

Population Forecasts: Long-Term Projections for Clark County, Nevada 2009-2050

2009

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Executive Summary

Each year, the Regional Transportation Commission (RTC), the Southern Nevada Water Authority (SNWA), Clark County Comprehensive Planning (CCCP),¹ the Center for Business and Economic Research (CBER) at the University of Nevada, Las Vegas, and a group of community demographers and analysts work together to provide a long-term forecast of economic and demographic variables influencing Clark County. The primary goal is to develop a long-term forecast of the Clark County population that is consistent with the structural economic characteristics of the county. Toward this end, we employ a general-equilibrium demographic and economic model developed by Regional Economic Models, Inc. (REMI), specifically for Clark County. We recalibrate the model to reflect the most current information available about the local economy.

The model recalibration incorporates the most recent available information about employment growth, expected hotel construction, transit investment, and an amenity factor representing negative externalities from growth. The resulting forecast predicts positive economic growth throughout the range of the forecast, though the variance in the growth forecast is much higher in the short run compared to the long run. Hence, the primary focus remains on the long run, which has a final population forecast of 3.31 million in 2035. With effect from this year, the forecast is extended to 2050 which shows a population forecast of 3.85.

Table 1 summarizes the population forecast. The population in Clark County is predicted to grow at a rate of 3.4 percent in 2009. We note that, despite short-term economic uncertainties and model difficulties, the main focus of this forecasting exercise, the long-term population-growth estimate is fairly consistent with past forecasts. By

¹ Beginning this year, CCCP is replaced by Southern Nevada Regional Planning Coalition (SNRPC).
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2015, the growth rate is at 2.6 percent, and by 2030 it has leveled off at around 1 percent. This represents a long-term convergence to the national average annual population-growth rate, which is projected to stabilize at around 1 percent after 2020. We forecast a growth rate of 1.1 percent in the year 2035, which is consistent with last year's forecast. The forecast predicts a growth rate of 0.8 percent in the year 2050.

The current recession affects population. A severe recession drives up unemployment rates and places people at economic risk. During such periods, we might expect slower rates of migration as people tend to be less sure of their economic environment in locations with which they are not as familiar. For economies such as Clark County, where there is a fairly higher percentage of the work force in construction than the national economy, the stoppage of construction at big projects is likely to result in out-migration because workers in this industry are accustomed to moving to find work. The effect of the current economic environment is to keep the population levels below the trend line shown in the baseline forecast. These recent events are natural swings of a couple years' duration and should be fully expected over the forecast range.

Although we feel this year's forecasts are sound, there are significant risks to the forecasts which could lead to our having either over- or underestimated population growth in the short-run. Specifically, the assumptions used in the forecast rely on current knowledge of construction activity on the Las Vegas Strip. To the extent that new information differs, the short-run forecasts will differ. We say, however, that these risks tend to arise from short-run uncertainty; whereas, our forecasts are primarily meant to be long-run planning tools.

Table 1: Clark County Final Population Forecast: 2000 – 2050 ²

Year	Population	Annual Change	Annual Percent Change
2000	1,428,690*	107,373	8.1%
2001	1,498,274*	69,584	4.9%
2002	1,578,332*	80,058	5.3%
2003	1,641,529*	63,197	4.0%
2004	1,747,025*	105,496	6.4%
2005	1,815,700*	68,675	3.9%
2006	1,912,654*	96,954	5.3%
2007	1,996,542*	83,888	4.2%
2008	1,986,146*	-10,396	-0.5%
2009	2,053,000	66,854	3.4%
2010	2,122,000	69,000	3.4%
2011	2,189,000	67,000	3.1%
2012	2,255,000	66,000	3.0%
2013	2,320,000	65,000	2.9%
2014	2,384,000	64,000	2.8%
2015	2,446,000	62,000	2.6%
2016	2,505,000	59,000	2.4%
2017	2,561,000	56,000	2.3%
2018	2,615,000	54,000	2.1%
2019	2,666,000	51,000	1.9%
2020	2,715,000	49,000	1.8%
2021	2,761,000	46,000	1.7%
2022	2,806,000	45,000	1.6%
2023	2,850,000	44,000	1.6%
2024	2,892,000	42,000	1.5%
2025	2,933,000	41,000	1.4%
2026	2,973,000	40,000	1.4%
2027	3,012,000	39,000	1.3%
2028	3,050,000	38,000	1.3%
2029	3,088,000	38,000	1.2%
2030	3,126,000	38,000	1.2%
2031	3,163,000	37,000	1.2%
2032	3,201,000	38,000	1.2%
2033	3,238,000	37,000	1.2%
2034	3,275,000	37,000	1.2%
2035	3,313,000	38,000	1.1%
2040	3,502,000	38,000	1.1%
2045	3,688,000	36,000	1.0%
2050	3,851,000	30,000	0.8%

*2000-2008 are historical estimates from Clark County Comprehensive Planning.
Note: The average annual forecasted growth rate is 1.6%.

² A full table with all the years appears in Appendix B. The average annual forecasted growth rate for the period 2009 to 2035 is 1.9%. The average annual growth rate of 1.6% is for the period 2009 to 2050.

I. Introduction³

Each year, the Regional Transportation Commission (RTC), the Southern Nevada Water Authority (SNWA), Clark County Comprehensive Planning (CCCP),⁴ the Center for Business and Economic Research (CBER) at the University of Nevada, Las Vegas, and a group of community demographers and analysts work together to provide a long-term forecast of economic and demographic variables influencing Clark County. The primary goal is to develop a long-term forecast of the Clark County population that is consistent with the structural economic characteristics of the county. Toward this end, we employ a general-equilibrium demographic and economic model developed by Regional Economic Models, Inc. (REMI), specifically for Clark County.

The REMI model is a state-of-the-art econometric forecasting model that accounts for dynamic feedbacks between economic and demographic variables. Special features allow the user to update the model to include the most current economic information. CBER calibrates the model using information on recent employment levels, the most recent national Gross Domestic Product (GDP) forecast, spending on capital projects, local information on hotel construction, and adjustments for disamenities related to population growth to reflect local information in the forecast.

The model employed divides Nevada into six regions: Clark County, Nye County, Lincoln County, Washoe County, and Carson City, and the remaining counties are combined to form a sixth region. These regions are modeled using the U.S. economy as a backdrop. The model contains over 100 economic and demographic relationships that are carefully constructed to concisely represent the Clark County economy. The model

³ We are grateful to Rennae Daneshvary for editing this report.

⁴ Beginning this year, CCCP is replaced by Southern Nevada Regional Planning Coalition (SNRPC).

includes equations to account for migration and trade between Nevada counties and U.S. states.

The demographic data used to construct the model begin in 1990. These include the aggregate totals of employment, labor force, and population. The economic data for the most recent version of the model (REMI PI+ v1) also begin in 1990 and are consistent with the North American Industry Classification System (NAICS). The most recent data for REMI PI+ v1 are from 2006 because the Bureau of Labor Statistics (BLS) personal-income data are reported with a two-year lag. Over the years the availability of the income data has been the key in setting the last year of history in the model.

The REMI model is the best model available for describing how economies interact geographically.⁵ These interactions may take place within a single economy (such as the interaction between house-price growth and employment growth in Clark County) or between two economies (such as the interaction between Southern Nevada and Southern California). These and over 100 other interactions contained within the model are too complex to consider modeling on our own. Rather, we turn to the REMI model because it has a solid foundation in economic theory and the principles of general-equilibrium-based growth distribution, yet it still offers the flexibility required to model a regional economy like Clark County.

To guarantee that the most current data are used in the forecast, we make a series of adjustments to the model. In this way, we ensure that the forecast model includes the best available information at the time the forecast is made. The first adjustment updates the model with employment figures from the Nevada Department of Employment, Training, and Rehabilitation (DETR). Next, we adjust the future hotel employment based

⁵ See Schwer R. K. and D. Rickman (1995), "A Comparison of the multipliers of IMPLAN, REMI and RIMS II: Benchmarking ready-made models for comparison," *The Annals of Regional Science*, 1995.

on our expectation of hotel rooms that will be added in the near future. The third adjustment we make to the model is to include planned new investment in public infrastructure using information from RTC. We also calibrate the model to include the federal stimulus funds to Clark County from the American Recovery and Reinvestment Act of 2009. The fifth adjustment accounts for the potential secondary effect of population growth on the quality of life in Clark County. We also adjust the model's national GDP forecast using the latest available national forecast from the University of Michigan. Lastly, we rebase the population forecast to the most recent local population estimate for use in local planning.

In the following sections, we first examine the changes in the REMI model from last year's model. Following that, in Section III, we present sequentially the changes we make to update the model and tailor it to local information. In Section IV, we present the population forecast and give a brief discussion of the economic environment surrounding the forecast. In Section V, we compare the population growth forecast with previous years' forecasts. We conclude with a discussion of the risks to the forecast.

II. Comparison of REMI Models: Current and Previous Years

Before any model calibrations, we have over the years made comparisons of the out-of-the-box REMI models, that is, the current forecasts that one finds without any adjustments, with the forecasts corresponding out-of-the-box from the previous models. This gives us the opportunity to examine how the new model differs from the previous versions and to explore the causes of these differences. The most recent data used to develop this year's model are from 2006. Thus, we refer to the current model as last historical year 2006 (LHY2006) and the previous model as last historical year 2005 (LHY2005).

Each year the REMI staff and users discuss the workings of the modeling scheme and propose changes for improvement. Based on research findings, each year's model incorporates improvements in addition to the inclusion of more recent data. The new model, identified as PI+ version 1, is a new generation of the REMI model. The new attributes of PI+ version 1 include a new user interface and three model changes. The new state and local government final demand equations include a response to GDP to more accurately reflect the reality that government budgets must be restricted to their revenue sources, many of which are affected by economic conditions. In addition, the number of consumption categories has been expanded from 13 to 79 and the parameters were re-estimated based on this greater detail. These updates lead to the differences in the out-of-the-box population forecast between the LHY2006 model and the LHY2005 model.

Last year, a new feature was added to the relative housing-price equation. This feature uses region-specific housing-price response to population and income. This allows the model to account for the fact that high population-growth rates may eventually lead to out-migration as relative housing prices increase. While we believe this hypothesis is correct for most local economies, we do not believe it applies to the Southern Nevada economy. Migration patterns to this area have traditionally been linked to employment opportunities in the gaming and hospitality industries. As a result, the housing-price response feature has been turned off.

Table 2 and Figures 1 and 2 compare the population forecast from the out-of-the-box LHY2005 and LHY2006 models, i.e., without any updating for employment, new

hotel information, infrastructure projects, the amenity factor, or the national GDP forecast.⁶

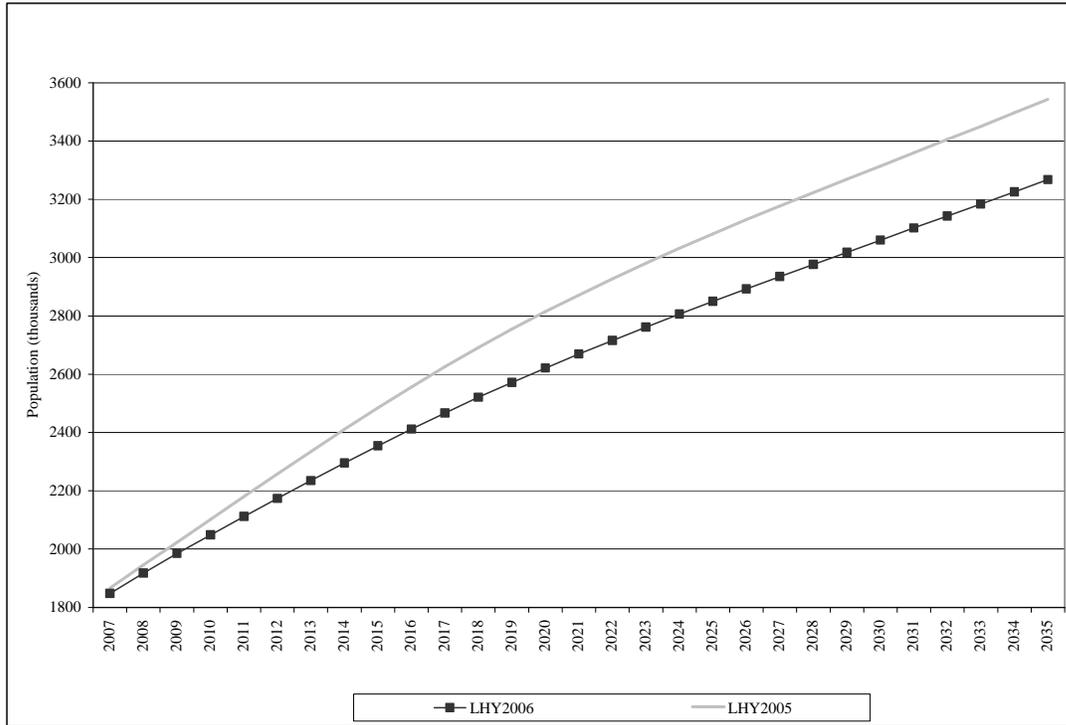
Table 2: Out-of-the-Box Clark County Population and Population Growth Forecasts from REMI Models LHY2005 and LHY2006

Year	LHY2006 Population (Thousands)	LHY2005 Population (Thousands)	LHY2006 Population Growth	LHY2005 Population Growth
2007	1,848	1,866		
2008	1,918	1,946	3.8%	4.3%
2009	1,985	2,024	3.5%	4.0%
2010	2,049	2,102	3.2%	3.9%
2011	2,112	2,180	3.1%	3.7%
2012	2,174	2,258	2.9%	3.6%
2013	2,235	2,335	2.8%	3.4%
2014	2,295	2,411	2.7%	3.2%
2015	2,354	2,485	2.6%	3.1%
2016	2,412	2,557	2.4%	2.9%
2017	2,467	2,626	2.3%	2.7%
2018	2,521	2,692	2.2%	2.5%
2019	2,572	2,755	2.0%	2.3%
2020	2,621	2,815	1.9%	2.2%
2021	2,669	2,872	1.8%	2.0%
2022	2,716	2,927	1.7%	1.9%
2023	2,761	2,981	1.7%	1.8%
2024	2,806	3,032	1.6%	1.7%
2025	2,850	3,082	1.6%	1.6%
2026	2,893	3,130	1.5%	1.6%
2027	2,935	3,177	1.5%	1.5%
2028	2,977	3,223	1.4%	1.5%
2029	3,018	3,269	1.4%	1.4%
2030	3,060	3,314	1.4%	1.4%
2031	3,101	3,359	1.4%	1.4%
2032	3,143	3,405	1.3%	1.4%
2033	3,184	3,451	1.3%	1.3%
2034	3,226	3,497	1.3%	1.3%
2035	3,268	3,544	1.3%	1.3%
2040	3,482	3,788	1.3%	1.4%
2045	3,695	4,051	1.1%	1.4%
2050	3,884	4,318	0.9%	1.2%

Note: Out-of-the-box refers to the model prior to recalibration. These numbers are not the final forecast.

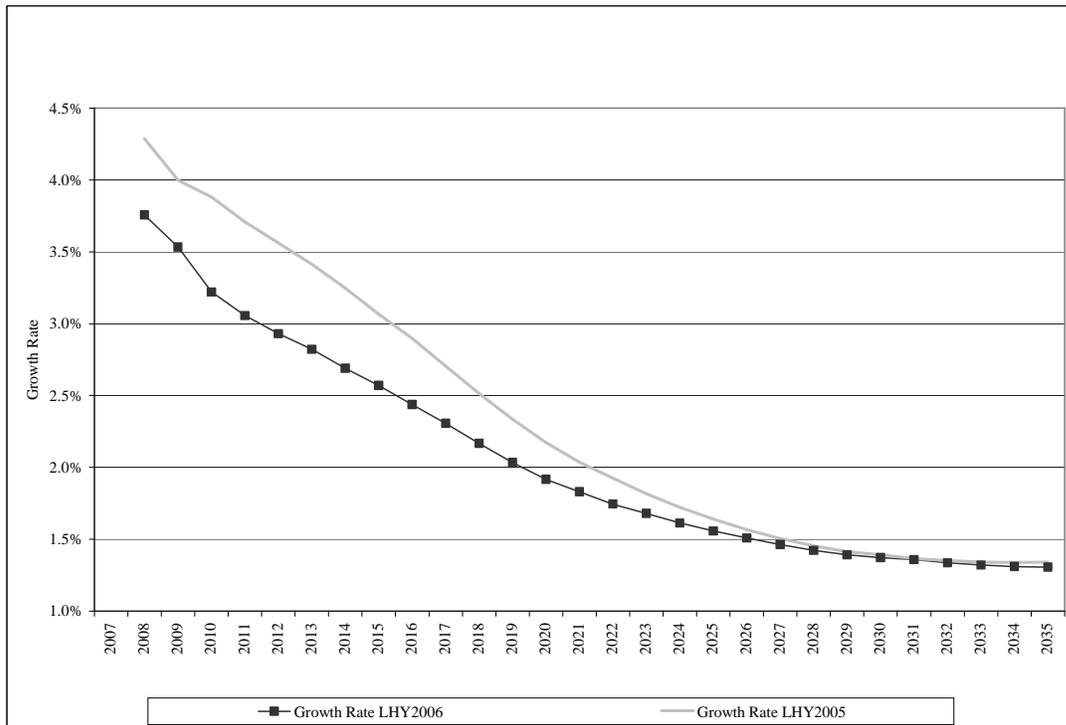
⁶ We should note that in last year’s forecast we used version 9.0 (LHY2004). However, we made use of the new data history that was contained in version 9.5 of the model. Hence, the last year of history in last year’s forecast was 2005.

Figure 1: Clark County Population Forecasts: REMI Out-of-the-Box LHY2006 and LHY2005: 2007-2035



Note: Out-of-the-box refers to the model prior to recalibration. These numbers are not the final forecast.

Figure 2: Clark County Population Growth Rate Forecasts: REMI Out-of-the-Box LHY2006 and LHY2005: 2007-2035



Note: Out-of-the-box refers to the model prior to recalibration. These numbers are not the final forecast.

The out-of-the-box population forecast arising from the LHY2005 model is slightly higher during the first years of the forecast, than the LHY2006 model. The difference between the two forecasts is larger in the later years of the forecast. The initial growth rates in the LHY2005 model are noticeably higher than those from the LHY2006 model, on average, over the first fifteen years of the forecast. The growth rate forecasts for the two models are basically identical by 2027. By 2050, the out-of-the-box forecasted population in the LHY2005 model is 434,000 people higher than the LHY2006 model.

III. Recalibrating the Model

County-level personal income is only available with a two-year lag. As a result, the REMI model also has a two- to three-year lag with the most recent historical data from 2006 for the current model, PI+ version 1, released in 2009. To bring the model up to date, we update pertinent model information, including more recent employment figures, the most recent national GDP forecast, spending on capital projects, local information on hotel construction, and adjustments for disamenities related to population growth to reflect local information in the forecast. We describe each update in turn.

A. Employment adjustment

Perhaps the most noteworthy update we make to the REMI model this year is the employment adjustment. The industry-level employment data used by REMI are the sum of the BLS wage and salary estimates for Clark County and REMI's BLS-based estimate of the number of proprietors. The most recent historical year in the model data is 2006. However, more recent wage and salary employment data are available from the Nevada DETR for 2007 and 2008. Thus, we update the model to account for the more recent information.

The latest growth rates for the out-of-the-box REMI-model forecasts and recent DETR estimates are shown in Table 3 for 2007 and 2008. The actual growth rates from DETR differ substantially from the REMI out-of-the-box forecasts, suggesting a clear need for adjustments. The employment update is as follows. We calculate the annual percentage change using DETR data and apply the percentage changes to generate new estimates for 2007 and 2008. The underlying assumption of this procedure is that the proportion of self-employed in each industry classification grows at the same rate as does the ratio between full- and part-time workers.

Table 3: Employment Growth Rates for Clark County Before Adjustment				
Industrial Classification	REMI Baseline Forecast		DETR Estimates	
	2007	2008	2007	2008
Construction	-4.96%	-4.56%	-5.71%	-8.79%
Wholesale trade	2.98%	-2.02%	2.54%	1.24%
Retail trade	3.82%	-2.05%	2.46%	2.00%
Transit, ground pass transportation	2.85%	0.65%	4.96%	3.15%
Monetary authorities, et al.	2.35%	-0.64%	-3.74%	-4.59%
Ins carriers, related activities	2.99%	0.66%	-4.59%	-3.21%
Real estate	4.12%	1.75%	5.29%	-1.37%
Prof, technical services	2.94%	0.80%	1.85%	-1.04%
Administrative, support services	2.61%	0.21%	-2.97%	-5.96%
Ambulatory health care services	4.78%	1.17%	4.87%	3.21%
Hospitals	4.82%	2.36%	8.40%	6.34%
Accommodation	3.43%	1.28%	-1.38%	-0.89%
Food services, drinking places	5.65%	2.43%	3.78%	2.83%
State & Local Government	0.61%	0.24%	6.55%	5.34%
Total	2.43%	0.13%	1.2%	-0.4%

Table 4 reports the updated employment by category for the model. The Clark County job growth numbers in 2007 and 2008 are consistent with the beginning of the economic slowdown currently experienced by the Las Vegas area. The strong negative growth in the construction sector is indicative of the slowdown in the local housing market, while the negative growth in the accommodation sector correlates with the early sign of the

national economic recession. However, with the exception of accommodation, most of the components of our tourism industry (that is, amusement, gambling, and recreation; scenic, sightseeing transportation; and transit, ground passenger transportation) grew in 2007 and 2008. Overall, Southern Nevada's economy experienced a gain of 13,000 jobs in 2007, while in 2008 the local economy lost roughly 5,000 jobs.

Industrial Classification	Baseline	DETR Growth Rates		Adjusted Job Levels	
	History 2006	2007	2008	2007	2008
Forestry et al.	0.001	0.00%	0.00%	0.001	0.001
Agriculture	0.286	4.20%	1.68%	0.298	0.303
Oil, gas extraction	0.001	0.00%	0.00%	0.001	0.001
Mining (except oil, gas)	1.327	0.08%	-1.51%	1.328	1.308
Support activities for mining	0.001	0.00%	0.00%	0.001	0.001
Utilities	3.319	2.11%	-0.18%	3.389	3.383
Construction	122.056	-5.71%	-8.79%	115.0878	104.9727
Wood product mfg	1.275	-3.92%	-3.84%	1.225	1.178
Nonmetallic mineral prod mfg	4.576	0.72%	-0.56%	4.609	4.583
Primary metal mfg	0.491	0.00%	-2.85%	0.491	0.477
Fabricated metal prod mfg	2.08	-1.49%	-2.73%	2.049	1.993
Machinery mfg	0.542	0.92%	-1.83%	0.547	0.537
Computer, electronic prod mfg	0.512	-18.75%	-13.22%	0.416	0.361
Electrical equip, appliance mfg	0.531	0.94%	-1.31%	0.536	0.529
Motor vehicle mfg	0.337	-2.37%	-12.77%	0.329	0.287
Transp equip mfg exc motor veh	0.196	4.59%	3.90%	0.205	0.213
Furniture, related prod mfg	2.656	0.15%	-3.80%	2.66	2.559
Miscellaneous mfg	5.733	2.74%	1.82%	5.89	5.997
Food mfg	2.712	4.02%	1.63%	2.821	2.867
Beverage, tobacco prod mfg	0.15	10.00%	6.06%	0.165	0.175
Textile mills	0.213	8.45%	3.46%	0.231	0.239
Textile prod mills	0.202	2.48%	-1.45%	0.207	0.204
Apparel mfg	0.379	10.55%	2.63%	0.419	0.43
Leather, allied prod mfg	0.094	34.04%	19.05%	0.126	0.15
Paper mfg	0.409	2.20%	-0.24%	0.418	0.417
Printing, rel supp act	2.357	1.15%	-1.89%	2.384	2.339
Petroleum, coal prod mfg	0.187	-1.07%	-2.70%	0.185	0.18
Chemical mfg	0.914	4.92%	1.98%	0.959	0.978
Plastics, rubber prod mfg	2.373	1.01%	-2.04%	2.397	2.348
Wholesale trade	28	2.54%	1.24%	28.71186	29.0678
Retail trade	116.403	2.46%	2.00%	119.2624	121.6453
Air transportation	4.685	3.50%	1.92%	4.849	4.942
Rail transportation	0.356	0.00%	-1.97%	0.356	0.349

Table 4 Continued:	Baseline	DETR Growth Rates		Adjusted Job Levels	
Industrial Classification	History 2006	2007	2008	2007	2008
Water transportation	0.049	10.20%	7.41%	0.054	0.058
Truck transp; Couriers, msngrs	9.617	4.46%	1.34%	10.046	10.181
Transit, ground pass transp	13.583	4.96%	3.15%	14.25654	14.70556
Pipeline transportation	0.02	-5.00%	0.00%	0.019	0.019
Scenic, sightseeing transp; supp	4.888	6.63%	3.74%	5.212	5.407
Warehousing, storage	3.674	5.06%	1.50%	3.86	3.918
Publishing, exc Internet	3.084	-3.15%	-4.82%	2.987	2.843
Motion picture, sound rec	2.804	2.82%	-0.62%	2.883	2.865
Internet serv, data proc, other	1.928	0.99%	-0.77%	1.947	1.932
Broadcasting, exc Int; Telecomm	6.79	1.99%	-0.36%	6.925	6.9
Monetary authorities, et al.	28.813	-3.74%	-4.59%	27.73496	26.46092
Sec, comm contracts, inv	13.772	4.93%	-1.47%	14.451	14.238
Ins carriers, rel act	11.957	-4.59%	-3.21%	11.40795	11.04192
Real estate	67.638	5.29%	-1.37%	71.21501	70.23946
Rental, leasing services	6.887	-0.38%	0.01%	6.861	6.862
Prof, tech services	58.795	1.85%	-1.04%	59.88092	59.2604
Mgmnt of companies, enterprises	12.378	4.59%	1.28%	12.946	13.112
Administrative, support services	76.452	-2.97%	-5.96%	74.18233	69.76245
Waste mgmnt, remed services	2.273	4.66%	2.27%	2.379	2.433
Educational services	7.006	4.68%	2.90%	7.334	7.547
Ambulatory health care services	30.489	4.87%	3.21%	31.97348	33.0012
Hospitals	14.001	8.40%	6.34%	15.17666	16.13856
Nursing, residential care facilities	6.2	5.61%	3.30%	6.548	6.764
Social assistance	14.272	6.17%	4.39%	15.152	15.817
Performing arts, spectator sports	16.815	3.13%	0.93%	17.341	17.502
Museums et al.	0.299	6.02%	3.79%	0.317	0.329
Amusement, gambling, recreation	15.007	4.95%	2.95%	15.75	16.214
Accommodation	184.835	-1.38%	-0.89%	182.2933	180.6666
Food services, drinking places	74.373	3.78%	2.83%	77.18149	79.36587
Repair, maintenance	10.9	4.48%	1.69%	11.388	11.581
Personal, laundry services	15.793	2.01%	-0.68%	16.111	16.002
Membership assoc, organ	7.066	4.50%	2.56%	7.384	7.573
Private households	9.49	4.82%	0.48%	9.947	9.995
State & Local Gov	80.755	6.55%	5.34%	86.0455	90.63726
Federal Civilian	11.171	-0.12%	1.42%	11.158	11.316
Federal Military	11.617	-0.49%	4.27%	11.56	12.054
Farm	0.338	-0.59%	-1.19%	0.336	0.332
Total	1141.183	1.2%	-0.4%	1154.798	1150.089

B. Adjustments for new hotel construction

Each year, we make an adjustment to future hotel employment based on our expectation of hotel rooms that will be added in the near future. The additional rooms and related

employment represent properties that are either under construction with fixed opening dates, or properties that have development plans and a high probability that the projects will be completed during the specified year. In this way, we ensure that the model includes a good short-term forecast of new hotel investment and employment.

As of March 2009, the Las Vegas Convention and Visitors Authority (LVCVA) projects that 12,563 hotel/motel rooms will be added to the local room stock by the end of 2009. This includes the opening of the CityCenter Las Vegas with ARIA Resort and Casino (4,004), Vdara Hotel and Spa (1,495), and the Fontainbleau Las Vegas (3,815). In 2010, 3,604 hotel/motel rooms are expected to be added to the inventory. This includes major additions such as the Cosmopolitan Resort and Casino (3,000). Hotel room additions are expected to total 230 in 2011, with the addition of Aloft Las Vegas.

We make one adjustment to the LVCVA hotel/motel room additions. Properties that have a completion date in December or late 2009 are moved to 2010. This includes CityCenter, Hard Rock Hotel expansion, Golden Nugget expansion, Marriott SpringHill Suites, Hampton Inn and Suites, and Fontainbleau Las Vegas. The rationale for this change is that we believe that the actual employment impact of these properties will take place in 2010. These changes bring the hotel/motel room additions to 1,733 rooms in 2009 and 14,434 rooms in 2010, and 230 rooms in 2011(see Table 5).

In addition to the projected new hotel/motel rooms for 2009 to 2011, the LVCVA lists a number of proposed projects with a yet-to-be-determined completion date. The LVCVA anticipates that these proposed future projects will create an additional 39,000 rooms. To account for these proposed projects, we add 3,715 rooms to the inventory from 2012 to 2014. This brings the modeled total new hotel rooms to 27,542 for the period 2009 to 2014.

Year	Total Rooms	New Rooms	New Jobs Implied	REMI Hotel Employment	REMI New Jobs Implied	Cumulative Additional Jobs Over and Above What Is in the Model
2008	140,529			193,629		
2009	142,262	1,733	2,773	195,050	1,421	1,352
2010	156,696	14,434	23,094	195,608	558	23,888
2011	156,926	230	368	198,460	2,852	23,888
2012	160,641	3,715	5,944	201,067	2,607	27,225
2013	164,356	3,715	5,944	203,702	2,635	30,534
2014	168,071	3,715	5,944	206,353	2,651	33,827

* Note: The new jobs implied by the room additions in 2011 are less than the REMI hotel employment.

The model adjustment for new hotel construction uses a ratio of job-to-room. We assume a jobs-to-room ratio of 1.6, which was obtained in the following manner.⁷ First, we expect new hotel rooms to create new jobs in hotel services. Using historical information from 2002-2008, we take the historical average ratio of annual accommodation employment from DETR divided by the total hotel rooms. From this calculation we obtain a jobs-to-room multiplier of 1.3 for hotel services. New hotel rooms will also generate secondary economic activity, and hence, additional jobs in other sectors. For example, increased tourism activity from new hotel rooms will also increase the demand for food services and other tourism-related industries. We account for these new jobs in the following manner. Each industry's location quotient⁸ is used to estimate the portion of the industry's employment attributable to tourism activity. We then take the historical average ratio of the annual employment in each of these sectors, which is attributable to tourism activity, divided by the total hotel rooms. The sum of the ratios for

⁷ The detailed computation of the jobs-to-room ratio is provided in the appendix at the end of the report.

⁸ The Location Quotient (LQ) compares Clark County's employment in a given industry sector to that of the nation. An LQ greater than 1 indicates that the area has proportionately more workers than the nation employed in that specific industry sector. This implies that the area is producing more than is consumed by its residents. Hence, the portion of the LQ that is above 1 represents the proportion of the industry's employment attributable to tourism activity.

the food services and other tourism-related industries is approximately 0.3. This together with the jobs-to-room multiplier of 1.3 for hotel services produces the overall jobs-to-room ratio of 1.6. The jobs-to-room multiplier is then used as the multiplicand times the number of additional rooms *over and above* the rooms and jobs already accounted for in the model. These results are shown in Table 5, revealing an increase of about 34,000 jobs by 2014 and years after.

C. Transportation and infrastructure improvements

Clark County has continued to invest in transportation infrastructure, such as roads, highways, and mass transit. The model assumes that public-infrastructure investment will continue at a pace consistent with the model history. Thus, some local spending on public infrastructure, such as road building and additional services, is built into the model. However, one-time monies tend to come from outside the region, for example, federal transportation funding. These large, special projects need to be accounted for in the forecast.

Whereas some of the planned expenditures are “new money,” the remaining would have been spent for other purposes. Thus, in order to avoid double-counting and retain a balanced budget, the expenditures are entered in the REMI model as translator policy variables. The model then computes the actual new expenditures over and above what is already included and returns them as policy variables.

The estimated federal funding in transportation-infrastructure investment expenditures are about \$384 million in 2009, \$719 million between 2010 and 2015, \$837 million between 2016 and 2020, and \$2.4 billion between 2021 and 2030.⁹ These \$4.3

⁹ Source: *Regional Transportation Commission*.
Center for Business and Economic Research
University of Nevada

billion in expenditures are annualized and included in the REMI investment model as new construction projects.

D. Adjustment for stimulus funds¹⁰

For this year's forecast, we adjust the model to incorporate federal stimulus funds to Clark County from the American Recovery and Reinvestment Act of 2009. These federal funds are intended to finance new public-infrastructure projects in Southern Nevada in 2009 and 2010. The new infrastructure projects have an estimated total cost of \$5.17 billion. In order to avoid double-counting the stimulus funds already included in the RTC's transportation and improvement funds, we exclude the infrastructure projects that list RTC as the submitting agency. As a result, the total amount for the stimulus infrastructure projects included in the model is \$3.89 billion.

E. Amenity adjustments

For over a decade, the Las Vegas metropolitan area has been one of the fastest-growing communities in the U.S. This has helped maintain a vibrant economy, but research has shown that rapid urban expansion is frequently correlated with a diminishing quality of life as congestion, deteriorating air quality, and a shortage of public services take their toll on local populations. These "negative externalities" arising from rapid growth impose costs on local residents, making the county less attractive to those living here and potential in-migrants. As a result, people are more likely to relocate to areas with a higher quality of life, all else equal.

To account for the rising social costs of negative externalities from growth, we continue to include an amenity factor in the model. We assume that the social costs of growth rise by 0.033 percent each year. The amenity factor is introduced in the model

¹⁰ The adjustment for stimulus funds incorporated in the model was based on a survey. A table detailing the costs of the stimulus infrastructure projects is included in Appendix B.

through the wage equations, effectively causing real wages to fall relative to other regions. Falling wages means less economic migration, and population growth slows as the desirability of Clark County falls.

F. Adjustment of the national GDP forecast

The REMI model relies on a baseline national GDP forecast from the University of Michigan's Research Seminar in Quantitative Economics (RSQE). The current REMI model, PI+ version 1, uses the October 2008 GDP forecast from RSQE. We adjust the model's national GDP forecast using the March 2009 national GDP forecast from RSQE.

G. Rebasing the population forecast

Each year, Clark County Comprehensive Planning (CCCP) estimates the Clark County population using the housing-units method. While the U.S. Post Office may still perform a residential vacancy survey, their vacancy numbers were not used for 2007-2008 nor will they be used for 2008-2009. The vacancy rates will be determined from electrical usage and the CB Richard Ellis vacancy numbers for apartments. This estimate is used instead of the census estimates because it is generally agreed that the housing-unit method works best in rapidly growing urban areas such as Clark County.

We traditionally rebase the population forecast by adding the forecasted annual changes in population to the most recent population estimate. The most recent estimate available for use in rebasing this forecast is CCCP's July 1, 2008, estimate of 1,986,146 people. This leads us to increase the population forecasts by 77,146, so that we forecast that population will grow from roughly 2 million in 2009 to about 3.85 million in 2050. See Table 6.

Year	Population REMI Forecast	Population Rebased Forecast	Change in Population Rebased Forecast	Growth in Population Rebased Forecast
2008	1,909,000	1,986,146*		
2009	1,976,000	2,053,000	66,854	3.4%
2010	2,045,000	2,122,000	69,000	3.4%
2011	2,112,000	2,189,000	67,000	3.1%
2012	2,178,000	2,255,000	66,000	3.0%
2013	2,243,000	2,320,000	65,000	2.9%
2014	2,307,000	2,384,000	64,000	2.8%
2015	2,369,000	2,446,000	62,000	2.6%
2016	2,428,000	2,505,000	59,000	2.4%
2017	2,484,000	2,561,000	56,000	2.3%
2018	2,538,000	2,615,000	54,000	2.1%
2019	2,589,000	2,666,000	51,000	1.9%
2020	2,638,000	2,715,000	49,000	1.8%
2021	2,684,000	2,761,000	46,000	1.7%
2022	2,729,000	2,806,000	45,000	1.6%
2023	2,773,000	2,850,000	44,000	1.6%
2024	2,815,000	2,892,000	42,000	1.5%
2025	2,856,000	2,933,000	41,000	1.4%
2026	2,896,000	2,973,000	40,000	1.4%
2027	2,935,000	3,012,000	39,000	1.3%
2028	2,973,000	3,050,000	38,000	1.3%
2029	3,011,000	3,088,000	38,000	1.2%
2030	3,049,000	3,126,000	38,000	1.2%
2031	3,086,000	3,163,000	37,000	1.2%
2032	3,124,000	3,201,000	38,000	1.2%
2033	3,161,000	3,238,000	37,000	1.2%
2034	3,198,000	3,275,000	37,000	1.2%
2035	3,236,000	3,313,000	38,000	1.1%
2040	3,425,000	3,502,000	38,000	1.1%
2045	3,611,000	3,688,000	36,000	1.0%
2050	3,774,000	3,851,000	30,000	0.8%

* Clark County Comprehensive Planning housing-unit-based population estimate.

IV. Analysis of the Economic and Demographic Forecast

As with last year, the forecast continues to predict steady economic growth for Southern Nevada over the forecast period extending out to 2050. However, the rate of growth,

which has been decidedly more than the national average over the past fifty years, is beginning to moderate and move toward the national rate of growth. For Southern Nevada to continue along the robust expansion path of the past, new business models, which are competitive on a global scale, will have to evolve. Tables 6 through 8, respectively, report the population, employment, and gross regional product (GRP) predictions for Clark County from the calibrated model.

A. Population

The population in Clark County is predicted to grow at a rate of 3.4 percent in 2009 and 2010. In the following years, growth begins to taper off as the Clark County economy continues to mature. By 2015, population growth has fallen to 2.6 percent, and it stabilizes at 1.2 percent, just above the estimated long-term national population growth rate of 1 percent, around 2029. This type of growth pattern is expected as our economy matures, and is very similar to previous forecasts.

Clark County is forecasted to experience declining in-migration throughout the forecast as local growth stays just above expected U.S. growth. In the early years of the forecast, economic migrants, those drawn in by relatively high wages and the abundance of employment opportunities, are the bulk of total in-migration. In later years, the population becomes large enough so that local population growth can fill new employment opportunities. As economic migration starts tapering off, more retired or international migrants enter the region. By 2028, these noneconomic migrants dominate net in-migration, drawn by local amenities.

B. Employment

The forecast predicts a moderate employment growth in the near future. The employment-growth forecast is somewhat lower than last year's forecast. This could be a

reflection of the beginning of the housing-market slump in 2007. Employment growth reaches a peak of 1.6 percent in 2012 and then starts to decrease thereafter. By 2026, growth in employment stabilizes at around 1 percent as the Southern Nevada economy approaches maturity. See Table 7.¹¹

The slowdown of employment growth after 2009 can be attributed to three factors. First, employment growth slows as the economy and the gaming industry mature. This is a typical pattern of regional economic growth: large city economies tend to grow more slowly than small cities, in part, because of their larger population base from which the rate is calculated. Second, the labor participation rate is expected to fall as the baby boomers begin retiring in the coming two decades. Third, the increase in the Hispanic population over the last decade has led to an increase in the number of children in Clark County, who would just be entering the work force near the end of the forecast to increase employment growth somewhat again. This shift, seen in the 2000 census, is picked up in the latest versions (9.5 and PI+ v1) of the model.

C. Gross regional product

Gross regional product (GRP) is defined as the dollar value of all final goods and services for sale in a regional economy. As such, it reflects the output of a local economy and avoids double-counting initial and intermediate goods. The forecast for growth in the Clark County GRP, shown in Table 8, basically mirrors the growth pattern of local employment, but also reflects continued growth in productivity throughout the majority of the forecast. The GRP-growth forecast starts at -0.4 percent in 2009, and climbs up to 2.8 percent by 2012. The GRP forecast then cycles through a low of 1.9 percent to end up at 2.6 percent in 2050.

¹¹ Unadjusted employment forecasts are shown in Appendix B.

Table 7: Employment History and Forecasts				
Year	Employment REMI Forecast	Change in Employment Forecast	Growth in Employment Forecast	Labor Force Participation Rate (REMI Forecast)
2006	1,141,000*			0.64*
2007	1,154,000	13,000	1.1%	0.63
2008	1,149,000	-5,000	-0.5%	0.60
2009	1,156,000	7,000	0.6%	0.58
2010	1,171,000	15,000	1.3%	0.57
2011	1,187,000	16,000	1.3%	0.56
2012	1,205,000	18,000	1.6%	0.55
2013	1,225,000	20,000	1.6%	0.55
2014	1,243,000	18,000	1.5%	0.54
2015	1,258,000	15,000	1.2%	0.53
2016	1,272,000	14,000	1.1%	0.52
2017	1,284,000	12,000	0.9%	0.52
2018	1,296,000	12,000	1.0%	0.51
2019	1,309,000	13,000	1.0%	0.51
2020	1,319,000	10,000	0.8%	0.50
2021	1,331,000	12,000	0.9%	0.50
2022	1,342,000	11,000	0.8%	0.49
2023	1,353,000	11,000	0.9%	0.49
2024	1,366,000	13,000	0.9%	0.49
2025	1,378,000	12,000	0.9%	0.48
2026	1,391,000	13,000	1.0%	0.48
2027	1,405,000	14,000	1.0%	0.48
2028	1,420,000	15,000	1.1%	0.48
2029	1,436,000	16,000	1.1%	0.48
2030	1,452,000	16,000	1.1%	0.48
2031	1,470,000	18,000	1.2%	0.48
2032	1,488,000	18,000	1.3%	0.48
2033	1,507,000	19,000	1.3%	0.48
2034	1,526,000	19,000	1.3%	0.48
2035	1,545,000	19,000	1.2%	0.48
2040	1,649,000	21,000	1.3%	0.48
2045	1,752,000	20,000	1.1%	0.49
2050	1,842,000	17,000	0.9%	0.49

* Actual employment.

Table 8: Gross Regional Product History and Forecasts				
Year	GRP (Billions of Chained 2000\$) REMI Forecast	Change in GRP (Billions of Chained 2000\$) REMI Forecast	Growth in GRP (Billions of Chained 2000\$) REMI Forecast	GRP per Capita (Chained 2000\$) REMI Forecast
2006	78.318*			44,069*
2007	78.224	-0.094	-0.1%	42,400
2008	77.354	-0.87	-1.1%	40,514
2009	77.046	-0.308	-0.4%	38,990
2010	78.466	1.42	1.8%	38,368
2011	80.464	1.998	2.5%	38,103
2012	82.697	2.233	2.8%	37,975
2013	85.035	2.338	2.8%	37,913
2014	87.371	2.336	2.7%	37,874
2015	89.46	2.089	2.4%	37,768
2016	91.589	2.129	2.4%	37,724
2017	93.354	1.765	1.9%	37,575
2018	95.295	1.941	2.1%	37,544
2019	97.294	1.999	2.1%	37,577
2020	99.182	1.888	1.9%	37,604
2021	101.213	2.031	2.0%	37,707
2022	103.269	2.056	2.0%	37,842
2023	105.452	2.183	2.1%	38,035
2024	107.742	2.29	2.2%	38,279
2025	110.059	2.317	2.2%	38,541
2026	112.55	2.491	2.3%	38,868
2027	115.165	2.615	2.3%	39,240
2028	117.914	2.749	2.4%	39,658
2029	120.825	2.911	2.5%	40,126
2030	123.84	3.015	2.5%	40,619
2031	127.069	3.229	2.6%	41,170
2032	130.452	3.383	2.7%	41,761
2033	133.964	3.512	2.7%	42,379
2034	137.628	3.664	2.7%	43,029
2035	141.366	3.738	2.7%	43,685
2040	162.646	4.497	2.8%	47,484
2045	187.198	5.112	2.8%	51,837
2050	213.914	5.468	2.6%	56,687

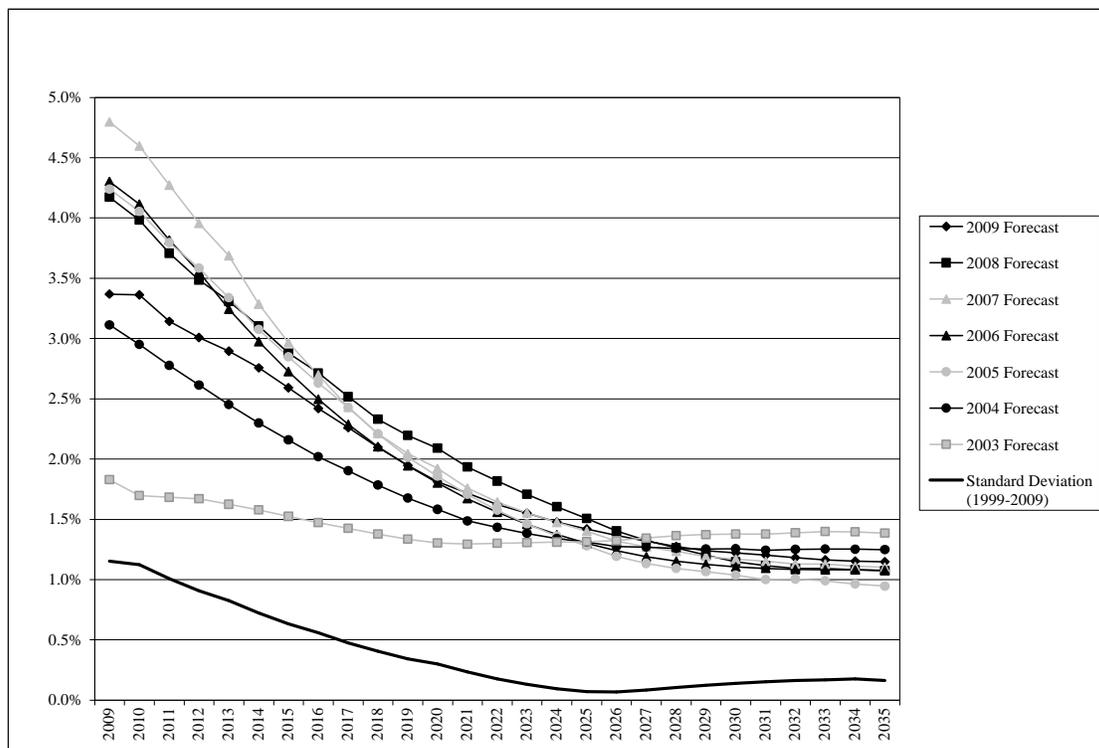
* Actual GRP.

V. Comparing Current Forecast with Previous Years of the Forecast

This section compares this year's final population-growth forecasts with the final population growth forecasts from previous years. This exercise allows us to assess the consistency of the forecast methodology and to assess the variability in the population growth forecasts over the last ten years. Figure 3 shows the 2009-2035 population growth

rate forecasts obtained from 2003 to 2009. The figure also shows the standard deviation of the population growth rate forecast in the last years (1999-2009).¹² The population growth rate forecasts exhibit a high level of variability in the near term. The standard deviation of the population growth rate forecast for the year 2009 is roughly 1.3 percent. This reflects a high degree of uncertainty in the short term forecast. See section VI. The variability among the population growth rate forecasts fall dramatically in the long term. By 2025, the forecasted growth rates converge to about 1.5 percent, with a standard deviation of 0.3 percent. Hence, there is a large degree of consistency in the long-term growth predictions obtained during the last ten years, as evidence by the low standard deviation among the forecasts. This observation further confirms the fact that our forecasts are primarily meant to be long-run planning tools.

Figure 3: Clark County Historic Population Growth Rate Forecasts: 2009-2035



¹² The standard deviation is a measure of the variability among data points. For data that follow a normal distribution, 99.7% of data points will fall within approximately 3 standard deviations of the mean.

VI. Risks to the Forecast

Tested theories underlie the modeling framework we use in our forecasts. Historical evidence, the within sample of the modeling framework, supports our work; however, forecasting moves beyond the sample period with assumptions about how the long run will evolve. We do not believe that anyone can control all of the explanatory relationships underpinning our numbers, even though the trends in productivity resulting from change are accounted for. Still, technological change occurs with differing effects on economic and demographic variables. Moreover, these effects can accumulate, thereby magnifying productivity, thereby creating a risk to the long-run forecast.

Our Southern Nevada population forecasts rest on economic and demographic models set in the context of a structured framework. This structure keeps our long-term forecasts consistent with our objectives. We have separated the long-term trend from the noise that one finds in time-series data. These noise factors include the business cycle and seasonal and irregular events. As a regional economy, Las Vegas depends on the spending of people who live outside the region. A rising national income gives rise to more travel to Las Vegas. On the hand, special events such as periodic boxing matches can attract visitors that will drive local occupancy rates above normal levels. Not all events need not be planned nor positive, for example, the aftermath of 9/11 curtailed travel to and from Las Vegas, driving revenues down below trend for some months and setting the economy and demography off course for awhile. In short, population projections should focus on the long term, though seeing through the ups and downs may not be easy.

One difficulty some have experienced is placing the past few years of boom in the future environment context. That is, their experiences over a period of unique prosperity

may result in a misleading assessment. Regions that experience sustained spurts of growth and development such as Las Vegas find that after time growth slows, however. Indeed, looking at other centers of growth you see periods of rapid growth followed by maturation. Foreseeing a cooling off from a decade or so of prosperity takes a brave heart to handle the skepticism that the future may not be the same as the current conditions.

The difficulty of seeing Las Vegas in less robust economic lenses is made more understandable by looking at the national economy. Over the past 25 years the economic data have shown marked changes. After the economic depressions of the mid 70s and the early 80s, the severity of national recessions has moderated substantially, such that the period has come to be known as the period of great moderation. The U.S. experienced the longest two periods of economic expansion in the country's history; the longest economic expansion went from the first quarter of 1991 to the first quarter of 2001, 10 years of uninterrupted expansion. This compares with the historical norm of a recession occurring every three years or so. People became complacent, giving far less attention to markets' fragility and the breeding of speculative behavior. Entrepreneurs and professional administrators in the private and public sectors let down their guard, taking on more leveraged and speculative projects. Inevitably, affairs get beyond the prudent path and a correction occurs. We can now see this more clearly in the current local and national recessions. Before this occurred, however, many were quick to degrade those that might suggest that Las Vegas was anything except recession proof from the most boastful to recession resistant among the more sophisticated growth advocates. Regardless, many were ignorant of economic history, development cycles, regional economics, and general economics, thereby creating a tendency, perhaps even a delusion, to overstate past growth continuing unabated into the future.

Again, using the current environment, we see a more balanced view of the future, many views suggesting that the days ahead are not likely to be a quick return to growth that we have seen. In short, many views are presented around the alphabet. Recovery, that is, the trough to peak of the next expansion, may take on a path exemplified by the letters (V, U, W, and L) with many probabilities of each path occurring. The letter V most often represents a shape of a downturn and recovery, that is, the bottom of the trough is of short duration and the recovery is followed by a rapid rebound, what is referred to as the Zarnowitz rule. Many, however, worry that a host of problems for which there may be differing times for recovery might lengthen the bottom of the recovery, as more time is needed for the recovery to get under way. In this case, you get a longer period of the recession. The most likely reasons for such a scenario come from a crippling housing market that many believe may not recover until 2011, a banking system that continues to contract credit availability, and consumers who are seeking more safety as they have less confidence in future income. Some believe that the economy will follow a W pattern. This pattern arises when the economy's short-lived recovery peters out and falls back to the levels previously identified as a bottom in the recession. This approach requires further realignment and reorganization before another recovery gets under way, suggesting a longer period of recovery. An even more pessimistic outlook calls for a long period of no growth; the path comes closest to looking like an L. The recovery is not likely to follow the Zarnowitz effect because of the structural problems associated with this recession, the complex developments in banking and finance and the erosion of regulation. We foresee an L and a lazy V (a good description of a western cattle brand perhaps); in short, the recession will be the longest since the 1930s and the unemployment rate will reach 10 percent, adversity not experienced since the 1930s.

The discussion about the shape of the U.S. recovery offers a similar shorthand for describing the near-term path of expansion in Southern Nevada. Using the five-year period of 2009 to 2014 as a window for looking at the future economy, we see a recovery from the current recession follow a similar pattern as the national economy, but with a longer phase in the base of the L, that is a slower recovery. This shape largely shows the greater difficulty of the Las Vegas housing market to recover. At midyear 2009, we see a large oversupply of housing units with more foreclosures in sight. Overcoming these difficulties will take more time in Nevada than elsewhere in the U.S., except for the housing bubble states of Arizona, California, and Florida.

The lower growth path recently experienced in Southern Nevada arises from the large jump in room inventory for the Las Vegas Strip. CityCenter will come on line at the end of 2009 and others will follow, resulting in a large one-time jump in rooms available. This comes at the time when consumers have experienced a recession and have cut back on spending, mainly big-ticket and discretionary items. A prudent assumption would be that consumers will be less hesitant to spend for travel and tourism than before the recession. Some believe that the 2008-2009 recession will be so severe that it will be some time before consumers return to earlier spending levels. Our assumption is not as stringent, believing that many consumers have not suffered home loss due to foreclosure or gone through bankruptcy so they may still travel to Las Vegas and spend, though again we believe that the spending for each visitor may remain at a lower level than during the boom period.

The long-term path, as shown in the trend estimates, arises from the regional economy's maturity. This maturation, under way for some time, spread casino gambling throughout the U.S., even though visitor growth has continued in Las Vegas. Many

argued that more gamblers in outlying venues created a larger base for Las Vegas to attract. Others foresaw cannibalization and direct competition that would cut into Las Vegas' economic well-being. It is the winnowing and sifting from competition that is now fully engaged. Many questions remain unanswered. In Reno, however, some conclusions seem apparent. The adverse effects of competition show clearly, a result of the alternative market offerings and customers' preferences, including relative ease of access. To be sure, the Las Vegas market has enjoyed continued success, but the region no longer has a monopoly with few impediments to success. Competitive markets for casino visitors will constrain growth, to be sure, but it need not prove a fatal flaw so long as the Las Vegas market remains quick to change and answers challenges and opens up to new ideas that will grow the market. The gambling market is reaching maturity with fewer low-hanging fruit to grow the market at high rates, either in Las Vegas or other markets. Last, the availability of capital, long a factor in the growth of Las Vegas, became abundant during the past few years, contributing to investments that might not otherwise have happened.

The current recession affects population. A severe recession drives up unemployment rates and places people at economic risk. During such periods you might expect slower rates of migration as people tend to be less sure of their economic environment in locations with which they are not as familiar. For economies such as Clark County, where there is a fairly higher percentage of the work force in construction than the national economy, the stoppage of construction at big projects is likely to result in out-migration because workers in this industry are accustomed to moving to find work. The effect of the current economic environment is to keep the population levels below the

trend line shown in the baseline forecast. Again, these recent events are natural swings of a couple years' duration and should be fully expected over the forecast range.

Therefore, although we feel the population forecasts are sound, there are significant risks to the forecasts which could lead to our having either over- or underestimated growth. We say again, however, that these risks tend to arise from short-run uncertainty, whereas, our forecasts are primarily meant to be long-run planning tools.

VII. Conclusion

The latest REMI model projects population-growth patterns that are very similar to those forecasted last year. The short-term population-growth forecast is slightly less than last year's forecast. However, in the long term, the current population-growth forecast is similar to last year's forecast. We note that, despite short-term economic uncertainties and model difficulties, the main focus of this forecasting exercise, the long-term population estimate is fairly consistent with past forecasts. In 2035, Clark County is expected to have 3.31 million residents. Beginning this year the forecasting horizon is extended to 2050 which shows that Clark County is expected to have about 3.85 million residents. The model continues to predict changes in the economy as the city grows and matures. Thus, the breakneck percentage annual growth rates seen in the past two decades are expected to moderate over the long term.

Appendices

Appendix A: Computation of the Jobs-to-Room Ratio

The adjustment for new hotel construction uses a ratio of jobs-to-room. Two issues arise in the computation of the jobs-to-room ratio. First, we expect new hotel rooms to create new jobs in hotels services. Second, new hotel rooms will also generate economic activity, and hence, additional jobs in other sectors. Increased tourism activity from new hotel rooms will increase the demand for food services and other tourism-related industries. Hence, we need an approach that accounts for these two issues. We propose the following formula:

$$\text{Jobs-to-Room Ratio} = \frac{\left(\begin{array}{l} \text{Total} \\ \text{employment} \\ \text{due to Tourism} \end{array} \right)}{\left(\begin{array}{l} \text{LVCVA} \\ \text{room count} \end{array} \right)},$$

where,

$$\left(\begin{array}{l} \text{Total} \\ \text{employment} \\ \text{due to tourism} \end{array} \right) = \left(\begin{array}{l} \text{Accommodation} \\ \text{employment} \end{array} \right) + \left(\begin{array}{l} \text{Employment} \\ \text{in tourism} \\ \text{related} \\ \text{industries} \end{array} \right) \times \left(\begin{array}{l} \text{Share of} \\ \text{employment} \\ \text{due to tourism} \end{array} \right)$$

(1) DETR Employment (thousands)							
Industrial Classification	2003	2004	2005	2006	2007	2008	Average 2003-2008
Accommodation	164.7	167.3	177.3	181.8	179.3	177.7	174.7
Clothing and clothing accessories	12.0	13.0	13.8	14.4	15.6	16.5	14.2
Transit, ground pass transportation	10.0	10.8	11.6	12.1	12.7	13.1	11.7
Food services, drinking places	56.0	62.2	66.9	71.5	74.2	76.3	67.9
Performing arts, spectator sports	18.0	18.2	18.1	18.5	19.0	18.9	18.5

(2) Proportion of employment due to tourism* (= Location quotient** - 1)							
Industrial Classification	2003	2004	2005	2006	2007	2008***	Average 2003-2008
Accommodation	1	1	1	1	1	1	1
Clothing and clothing accessories	0.320	0.381	0.405	0.366	0.449	0.574	0.416
Transit, ground pass transportation	1	1	1	1	1	1	1
Food services, drinking places	0.033	0.052	0.047	0.055	0.079	0.129	0.066
Performing arts, spectator sports	0.477	0.385	0.428	0.456	0.577	0.542	0.478

*Maximum value = 1. Minimum value = 0.

** The Location quotient (LQ) compares Clark County's employment in a given industry sector to that of the nation. An LQ greater than 1 indicates that the area has proportionately more workers than the nation employed in that specific industry sector. This implies that the area is producing more than is consumed by its residents. The portion of the LQ that is above 1 represents the proportion of the industry's employment attributable to tourism activity.

*** Based on employment through the first three quarters of 2008. Calculated using BLS Quarterly Census of Wage and Employment data.

Employment due to tourism (thousands) = (1) x (2)							
Industrial Classification	2003	2004	2005	2006	2007	2008*	Average 2003-2008
Accommodation	164.7	167.3	177.3	181.8	179.3	177.7	174.7
Clothing and clothing accessories	3.8	5.0	5.6	5.3	7.0	9.5	6.0
Transit, ground pass transportation	10.0	10.8	11.6	12.1	12.7	13.1	11.7
Food services, drinking places	1.8	3.2	3.2	3.9	5.9	9.8	4.6
Performing arts, spectator sports	8.6	7.0	7.7	8.4	11.0	10.2	8.8
Total employment due to tourism	188.9	193.3	205.4	211.5	215.9	220.4	205.9

* Based on the location quotient derived for the first three quarters of 2008.

Employment due to one hotel room							
	2003	2004	2005	2006	2007	2008	Average 2003-2008
Total employment due to tourism	188.9	193.3	205.4	211.5	215.9	220.4	205.9
LVCVA Hotel Room Count (thousands)	126.8	130.4	131.5	133.2	132.6	132.9	131.2
Jobs-to-room ratio (employment due to tourism/hotel rooms)	1.5	1.5	1.6	1.6	1.6	1.6*	1.6

* Based on the location quotient derived for the first three quarters of 2008.

Appendix B: Detailed Result Tables

Year	Population Forecast	Change in Population Forecast	Growth in Population (Percent)
2000	1,428,690*	107,373	8.1%
2001	1,498,274*	69,584	4.9%
2002	1,578,332*	80,058	5.3%
2003	1,641,529*	63,197	4.0%
2004	1,747,025*	105,496	6.4%
2005	1,815,700*	68,675	3.9%
2006	1,912,654*	96,954	5.3%
2007	1,996,542*	83,888	4.2%
2008	1,986,146*	-10,396	-0.5
2009	2,053,000	66,854	3.4
2010	2,122,000	69,000	3.4
2011	2,189,000	67,000	3.1
2012	2,255,000	66,000	3.0
2013	2,320,000	65,000	2.9
2014	2,384,000	64,000	2.8
2015	2,446,000	62,000	2.6
2016	2,505,000	59,000	2.4
2017	2,561,000	56,000	2.3
2018	2,615,000	54,000	2.1
2019	2,666,000	51,000	1.9
2020	2,715,000	49,000	1.8
2021	2,761,000	46,000	1.7
2022	2,806,000	45,000	1.6
2023	2,850,000	44,000	1.6
2024	2,892,000	42,000	1.5
2025	2,933,000	41,000	1.4
2026	2,973,000	40,000	1.4
2027	3,012,000	39,000	1.3
2028	3,050,000	38,000	1.3
2029	3,088,000	38,000	1.2
2030	3,126,000	38,000	1.2
2031	3,163,000	37,000	1.2
2032	3,201,000	38,000	1.2
2033	3,238,000	37,000	1.2
2034	3,275,000	37,000	1.2
2035	3,313,000	38,000	1.1%
2036	3,351,000	38,000	1.1%
2037	3,389,000	38,000	1.1%
2038	3,426,000	37,000	1.1%
2039	3,464,000	38,000	1.1%
2040	3,502,000	38,000	1.1%
2041	3,540,000	38,000	1.1%
2042	3,578,000	38,000	1.1%
2043	3,615,000	37,000	1.0%
2044	3,652,000	37,000	1.0%
2045	3,688,000	36,000	1.0%
2046	3,724,000	36,000	1.0%
2047	3,757,000	33,000	0.9%
2048	3,790,000	33,000	0.9%
2049	3,821,000	31,000	0.8%
2050	3,851,000	30,000	0.8%

*2000-2008 are historical estimates from Clark County Comprehensive Planning.
 Note: The average annual forecasted growth rate is 1.6%.

Table 10: Summary of Southern Nevada Stimulus Projects			
Project Type	2009	2010	Total
ADA compliance	6,250,000		6,250,000
Airport infrastructure/aviation facilities	130,000,000		130,000,000
Clark county school district facilities	135,300,000		135,300,000
Government buildings	1,209,959,200		1,209,959,200
Green infrastructure projects	153,155,000		153,155,000
Hospital/clinic infrastructure projects	37,500,000		37,500,000
Major park construction/maintenance	228,032,553		228,032,553
Recreation facilities	63,457,000		63,457,000
Roadways/highways/bridges	1,619,857,678		1,619,857,678
Sewage treatment plants	668,672,200		668,672,200
Storm drains/washes	247,239,650		247,239,650
Water infrastructure	376,147,000	298,100,000	674,247,000
Total	4,875,570,281	298,100,000	5,173,670,281

Source: SNRPC Southern Nevada Infrastructure List 02/17/2009.

Table 11: Las Vegas Room Inventory Summary					
	Cost (\$ millions)	Additional Convention Space (Sq. Ft.)	Additional Hotel/Motel Rooms (1)	Additional Time-Share Units (2)	Estimated Year-End Hotel/Motel Room Count
Las Vegas Room Inventory (December 31, 2008)					140,529
Projects scheduled to open in 2009					
Open and/or under construction (as of May 28, 2008)	15,241	976,022	1,628	12,563	
Planned (as of May 28, 2008)	–	–	–	–	
Total	15,241	976,022	1,628	12,563	153,092
Projects scheduled to open in 2010					
Open and/or under construction (as of May 28, 2008)	3,900	167,000	400	3,400	
Planned (as of May 28, 2008)	–	–	–	204	
Total	3,900	167,000	400	3,604	156,696
Projects scheduled to open in 2011					
Open and/or under construction (as of May 28, 2008)	40	300	–	230	
Planned (as of May 28, 2008)	–	–	–	–	
Total	40	300	–	230	156,926
Projects scheduled to open in 2009 – 2011					
Open and/or under construction (as of May 28, 2008)	19,181	1,146,022	2,028	16,193	
Planned (as of May 28, 2008)	–	–	–	204	
Total	19,181	1,146,022	2,028	16,397	156,926

Source: Las Vegas Valley Convention and Visitors Authority.

NOTE: Both time-share and condo hotel units are properties that may be rented out to overnight lodgers.

1. Room count includes condo-hotel units that may be rented to overnight lodgers when individual condo owners place their units into a nightly inventory.
2. Time-share: Ownership is divided among multiple owners with each owning the unit for a short interval of time (typically a week).

Variable	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total Employment	1154.133	1148.664	1155.957	1171.155	1186.575	1205.136	1224.632	1243.414	1257.935
Relative Labor Intensity	0.967	0.967	0.968	0.968	0.968	0.969	0.969	0.970	0.970
Relative Delivered Price	1.049	1.047	1.047	1.046	1.044	1.043	1.042	1.041	1.040
Relative Cost of Production	1.070	1.067	1.065	1.063	1.061	1.059	1.057	1.055	1.053
Regional Purchase Coefficient	0.584	0.579	0.568	0.567	0.565	0.561	0.558	0.554	0.551
Real Disposable Personal Income	53.256	54.286	56.877	57.107	59.470	62.082	64.767	67.560	70.212
Population	1844.902	1909.294	1980.922	2049.468	2115.706	2181.190	2246.109	2309.739	2371.229
Personal Income	73.007	76.269	80.282	81.744	87.551	94.029	101.056	108.513	116.114
PCE-Price Index	119.509	123.480	124.839	127.351	131.046	134.859	138.969	143.088	147.370
Output	116.561	115.450	117.211	118.688	122.503	126.729	131.161	135.627	139.739
Labor Access Index	1.000	1.000	1.000	1.000	1.001	1.001	1.001	1.002	1.003
Intermediate Demand Employment	235.176	228.882	227.865	226.073	228.625	231.272	234.138	236.895	239.279
Industrial Mix Index (weighted average)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Industrial Mix Index (calculated)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Imports from Rest of World	12.273	12.477	12.770	12.957	13.596	14.312	15.102	15.937	16.838
Imports from Rest of Nation	41.882	42.249	44.672	44.767	46.743	49.079	51.512	53.993	56.286
Imports from Multiregions	0.303	0.301	0.298	0.304	0.315	0.327	0.340	0.353	0.365
Gross Domestic Product	80.121	79.716	81.069	81.877	84.476	87.357	90.384	93.447	96.280
Exports to Rest of World Employment	20.439	22.070	22.160	22.710	23.405	24.116	24.877	25.684	26.569
Exports to Rest of Nation Employment	311.919	306.334	325.413	334.751	339.031	345.249	351.590	357.916	361.174
Exports to Multiregions Employment	4.766	4.728	4.747	4.819	4.884	4.958	5.038	5.115	5.175
Exogenous Industry Sales Employment	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Exogenous Industry Demand Employment	0.000	0.000	21.380	2.082	0.414	0.625	0.474	0.450	0.427
Disposable Personal Income	63.646	67.033	71.005	72.727	77.932	83.723	90.006	96.671	103.472
Demand	130.765	130.714	133.805	134.120	139.355	145.229	151.427	157.718	163.813
Average Annual Compensation Rate	40.680	41.724	43.133	43.788	46.041	48.478	51.069	53.827	56.657

¹³ Note: The population forecast will differ from the forecast in Table 1. See page 18 for details on rebasing the forecast.

Table 12: Economic Forecast After Employment, Hotel, Amenity, and Transit Adjustments continued										
Variable	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Employment	1272.22	1283.701	1296.292	1308.873	1319.174	1330.572	1341.573	1353.427	1365.879	1377.86
Relative Labor Intensity	0.971	0.971	0.972	0.972	0.973	0.973	0.974	0.974	0.975	0.975
Relative Delivered Price	1.039	1.037	1.036	1.034	1.033	1.032	1.030	1.029	1.028	1.027
Relative Cost of Production	1.050	1.048	1.046	1.043	1.041	1.038	1.036	1.034	1.032	1.030
Regional Purchase Coefficient	0.548	0.546	0.543	0.541	0.539	0.538	0.536	0.534	0.533	0.531
Real Disposable Personal Income	72.965	75.352	77.921	80.454	82.856	85.420	87.928	90.603	93.337	96.146
Population	2430.168	2486.569	2540.128	2590.854	2639.070	2685.544	2730.205	2773.608	2815.621	2856.521
Personal Income	124.320	132.283	140.921	149.921	159.124	169.010	179.366	190.483	202.347	214.857
PCE-Price Index	151.862	156.508	161.254	166.178	171.286	176.484	181.971	187.557	193.413	199.382
Output	143.931	147.850	151.944	156.086	160.012	164.133	168.261	172.566	177.023	181.495
Labor Access Index	1.003	1.004	1.005	1.005	1.006	1.006	1.007	1.007	1.008	1.008
Intermediate Demand Employment	241.705	243.975	246.332	248.580	250.348	252.317	254.191	256.241	258.415	260.526
Industrial Mix Index (weighted average)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Industrial Mix Index (calculated)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Imports from Rest of World	17.754	18.554	19.306	20.087	20.881	21.689	22.517	23.363	24.237	25.125
Imports from Rest of Nation	58.662	60.958	63.282	65.581	67.737	69.983	72.241	74.598	77.043	79.503
Imports from Multiregions	0.377	0.390	0.403	0.416	0.428	0.441	0.453	0.466	0.480	0.493
Gross Domestic Product	99.192	101.708	104.413	107.178	109.818	112.613	115.432	118.390	121.466	124.570
Exports to Rest of World Employment	27.510	28.149	28.660	29.119	29.554	29.975	30.386	30.791	31.196	31.599
Exports to Rest of Nation Employment	364.703	368.039	371.932	375.957	379.490	383.421	387.305	391.408	395.705	399.930
Exports to Multiregions Employment	5.233	5.281	5.337	5.389	5.433	5.483	5.528	5.575	5.626	5.676
Exogenous Industry Sales Employment	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Exogenous Industry Demand Employment	0.585	0.556	0.528	0.501	0.476	0.330	0.314	0.298	0.283	0.269
Disposable Personal Income	110.806	117.932	125.651	133.696	141.920	150.753	160.003	169.932	180.527	191.697
Demand	170.017	175.825	181.735	187.684	193.346	199.246	205.182	211.371	217.786	224.241
Average Annual Compensation Rate	59.768	62.764	66.049	69.421	72.961	76.701	80.638	84.801	89.194	93.831

Variable	2026	2027	2028	2029	2030	2035	2040	2045	2050
Total Employment	1391.248	1405.308	1420.141	1435.994	1452.116	1545.313	1649.005	1752.035	1841.669
Relative Labor Intensity	0.976	0.976	0.976	0.977	0.977	0.979	0.980	0.981	0.982
Relative Delivered Price	1.026	1.025	1.024	1.023	1.022	1.017	1.012	1.007	1.003
Relative Cost of Production	1.028	1.026	1.025	1.023	1.021	1.013	1.005	0.997	0.989
Regional Purchase Coefficient	0.530	0.528	0.527	0.526	0.524	0.519	0.514	0.509	0.505
Real Disposable Personal Income	99.121	102.246	105.521	108.954	112.559	133.437	159.184	189.363	222.007
Population	2896.472	2935.573	2973.898	3011.679	3049.321	3236.334	3425.503	3611.554	3773.962
Personal Income	228.411	242.945	258.533	275.323	293.308	406.067	566.146	787.890	1082.090
PCE-Price Index	205.610	212.022	218.637	225.514	232.566	271.715	317.705	371.869	435.725
Output	186.237	191.165	196.290	201.669	207.200	238.748	276.209	318.817	364.880
Labor Access Index	1.009	1.009	1.010	1.010	1.011	1.014	1.018	1.021	1.024
Intermediate Demand Employment	262.900	265.453	268.194	271.136	274.166	292.243	312.800	333.661	352.683
Industrial Mix Index (weighted average)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Industrial Mix Index (calculated)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Imports from Rest of World	26.042	26.986	27.947	28.937	29.959	35.427	41.318	47.314	52.439
Imports from Rest of Nation	82.165	84.896	87.758	90.775	93.895	112.158	135.242	162.950	194.459
Imports from Multiregions	0.507	0.521	0.536	0.552	0.568	0.662	0.774	0.905	1.052
Gross Domestic Product	127.869	131.309	134.899	138.675	142.572	164.904	191.671	222.350	255.636
Exports to Rest of World Employment	32.000	32.401	32.805	33.212	33.622	35.712	37.925	40.333	43.017
Exports to Rest of Nation Employment	404.355	409.077	414.044	419.261	424.436	453.467	484.791	516.703	548.394
Exports to Multiregions Employment	5.723	5.773	5.822	5.873	5.919	6.177	6.438	6.723	7.018
Exogenous Industry Sales Employment	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Exogenous Industry Demand Employment	0.752	0.715	0.680	0.646	0.614	0.000	0.000	0.000	0.000
Disposable Personal Income	203.802	216.784	230.708	245.706	261.775	362.566	505.737	704.183	967.339
Demand	231.154	238.291	245.723	253.535	261.624	308.160	364.788	430.295	501.092
Average Annual Compensation Rate	98.719	103.869	109.303	115.027	121.070	156.669	203.250	264.046	343.758

Variable	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total Employment	1154.133	1148.664	1155.957	1171.155	1186.575	1205.136	1224.632	1243.414	1257.935
Total Employment as % of Nation	0.636	0.634	0.657	0.657	0.659	0.664	0.67	0.675	0.678
Private Non-Farm	1045.356	1035.02	1059.378	1058.814	1073.725	1091.895	1111.004	1129.504	1143.89
Forestry, Fishing, Other	0.299	0.304	0.31	0.312	0.321	0.33	0.34	0.35	0.36
Mining	1.33	1.31	1.264	1.306	1.315	1.322	1.325	1.33	1.33
Utilities	3.387	3.379	3.364	3.31	3.319	3.325	3.327	3.333	3.333
Construction	115.028	104.838	98.366	94.59	95.413	96.311	97.349	98.352	99.242
Manufacturing	29.262	29.026	27.762	26.901	26.964	27.026	27.108	27.172	27.201
Wholesale Trade	28.7	29.042	28.173	28.216	28.389	28.567	28.768	28.94	29.076
Retail Trade	119.211	121.536	118.019	117.439	118.364	119.412	120.689	121.899	123.087
Transportation and Warehousing	38.646	39.565	39.583	39.625	40.21	40.769	41.337	41.889	42.405
Information	14.736	14.528	14.161	13.936	13.992	14.068	14.17	14.276	14.38
Finance and Insurance	53.566	51.684	51.197	49.726	49.579	49.443	49.321	49.148	48.922
Real Estate and Rental and Leasing	78.057	77.058	78.444	79.179	81.071	82.947	84.929	86.886	88.801
Professional and Technical Services	59.854	59.203	58.796	58.738	60.107	61.465	62.856	64.204	65.467
Mngmt of Companies and Enterprises	12.944	13.108	12.964	13.083	13.29	13.478	13.658	13.821	13.957
Admin and Waste Services	76.525	72.121	71.882	71.229	72.058	72.868	73.732	74.529	75.241
Educational Services	7.332	7.542	7.756	7.836	8.097	8.357	8.626	8.881	9.131
Health Care and Social Assistance	68.82	71.656	73.576	73.602	75.84	78.173	80.696	83.159	85.627
Arts, Entertainment, and Recreation	33.4	34.027	34.563	34.679	35.533	36.368	37.267	38.124	38.957
Accommodation and Food Services	259.456	259.994	293.653	300.214	304.418	311.59	318.74	325.777	329.299
Other Services, except Govt	44.804	45.097	45.545	44.894	45.443	46.073	46.764	47.435	48.074
Government	108.441	113.312	113.748	112.03	112.542	112.934	113.323	113.608	113.748
State and Local	85.723	89.942	90.403	88.928	89.636	90.264	90.9	91.437	91.847
Federal Civilian	11.158	11.316	11.436	11.584	11.55	11.493	11.429	11.361	11.281
Federal Military	11.56	12.054	11.909	11.518	11.356	11.177	10.994	10.81	10.62
Farm	0.336	0.332	0.328	0.324	0.32	0.316	0.311	0.307	0.302

Variable	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Employment	1272.22	1283.701	1296.292	1308.873	1319.174	1330.572	1341.573	1353.427	1365.879	1377.86
Total Employment as % of Nation	0.68	0.682	0.684	0.686	0.689	0.691	0.693	0.696	0.698	0.701
Private Non-Farm	1158.126	1169.575	1182.002	1194.391	1204.699	1216.015	1226.979	1238.731	1251.054	1262.953
Forestry, Fishing, Other	0.371	0.384	0.398	0.413	0.427	0.442	0.458	0.474	0.492	0.51
Mining	1.332	1.341	1.354	1.365	1.374	1.384	1.393	1.403	1.413	1.423
Utilities	3.331	3.339	3.361	3.381	3.396	3.415	3.427	3.444	3.463	3.48
Construction	100.023	100.285	100.574	100.849	100.931	101.101	101.233	101.446	101.723	101.99
Manufacturing	27.252	27.294	27.392	27.463	27.471	27.518	27.558	27.603	27.664	27.716
Wholesale Trade	29.194	29.047	28.852	28.616	28.302	27.984	27.637	27.289	26.937	26.562
Retail Trade	124.269	124.81	125.532	126.301	126.858	127.561	128.25	129.057	129.964	130.852
Transportation and Warehousing	42.939	43.612	44.3	44.965	45.544	46.149	46.734	47.339	47.957	48.552
Information	14.492	14.492	14.473	14.443	14.382	14.332	14.275	14.227	14.182	14.134
Finance and Insurance	48.638	48.207	47.732	47.252	46.698	46.216	45.727	45.305	44.913	44.528
Real Estate and Rental and Leasing	90.711	92.33	94.095	95.896	97.548	99.302	101.034	102.848	104.716	106.564
Professional and Technical Services	66.698	68.408	70.028	71.556	72.914	74.275	75.573	76.88	78.186	79.431
Mngmt of Companies and Enterprises	14.083	14.288	14.459	14.599	14.695	14.781	14.844	14.896	14.934	14.949
Admin and Waste Services	75.917	76.574	77.249	77.882	78.329	78.81	79.226	79.654	80.073	80.428
Educational Services	9.384	9.625	9.876	10.123	10.346	10.566	10.791	11.018	11.257	11.481
Health Care and Social Assistance	88.122	89.993	92.03	94.134	96.107	98.215	100.327	102.574	104.916	107.225
Arts, Entertainment, and Recreation	39.812	40.492	41.214	41.93	42.573	43.234	43.91	44.606	45.339	46.037
Accommodation and Food Services	332.906	335.849	339.238	342.711	345.7	348.96	352.179	355.57	359.107	362.555
Other Services, except Govt	48.651	49.206	49.845	50.513	51.106	51.77	52.404	53.102	53.822	54.536
Government	113.801	113.838	114.007	114.201	114.2	114.287	114.33	114.435	114.569	114.655
State and Local	92.17	92.456	92.823	93.196	93.4	93.667	93.89	94.159	94.448	94.692
Federal Civilian	11.2	11.129	11.085	11.05	11.001	10.963	10.925	10.894	10.867	10.838
Federal Military	10.431	10.253	10.099	9.955	9.799	9.657	9.515	9.382	9.254	9.125
Farm	0.298	0.293	0.289	0.285	0.28	0.275	0.27	0.266	0.261	0.257

Variable	2026	2027	2028	2029	2030	2035	2040	2045	2050
Total Employment	1391.248	1405.308	1420.141	1435.994	1452.116	1545.313	1649.005	1752.035	1841.669
Total Employment as % of Nation	0.703	0.706	0.709	0.711	0.714	0.73	0.746	0.758	0.761
Private Non-Farm	1276.166	1290.019	1304.599	1320.138	1335.953	1426.94	1528.15	1629.263	1718.401
Forestry, Fishing, Other	0.53	0.551	0.573	0.597	0.624	0.784	1.007	1.317	1.733
Mining	1.433	1.445	1.454	1.468	1.478	1.54	1.603	1.655	1.702
Utilities	3.501	3.522	3.545	3.564	3.589	3.723	3.845	3.913	3.883
Construction	102.392	102.884	103.468	104.154	104.907	109.978	115.565	119.742	120.635
Manufacturing	27.792	27.874	27.983	28.109	28.236	29.172	30.538	32.212	34.426
Wholesale Trade	26.203	25.847	25.496	25.157	24.822	23.363	22.234	21.332	20.458
Retail Trade	131.93	133.125	134.428	135.877	137.418	147.096	158.854	170.749	180.173
Transportation and Warehousing	49.187	49.831	50.494	51.18	51.854	55.483	59.221	62.862	66.396
Information	14.1	14.072	14.052	14.04	14.03	14.087	14.222	14.38	14.534
Finance and Insurance	44.21	43.933	43.687	43.482	43.302	42.775	42.451	42.017	41.178
Real Estate and Rental and Leasing	108.53	110.585	112.718	114.961	117.267	130.147	144.649	159.799	174.164
Professional and Technical Services	80.71	81.982	83.261	84.545	85.808	92.11	97.947	103.273	108.216
Mngmt of Co and Enterprises	14.958	14.952	14.935	14.906	14.86	14.468	13.848	13.15	12.546
Admin and Waste Services	80.823	81.208	81.603	81.995	82.363	84.173	85.419	85.889	85.593
Educational Services	11.716	11.937	12.159	12.384	12.599	13.748	15.032	16.249	17.04
Health Care and Social Assistance	109.698	112.278	114.948	117.779	120.667	137.394	156.819	177.761	198.026
Arts, Entertainment, and Recreation	46.806	47.604	48.422	49.3	50.18	55.047	60.183	64.959	68.303
Accommodation and Food Services	366.303	370.161	374.205	378.457	382.687	406.278	431.712	456.844	480.093
Other Services, except Govt	55.343	56.229	57.168	58.185	59.263	65.575	73.001	81.159	89.302
Government	114.835	115.046	115.304	115.62	115.931	118.16	120.661	122.594	123.107
State and Local	95.012	95.357	95.738	96.167	96.595	99.294	102.199	104.535	105.467
Federal Civilian	10.817	10.799	10.786	10.778	10.767	10.766	10.787	10.795	10.78
Federal Military	9.006	8.89	8.78	8.675	8.569	8.1	7.675	7.264	6.86
Farm	0.252	0.248	0.244	0.24	0.237	0.219	0.202	0.187	0.172

Variable	2007	2008	2009	2010	2011	2012	2013	2014	2015
By Demand Source	1045.356	1035.02	1059.378	1058.814	1073.725	1091.895	1111.004	1129.504	1143.89
Intermediate Demand	235.176	228.882	227.865	226.073	228.625	231.272	234.138	236.895	239.279
Local Consumption Demand	383.072	389.289	392.554	391.779	397.906	404.436	411.532	418.124	424.158
Government Demand	8.869	8.683	7.746	8.732	8.918	8.983	9.077	9.158	9.225
Investment Activity Demand	81.115	75.034	62.27	68.063	70.576	72.313	74.32	76.203	77.924
Exports to Multiregions	4.766	4.728	4.747	4.819	4.884	4.958	5.038	5.115	5.175
Exports to Rest of Nation	311.919	306.334	325.413	334.751	339.031	345.249	351.59	357.916	361.174
Exports to Rest of World	20.439	22.07	22.16	22.71	23.405	24.116	24.877	25.684	26.569
Exogenous Industry Sales	0	0	0	0	0	0	0	0	0
Exogenous Industry Demand	0	0	21.38	2.082	0.414	0.625	0.474	0.45	0.427

Variable	2016	2017	2018	2019	2020	2021	2022	2023	2024
By Demand Source	1158.126	1169.575	1182.002	1194.391	1204.699	1216.015	1226.979	1238.731	1251.054
Intermediate Demand	241.705	243.975	246.332	248.58	250.348	252.317	254.191	256.241	258.415
Local Consumption Demand	429.814	433.682	438.26	442.982	446.887	451.241	455.438	459.992	464.764
Government Demand	9.277	9.274	9.291	9.313	9.32	9.344	9.355	9.37	9.386
Investment Activity Demand	79.354	80.672	81.713	82.597	83.234	83.933	84.491	85.083	85.703
Exports to Multiregions	5.233	5.281	5.337	5.389	5.433	5.483	5.528	5.575	5.626
Exports to Rest of Nation	364.703	368.039	371.932	375.957	379.49	383.421	387.305	391.408	395.705
Exports to Rest of World	27.51	28.149	28.66	29.119	29.554	29.975	30.386	30.791	31.196
Exogenous Industry Sales	0	0	0	0	0	0	0	0	0
Exogenous Industry Demand	0.585	0.556	0.528	0.501	0.476	0.33	0.314	0.298	0.283

Variable	2025	2026	2027	2028	2029	2030	2035	2040	2045	2050
By Demand Source	1262.953	1276.166	1290.019	1304.599	1320.138	1335.953	1426.94	1528.15	1629.263	1718.401
Intermediate Demand	260.526	262.9	265.453	268.194	271.136	274.166	292.243	312.8	333.661	352.683
Local Consumption Demand	469.289	474.362	479.739	485.338	491.359	497.548	533.335	573.768	614.313	647.904
Government Demand	9.398	9.381	9.401	9.423	9.449	9.473	9.65	9.771	9.83	9.781
Investment Activity Demand	86.289	86.762	87.525	88.354	89.26	90.228	96.356	102.657	107.7	109.603
Exports to Multiregions	5.676	5.723	5.773	5.822	5.873	5.919	6.177	6.438	6.723	7.018
Exports to Rest of Nation	399.93	404.355	409.077	414.044	419.261	424.436	453.467	484.791	516.703	548.394
Exports to Rest of World	31.599	32	32.401	32.805	33.212	33.622	35.712	37.925	40.333	43.017
Exogenous Industry Sales	0	0	0	0	0	0	0	0	0	0
Exogenous Industry Demand	0.269	0.752	0.715	0.68	0.646	0.614	0	0	0	0

Table 15: Gross Regional Product

Variable	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Personal Consumption Expenditures	64.03	64.63	64.81	65.80	68.15	70.61	73.26	75.87	78.45	81.00	83.17	85.51	87.94	90.25	92.71
New autos	0.90	0.76	0.72	0.74	0.76	0.77	0.80	0.82	0.83	0.85	0.87	0.88	0.90	0.91	0.93
Furniture (incl. mattresses and bedsprings)	0.84	0.83	0.78	0.77	0.79	0.82	0.84	0.87	0.89	0.92	0.93	0.96	0.98	1.00	1.03
Computers, peripherals & software	1.97	2.38	2.60	3.07	3.61	4.18	4.81	5.48	6.19	6.96	7.59	8.26	8.97	9.71	10.48
Other durable house furnishings	0.81	0.81	0.77	0.78	0.81	0.85	0.88	0.93	0.97	1.00	1.05	1.09	1.14	1.19	1.25
Food & alcoholic beverages purch	5.23	5.46	5.45	5.58	5.78	5.97	6.16	6.35	6.53	6.71	6.92	7.16	7.42	7.66	7.92
Gasoline and oil	1.28	1.29	1.32	1.36	1.40	1.45	1.49	1.53	1.58	1.61	1.65	1.69	1.73	1.77	1.81
Fuel oil & coal	0.04	0.04	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06
Owner-occupied nonfarm dwellings	7.37	7.41	7.61	7.79	8.12	8.45	8.79	9.14	9.48	9.81	10.11	10.41	10.72	11.01	11.31
Tenant-occupied non-farm dwellings	2.12	2.08	2.09	2.09	2.13	2.17	2.20	2.23	2.25	2.28	2.29	2.33	2.36	2.40	2.44
Education and research	1.18	1.20	1.21	1.22	1.27	1.31	1.36	1.40	1.44	1.49	1.52	1.56	1.59	1.62	1.65
Gross Private Domestic Fixed Investments	18.99	18.04	15.97	16.80	17.59	18.31	19.10	19.89	20.71	21.52	22.26	22.89	23.48	24.01	24.56
Residential	4.85	3.75	3.07	3.66	3.86	4.01	4.18	4.34	4.48	4.59	4.68	4.76	4.84	4.90	4.97
Non-residential	3.14	3.43	2.74	2.78	2.89	2.96	3.04	3.13	3.21	3.29	3.33	3.36	3.40	3.43	3.46
Producer's Durable Equipment	11.24	11.15	10.45	10.77	11.35	11.94	12.56	13.20	13.86	14.55	15.21	15.76	16.28	16.75	17.22
Change in Private Inventories	0.00	-0.04	-0.06	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Exogenous Final Demand	0.00	0.00	2.27	0.22	0.04	0.07	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.05	0.04
Government Consumption Expenditures	10.55	10.88	10.19	10.75	10.96	11.08	11.22	11.35	11.48	11.59	11.70	11.84	11.98	12.10	12.25
Federal Military	2.86	3.04	3.02	3.02	3.05	3.08	3.09	3.11	3.13	3.15	3.16	3.18	3.19	3.20	3.22
Federal Civilian	1.00	1.02	0.99	1.05	1.05	1.05	1.04	1.04	1.04	1.03	1.04	1.05	1.06	1.08	1.09
State and Local Government	6.68	6.82	6.17	6.67	6.85	6.95	7.07	7.18	7.30	7.40	7.49	7.60	7.71	7.81	7.92
Total Exports	43.70	42.89	44.10	45.36	46.35	47.54	48.77	50.01	50.94	51.93	52.84	53.81	54.80	55.73	56.73
Total Imports	57.11	57.06	56.78	58.02	60.07	62.23	64.57	66.89	69.17	71.45	73.58	75.67	77.76	79.75	81.85

Table 15: Gross Regional Product continued

Variable	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035	2040	2045	2050
Personal Consumption Expenditures	95.20	97.81	100.58	103.33	106.30	109.41	112.66	116.12	119.68	140.67	166.57	197.00	229.90
New autos	0.95	0.97	1.00	1.02	1.04	1.07	1.10	1.13	1.17	1.38	1.64	1.92	2.18
Furniture (incl. mattresses and bedsprings)	1.06	1.09	1.12	1.15	1.19	1.22	1.27	1.31	1.36	1.66	2.07	2.60	3.30
Computers, peripherals & software	11.31	12.18	13.12	14.08	15.12	16.21	17.36	18.60	19.87	27.66	38.02	51.24	66.56
Other durable house furnishings	1.30	1.37	1.44	1.51	1.59	1.68	1.77	1.87	1.99	2.69	3.70	5.13	7.18
Food & alcoholic beverages purch	8.18	8.45	8.72	9.00	9.29	9.59	9.90	10.23	10.56	12.48	14.67	17.12	19.69
Gasoline and oil	1.85	1.88	1.92	1.96	2.00	2.04	2.08	2.12	2.17	2.34	2.57	2.81	3.02
Fuel oil & coal	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.08	0.08
Owner-occupied nonfarm dwellings	11.61	11.92	12.23	12.54	12.87	13.20	13.55	13.91	14.29	16.34	18.68	21.20	23.66
Tenant-occupied non-farm dwellings	2.48	2.52	2.57	2.61	2.66	2.71	2.77	2.82	2.88	3.23	3.63	4.08	4.52
Education and research	1.68	1.71	1.74	1.76	1.79	1.81	1.83	1.85	1.87	1.95	2.04	2.09	2.04
Gross Private Domestic Fixed Investments	25.11	25.67	26.28	26.86	27.50	28.17	28.89	29.66	30.43	35.09	40.71	47.02	53.44
Residential	5.02	5.09	5.15	5.22	5.27	5.35	5.44	5.54	5.65	6.32	7.04	7.66	7.88
Non-residential	3.48	3.51	3.54	3.56	3.58	3.62	3.65	3.69	3.73	3.96	4.17	4.23	4.09
Producer's Durable Equipment	17.70	18.18	18.70	19.20	19.75	20.30	20.88	21.51	22.13	25.82	30.31	35.51	41.07
Change in Private Inventories	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Exogenous Final Demand	0.04	0.03	0.03	0.03	0.09	0.08	0.08	0.08	0.07	0.00	0.00	0.00	0.00
Government Consumption Expenditures	12.38	12.51	12.65	12.79	12.91	13.05	13.20	13.37	13.52	14.39	15.25	16.07	16.74
Federal Military	3.24	3.25	3.26	3.28	3.29	3.31	3.32	3.35	3.36	3.45	3.54	3.62	3.69
Federal Civilian	1.10	1.11	1.13	1.14	1.15	1.16	1.18	1.19	1.21	1.29	1.37	1.46	1.54
State and Local Government	8.03	8.13	8.25	8.35	8.45	8.56	8.68	8.81	8.93	9.63	10.32	10.98	11.50
Total Exports	57.73	58.77	59.86	60.96	62.10	63.30	64.56	65.87	67.19	74.63	83.11	92.58	103.09
Total Imports	83.95	86.13	88.49	90.79	93.30	95.90	98.62	101.54	104.49	121.98	143.42	168.48	195.52

Variable	2007	2008	2009	2010	2011	2012	2013	2014	2015
Personal Income	73.007	76.269	80.282	81.744	87.551	94.029	101.056	108.513	116.114
Personal Income as % of Nation	0.624	0.626	0.643	0.645	0.649	0.656	0.663	0.669	0.674
Total Earnings by Place of Work	55.386	56.58	59.649	60.512	64.226	68.618	73.384	78.459	83.501
Total Wage and Salary Disbursements	41.477	42.243	44.567	45.179	48.105	51.431	55.042	58.886	62.695
Supplements to Wages and Salaries	8.472	8.91	9.395	9.469	10.08	10.741	11.457	12.219	12.976
Employer contributions for employee pension and insurance funds	5.731	6.039	6.377	6.434	6.855	7.311	7.804	8.328	8.849
Employer contributions for government social insurance	2.741	2.871	3.019	3.035	3.225	3.43	3.654	3.891	4.127
Proprietors' income with inventory valuation and capital consumption adjustments	5.437	5.427	5.688	5.863	6.042	6.446	6.885	7.353	7.83
Real Personal Income	61.089	61.766	64.308	64.188	66.81	69.724	72.718	75.836	78.791
Real Disposable Personal Income	53.256	54.286	56.877	57.107	59.47	62.082	64.767	67.56	70.212
PCE-Price Index	119.509	123.48	124.839	127.351	131.046	134.859	138.969	143.088	147.37
Real Personal Income with Housing Price	59.74	60.385	62.862	62.734	65.283	68.116	71.027	74.056	76.924
Real Disposable Personal Income with Housing Price	52.081	53.072	55.599	55.814	58.111	60.651	63.26	65.974	68.548
PCE-Price Index with Housing Price	122.206	126.304	127.71	130.302	134.11	138.042	142.278	146.528	150.948
Relative Housing Price	1.192	1.192	1.192	1.192	1.192	1.192	1.192	1.192	1.192
Real Disposable Personal Income per Capita	28.867	28.433	28.713	27.864	28.109	28.462	28.835	29.25	29.61
Real Personal Income per Capita	33.112	32.35	32.464	31.319	31.578	31.966	32.375	32.833	33.228

Variable	2016	2017	2018	2019	2020	2021	2022	2023	2024
Personal Income	124.32	132.283	140.921	149.921	159.124	169.01	179.366	190.483	202.347
Personal Income as % of Nation	0.678	0.681	0.684	0.686	0.689	0.691	0.694	0.696	0.699
Total Earnings by Place of Work	89.049	94.298	100.17	106.25	112.498	119.242	126.354	134.007	142.201
Total Wage and Salary Disbursements	66.869	70.855	75.273	79.871	84.59	89.682	95.054	100.831	107.016
Supplements to Wages and Salaries	13.811	14.583	15.471	16.386	17.324	18.334	19.398	20.542	21.765
Employer contributions for employee pension and insurance funds	9.423	9.955	10.566	11.195	11.841	12.537	13.269	14.056	14.898
Employer contributions for government social insurance	4.388	4.628	4.905	5.19	5.483	5.798	6.13	6.486	6.867
Proprietors' income with inventory valuation and capital consumption adjustments	8.369	8.859	9.426	9.993	10.584	11.226	11.902	12.634	13.42
Real Personal Income	81.864	84.521	87.391	90.217	92.9	95.765	98.569	101.56	104.619
Real Disposable Personal Income	72.965	75.352	77.921	80.454	82.856	85.42	87.928	90.603	93.337
PCE-Price Index	151.862	156.508	161.254	166.178	171.286	176.484	181.971	187.557	193.413
Real Personal Income with Housing Price	79.903	82.475	85.252	87.985	90.576	93.346	96.054	98.945	101.901
Real Disposable Personal Income with Housing Price	71.218	73.527	76.014	78.463	80.783	83.262	85.684	88.27	90.912
PCE-Price Index with Housing Price	155.588	160.392	165.3	170.395	175.68	181.058	186.735	192.514	198.572
Relative Housing Price	1.192	1.192	1.192	1.192	1.192	1.192	1.192	1.192	1.192
Real Disposable Personal Income per Capita	30.025	30.304	30.676	31.053	31.396	31.807	32.206	32.666	33.15
Real Personal Income per Capita	33.686	33.991	34.404	34.822	35.202	35.66	36.103	36.617	37.157

Variable	2025	2026	2027	2028	2029	2030	2035	2040	2045	2050
Personal Income	214.857	228.411	242.945	258.533	275.323	293.308	406.067	566.146	787.89	1082.09
Personal Income as % of Nation	0.701	0.704	0.707	0.71	0.713	0.717	0.739	0.764	0.785	0.795
Total Earnings by Place of Work	150.864	160.224	170.249	181.008	192.58	204.94	281.922	390.245	538.549	737.01
Total Wage and Salary Disbursements	113.555	120.617	128.178	136.292	145.016	154.331	212.41	293.882	405.383	554.332
Supplements to Wages and Salaries	23.056	24.449	25.938	27.536	29.25	31.08	42.448	58.31	79.888	108.552
Employer contributions for employee pension and insurance funds	15.786	16.745	17.77	18.87	20.05	21.31	29.139	40.069	54.947	74.724
Employer contributions for government social insurance	7.27	7.704	8.168	8.666	9.2	9.77	13.309	18.241	24.941	33.828
Proprietors' income with inventory valuation and capital consumption adjustments	14.253	15.158	16.132	17.181	18.314	19.53	27.065	38.053	53.278	74.126
Real Personal Income	107.761	111.089	114.585	118.248	122.087	126.118	149.446	178.199	211.873	248.342
Real Disposable Personal Income	96.146	99.121	102.246	105.521	108.954	112.559	133.437	159.184	189.363	222.007
PCE-Price Index	199.382	205.61	212.022	218.637	225.514	232.566	271.715	317.705	371.869	435.725
Real Personal Income with Housing Price	104.937	108.154	111.531	115.07	118.78	122.675	145.208	172.963	205.446	240.589
Real Disposable Personal Income with Housing Price	93.626	96.501	99.521	102.685	106.002	109.486	129.652	154.507	183.619	215.076
PCE-Price Index with Housing Price	204.747	211.191	217.827	224.674	231.793	239.094	279.645	327.322	383.503	449.766
Relative Housing Price	1.192	1.192	1.192	1.192	1.192	1.192	1.192	1.192	1.192	1.192
Real Disposable Personal Income per Capita	33.658	34.221	34.83	35.482	36.177	36.913	41.231	46.47	52.433	58.826
Real Personal Income per Capita	37.725	38.353	39.033	39.762	40.538	41.359	46.178	52.021	58.665	65.804

Variable	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total Population	1844.902	1909.294	1976.065	2045.095	2111.777	2177.655	2242.926	2306.873	2368.648	2427.844
Population As % of Nation	0.611	0.626	0.643	0.659	0.673	0.687	0.701	0.714	0.726	0.736
By Race and Ethnicity										
White	977.948	1002.417	1030.066	1055.25	1078.572	1100.89	1122.316	1142.482	1160.98	1177.67
Black	170.88	175.772	181.198	186.334	191.303	196.176	200.954	205.576	209.963	214.078
Other	189.637	197.573	206.303	214.763	222.967	231.109	239.195	247.148	254.891	262.368
Hispanic	506.437	533.532	563.355	593.121	622.864	653.015	683.643	714.533	745.394	776.052
By Age										
Ages 0-14	409.26	423.649	439.54	454.953	470.343	485.959	502.135	517.802	532.654	546.103
Ages 15-24	223.624	232.829	245.687	258.439	270.57	282.168	289.909	297.229	302.904	308.642
Ages 25-64	1016.27	1044.091	1074.688	1102.839	1129.848	1152.111	1177.696	1203.549	1229.436	1254.927
Ages 65 & Older	195.748	208.725	221.006	233.236	244.944	260.952	276.369	291.159	306.235	320.497
Labor Force	946.367	970.771	1000.346	1025.762	1050.381	1074.644	1098.659	1122.421	1144.495	1165.42
Participation Rates by Gender										
Male (16 & Older)	0.757	0.75	0.744	0.737	0.73	0.724	0.719	0.714	0.709	0.704
Female (16 & Older)	0.602	0.597	0.594	0.588	0.584	0.58	0.576	0.574	0.57	0.568

Variable	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Total Population	2484.477	2538.245	2589.159	2637.545	2684.172	2728.971	2772.5	2814.625	2855.631	2895.68
Population As % of Nation	0.746	0.755	0.763	0.77	0.776	0.782	0.787	0.792	0.796	0.8
By Race and Ethnicity										
White	1192.613	1205.716	1217.032	1226.749	1235.264	1242.558	1248.921	1254.307	1258.861	1262.625
Black	217.917	221.459	224.711	227.704	230.503	233.104	235.546	237.83	239.981	242.014
Other	269.583	276.499	283.111	289.462	295.634	301.623	307.487	313.216	318.827	324.336
Hispanic	806.456	836.453	865.999	895.156	924.144	952.921	981.654	1010.268	1038.851	1067.498
By Age										
Ages 0-14	558.595	570.131	580.103	588.841	596.357	603.042	609.125	614.433	619.109	623.416
Ages 15-24	313.861	319.328	324.855	330.637	337.303	344.406	352.312	360.292	368.224	375.568
Ages 25-64	1279.683	1302.008	1322.381	1340.592	1357.813	1373.286	1386.972	1400.298	1412.301	1424.316
Ages 65 & Older	334.429	348.661	363.515	379	394.07	409.471	425.199	440.597	456.888	473.172
Labor Force	1184.753	1202.466	1219.352	1234.682	1247.653	1260.274	1272.617	1284.828	1296.692	1308.892
Participation Rates by Gender										
Male (16 & Older)	0.699	0.693	0.688	0.683	0.678	0.674	0.669	0.665	0.66	0.656
Female (16 & Older)	0.564	0.561	0.558	0.555	0.549	0.544	0.539	0.535	0.531	0.527

Table 17: Population and Labor Force continued								
Variable	2027	2028	2029	2030	2035	2040	2045	2050
Total Population	2934.87	2973.272	3011.125	3048.83	3236.057	3425.279	3611.271	3773.608
Population As % of Nation	0.804	0.808	0.811	0.814	0.829	0.842	0.853	0.857
By Race and Ethnicity								
White	1265.64	1267.951	1269.668	1270.964	1271.54	1264.988	1250.952	1224.809
Black	243.94	245.772	247.527	249.238	257.163	264.108	269.486	272.083
Other	329.758	335.098	340.381	345.647	371.784	397.916	423.172	444.808
Hispanic	1096.236	1125.077	1154.103	1183.472	1335.847	1498.491	1667.944	1832.262
By Age								
Ages 0-14	627.429	631.296	635.17	639.196	664.534	700.527	739.428	768.867
Ages 15-24	382.757	389.798	396.078	401.915	423.255	435.487	448.923	467.453
Ages 25-64	1435.94	1447.309	1458.518	1469.698	1533.608	1601.406	1660.746	1713.07
Ages 65 & Older	489.447	505.495	521.913	538.511	614.937	688.083	762.457	824.571
Labor Force	1321.419	1334.164	1347.054	1359.982	1430.062	1504.141	1578.169	1644.161
Participation Rates by Gender								
Male (16 & Older)	0.653	0.65	0.647	0.644	0.635	0.632	0.63	0.628
Female (16 & Older)	0.524	0.52	0.518	0.515	0.506	0.5	0.497	0.494

Variable	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Starting Population	1777.168	1844.902	1909.294	1980.922	2049.468	2115.705	2181.19	2246.109	2309.739	2371.229
Births	29.387	30.452	31.618	32.876	33.99	35.033	35.956	36.793	37.573	38.229
Deaths	13.057	13.605	14.163	14.731	15.301	15.871	16.444	17.021	17.599	18.183
Natural Growth	16.33	16.847	17.456	18.144	18.689	19.162	19.512	19.772	19.975	20.046
Population Before Migrants	1793.498	1861.749	1926.749	1999.067	2068.157	2134.867	2200.702	2265.881	2329.714	2391.275
Total Migrants	51.404	47.544	54.173	50.401	47.548	46.322	45.407	43.858	41.515	38.893
Economic Migrants	37.784	32.186	39.719	36.147	32.958	31.398	30.165	28.29	25.621	22.666
Retired Migrants	3.686	3.799	3.897	3.988	4.078	4.289	4.459	4.633	4.816	4.994
International Migrants	10.038	10.663	10.82	10.975	10.806	10.96	11.114	11.269	11.422	11.576
Total Special Pops	104.052	104.948	104.685	103.976	103.682	103.358	103.026	102.692	102.348	102.005
Military	8.103	8.449	8.348	8.074	7.96	7.835	7.706	7.577	7.444	7.312
Military Dependents	12.856	13.405	13.244	12.809	12.629	12.43	12.227	12.022	11.811	11.601
College	73.257	73.257	73.257	73.257	73.257	73.257	73.257	73.257	73.257	73.257
Prisoners	9.836	9.836	9.836	9.836	9.836	9.836	9.836	9.836	9.836	9.836
Total Population	1844.902	1909.294	1976.065	2045.095	2111.777	2177.655	2242.926	2306.873	2368.648	2427.844

Variable	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Starting Population	2430.168	2486.568	2540.127	2590.854	2639.07	2685.544	2730.205	2773.608	2815.621	2856.521
Births	38.819	39.302	39.708	40.05	40.38	40.689	40.977	41.288	41.595	42.052
Deaths	18.768	19.358	19.947	20.544	21.157	21.775	22.399	23.035	23.676	24.333
Natural Growth	20.051	19.944	19.761	19.506	19.223	18.914	18.578	18.253	17.919	17.719
Population Before Migrants	2450.219	2506.512	2559.889	2610.359	2658.293	2704.458	2748.783	2791.861	2833.54	2874.24
Total Migrants	36.35	33.615	30.965	28.711	27.251	25.747	24.825	23.76	22.98	22.233
Economic Migrants	19.79	16.695	13.692	11.111	9.286	7.459	6.196	4.804	3.695	2.613
Retired Migrants	5.152	5.316	5.497	5.692	5.88	6.049	6.221	6.386	6.563	6.726
International Migrants	11.73	11.883	12.037	12.19	12.343	12.496	12.649	12.803	12.955	13.109
Total Special Pops	101.682	101.403	101.142	100.859	100.602	100.344	100.103	99.871	99.637	99.422
Military	7.187	7.079	6.978	6.869	6.769	6.67	6.576	6.487	6.396	6.313
Military Dependents	11.403	11.231	11.071	10.898	10.74	10.582	10.434	10.292	10.148	10.016
College	73.257	73.257	73.257	73.257	73.257	73.257	73.257	73.257	73.257	73.257
Prisoners	9.836	9.836	9.836	9.836	9.836	9.836	9.836	9.836	9.836	9.836
Total Population	2484.477	2538.245	2589.159	2637.545	2684.172	2728.971	2772.5	2814.625	2855.631	2895.68

Table 18: Demographics continued								
Variable	2027	2028	2029	2030	2035	2040	2045	2050
Starting Population	2896.472	2935.573	2973.898	3011.679	3198.765	3387.371	3575.222	3744.253
Births	42.521	43.006	43.505	44.011	46.801	49.527	51.675	53.048
Deaths	25	25.671	26.343	27.018	30.433	33.695	36.616	39.123
Natural Growth	17.52	17.335	17.163	16.993	16.368	15.832	15.059	13.925
Population Before Migrants	2913.993	2952.908	2991.061	3028.672	3215.134	3403.203	3590.281	3758.178
Total Migrants	21.581	20.99	20.618	20.648	21.2	22.3	21.273	15.783
Economic Migrants	1.669	0.789	0.132	-0.089	-0.565	-0.372	-2.415	-9.146
Retired Migrants	6.861	6.987	7.109	7.209	7.447	7.577	7.823	8.295
International Migrants	13.261	13.414	13.567	13.721	14.486	15.25	16.015	16.78
Total Special Pops	99.211	99.012	98.821	98.629	97.779	97.008	96.263	95.531
Military	6.231	6.154	6.081	6.006	5.678	5.38	5.092	4.809
Military Dependents	9.887	9.764	9.648	9.53	9.008	8.536	8.078	7.629
College	73.257	73.257	73.257	73.257	73.257	73.257	73.257	73.257
Prisoners	9.836	9.836	9.836	9.836	9.836	9.836	9.836	9.836
Total Population	2934.87	2973.272	3011.125	3048.83	3236.057	3425.279	3611.271	3773.608



An affirmative action/equal opportunity institution.
