requests for transportation projects funds. In addition to the main north-south running light rail, a spur heading east from downtown to the University of Utah has since been added, and others are on the drawing board, most notably a spur heading west out to the airport, and others connecting the various suburbs to the main rail backbone. This is all good for

growth: in order to justify mass transit, municipalities must show average ridership; and to get the requisite numbers, they need density. What this means is that now that mass transit is in fact here—it is not just on the drawing board or being bandied about in some congressional legislative session—in order for suburban cities to secure approvals for light-rail spurs, they have now even more incentive to encourage and allow higher-density housing, and this is a more economic use of existing developed land, the benefits of which accrue to the region over the long run.

From another standpoint mass transportation will aid the prospects for long term growth. Following the Ricardian model, as housing moves outward from a city core, rent will decline dollar for dollar as commuting costs increase, out to the undeveloped edge of the city. However, with implementation of a mass transit transportation system, presumably triggering a decrease in commuting time, the value of land outside the urban core increases in value, and more agricultural land at the city edge is developed into housing. This means that at that point where the SLC-Ogden area has the most opportunity to develop land and accommodate growth is where the value is increasing. This has the interesting side effect of flattening out the rent curve, as rents in the urban core will be less than previously, relative to rents going outward from the core to the city edge.

#### **4.2.1 Non-Transportation-Related Construction**

While the prodigious amount of infrastructure-related construction would be of major benefit on its own merits, an astonishing amount of ancillary construction has been on-going for the last 8-10 years. The LDS Church put the finishing touches on a new Conference Center across the street from Temple Square. The \$300 million dollar building will be used as a central meeting place of worship and instruction from church leaders. Just 3 blocks away is The Gateway, a \$375 million entertainment-based retail shopping complex that was completed in the fall of 2001 and has served to revitalize a blighted rail depot area on the west side of the Salt Lake downtown. The luxurious, world-class Grand America Hotel—an anomaly in a city the size of Salt Lake--was built at a reported cost of \$375 million and was completed by the spring of 2002. These are only a sampling of the residential and non-residential construction that has taken place. The region is expected to experience a drop-off in amount of construction and the number of construction-related jobs through 2002 and at least into next year, but that is only natural given the extraordinary total of dirt that has been turned during this construction boom. Table X in the appendix gives a list of the construction projects (on-going and planned) and their respective dollar values.

### 4.3 Olympics and Its Long Term Effect

On a less tangible front, the Games represented a unique, once-in-a-lifetime opportunity for Utah. With both national and international attention focused on the state, favorable impressions and images generated from Olympic-related exposure should translate into future gains in traveler spending and greater tax relief for Utah residents. Opportunities for increased business and tourism development, as well as the lasting benefits of infrastructure improvements and Olympic facilities, will impact the state for years to come.

One area in particular that may be overlooked in assessing the Olympics long term benefits is that Salt Lake City may very well be on its way to becoming the United States' preeminent hub for winter sports. While Squaw Valley, CA and Lake Placid, NY have also represented the U.S. as hosts of the Winter Games, there can be little doubt that in the U.S. no comparable city can boast the world-famous snow conditions, quality of facilities, and proximity to a major national airport. Although this may or may not have any material impact on housing demand in the SLC-Ogden area, it would be a boon to employment, income, and population at least in some measure. In assessing the impact of the '88 Olympic Games on Calgary, one local writer penned:

*“When the Canadian team marches into the opening ceremonies of the Salt Lake City Olympics, over 80 of them will have spent a significant portion of their training time in the Calgary area. In fact, Calgary area athletes will make up over 50 percent of the team. That’s a far stretch from the 1998 Calgary Olympics, where Calgary only boasted 15 athletes, plus the men’s hockey team. And would you believe – not one speed skater was from Calgary? Things sure have changed. The Calgary area is now widely recognized as the hub of winter sport in Canada.”<sup>18</sup>*

This article must be tempered by the fact that the U.S. is not Canada. In the U.S. professional winter sports must compete with the likes of baseball, football, and basketball (to name just a few), sports that compete not only for the hearts and minds of fans, but also for tomorrow’s future athletes, while Canada’s singular passion for their winter sports is rivaled by few others. However, the United States Olympic team had their best Olympic showing at the SLC Games and viewers tuned in, in greater percentage numbers than ever before. If such a positive showing does indeed translate into heightened U.S. interest and participation in Winter Olympic sports, then Salt Lake City will most certainly be the prime training ground for future Olympic stars waiting in the wings.

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<sup>18</sup> “The Calgary Difference,” Julie Perkins, National Sport Centre Calgary (NSCC), Winter 2002

#### 4.4 The State's Ability to Attract People and Firms: What Brings

#### Outsiders to SLC-Ogden?

#### Quality of Life

What are the things that bring about consistent in-migration? While the statistics cited above help answer this question by emphasizing the strength of what is taking place in Utah, there is obviously something else at play here:

#### Social Indicators

- A low level of poverty. Utah ranks 6<sup>th</sup> in the nation with a poverty rate of 8.1%. (1998-2000). The national average is 11.9%.
- A reasonable crime rate. Violent crime in Utah is the 10<sup>th</sup> lowest in the U.S. at 255.7 per 100,000 people.
- On average, Utahns live more than 2 years longer than people elsewhere in the United States, with a life expectancy of 78.6 years. Utah places 2<sup>nd</sup> in the nation for the overall death rate of 5.7 per 1,000 people.<sup>19</sup>
- Utah ranks youngest in the U.S. with a median age of 26.1 (2000)
- Utah ranks 3<sup>rd</sup> healthiest state in the nation according to United Health Group (2000) and 5<sup>th</sup> healthiest according to the Morgan Quitno Press (2000).
- Utah ranks 2<sup>nd</sup> lowest in the nation with 8.5% receiving public assistance. (1998-2000)

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<sup>19</sup> 2002 Economic Report to the Governor

- Utah is 2<sup>nd</sup> lowest in the nation for death rates per 100,000 from heart disease (137.0) and is 2<sup>nd</sup> lowest in the nation for death rates from cancer (112.9). (1998)

- According to the Annie E. Casey Foundation's National Composite Rank, Utah ranked third among states in child well-being, behind New Hampshire and Minnesota in 2001.<sup>20</sup>

### Lifestyle/Arts

- According to the American Chamber of Commerce Researchers Association (ACCRA) Cost of Living Index, of Utah's main population centers, Salt Lake City rates 99.6; Provo/Orem rates 94.5; and St. George rates 97.1; Cedar City rates 93.3 and Logan rates 97.3 on ACCRA's composite index where the baseline of 100 represents the national average. The index consists of price comparisons for a single point in time and is based on six components: grocery items, housing, utilities, transportation, health care, and miscellaneous goods and services.

- More than 1,000 churches, mosques, and synagogues represent 67 active religious denominations.

- Performing Arts organizations include Ballet West, Mormon Tabernacle Choir, Pioneer Theatre Company, Repertory Dance Theater, Odyssey Dance Utah, Utah Opera Company, and the Utah Symphony.

- Cedar City's annual Shakespeare Festival is recognized as one of the finest in the country, winning the 2000 Tony Award for Best Regional Theater.

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<sup>20</sup> A state's National Composite Rank is determined by the sum of the state's standing on each of 10 measures of the condition of children arranged in order from best to worst.



- The Utah Arts Council represents more than 400 organizations for performing, visual, and literary arts.

- The Intermountain West's only collection of world art is on display at the Utah Museum of Fine Arts on the campus of the University of Utah. Other attractions include the Hansen Planetarium, the Children's Museum of Utah, the Museum of Natural History, and the Museum of Ancient Life, the largest dinosaur museum in the world, housing more than 50 dinosaur skeletal displays.

#### Sports and Recreation

- Salt Lake is home to the NBA's Utah Jazz, as well as the Starzz of the WNBA.

- The Salt Lake Stingers, a Triple A baseball club, play in the Franklin Quest Field and the Utah Grizzlies hockey team call the "E" Center in West Valley City home.

#### **4.4.2 Natural Amenities**

Dovetailing into what counts for quality of life are the state's many natural amenities: the natural geographical location value: mountain-ringed valleys offer a wealth of hiking, mountain biking, camping year-round, plus the obvious world-class skiing during the winter months. Many international tourists typically make a Yellowstone-Grand Tetons-Southern Utah-Grand Canyon loop, and Salt Lake City benefits from being situated centrally between these attractions. Some of the attractions of Southern Utah: Zions and Bryce

National Parks are famous for their red rock formations and majestic scenery; Moab is one of the preeminent mountain biking destinations in the world; the Colorado River offers not only incredible white-water rafting trips in Utah and through the Grand Canyon, but also Lake Powell. This one-of-a-kind boating destination was formed when the Glen Canyon Dam was built, creating a water sports playground out of a significant stretch of the Colorado river.

- Utah has 14 ski resorts, and receives an average of 500 inches of *"The Greatest Snow on Earth"* every winter. Park City, Snowbird, Alta, Deer Valley, and Snowbasin are world-class resorts. Brighton Ski Resort and Solitude Mountain Resort remain local favorites with both skiers and snowboarders; all are located less than an hour's drive up canyons east of Salt Lake and Ogden.

- Deer Valley is ranked the #1 ski resort in North America according to Ski Magazine in 2001.

- Park City is now renowned as the home of the Sundance Film Festival.

- Utah has five national parks, six national monuments, two national recreation areas, six national forests and 45 state parks which cover more than nine million acres of land for recreation and outdoor activities and all are within a five hour drive from Salt Lake City.<sup>21</sup>

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<sup>21</sup> Utah Travel Guide and Ski Utah

## 4.5 Analysis of the Utah Residential Economy

While economists debate the nature and depth of the nation's current recession, it seems clear that most experts agree that the current economic climate would be significantly worsened if not for the strength of the residential sector. Utah is no exception. In 2001, the value of permit-authorized construction was \$3.9 billion, within 1% of the all-time high set in 1999. This near record valuation is due, in part, to the continued strength of residential construction, which in 2001 produced nearly 19,000 new units valued at \$2.25 billion.<sup>22</sup>

Historically, new home construction in Utah has been fragmented: local builders building a relatively small number of homes on a relatively small development site—30 acres or less<sup>23</sup>. However, that seems to be changing, as many large scale master planned communities have arrived on the scene. A prime example of this is none other than the Kennecott Copper Corporation, mentioned earlier in the section on Utah's history. The company has long been a key partner in the valley with its mining operations; now, paradoxically, as its mining operations inevitably wind down it will still have a role in contributing to and participating in Utah's future growth, but in a completely unrelated way. As

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<sup>22</sup> Economic Report to the Governor, 2002

<sup>23</sup> "Utah's Residential Construction: The Impact of Changing Economics and Demographics on the Characteristics of New Homes and Housing Densities," Utah Economic & Business Review, James Wood, Senior Economist, University of Utah, Bureau of Economic Research and Business

part of the initial land acquisition in the last century, the company still has under ownership thousands of acres of land, four thousand of which have never been mined on and much of which has simply been dry farmed for most of the last century. Although a mining company first and foremost, Kennecott nevertheless realizes the earth will yield up her mineral wealth only for so long, and at some point the mining operations in Bingham Canyon will come to an end. At the same time, the company has no doubt watched as development has pushed the boundaries of Salt Lake City and her suburbs westward. While still miles from the remote mining operations, development has encroached far enough west and south to make the value of the company's land holdings increase manyfold. Sun Rise, a soon-to-be incorporated city to the west of South Jordan City (a suburban city of Salt Lake), is slated to be a 1 billion dollar development. As a sign of Kennecott's commitment to their plans, 24 million cubic yards of potentially hazardous waste and soil have been removed from the affected land.

Besides the slated Sun Rise development, there are a number of master planned communities already well underway or at various stages in the pipeline (see Table 4.1 ). All told, these Master Planned Communities should account for over 22,000 acres and comprise nearly 60,000 units.

**Table 4.1**

Selected Master Planned Communities				
Project Name/Developer	City	Size of Development	Proposed Residential Units - All Types	Year Construction Begun
Average Single-family Lot Size less than 11,000 square feet				
Hunter Village	West Valley	200	700	2001
Jordan Hills Villages	West Jordan	675	2600	2002
Sunrise - East Village	South Jordan	2250	6600	2002
Western Springs	Riverton	186	800	2001
The Ranches	Eagle Mountain	2114	6100	1998
Villages at Eagle Mountain	Eagle Mountain	7610	23000	1998
Saratoga Springs	Saratoga Springs	???	1500	1997
Harvest Hills	Saratoga Springs	360	1435	2001
Overlake	Tooele City	320	8000	1998
South Mountain	Draper	1498	1912	1995
Traverse Mountain	Lehi	2632	3500	2002
Average Single-family Lot Size more than 11,000 square feet				
Suncrest	Draper	3800	3800	1999

Source: Planning and zoning offices of individual cities.

Master planned communities have considerable advantages for cities, builders and home buyers.

*Advantages for cities:*

- Development agreement with a single owner/developer. The developer, due to the size and phasing of the community, becomes a long term partner with the city, which gives a common interest, familiarity and continuity to the development.
- More efficient use of both land and infrastructure. For example, the location of churches, schools, roads and parks are all planned well in advance of development. Therefore, the proximity to potential users is

maximized. Incompatible uses are more easily avoided. Furthermore, infrastructure is developed in an orderly way as new home construction proceeds systematically across the development site. Thus, the municipal problems associated with delivery of services to outlying residential developments created by leap-frogging of small residential communities are avoided.

- Enhanced community amenities: golf course, parks, community center, trails, etc., which are integrated into a master plan.
- More politically palatable than large piecemeal development. The planning, greater certainty, amenities and commercial component of master planned communities are more likely to garner the support of a city council. These positive aspects usually offset the perceived negative aspects of higher residential densities. The higher densities often include an apartment community that would have difficulty receiving approval as an independent project.
- Lower maintenance costs for municipal roads, water and sewer systems—a benefit derived from higher densities. Higher density also reduces the household consumption of water, an increasingly important issue for the Salt Lake City region.
- Greater sense of community provided by amenities, planning and marketing.

*Advantages for home builder:*

- Lower land and infrastructure costs per unit due to higher residential density.

- Broader market through variety of building types. Such a diversity of product offering will spread risk across different market segments. For example, while it is conceivable that a development that offers exclusively higher-end homesites on 1 acre lots in a gated community might be hit especially hard in an economic downturn, it is very hard to imagine that a mix of apartments, townhomes, single-family detached, and larger lot ranchettes would all be suffering from lack of sales simultaneously.
- More competitively priced product, which reduces the builder's risk.
- More innovative use of land and types of housing

*Advantages for home buyers:*

- Provides a greater variety and more innovative housing at competitive prices in a master planned, amenity-rich environment.
- Gives households the opportunity to stay in one area throughout the life cycle of the household; that is, when a household's demand for housing services change. There may be a need for more bedrooms (a young couple starting a family) or a need to downsize (empty-nesters). Most zoning in the suburban United States over the last half century has been directed at keeping these uses more or less separate. So when a household needs to move as a result of their housing needs, and yet wants to stay in their neighborhood or community, they typically have few options, if any. As opposed to the last half century's traditional zoning-based development, master planned communities offer a mix of different housing options and lot sizes without the typical segregation of different lot sizes.

How will these master planned communities affect residential development over the long term?

Higher densities mean an ultimate slower build-out of current agricultural land. Besides meaning more affordable housing for the reasons above, this slower build-out will also mean more affordable housing which will allow growth to continue unabated..

MPC's will be able to achieve these higher densities without the headaches that the smaller developer must endure in trying to get such high densities. Utahns like their space and their elected city officials are no different; though it is changing (slowly), securing approvals for high density developments is an arduous and many times, unsuccessful process.

Large-scale developments should help avoid the common overbuilding oscillations of the backward-looking stock flow model. Because these large master planned communities will most likely have more sophisticated development models and are not faced with the pressures of a smaller builder, this should translate to a build-out mirroring a realistic absorption rate.



How else will densities benefit the Salt Lake area? Based on the state of Utah population forecast, the household mix of the Greater Wasatch area will change during the next 20 years. There will be a rise in senior households (head of household over 60 years) from the current 21 percent to 27 percent in the year 2020. Household size will decline from 3.15 people per household in 1990 to 2.78 in 2000<sup>24</sup>. Decreasing household sizes mean the number of new households will increase proportionately faster than the population. Household sizes are expected to decrease as a result of more single-person and single-parent households and fewer two-parent families with children. Assuming that real incomes will remain more or less the same, smaller households mean there will be less demand for large-lot, single-family homes and more demand for smaller, less expensive housing. This point is worth repeating: a ready supply of less expensive housing is critical to maintaining a region's rate of growth. If not, real estate rents will rise, causing wages to have to rise, which will lead to an increase the cost of a region's output, and this will choke off economic growth.

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<sup>24</sup> Governor's Office of Planning and Budget

## 5. The Unique (& Changing) Demographics & Economics of the Salt Lake City Region

At the time they entered the Salt Lake valley in 1849, the Mormon settlers presented a wholly unique demographic picture, largely as a natural result of (Mormon) religious and cultural factors. With a few exceptions, outside of the SLC-Ogden area the state of Utah has changed relatively little in its ethnic makeup over 150 years and much of the population is overwhelmingly of this same Mormon pioneer stock. However, while the Salt Lake City-Ogden area is and will continue to have a strong LDS presence; in absolute numbers the area has become much more diverse and cosmopolitan.<sup>25</sup> The state still leads the other 49 in many categories and continues to defy many nationwide trends.

### 5.1 Economic Condition of Utah's Households

**Per Capita Income.** Utah's 2000 per capita income of \$23,364 was 79.3% of (or \$6,087 less than) the national average of \$29,451. Per capita income in Utah only ranked 45<sup>th</sup> in the nation in 2000. Utah's per capita income is lower than the nation's per capita income because Utahns have more children compared to

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<sup>25</sup> U.S. Bureau of the Census

other states. Utah ranked first in the nation in 2000 for the percentage of the population under 18 at 32.2%. This compares to the average of only 25.7%, according to the U.S. Bureau of the Census.

**Median Household Income.** Utah's lower pay, relative to the nation, would be a much more serious problem for most Utahns were it not for more wage earners per household in Utah than on average in the nation. Median household income data recently released by the U.S. Department of Commerce shows that Utah continues to have household incomes that are above the national average. Median household income in Utah ranked 11<sup>th</sup> in the nation (at \$46,539) for the 3-year period 1998 to 2000. This was 11.4%, or \$4,750 higher than the national 3-year average of \$41,789. The Bureau of Census recommends using 3-year averages when ranking states due to the small sample size in certain states like Utah.

Higher median household income, despite lower average-annual pay, is due to more wage earners per household in Utah than on average in the nation. The average household size in Utah (3.13 in 2000) is the highest in the nation, and ranks far higher than the national average of 2.59 persons per household. According to the 2000 Census, 63.2% of Utah households are comprised of married-couple families (which ranks Utah first in the nation). Utah also has the

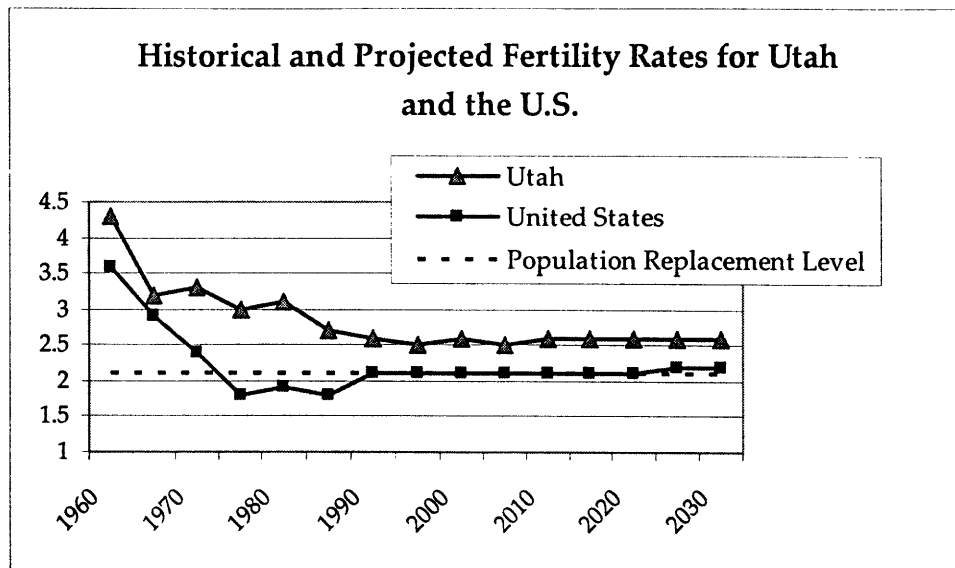
lowest ranking in the nation for the percent of families with children headed by a single parent (17% in Utah vs. 27% in the nation.)

Women in Utah are only slightly less likely to work than women in the nation (97% of the national average). Working women in Utah are much more likely to hold part-time jobs than working women in the nation (125.4%).

Additionally, there are more youths working in Utah than in the nation (159.9%) and they hold more part-time jobs (125.4%). Conversely, the adult male population is much less likely to hold part-time jobs than working men in the nation (77.7%). Working families who combine two or more incomes help raise median-household incomes in Utah.

In 2000 the average number of children born to women over a lifetime was 2.1, according to a new CDC report, "Births: Final Data for 2000." During most of the 1970s and 1980s U.S. women gave birth to fewer than 2 children on average, a rate insufficient to replace the population (2.1 is considered the population's replacement level).

Figure 5.1



Utah's unique demographic characteristic comes in part from the value that is placed on having children. Without getting into too much theological detail, the teachings of the LDS Church hold that the parenting and rearing of children is a sacred responsibility, and the Biblical admonition to multiply and replenish the earth does not go unheeded. While the birth rate is not what it once was and probably never will be that high again, Utah continues to have the highest birth rate in the nation and that will most likely not change. See Figure 5.1 above.

Fluctuations in the number of births of a given population have a profound influence on the age distributions for current and future generations.

The nation as a whole experienced a baby boom after World War II, which lasted from 1946 through 1964. The state followed suit, and Utah's baby boomers one-upped them by having not only more children than their non-Utah counterparts, but also had them earlier in life. After 1964, however, nationally a Baby Bust was taking place. At this point Utah diverged from the nation's example, as Utah's number of births actually began a 16-year run of increases, peaking at record levels in 1982. Utah's Baby Boom has never really ended. Births declined and remained fairly constant from 1987 through 1990, then began another period of increase. A record number of births have occurred for each year since 1997. State projections indicate another 30-year run of increasing births.<sup>26</sup> Ultimately what this is saying is that there will be an "Echo Boom Effect", as Utah's seemingly never-ending Baby Boom peaked in the early 80's, and now what was once an abnormally large number of babies is now an abnormally high number of people entering the 18-30 age group. So, this forecast of an upswing in the number of births is **not** the result of a rising fertility rate, but rather the fact that there will be a substantial increase in the number of women in childbearing years.<sup>27</sup> The

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<sup>26</sup> "Demographic Trends Affecting Public Education in Utah," Utah Economics and Business Review, December 2000. Pamela S. Perlich, Senior Research Economist, Bureau of Economic and Business Research, David Eccles School of Business, University of Utah

<sup>27</sup> *Ibid*

children of Utah's baby boom generation are expected to continue this pattern of relatively large families.

Other national demographic trends are also evident in Utah. There are more single-parent households than in the past, and more people are choosing to live alone. The rise of single-parent and single-person households means that average household sizes are dropping and the number of new households is increasing faster than the population. Single-parent and single-person households also tend to have lower household incomes.<sup>28</sup> People in Utah tend to form households at a younger age, judging by head of household age<sup>29</sup>.

## 5.2 Changes in Economics

Over the past ten years, household income in Utah improved, both relatively and absolutely, at a rate much greater than the national average. Between 1990 and 2000, the median household income in Utah rose 55 percent while nationally the gain was only 37.5 percent. In absolute terms, between 1990 and 2000, Utah's median income rose \$16,200 compared to \$11,300 for the nation.

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<sup>28</sup> *Ibid*

<sup>29</sup> Table HCT8, "Tenure by Age of Householder," US Bureau of the Census 2000

The state's median household income in 2000, as reported by the U.S. Bureau of the Census, was \$45,654 compared to \$41,343 nationally."<sup>30</sup>

The ratio of population to employment has changed dramatically in the last 30 years, going from 3.43 in 1969 to 1.88 in 2001. What does this mean? True, the birthrate has fallen somewhat, even for Utah. But there are other facts behind the numbers. While Utah still leads the nation in traditional households (defined as a mother, father, and kid(s)), it appears that there are more dual wage earners per household. Not only are there less of the traditional stay-at-home-mothers, but teenagers are working both more than teenagers nationally, and more than they used to, at least in non-agricultural jobs.

From 1990 to 2000, the number of persons per household has held steady, changing only slightly from 3.15 to 3.13, mirroring the numbers nationally, from 2.63 to 2.59, respectively. At the same time, the average fertility rate has actually declined, which would imply that a large component of the net in-migration is international. And the majority of the international in-migration is Hispanic (table 5.1), and the majority of Hispanic migration is Mexican. Mexican household size averages 4.11, significantly higher than the average of 3.04 for the MSA as a whole.

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<sup>30</sup> "Utah's Residential Construction" James A. Wood



Another possibility that explains Utah's changing demographic is the diversity of those coming into the state. We use education as an example. From 1990 to 2000, the population 25 years and over increased from over 398,000 to over 509,000, an increase of just under 28%. Of this number, we can break it down by level of educational attainment and see that in several areas the increase outpaced the increase in population. The numbers of individuals in this segment of the population that hold less than a 9<sup>th</sup> grade education increased by over 50% from 1990 to 2000. At the other end of the scale, however, the increase in the number of individuals of this segment that hold at least a bachelor's degree and/or graduate/professional degree increased 44% and 54%, respectively<sup>31</sup>. This would augment my assertion of the diversity of the net in-migrants. On the one hand, we see a significant increase in the numbers of in-migrants from international countries (primarily Mexico), and on the other we see the considerable influx of young, primarily single, well-educated individuals that, among other things, are drawn by the natural amenities we discussed in Section 4.4.2. (Table 5.1)

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<sup>31</sup> "Profile of Selected Social Characteristics," Table DP-2, United States Census 2000

**Table 5.1**

**Table DP-2. Profile of Selected Social Characteristics:  
2000**

Geographic area: Salt Lake County, Utah

	1990	2000	% change:		
<b>EDUCATIONAL ATTAINMENT</b>					
Population 25 years and over.....	398,673	509,453	27.8%		
Less than 9th grade.....	12,137	18,214	50.1%		
9th to 12th grade, no diploma.....	46,409	48,871	5.3%		
High school graduate (includes equivalency)..	105,528	122,409	16.0%		
Some college, no degree.....	109,605	142,287	29.8%		
Associate degree.....	29,967	38,041	26.9%		
Bachelor's degree.....	64,799	93,213	43.8%		
Graduate or professional degree.....	30,228	46,418	53.6%		
Percent high school graduate or higher.....	(X)	86.8			
Percent bachelor's degree or higher.....	(X)	27.4			
	1990	2000	% change:		
<b>NATIVITY AND PLACE OF BIRTH</b>					
Total population.....	725,956	898,387	23.8%		
Native.....	692,942	805,111	16.2%		
Born in United States.....	686,631	797,015	16.1%		
State of residence.....	485,313	548,207	13.0%		
Different state.....	201,318	248,808	23.6%		
Born outside United States .....	6,311	8,096	28.3%		
Foreign born.....	33,014	93,276	182.5%		
Entered 1990 to March 2000.....	13,678	55,273	304.1%		
Naturalized citizen.....	15,347	28,519	85.8%		
Not a citizen.....	17,667	64,757	266.5%		
	1990	% of total	2000	% of total	% change:
<b>REGION OF BIRTH OF FOREIGN BORN</b>					
Total	32,231	100.0	93,269	100.0	189%
Europe.....	11,503	36%	16,262	17%	41%
Asia.....	9,409	29%	18,294	20%	94%
Africa.....	347	1%	1,731	2%	399%
Oceania.....	2,627	8%	5,107	5%	94%
Latin America.....	6,255	19%	48,987	53%	683%
Northern America.....	2,090	6%	2,888	3%	38%

Source: U.S. Census

The Census is also helpful in obtaining specific data on in-migration, primarily from foreign countries. From 1990 to 2000, the total population of Salt Lake County increased from 726,000 to 898,000, a 24% increase<sup>32</sup>. As a share of the total SLC population, both the number of Utahns who were born in the state and the United States declined for the 10 year period. The most telling figures, however, have to do with the data on foreign-born individuals. The number of foreign born individuals increased in real percentage terms by 182%. Of these, those that entered the state between 1990 and 2000 increased by over 300%. Of these foreign born, the majority (52.5%) come from Latin America, with Asia the next closest at 19.6%<sup>33</sup>. In conclusion, the number of people emigrating from Latin America increased in the 10 year period from 6,255 to almost 49,000, or an otherworldly increase of 683%<sup>34</sup>.

### 5.3 Migration and its effects on Growth

People tend to move to the state when economic conditions are better here than elsewhere. However, this statement must be qualified. In-migration from international destinations depends more on a strong Utah economy, than does in-migration from other states. However, the majority of in-migration over the

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<sup>32</sup> *Ibid*

<sup>33</sup> *Ibid*

<sup>34</sup> *Ibid*

next 30 years is expected to be from international countries, primarily Mexico. As a result, forecasting migration really amounts to forecasting economic conditions.

## 6. METHODOLOGY

### 6.1 The Housing Price Index

Economists are at a natural disadvantage in studying housing markets; specifically the study of housing prices in a given area. Whereas with most goods a price per standard unit can easily be observed, because of the idiosyncratic and varied nature of housing attributes there is no standard unit of housing. If the houses that sell in one year are of higher quality than those that sold the year before, housing expenditures will go up yet true home values have not necessarily. In order to separate changes in house prices from changes in house quality, economists have used a variety of statistical techniques that estimate prices for a uniform, or *quality-controlled*, house.

For purposes of my forecasting, I have gathered a range of data on the SLC metropolitan statistical area (MSA) from the Office of Federal Housing Enterprise Oversight (OFHEO). This governmental entity publishes the House Price Index (HPI), a measure designed to capture changes in the value of single-family homes in the U.S. as a whole, in various regions of the country, and in the individual states and the District of Columbia, and has been publishing an update every 3 months since 1995. OFHEO is required by its enabling statute to

*develop and administer a quarterly risk-based capital stress test to measure the capital adequacy of Fannie Mae and Freddie Mac.*<sup>35</sup>

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<sup>35</sup> (The Federal Housing Enterprises Financial Safety and Soundness Act of 1992 (Title XIII of P.L. 102-550))

The HPI is a broad measure of the movement of single-family house prices. Because of the breadth of the sample, it provides more information than is available in other house price indices.

The HPI is a **weighted repeat sales index**, meaning that that it measures average price changes in repeat sales or refinancings on the same properties. This information is obtained by reviewing repeat mortgage transactions on single-family properties whose mortgages have been purchased or securitized by Fannie Mae or Freddie Mac since January 1975. The HPI is updated each quarter as additional mortgages are purchased or securitized by Fannie Mae and Freddie Mac. The new mortgage acquisitions are used to identify repeat transactions for the most recent quarter and for each quarter since the first quarter of 1975.

The House Price Index is based on transactions involving conforming, conventional mortgages purchased or securitized by Fannie Mae or Freddie Mac. Only mortgage transactions on single family properties are included. **Conforming** refers to a mortgage that both meets the underwriting guidelines of Fannie Mae or Freddie Mac and that doesn't exceed the conforming loan limit, a figure linked to an index published by the Federal Housing Finance Board. The conforming limit for single-family homes was \$275,000 in 2001. **Conventional** means that the mortgages are neither insured nor guaranteed by the FHA, VA, or other federal government entity.

Mortgages on properties financed by government-insured loans, such as FHA or VA mortgages, are excluded from the HPI, as are properties with mortgages whose principal amount exceeds the conforming loan limit. Mortgage transactions on condominiums or multi-unit properties are also excluded.

MSA definitions are taken directly from the Office of Management and Budget (OMB). OFHEO aggregates to either MSA or PMSA, depending on which is available for a given area. The Census website describes the definitions of MSA and PMSA in great detail. MSAs are finer levels of geographic aggregation than states and also vary significantly in their relative populations. For these reasons, OFHEO requires that an MSA must have at least 1,000 total transactions before it may be published. Application of this criterion results in different starting points for various MSAs. Additionally, an MSA must have experienced at least 10 transactions in any given quarter for that quarterly value to be published. Blanks are displayed where this criterion is not met.

OFHEO has access to this information by virtue of its role as the federal regulator responsible for ensuring the financial safety and soundness of these government-sponsored enterprises. Chartered by Congress for the purpose of creating a reliable supply of mortgage funds for homebuyers, Fannie Mae and Freddie Mac are by far the largest mortgage finance institutions in the United States. The combined mortgage records of these GSEs are the nation's largest database of mortgage transactions.

## **6.2 Rent Data Sources**

Rent Data is obtained from the Bureau of Labor Statistics (BLS) as part of their overall data collection for the Consumer Price Index (CPI).

The CPI has had a rent component since its inception; however, in 1978 it made major improvements to its sampling methods.

Sampling. The primary housing sample is a stratified cluster sample, which represents housing units built before the latest decennial

census. Housing units built after that census are handled through the New Construction Survey. (See "New construction augmentation" below.) Using data from the Census of Population and Housing, CPI analysts divide the CPI areas into segments (geographic neighborhoods). These segments are then stratified within each CPI area.

New construction augmentation. Primary sample selection is done with every decennial census, so the primary sample represents housing units built before that census. Starting in 1978, when the CPI began using a housing sample based on the 1970 census, BLS has augmented the primary housing sample with housing units constructed since the most recent census. The Census Bureau supplies to BLS a sample of address records from building permits, representing housing units built after that census, and BLS fits these housing units into the sample drawn from that census.

Housing sample pricing. Because rents are not volatile, the CPI can use a longer interval between pricing observations than it uses for other consumer items. The housing sample is divided into six subsamples called panels. Each panel is priced in consecutive order, so that every panel is priced twice a year. For example, panel 1 is priced in January and July, panel 2 in February and August, and so on through panel 6. The segments within the strata are assigned to these panels. These assignments are made such that each panel is a representative subsample of the CPI area. Because each panel is representative of the entire sample and there is never an off-cycle month for the Housing survey, a panel of data provides sufficient information for monthly publication of the rent and rental equivalence indexes.



The BLS derives data on the monthly economic rent for each renter unit in the survey. The economic rent is the contract rent (including the value of certain rent reductions) adjusted by the value of any changes in the services the landlord provides.

### 6.3 Regression-based Forecasting

Economists take pains to avoid looking backwards as a way to forecast what will happen going forward. No one would suggest looking out the rear window while driving a car as a sound method of ascertaining what lies ahead. On the other hand, if we look at past trends and mathematically discern the fundamental factors that underlie these past and current trends, then a model can be built to make use of these same fundamental economic indicators to reasonably predict the future direction of the market. We can determine, within a reasonable range, what the market will do, depending on what occurs with these indicators.

Running this regression, I get the following for the demand equation:

RENT			PRICE		
	Coefficient	T-Stat		Coefficient	T-Stat
Constant	-703.31	(-1.04)	Constant	346332.90	(3.62)
EMP	1.79	(3.48)	EMP	382.63	(2.62)
MS	-0.01	(-3.44)	SS	-0.92	(-3.51)
RRENT	0.62	(1.92)	PRICE	0.75	(8.88)
SIZE	619.25	(2.00)	SIZE	17106.40	(0.39)
WAGE	-7534.71	(-0.75)	WAGE	469338.63	(0.33)
		$R^2 = .97$			$R^2 = 0.945$

The numbers in parentheses are t-statistics. As a general rule, if:  $-1.7 > t\text{-statistic} > 1.7$ , then we can be pretty confident that the coefficient we have estimated is truly different from zero, and the coefficient is then relevant. Any t-statistic between the range of 1.7 and -1.7 is irrelevant. With these variables, our model is able to explain 97% (94.5% for the rental market) of the variation in house prices (rents) across the MSA.

Below is a table showing the coefficients & the elasticities they represent.

#### RENT

$\alpha_0$ (Constant)	-703	Typically represents the "starting point" for rent if there were no economy at all. The t-stat tells us that it is not relevant.
$\alpha_1$ (Emp)	1.79	Each additional worker generates a .00179 increase needed in MF stock for real rents to remain constant. See additional discussion below**
$\alpha_2$ (Stock)	-0.0084	Each additional unit of stock means units should decrease .0084 to keep real rents constant. See below**
$\alpha_3$ (Rent)	0.62	This is the adjustment rate for employment. If a thousand workers come into the economy the increase in rents in the first year is 1.79. In year two rents go up by $1.79 + (1.79 \cdot .62)$ , and so on.
$\alpha_4$ (Size)	619.25	With every increase of one in the ratio of population to employment, rent will go up by \$619.25

## PRICE

$\alpha_1$ (Emp)	382.63	Each additional worker generates a .38 increase needed in SF stock for real rents to remain constant. See below**
$\alpha_2$ (Stock)	-0.92	Each additional unit of stock means units should decrease .092 units to keep real rents constant. See below**
$\alpha_3$ (Price)	0.75	This is the adjustment rate for employment. If a thousand workers come into the economy the increase in price in the first year is \$382.63. In year two rents go up by $382.63 + (382.63 * .75)$ , and so on.

\*\*Putting the Rent and Price coefficients of Employment and Stock together, we can determine the following: from the Rental equation, since each worker generates a .00179 decrease, each unit a decrease of .0084., we need to add  $179/840 = .213$  units or 213 units for every thousand workers if real rents are to remain constant. For price it is  $.38/.92 = 416$  units for each worker. Therefore, for each 1000 people added to the employment rolls we need 630 (213 + 416) new units to house them. This works out, as the average SLC household size is 1.5. I explain how I derived the demand equation below.

### 6.3.1 Demand Equations

The current demand for owner occupied housing (sf housing) is first and foremost proportional to the number of households in the area:

$$\text{Demand} = \text{Households} (\alpha_0 - \alpha_1 U)$$

The parameter,  $\alpha_0$ , is roughly equivalent to the fraction of households who would own homes if the annual costs were zero, while  $\alpha_1$  is the responsiveness of this fraction to changes in the cost of owning. For instance, with a drop in mortgage rates a buyer can buy more house because the cost of borrowing money has decreased. Summing it up, the annual cost of owning depends on current price level ('P'), the current after-tax mortgage rate ('M')<sup>36</sup>, and the *ex ante* future price appreciation the homebuyer is expecting ('I'), expressed as:

$$U = P (M - I)$$

Stock flow theory holds that in the short run, house prices adjust quickly to equate housing demand to the existing stock of units.

$$D = S$$

By contrast, changes in the total stock of housing occur only gradually, primarily due to the lag involved in construction. Combining the above 3 equations to solve for current house prices (P), we get:

$$P = (\alpha_0 - S/H) / \alpha_1 (M - I)$$

The stock flow approach assumes that this equation holds during each and every period. Thus, the price level of housing today will be higher, all else

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<sup>36</sup> The current after-tax mortgage rate is  $(1-t_y)i$ , where  $t_y$  is the marginal income tax rate, and  $i$  is the nominal mortgage interest rate.

being equal, when today's ratio of stock-to-households is smaller, mortgage rates lower, or expectations about future price increases more optimistic.<sup>37</sup>

In our unique model, we first determine a demand equation; where EMP is the total employment in thousands, SS, the total stock, the price of housing is P, the ratio of Employment to Population is denoted SIZE, and W is WAGE:

$$D = (\alpha_0 - \alpha_1 \text{EMP} + \alpha_2 \text{SS} - \alpha_3 \text{P} + \alpha_4 \text{SIZE} + \alpha_5 \text{W})$$

With  $D = S$ , then we set demand equal to stock and use algebra to get the price determination equation:

$$P = 1 / \alpha_3 (\alpha_0 - \alpha_1 \text{EMP} + \alpha_2 \text{SS} + \alpha_4 \text{SIZE} + \alpha_5 \text{WAGE} - \text{SS}_{t-1})$$

$$\text{Price} = (1/.75) [346332 - 382.6(\text{EMP}) - .92(\text{SS}) + 17106(\text{SIZE}) + 469338\text{WAGE} - \text{SS}_{t-1}]$$

The demand equation for Rent starts out the same,

$$\text{Rent}^* = 1 / \alpha_3 (\alpha_0 - \alpha_1 \text{EMP} + \alpha_2 \text{MS} + \alpha_4 \text{SIZE} + \alpha_5 \text{WAGE} - \text{SS}_{t-1})$$

But with an adjustment:

$$\text{Rent}_t = B (\text{Rent}^*) + (1-B)\text{R}_{t-1}$$

Where the subscript t-1 refers to one period back. The term (1-B) is the lagged rent (or price coefficient). So, B = 1- lagged rent coefficient. Combining the two, we get:

$$\text{Rent} = B[(1 / \alpha_3 (\alpha_0 - \alpha_1 \text{EMP} + \alpha_2 \text{MS} + \alpha_4 \text{SIZE} + \alpha_5 \text{WAGE} - \text{SS}_{t-1})) + (1-B)\text{R}_{t-1}]$$

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<sup>37</sup> "Urban Economics and Real Estate Markets," DiPasquale and Wheaton

### 6.3.2 Supply Equations

A typical supply equation is fairly straightforward. Linking the increase in stock to construction begun 1 period ago (the term  $C_{t-1}$ ) with a variable to account for a percentage of existing units scrapped, we get

$$S_t - S_{t-1} = C_{t-1} - \text{scrappage rate}$$

For Price and Rent, our supply equations are as follows:

$$\text{Permits} = (\alpha_0) + \alpha_1 \text{SF PERMITS}_{t-1} + \alpha_2 \text{PRICE} + \alpha_3 \text{PRICE}_{t-1}$$

$$\text{Permits} = (\alpha_0) + \alpha_1 \text{RRENT}_{t-1} + \alpha_2 \text{RRENT}_{t-2} + \alpha_3 \text{MF PERMITS}_{t-1}$$

Supply Equations					
Single Family			Multi-Family		
Constant	2086	(1.24)	Constant	-1352	(-.36)
SF Permits	0.45	(2.98)	Rrent <sub>(t-1)</sub>	8.79	(.56)
PRICE	0.07	(3.46)	Rrent <sub>(t-2)</sub>	-4.37	(-.33)
PRICE <sub>(t-1)</sub>	-0.06	(-3.51)	MF Permits	0.53	(1.52)

Or a function of:

$$\text{SF Permits} = 2086 + .45(\text{SF PERMITS}_{t-1}) + .07(\text{PRICE}) - .06(\text{PRICE}_{t-1})$$

MF follows the same form.

We can link the above equations with the typical supply equation, where  $C_{t-1}$  = the number of Permits from last year, to get current year stock (supply).

While this amount of new construction depends on the current amount of stock, it is also heavily driven by the current level of house prices. When prices are rising, this brings forth new construction. Once these new units are

completed and come on line, this increase in supply will drive price back down until stock catches up to the long run equilibrium.

Now, in order to scientifically forecast future prices, rents and construction we need to input some assumptions about our primary economic indicators: employment, population, income, and wages. I will explain in the next section the various assumptions I keyed in, and my rationale for doing so.

## 7. FORECASTS

### 7.1 Forecast of Future Migration

A comprehensive study was prepared by the U.S. Census Bureau in the 1990's. According to that report, Utah was expected to gain 80 thousand people through international migration between 1995 and 2025, placing it 33rd largest among the net international migration gains among the 50 states and District of Columbia.<sup>38</sup> According to the same report, Utah's population would grow to 2.2 million by 2000.<sup>39</sup> This forecast was missed by 50%, as the population at decade's end was 2.3 million.

The role of the LDS Church figures in as well. The rapid initial growth of Utah resulted from one of the most well organized international migration movements in modern times. Leaders of the LDS Church provided management of these nineteenth century migrations and associated settlements. How does this affect contemporary migration? By 1998, there were actually more members of the church outside of the U.S. than inside. This is remarkable for an entity that has been called an "American church". Because Salt Lake City is headquarters to

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<sup>38</sup> Series A, Paul R. Campbell, "Population Projections for States, by Age, Sex, Race and Hispanic Origin: 1995-2025," Report PPL-47, U.S. Bureau of the Census, Population Division

<sup>39</sup> *Ibid*



a large international religion, this will continue to bring in diverse populations to Utah.

The state projects a prolonged period of net in-migration especially pronounced between 2007 and 2012. If correct, this would bring an additional 245,000 persons to the state through migration between 2004 and 2020. These cycles particularly influence number of births because the peak years for individuals to migrate for employment reasons (mid-20's) are also the years in which they are most likely to have children.<sup>40</sup>

It is clear that a great uncertainty in forecasting the rate of population growth stems from the cyclical nature of migration. This point may seem tiresome to the reader, but it cannot be overemphasized: Utah will be on firmer footing than most other states due to its high rate of natural increase, a rate that accounts for 88% of total population growth.

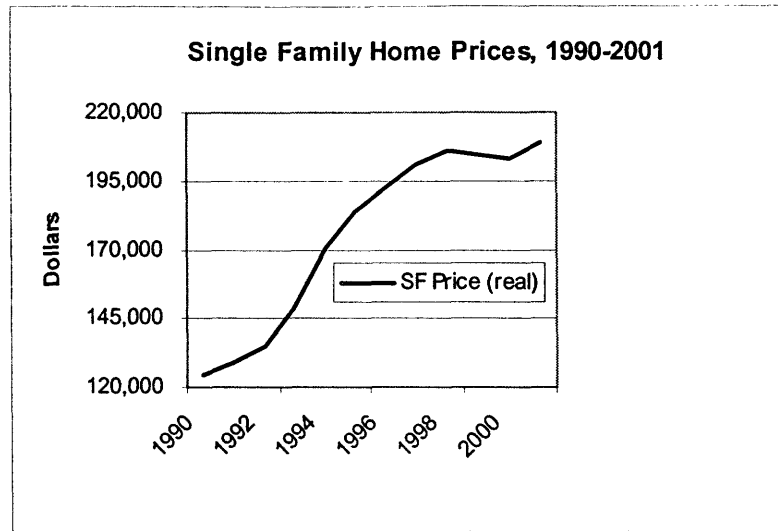
## **7.2 Fears of a Housing Bubble**

There has been much concern about the rising home prices in the SLC-Ogden MSA. Looking at figure 7.1 below, it is easy to see why.

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<sup>40</sup> "Demographic Trends Affecting Public Education in Utah," Pamela S. Perlich

**Figure 7.1**



While homeowners have understandably enjoyed the run-up, experts warn that such a steep run-up might well be evidence of a bubble, and that a correction could be in the offing. If one looks only at recent history and concludes that prices are irrationally high—a study on precisely that topic was quoted in a recent newspaper article --then those fears might be well founded. In comparison with over 180 other MSA's around the nation--by either 1 year period or a 5 year period--the SLC-Ogden metro area actually falls in the lowest quartile (see Table 7.1).<sup>41</sup>

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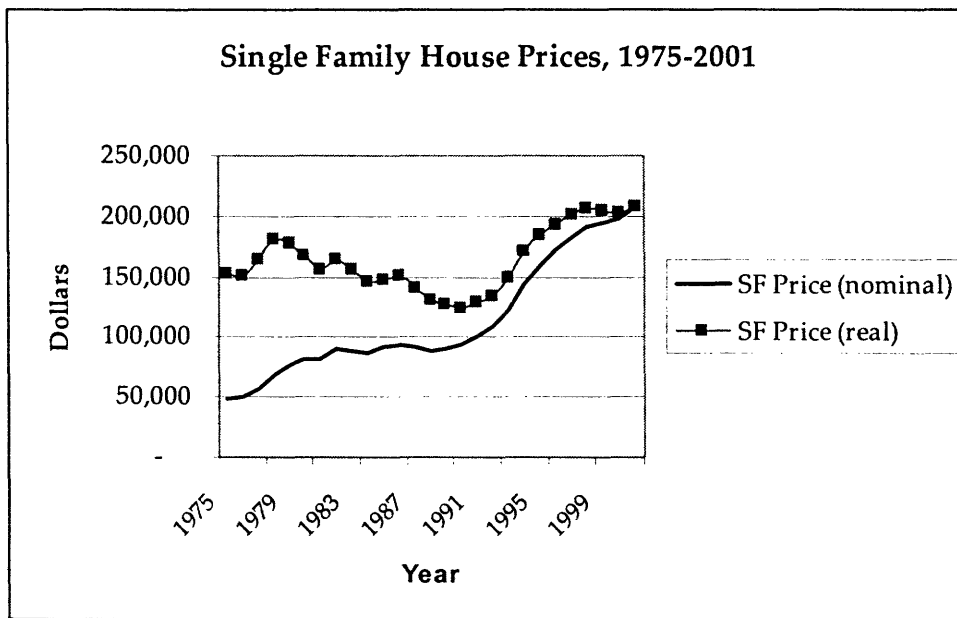
<sup>41</sup> "House Appreciation Rankings by MSA," Forbes.com

**Table 7.1**

Metro Area	National Ranking	1-Year	Qtr	5-Year
Salt Lake City-Ogden, UT	158	3.9%	0.6%	19.7%

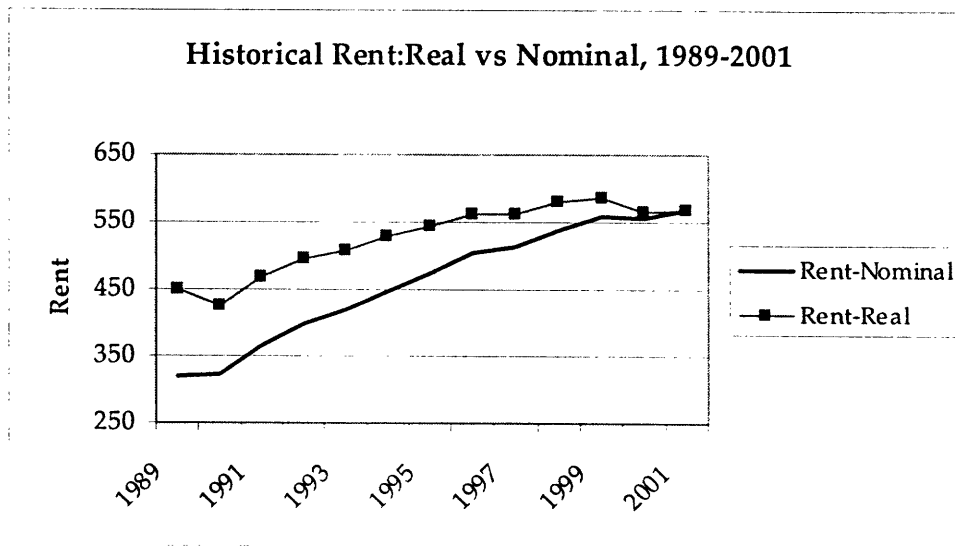
In addition, when taking in the whole picture of what home prices in the Salt Lake City-Ogden MSA have done since 1980, that home prices in our study area consistently lost value for most of the 80's, then the cumulative increase is not all that out of the ordinary. In fact, when one looks at appreciation in single family homes for the last 25 years, homes in the Salt Lake-Ogden MSA have appreciated on average at an annual rate of only 1.39%. Figure 7.2 shows the appreciation in real (inflation-adjusted) prices over the last 26 years.

**Figure 7.2**



A key determinant of the future state of the housing market is how well the market reacts to the sharp run-up through 1996. It stands to reason that any market enjoying 8-10% appreciation per year will not last, and the longer it goes the steeper the inevitable tumble. Home prices can only outpace income for so long. That being said, it is encouraging that home prices since have settled down for more of a gradual walk, and since 1996 have appreciated on average 2.14% per year. This drop-off in appreciation as it happens is a good thing, indicating that the market is slowing to a more manageable (and realistic) pace, and quells fears about the housing market being wildly overvalued. Rents are much less volatile; we show the trend lines for rent as an example in Figure 7.3.

Figure 7.3



### 7.3 Regression Results and Forecasts

Utah's ratio of population to employment (termed *size* in economic parlance) has dropped precipitously from 3.4 to 1.85 over the last 30 years. One might conveniently say that this drop in *size* is simply a result of Utahns having fewer kids. During that same 30 year period, Utah's fertility rate has dropped from 3.3 to 2.6, a decrease to be sure, but not enough to account for this change. As further evidence, average family size in Utah has remained about the same for the 1990-2000 period (3.6 to 3.54)<sup>42</sup>; even while *size* has decreased over the same period from 2.17 to 1.85. From this we can hypothesize that there is no observable correlation between family size and the ratio of population to employment. While this marginal drop in the fertility rate does have some contributing affect, it appears that there is more going on.

Looking at the data, a number of things become clear. While still more homogeneous than most states, Utahns are increasingly becoming more diverse and varied.<sup>43</sup> More and more "dissimilar" people (dissimilar to the existing population) are in-migrating--with fewer kids and different religious preferences than the existing population--and inexorably changing the demographic makeup

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<sup>42</sup> Profile of Selected Social Characteristics, U.S. Census Bureau, Census 2000 (see Figure 5.2, page 54)

<sup>43</sup> Ibid

of the state. This has impacted the housing market in a very tangible way by increasing demand for single family housing.

Intuitively, one would expect the reverse to happen. If we establish that the in-migrants will tend to have smaller households, one might initially venture that their housing needs would be less, and that this would manifest itself in a higher demand for rental housing. That has not occurred. I will explain why. For pedagogical and comparative purposes let's put this household side by side with a typical Utah household. Household A represents the average three generation Latter Day Saint household and Household B represents the average household migrating from another state. Simply on the basis of housing needs, A would clearly be the prime candidate for single family housing (i.e. larger), while B would be much more capable of living in a rental unit. This illustrates the crucial difference between what a household wants and what it can afford. Households with more kids may prefer a larger house to expand into, but more kids also mean more expenses, and as a result many cannot afford the housing services they want. Households with fewer or no kids at all, on the other hand, have significantly more disposable income and are able to live more comfortably as a result. This translates into more purchasing ability when it comes to housing, and it is precisely this that is one of the drivers of the demand for single family housing.

Another point to extrapolate from this drop in *size* is that this means that there is more output; more is being produced in the state. With *size* high, that means more kids and/or elderly; or more non-working individuals. This is also why per capital income in the state has traditionally been at the bottom end of the national scale.

#### **7.4 Various Professional Forecasts of Fundamental Economic Indicators**

In attempting to determine what trajectory such variables as population and income will take over the coming decade, failing to take advantage of professionals viewpoints would be foolish.

The Wasatch Front Regional Council (WFRC) maintains future year projections of demographic and economic data for the region. The Regional Council, as the Metropolitan Planning Organization (MPO) for the Salt Lake City and Ogden, Utah Urbanized Areas, is responsible for the transportation planning for the region. In a recent report, the WFRC published projections for employment and growth by county for the period 2005-2030.<sup>44</sup> For the period thru 2010, the WFRC forecasts annual average growth in population of 2.5% and

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<sup>44</sup> Technical Report #39, Wasatch Front Region Small Area Socioeconomic Projections: 2005-2030, July 2001

employment growth of 2.45%, though it should be noted that the annual average forecast for the full 25 year period is 1.7% and 1.88%, respectively.

According to ECONorthwest, a well-respected economic consulting firm based in the Northwest, the region is predicted to grow by 2.2 percent per year. Two-thirds of this growth is expected to come from residents' children growing up, settling in this area and starting their own families<sup>45</sup>.

In a 1995 study prepared for the U.S. Census Bureau, Population Division, it was estimated that over the subsequent three decades, Utah's total population is expected to increase 931,000 people. Among the 50 states and District of Columbia, the state's net gain ranks as the 18th largest. Its rate of population change, at 47.7 percent, ranks as the 7th largest. From 1995 to 2000, the state would have a net increase of 256,000, which would rank as the 13th largest net gain in the nation.<sup>46</sup> The study uses a population growth rate of 1.8% through 2010.

A study by the Governor's Office of Planning & Budget forecasts population growth of 2.32% through 2010.<sup>47</sup> According to the paper, natural

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<sup>45</sup> ECONorthwest, 1999

<sup>46</sup> "Population Projections, 1995-2025," Paul Campbell, U.S. Census

<sup>47</sup> Governor's Office of Planning & Budget—Demographic and Economic Analysis Section, UPED Model System. December 2001



increase will fuel 81% of Utah’s population growth over the next thirty years.

Employment is forecasted to increase annually at a 2.5% clip.

According to the Economic Development Corporation of Utah, the three counties that make up the SLC-Ogden MSA are among those forecasted with the highest absolute increases in the state population from 1999 to 2030<sup>48</sup>.

See Table 7.2 for a summary of these forecasts.

**Table 7.2**

<u>Professional Forecasts:</u>	<u>Population</u>	<u>Employment</u>
WFRC <sup>49</sup>	1.95%	2.45%
Econorthwest	2.20%	n/a
U.S. Bureau of the Census	1.80%	n/a
GOPB <sup>50</sup>	1.94%	2.28%

These various forecasts are instructive in determining the inputs to use for the future economic growth of the SLC-Ogden area. I started out conservatively, with a baseline scenario projecting growth in employment of 2%, population of 1.5%, and wages of 1%. However, I felt justified in straying from this initial

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<sup>48</sup> “State of Utah, Demographic Overview,” The Economic Development Corporation of Utah

<sup>49</sup> Wasatch Front Small Area Socioeconomic Projections, 2005-2030

<sup>50</sup> 2002 Baseline Projections, GOPB; UPED Model System. Employment data is for the state, not the MSA; as a result employment forecast data for mining and agriculture was omitted.

forecast and trying to tease out a growth model that was more closely aligned with Utah and its unique demographic. As a reference point, historically population has increased since 1971 at an average annual rate of 2.21% (2.5% for 1990-2001 period), and employment 3.52% (See Figure 7.5).

I will first show the various forecasts for comparison sake, and then my explain and then and graph my own projected forecasts.

Figure 7.4a

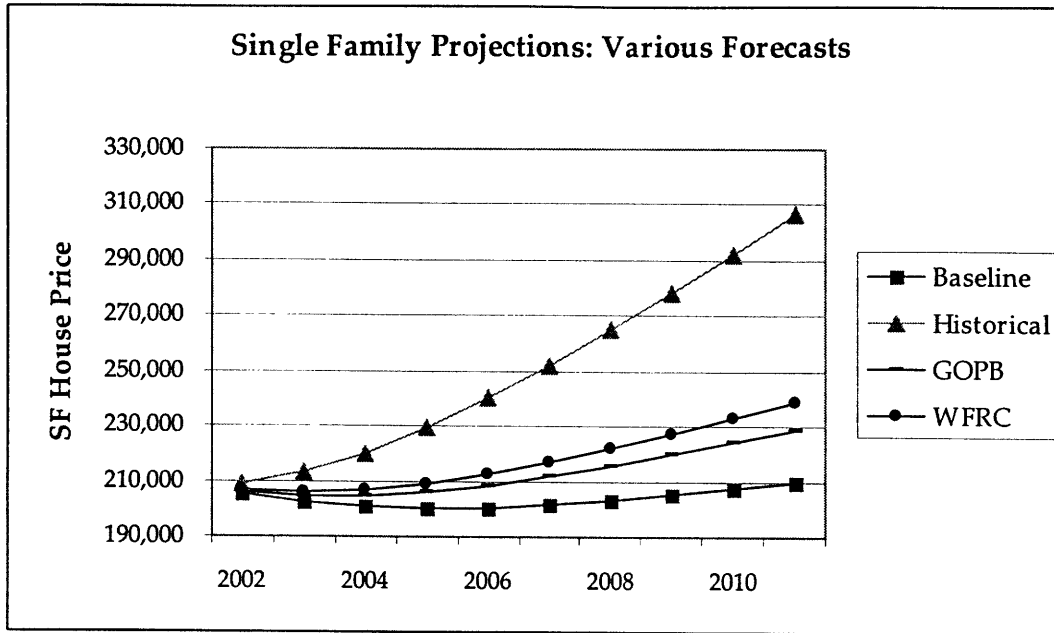
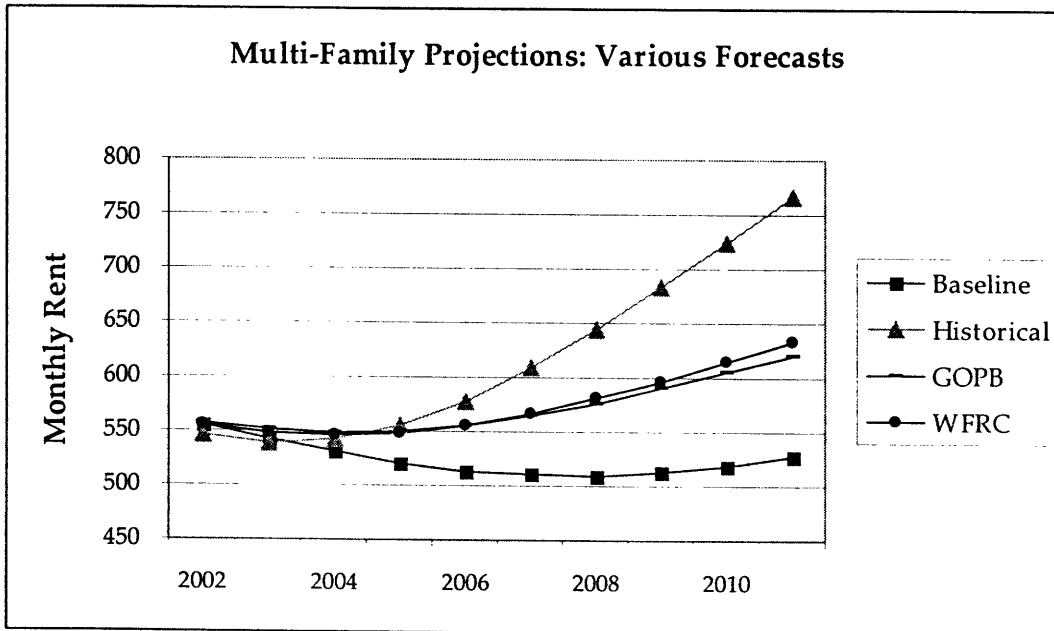


Figure 7.4b



**Table 7.3a – Source Data**

	Baseline Model			Historical		
	Price	Stock	SPER	Price	Stock	SPER
2002	205,327	698,001	6,652	209,244	698,271	6,922
2003	202,447	703,937	5,918	213,219	705,075	6,786
2004	200,660	709,621	5,665	220,195	712,258	7,164
2005	200,049	715,330	5,689	229,456	720,004	7,726
2006	200,423	721,189	5,839	240,305	728,316	8,291
2007	201,525	727,234	6,023	252,226	737,127	8,788
2008	203,131	733,450	6,194	264,908	746,355	9,205
2009	205,087	739,812	6,338	278,202	755,940	9,560
2010	207,304	746,292	6,456	292,068	765,845	9,878
2011	209,740	752,871	6,554	306,526	776,053	10,181
	Rrent	MS	MPER	Rrent	MS	MPER
2002	555	140,888	2,477	547	140,888	2,477
2003	543	143,365	2,348	539	143,365	2,271
2004	531	145,713	2,228	542	145,635	2,195
2005	521	147,941	2,116	556	147,830	2,217
2006	514	150,057	2,023	579	150,047	2,335
2007	510	152,080	1,956	608	152,382	2,536
2008	510	154,036	1,918	644	154,917	2,805
2009	513	155,954	1,912	683	157,723	3,128
2010	519	157,866	1,935	724	160,851	3,488
2011	527	159,801	1,986	766	164,338	3,870

Price: Single Family House Price

Stock: Current stock of SF Units

SPER: Number of new SF building permits issued

Rrent: Multi-Family Rent

MS: MF Stock

MPER: Number of new MF building permits issued

**Table 7.3b—Source Date (cont.)**

<b>GOPB</b>			<b>WFRC</b>		
Price	Stock	SPER	Price	Stock	SPER
206,154	698,058	6,709	206,576	698,087	6,738
204,706	704,176	6,100	205,863	704,298	6,193
204,726	710,172	5,977	206,819	710,455	6,138
206,120	716,300	6,109	209,262	716,801	6,326
208,584	722,659	6,338	212,834	723,420	6,599
211,805	729,258	6,577	217,194	730,312	6,870
215,539	736,069	6,789	222,086	737,441	7,106
219,632	743,058	6,965	227,356	744,768	7,303
224,003	750,194	7,111	232,931	752,262	7,468
228,625	757,458	7,238	238,787	759,903	7,615
Rrent	MS	MPER	Rrent	MS	MPER
557	140,888	2,477	555	140,888	2,477
551	143,365	2,364	548	143,365	2,348
549	145,729	2,303	546	145,713	2,280
551	148,032	2,279	549	147,993	2,256
556	150,311	2,292	556	150,249	2,276
565	152,603	2,340	567	152,525	2,337
577	154,943	2,419	581	154,863	2,434
590	157,362	2,523	597	157,297	2,560
605	159,884	2,646	615	159,857	2,708
620	162,530	2,781	633	162,565	2,870

## 7.5 My Projected Forecasts:

	<u>Population</u>	<u>Employment</u>
My Forecasts	2%	2.30%

Determining what rates to use for employment, income, and population growth, I begin by discarding the 3.5% employment growth number. This high number is a result of Utah's ratio of population to employment standing at an abnormally high 3.4 in 1969. Inevitably, this number would have to come down-- as it did--in the form of more people getting jobs. Even though the 15 year (3.21%) and 10 year (3.43%) averages are pretty much the same, I concluded that it could not be sustained. I also eliminated the Census Bureau's 1.8% population growth rate; without a single migrant coming into the state the birth rate replenishes the population at a rate of 1.75%. As a result, for employment I am projecting a conservative 2.3% (for Utah) annual increase. According to the supply equation, historically supply has been in a limited range, and it will in effect be difficult to generate needed construction without significant price/rent increases. As a result, Utah's historical population growth rate (2.21%) is still high to use as a projection. and with the above forecasts ranging from 1.8 to 2.2, I have used 2% as my projected annual rate of population increase.

Table 7.5: My Projections-Single Family Housing

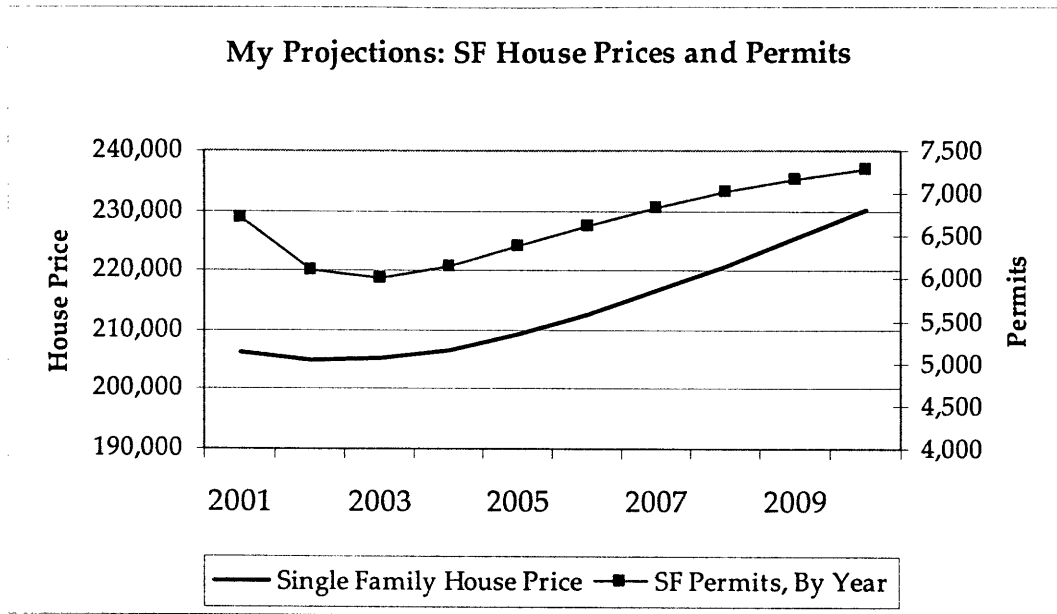


Table 7.5b: My Projections, Multi-Family Housing

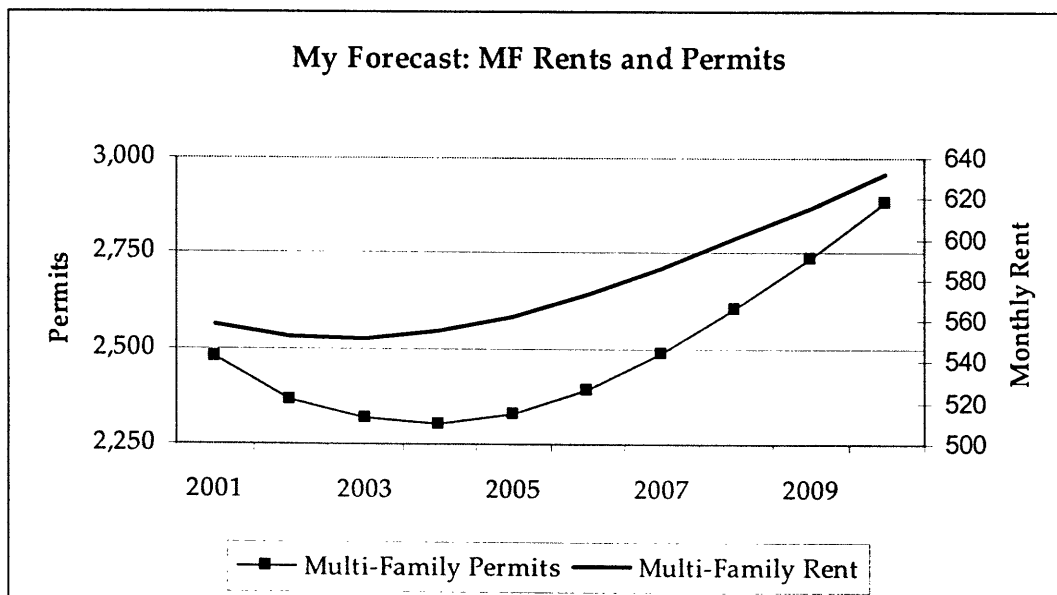
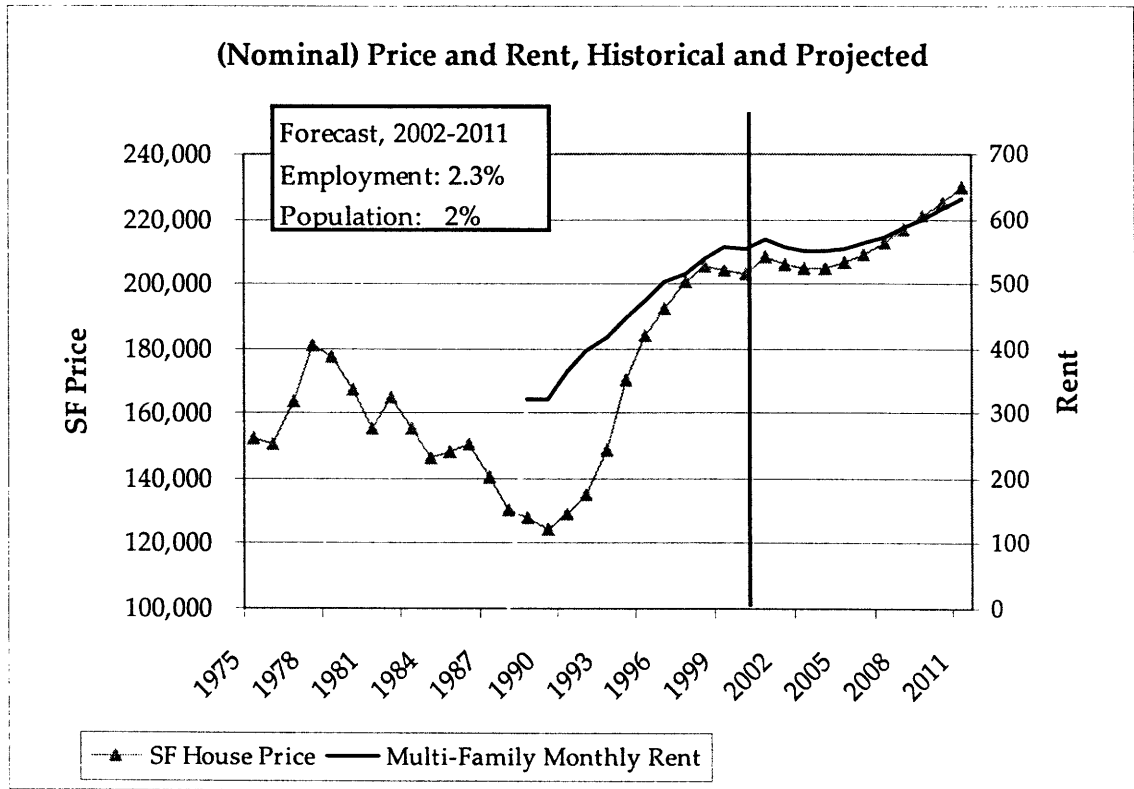


Figure 7.6



### 7.6 The Effect of “Demand Shocks”

It is widely accepted that any significant changes in interest rates (i.e. mortgage rates), inflation, and tax policy can dramatically alter the effective cost of different capital assets. The 1986 Tax Reform Act is just such an example. A sharp upturn in the interest rate above its current 30-year low would trigger a textbook “demand shock”. Not only do these intuitively affect the cost of homeownership, but they also affect rental housing in very tangible ways. First, because they affect the “cost of homeownership”, they necessarily affect its



alternative, the cost of and thus the demand for rental housing. Secondly, and more importantly, since rental housing is owned by someone other than the occupant, the combinations of these three also influence its investment return, and therefore its supply.<sup>51</sup> This is a disclaimer, if you will, that forecasts of future events can't hope to foresee future events, and how they might create "demand shocks". We can take recent events to demonstrate just how such a demand shock might occur.

In light of the recent high-profile accounting scandals, much has been made in the press as of late regarding the safety of one's savings in the stock market. While all investments are ultimately competing for the same dollars, one might be inclined to think that this will cause a surge of money flowing out of traditional public securities and into alternatives; real estate being an obvious candidate. For a true demand shock to occur, however, there would have to be a sustained wholesale exodus from the public markets. This is unlikely to happen, unless even more egregious scandals come to light. At the same time, the tangible allure of "bricks and mortar" real estate does seem a safe harbor if one is skittish about a public company's "earnings".

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<sup>51</sup> "The Cost of Capital, Tax Reform, and the Future of the Rental Housing Market," *Journal of Urban Economics* 31, 337-359 (1992) Denise D. Pasquale and William C. Wheaton

## 8. CONCLUSION

By now, we have painted a picture of Utah's strengths and weaknesses, and its prospects for the future. Having had the highest rate of natural increase in the country for as long as the statistics have been kept, there seems little reason to believe that this will change in the future. We have established that growth is not a question of *if*, but more a matter of *at what rate* of growth. So, with that as the assumption, we return to our fundamental question: how well can the SLC-Ogden area accommodate this future growth?

**Labor-** We know that in order for a the SLC-Ogden region to enjoy a sustained level of economic growth, it must either already have a local labor supply or be able to attract a large pool of workers. Utah possesses not only a highly educated workforce but also a large pool of young people to fill entry-level jobs. Migratory workers from Mexico and other points also help fill the region's needs. These qualities, combined with a highly regarded work ethic, attract both firms and industry, and ensure that a lack of labor doesn't stand in the way of continued economic growth.

**Real Estate-** Without affordable housing for the area's workers and buildings for its firms, output cannot be easily produced. Utah has a sparse 27.2

persons per square mile, significantly less than the national average of 79.6<sup>52</sup>. We mentioned earlier the geography of the three counties that make up the SLC-Ogden area. The fact remains that despite geographical features that would seem to limit expansion, at least within the confines of the SLC valley, there is still room to grow, especially when one takes into account the land located immediately outside the mountain-ringed SL valley. Of the two counties to the north of Salt Lake City, Davis and Weber, Davis is expected to reach build-out by 2030 (approximate population at build-out: 400,000); and Weber, hemmed in by the Wasatch Mountains and the Great Salt Lake, has few outlets for spillover growth. Salt Lake County, on the other hand, does have more room for growth, although not in the county proper. Just outside of the valley (which pretty much defines the county), some significant acreage remains and some booming bedroom communities have already sprung up. Tooele County has proved to be a viable alternative to the Salt Lake metro area, and has added 16,000 residents since 1990. Its 25 minute commute to downtown makes it 10-15 minutes quicker than a commute from either the south end of SL valley or north from Davis County. What's more, the area has 7,000 square miles, or an astonishing 4.4 million acres of land area. It is expected to be one of Utah's fastest-growing counties; experts forecast 2.7% population growth per year for the next 30 years.

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<sup>52</sup> U.S. Census 2000

To the south Utah County, where a couple of the larger master planned communities are being developed, is the other area with lots of room to handle growth.

It is essential to reiterate that it is a good thing that home price appreciation has slowed over the last few years. Compared with the nation, OFHEO housing price growth in Utah has lagged behind growth in housing prices in the US since the 3<sup>rd</sup> quarter of 1998.<sup>53</sup> It will also augur well if they remain flat for at least the next few years, as I have forecasted. Households will not have experienced recent unreasonably high annual appreciation rates (“myopic expectations”), and as a result will be more realistic in their expectations going forward. A marketplace with “rational expectations” should carry the day, and should be able to sidestep the wild oscillations that come with the over building in an unrealistic market.

With room to grow, the Salt Lake, Davis and Weber Counties should have ample room for expansion if current growth rates continue. With the highest birth rate in the country, Utah’s population should continue to naturally increase annually regardless of the migration cycle. While it is difficult to predict economic trends in population, income, and employment, the Salt Lake City and Ogden metro area housing markets should hold fairly steady even if a

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<sup>53</sup> OFHEO

prolonged nationwide or regional downturn should occur, and should exhibit reasonable continued growth in a healthy economy.

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