THE UCLA ANDERSON FORECAST FOR THE NATION AND CALIFORNIA

March 2014 Report

FORECASTS:
2014 1st Quarter
2016 4th Quarter

63rd Year

UCLA Anderson Forecast

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Chauncey J. Medberry Chair in Management

The UCLA Anderson Forecast Staff:
Jerry Nickelsburg, Senior Economist, Adjunct Professor of Economics, UCLA Anderson School
David Shulman, Senior Economist
William Yu, Economist
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THE UCLA ANDERSON FORECAST FOR THE NATION AND CALIFORNIA

March 2014 Report

Nation

California

THE UCLA ANDERSON FORECAST FOR THE NATION

MARCH 2014 REPORT

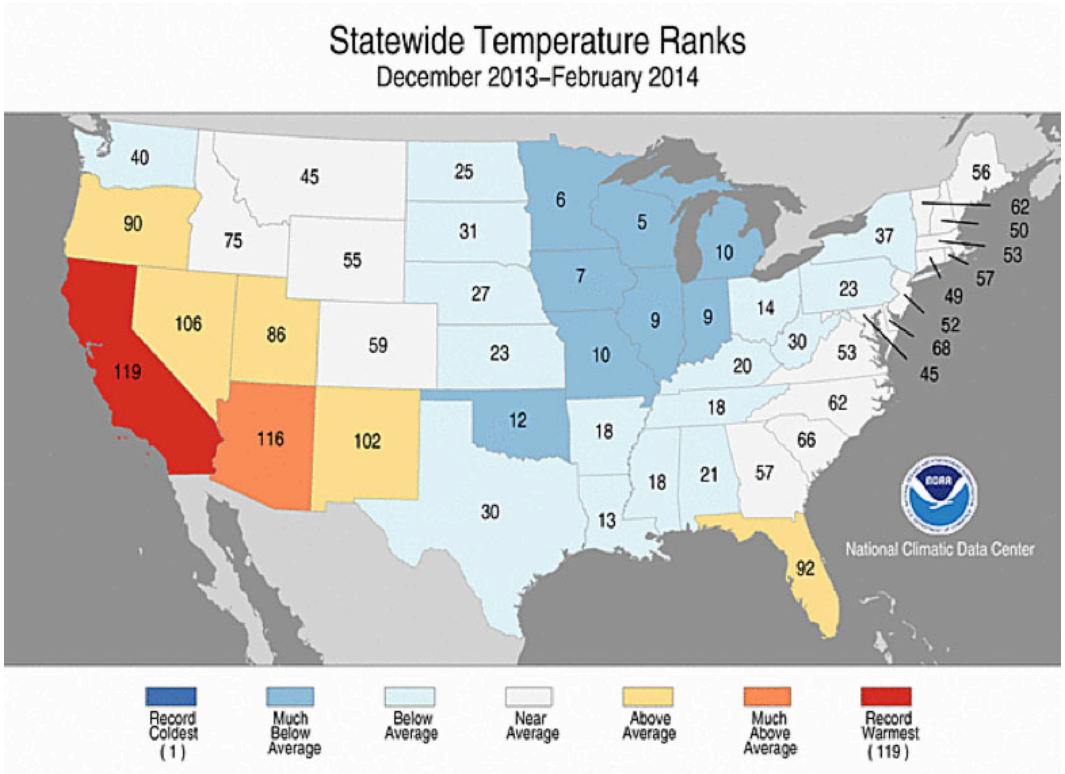
There Will Be Growth in the Spring... and Beyond

There Will be Growth in the Spring... and Beyond[1]

David Shulman
Senior Economist, UCLA Anderson Forecast
March 2014

The weather played havoc with the economy in the first quarter. In a mirror image of the balmy winter of 2012 where unusually warm temperatures temporarily enhanced economic activity, near record cold weather suppressed it.[2] As a result of this year's polar vortex the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Oklahoma and Wisconsin experienced among their twelve coldest winters in the past 119 years. (See Figure 1) The cold weather was exacerbated by unusually heavy snow falls across the Great Lakes and into the Northeast. Interestingly, while the middle of the country was freezing, California was experiencing a drought along with its warmest winter in recorded history. Indeed the entire southwest from Texas to California was experiencing severe drought conditions.

Figure 1 U.S. Winter Temperature by State

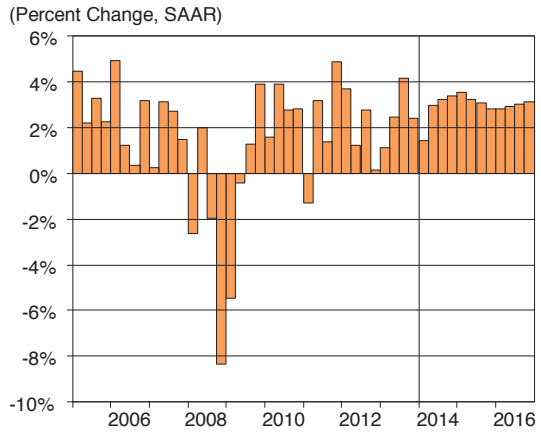


Sources: NOAA

Simply put, the seasonal factors the Bureau of Labor Statistics uses are incapable of fully accounting for extreme weather conditions. In order to highlight the impact of weather in January and February of 2012, we note that payroll employment growth averaged, as initially reported a robust gain of 256,000 jobs. In contrast, this year job gains were a far more modest 152,000 for the first two months. As a result, we expect that first quarter real GDP growth will come in a subpar 1.4% annualized rate.

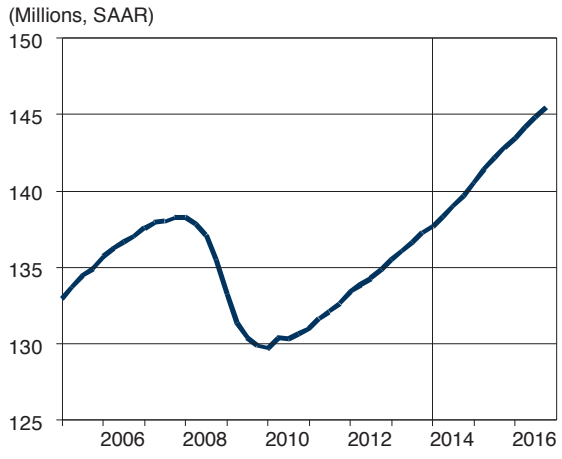
Nevertheless as our title suggests, there will be growth in the spring as such weather affected activities as factory production, automobile sales and the construction rebound from their winter lows leading to real GDP growth of about 3%. Furthermore, as we have argued previously, we continue to believe that the economy is poised to remain on a 3% or so growth path through 2016 buoyed by increased housing and business investments along with gains in consumer spending. (See Figure 2) In this environment we can visualize the economy creating between 200,000-250,000 jobs a month with the unemployment rate dropping to 5.4% by late 2016. (See Figures 3 and 4) To be sure, total payroll employment will surpass the prior 2007 peak, but the economy will remain well below its pre-Great Recession growth path.

Figure 2 Real GDP Growth, 2005Q1-2016Q4



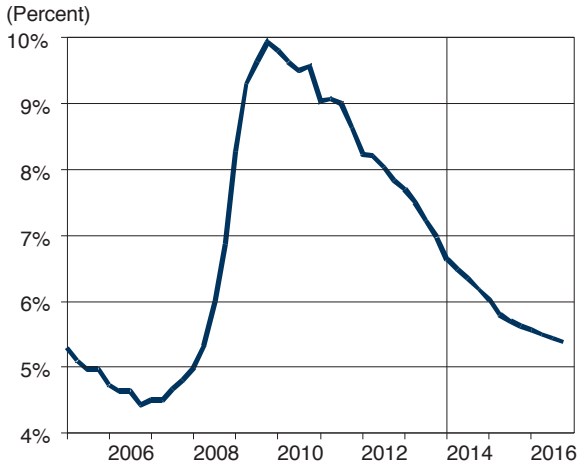
Sources: U.S. Department of Commerce and UCLA Anderson Forecast

Figure 3 Payroll Employment, 2005Q1 -2016Q4



Sources: U.S. Bureau of Labor Statistics and UCLA Anderson Forecast

Figure 4 Unemployment Rate, 2005Q1 – 2016Q4



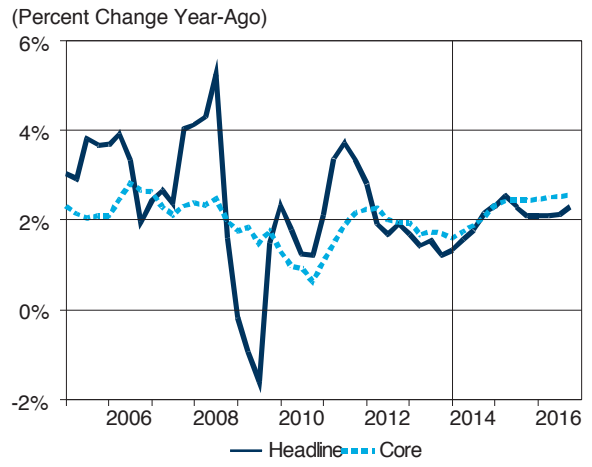
Sources: U.S. Bureau of Labor Statistics and UCLA Anderson Forecast

Modest Inflation Ahead

While inflation has been quiescent for most of the post-2009 recovery period, it is about to experience an uptick. Specifically, we forecast that the core consumer price index will increase from 1.8% in 2013 to 2.5% in 2016. (See Figure 5) Because of increases in domestic energy production, the increase in headline inflation will be somewhat more muted. Admittedly, food prices might pose an upside risk should drought conditions in the Southwest and political uncertainty in the Ukrainian breadbasket persist.

As we have written elsewhere, the increase in inflation will come from the shelter and healthcare components of price indices. Both measures are now running at a 2.5%

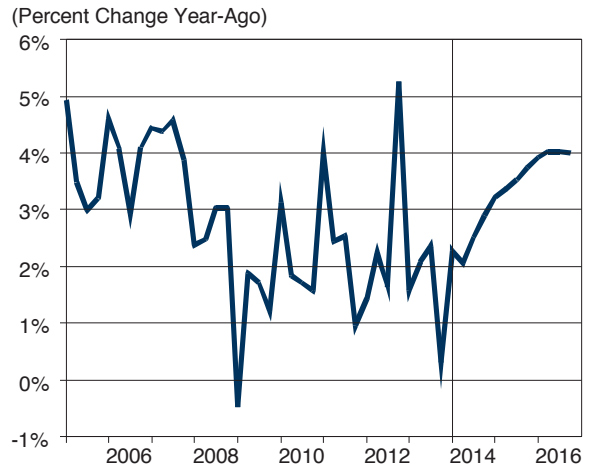
Figure 5 Headline Consumer Price Index vs. Core CPI, 2005Q1 – 2016Q4F



Sources: U.S. Bureau of Labor Statistics and UCLA Anderson Forecast

rate along with a general increase in wages.[3] To be sure, for most Americans, the increase in wages will be most welcome, but for those wary of inflation it will be signaling a cautionary yellow light. Specifically, we are forecasting total compensation per hour to increase by 2.4%, 3.5% and 4% in 2014, 2015 and 2016, respectively, compared to a very low increase of 1.6% in 2013. (See Figure 6)

Figure 6 Compensation per Hour, 2005Q1 -2016Q4F

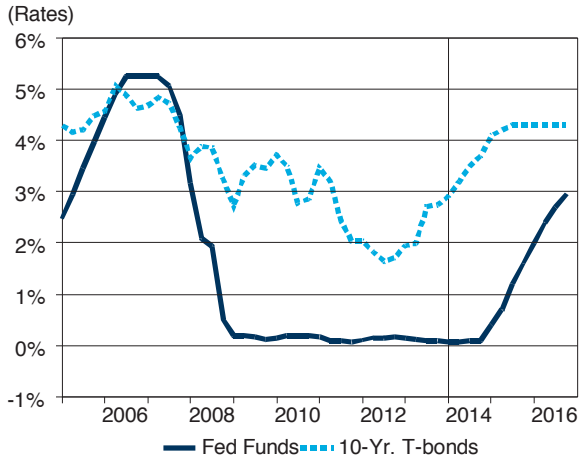


Sources: U.S. Bureau of Labor Statistics and UCLA Anderson Forecast

Fed Policy: From Taper to Modest Tightening

The Federal Reserve's long experiments with zero interest rates and quantitative easing are slowly coming to an end. We anticipate that the monthly $85 billion bond buying program, now down to $55 billion, known as quantitative easing will be all but wound down by September. Although most market participants do not expect the Fed to actually begin to raise rates by mid-2015 at the earliest and a few anticipate that it will wait until 2016, we believe that the first overt tightening will begin in the first quarter of 2015. (See Figure 7) Our view was strengthened at Fed Chair Yellen's recent news conference where she defined "considerable period" as approximating six months as the time between the end of tapering and the beginning of overt tightening. Thereafter, we forecast that the Federal Funds rate will rise, to use "Fedspeak", at measured pace reaching 3% by the end of 2016. In essence, the "Yellen Fed" will be very much like the "Bernanke Fed."

Figure 7 Federal Funds Rate vs. 10-Year U.S. Treasuriy Bonds,, 2005Q1 - 2016Q4F



Sources: Federal Reserve Board and UCLA Anderson Forecast

Why? Under the Fed's dual mandate to maintain maximum employment and price stability there would be little intellectual justification for continuing a zero interest rate policy with a 6% and falling unemployment rate and a 2.5% core inflation run rate in the first quarter of 2015. We are aware that the Fed's official inflation target variable are the core and overall price deflators for personal consumption expenditures in the GDP accounts will be running somewhat below the consumer price indices. But at that time, there will be little doubt as to where they will be heading.

In this environment, long-term interest rates will begin to normalize. We would not be surprised to see 10-Year U.S. Treasury rates exceeding 3.7% by yearend and be above 4% thereafter. We would also point out that relative to the 2%-2.5% inflation rate, both the real Fed Funds rate and the 10-year treasury yield would still be well below pre-2007 levels. Our short-term interest rate forecast is broadly consistent with the higher end of published consensus beliefs of the open market committee after the March meeting.

Sources of Growth: Housing, Business Investment and Consumption

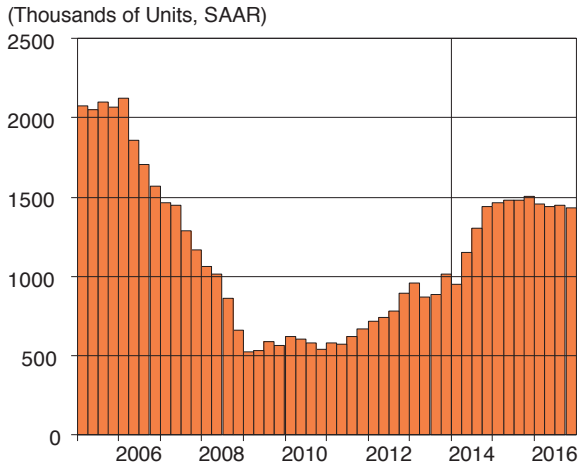
As we have noted for the past several years, we believe that housing construction is in a period of sustained, albeit moderate recovery. After bottoming at below 600,000 units a year in 2010, housing starts recovered to 931,000 units in 2013 and are expected to exceed 1.2 million units this year and approach 1.5 million units in 2015. (See Figure 8) Thereafter, housing activity is expected to plateau in the 1.4-1.5 million unit range as mortgage rates in excess of 6% exact their toll. As we have noted on many occasions, multi-family construction will account for about 30% of overall starts as it has in recent years, up from the 20% that has characterized the prior decades.

Meantime, investment in business equipment and software along with nonresidential construction will begin to experience a sustained pickup. (See Figures 9 and 10) Real equipment and software spending, which increased at a very tepid 3.1% in 2013, will likely increase by 6% this year and 10% next year. The improvement in nonresidential construction will be even more dramatic where that sector will rebound from a meager 1.4% growth rate in 2013 to 5.2% this year and 11% by 2016.

The rebound in corporate spending will be caused by the need to replace aging capital equipment, accelerating global growth, reduced domestic political uncertainty, the on-going energy renaissance in the U.S. and "most importantly" in the words BofA Merrill Lynch, the stock market is no longer rewarding share buybacks.[4] Put bluntly, instead of spending big bucks on financial engineering, American companies will step up their spending on physical engineering.

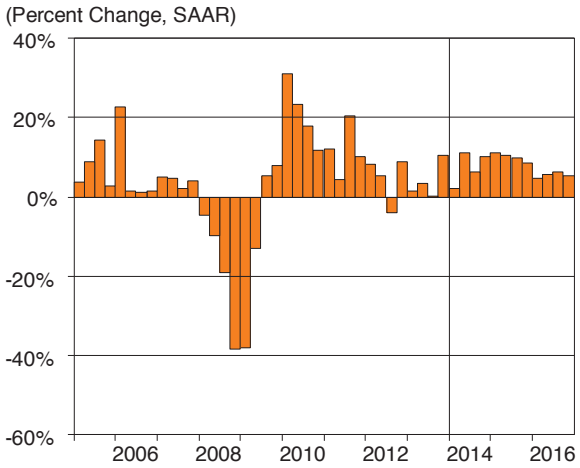
Along with increases in business spending, the long suffering U.S. consumer will begin to spend more robustly. The increase in spending will be driven by the improved employment and wage picture, a very big deal, along with the $10 trillion increase in wealth that took place in 2013. Yes, a bull market on Wall Street is largely concentrated

Figure 8 Housing Starts, 2005Q1 - 2016Q4F, Quarterly Data



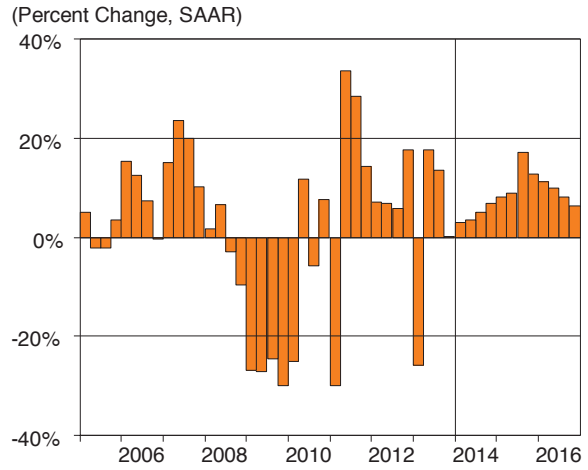
Sources: U.S. Department of Commerce and UCLA Anderson Forecast

Figure 9 Real Equipment and Spftware Spending, 2005Q1 - 2016Q4F



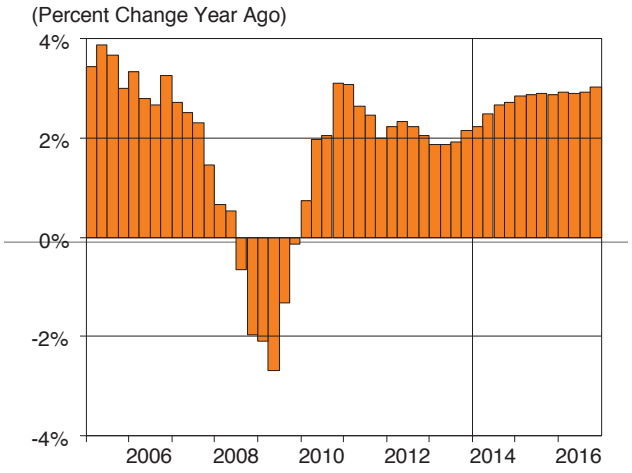
Sources: U.S. Department of Commerce and UCLA Anderson Forecast

Figure 10 Real Investment in Nonresidential Construction, 2005Q1 - 2016Q4F



Sources: U.S. Deparment of Commerce and UCLA Anderson Forecast

Figure 11 Real Consumption Spending, 2005Q1 – 2016Q4F, Annual Data



Sources: U.S. Department of Commerce and UCLA Anderson Forecast

in the upper income brackets, but that is where half the purchasing power is. Furthermore, last year's rise in stock prices will take some of the pressure off the fiscal stress facing most defined benefit pension plans and individual retirement accounts. As a result, real consumer spending gains are expected to approach 3% in 2015 and 2016 well above the 2% recorded in 2013. (See Figure 11) Even with the increases in consumer spending we envision the saving rate after modestly declining in 2014 to 4.3% will be well above 5% by 2016.

Conclusion

There will be growth in the spring. The economy will shake-off the weather induced weakness and begin to grow at a 3% growth track bringing with it rising employment and wage gains. Growth will be led by housing, business investment and the consumer. Along the way inflation will modestly increase causing the Fed to begin increasing rates in early 2015 and longer-term interest rates will begin to normalize. Not great, but what's not to like.

Endnotes

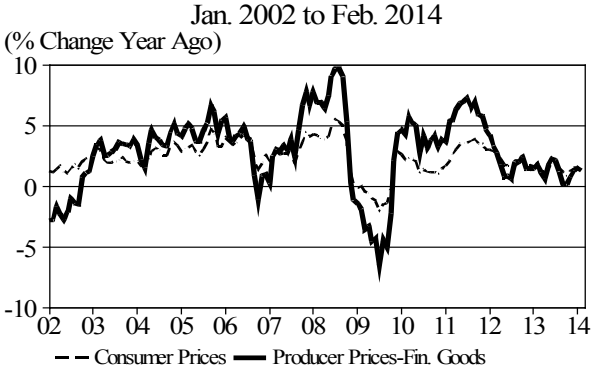
1. *With apologies to Chance Gardiner in "Being There" (United Artists, 1979).*
2. *See Shulman, David, "Curb Your Enthusiasm," UCLA Anderson Forecast, March 2012.*
3. *See Shulman, David, "The Inflation to Come in Housing, Healthcare and Wages," Ziman Economic Letter, January 2014.*
4. *See "The cap-X factor," BofA Merrill Lynch Global Research, 11 March 2014.*

THE UCLA ANDERSON FORECAST FOR THE NATION

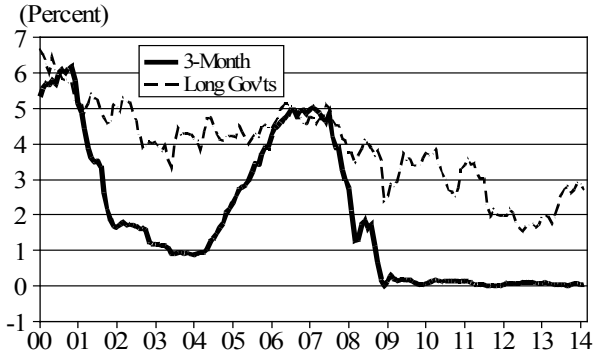
MARCH 2014 REPORT

Charts

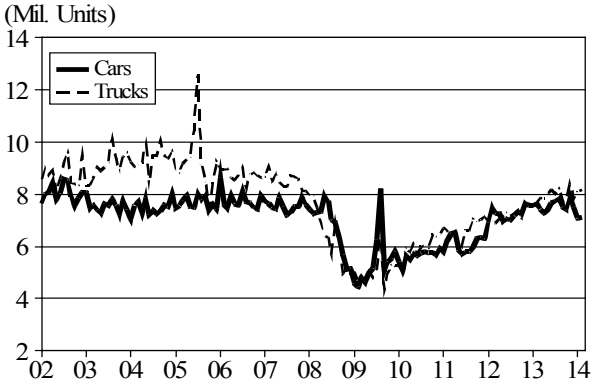
Price Inflation
Consumer vs. Producers' Price Index
Jan. 2002 to Feb. 2014



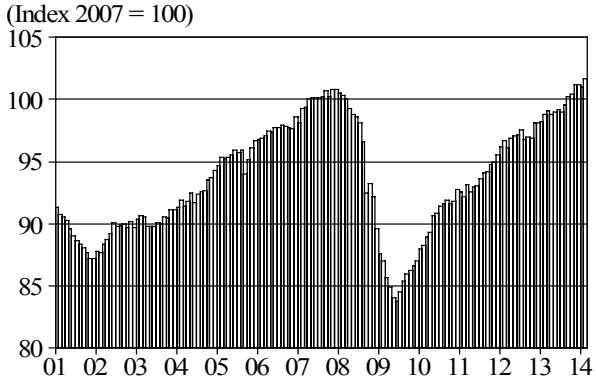
Interest Rates
3-Mo. T-Bills vs. Long Gov't Bond Yields
Jan. 2000 to Feb. 2014



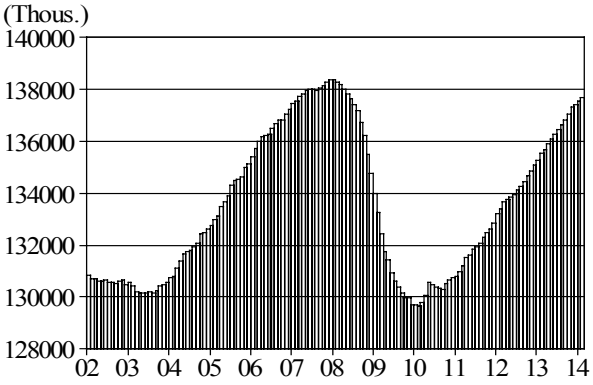
Automobile Sales
Jan. 2002 to Feb. 2014



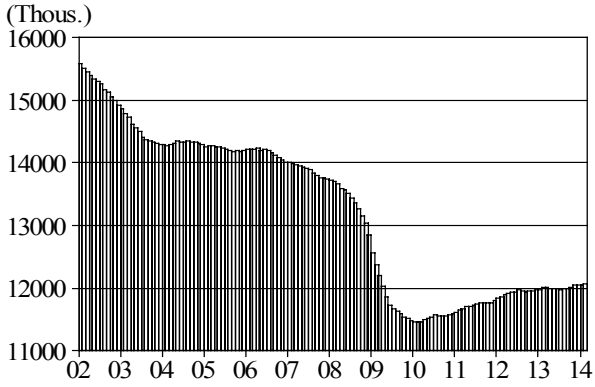
Industrial Production
Jan. 2001 to Feb. 2014



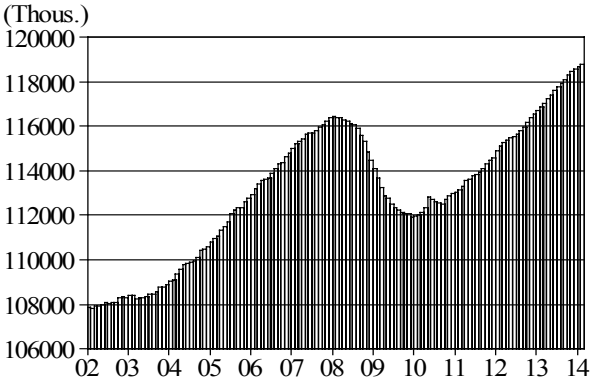
Total Nonfarm Employment
Jan. 2002 to Feb. 2014



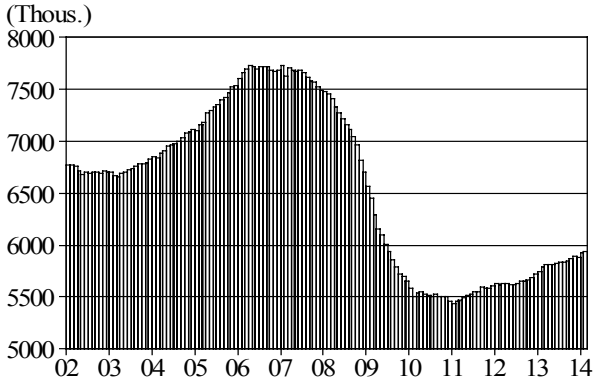
Employment in Manufacturing
Jan. 2002 to Feb. 2014



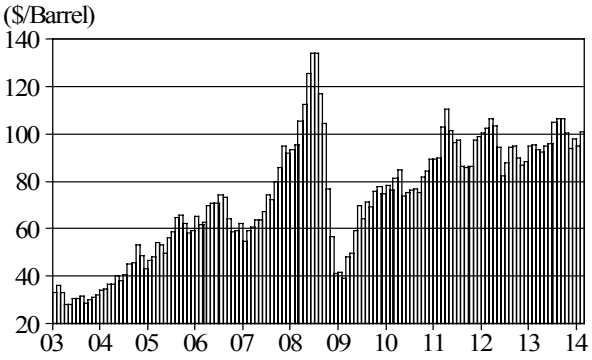
Employment in Services
Jan. 2002 to Feb. 2014



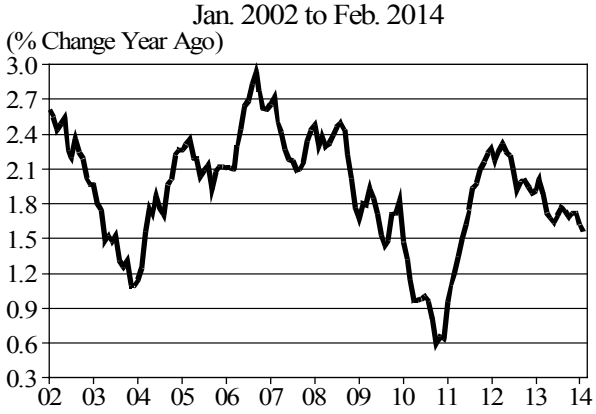
Employment in Construction
Jan. 2002 to Feb. 2014



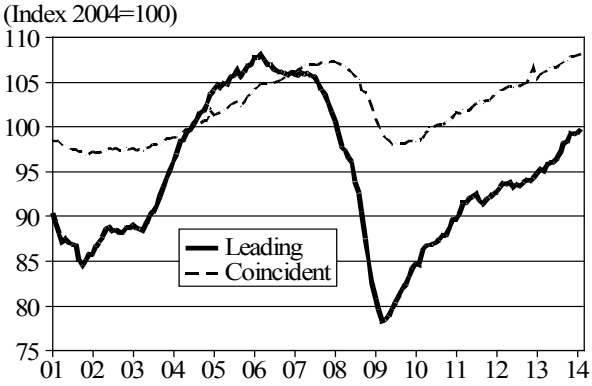
Crude Oil Price
West Texas Intermediate
Jan. 2003 to Feb. 2014



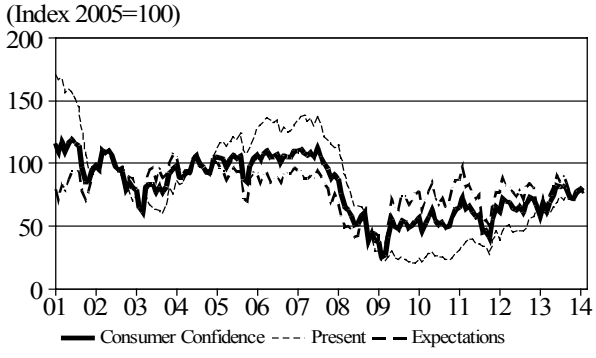
Core Consumer Price Index
Jan. 2002 to Feb. 2014



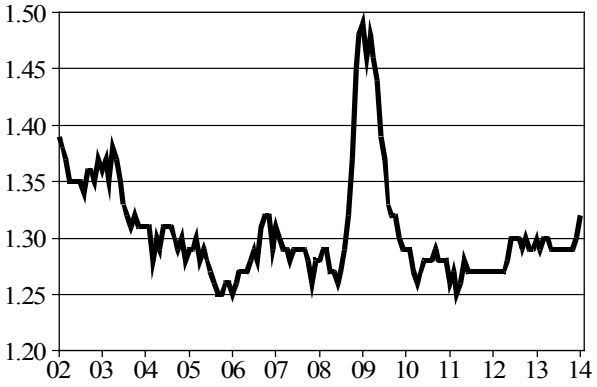
Composite Indexes of Economic Indicators
Jan. 2001 to Feb. 2014



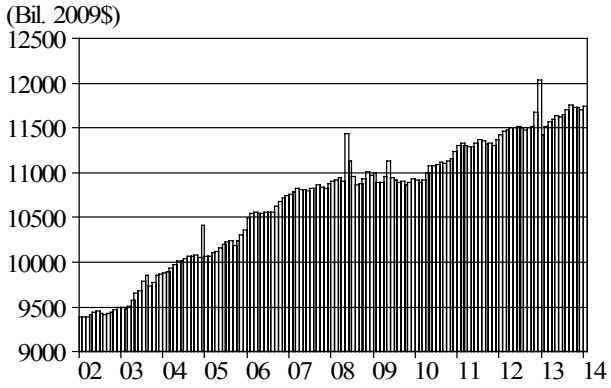
Indexes of Consumer Attitudes
Conference Board
Jan. 2001 to Feb. 2014



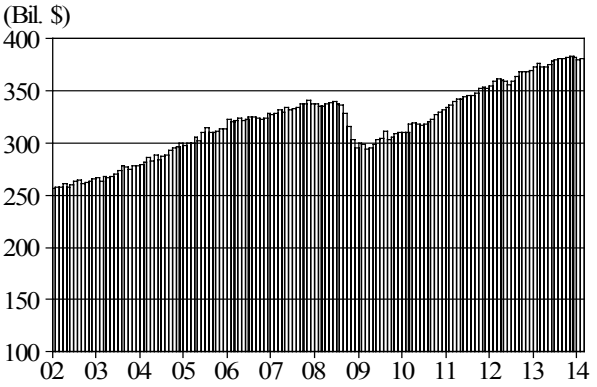
Total Business Inventory-to-Sales Ratio
Jan. 2002 to Jan. 2014



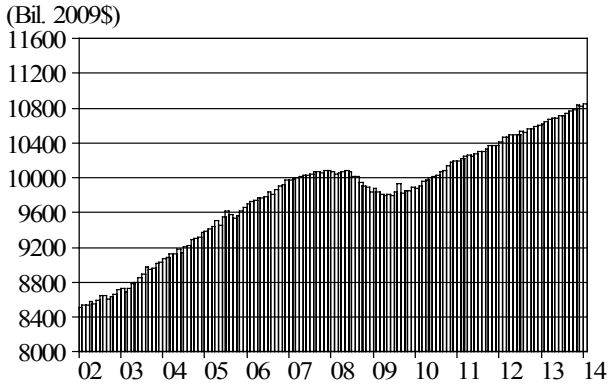
Real Disposable Personal Income
Jan. 2002 to Jan. 2014



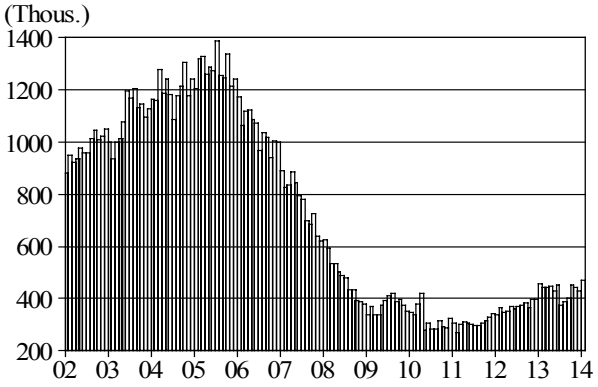
Retail Sales
Jan. 2002 to Feb. 2014



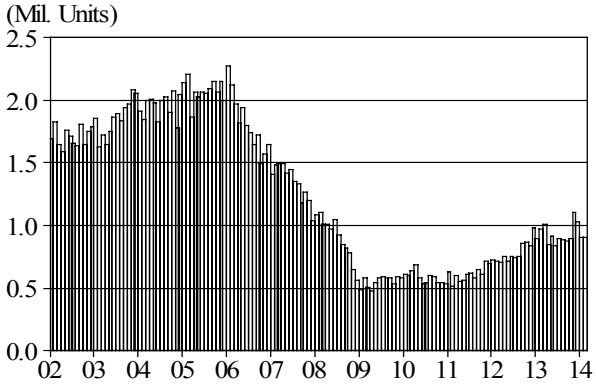
Real Personal Consumption
Jan. 2002 to Jan. 2014



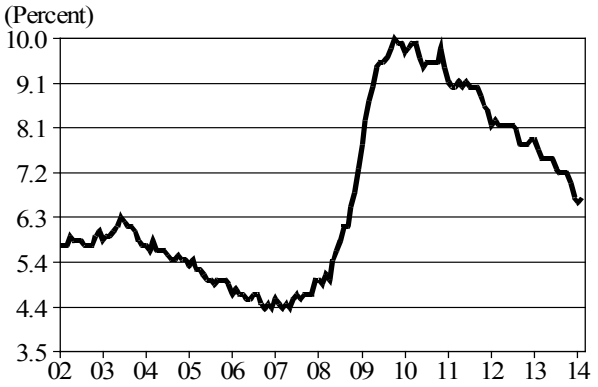
Single-Family New Home Sales
Jan. 2002 to Jan. 2014



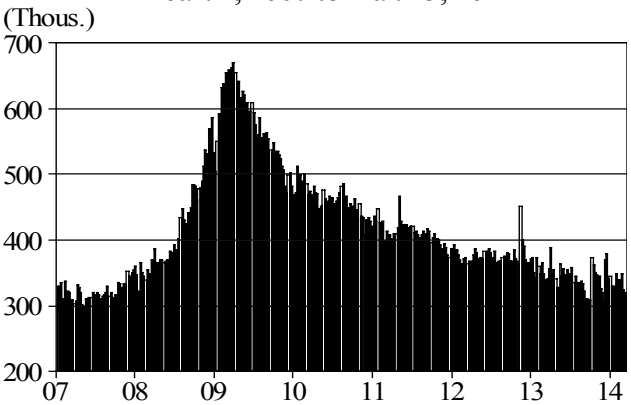
Housing Starts
Jan. 2002 to Feb. 2014



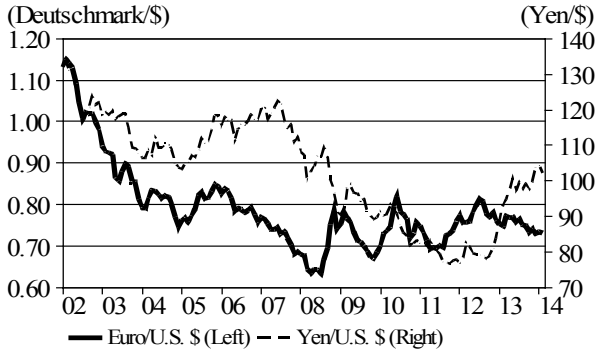
Rate of Unemployment
Jan. 2002 to Feb. 2014



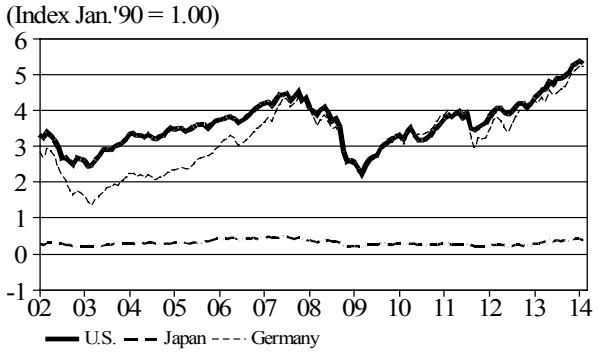
Unemployment Insurance Claims
Jan. 1, 2007 to Mar. 15, 2014



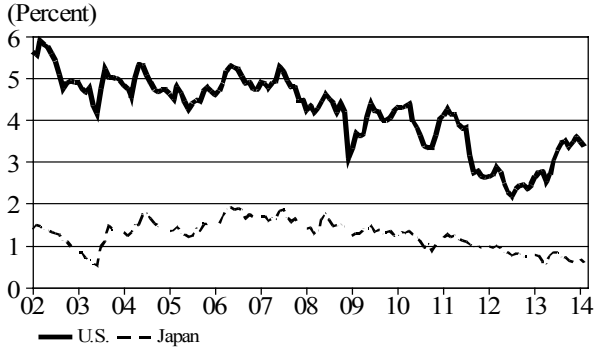
Japanese and European
Exchange Rates
Jan. 2002 to Feb. 2014



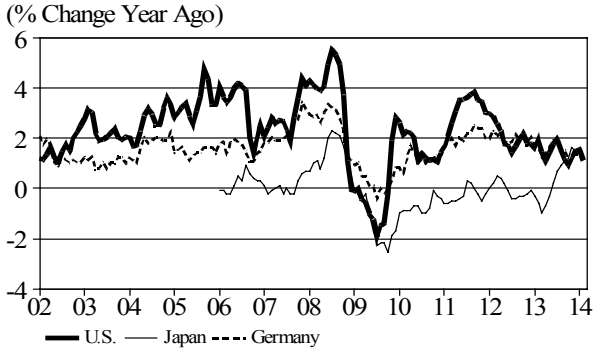
U.S., Japanese and German
Stock Markets
Jan. 2002 to Feb. 2014



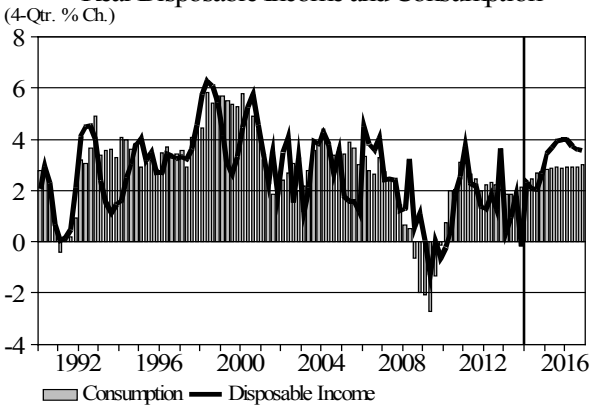
U.S. and Japanese
Long Term Gov't Bond Yields
Jan. 2002 to Feb. 2014



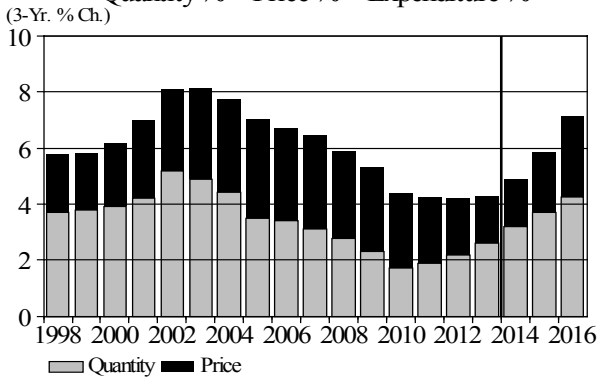
U.S., Japanese and German
Consumer Price Index
Jan. 2002 to Feb. 2014



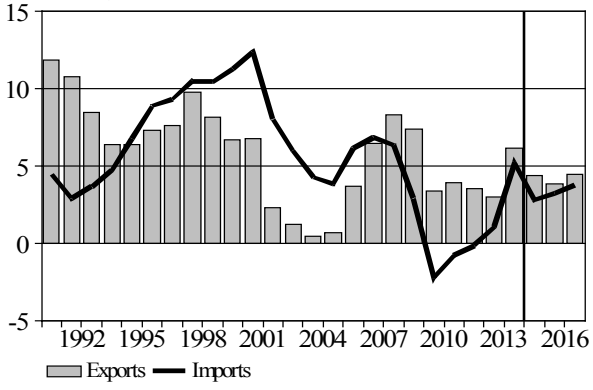
Real Disposable Income and Consumption



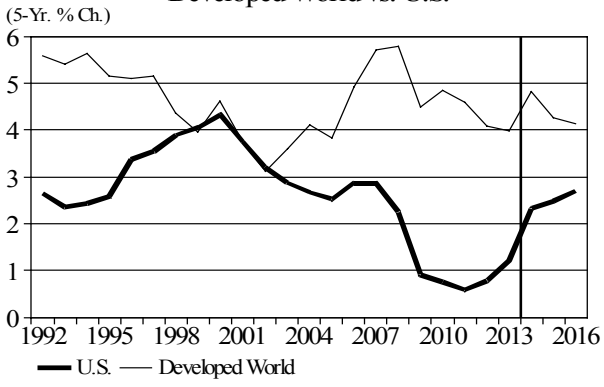
Consumer Expenditures on Medical Services:
Quantity % + Price % = Expenditure %



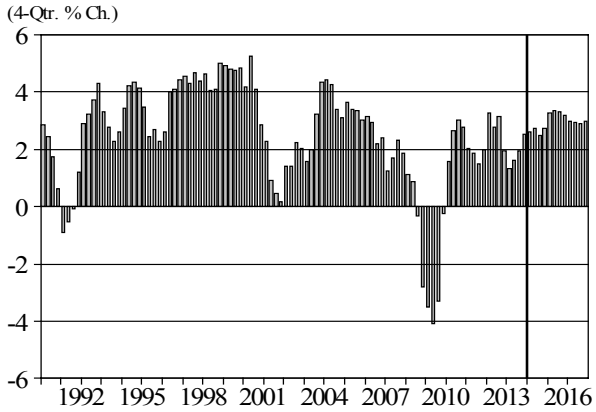
Real Export and Import Growth



Real GDP Growth
Developed World vs. U.S.

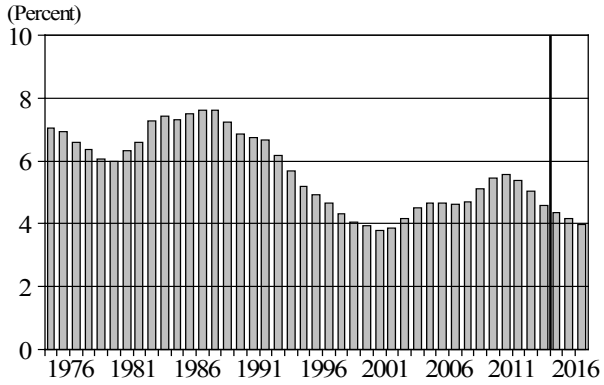


Real GDP Growth

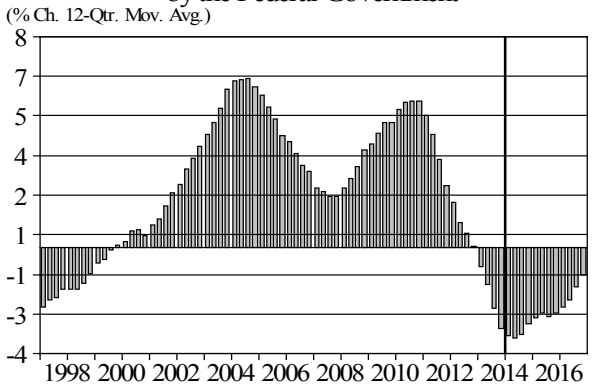


Actual Real GDP
Vs. Potential Real GDP

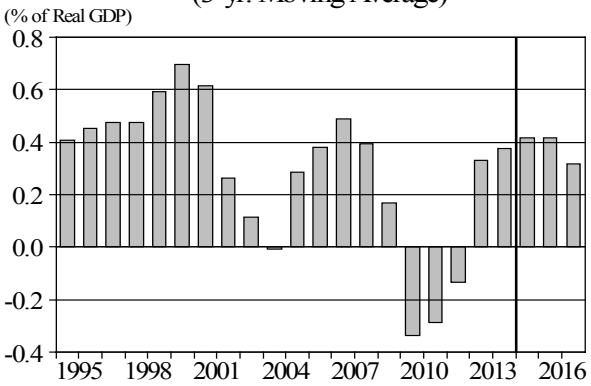
Defense Spending
As A Share of GDP



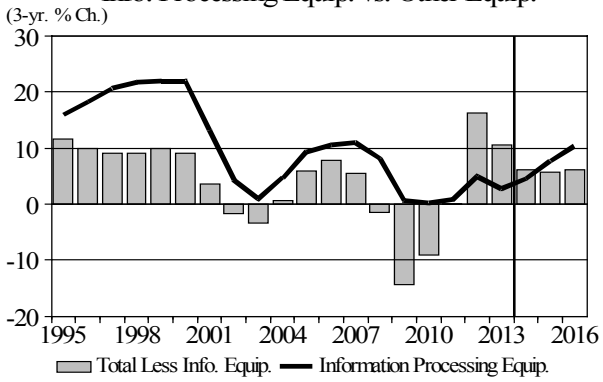
Real Purchases of Goods and Services
by the Federal Government



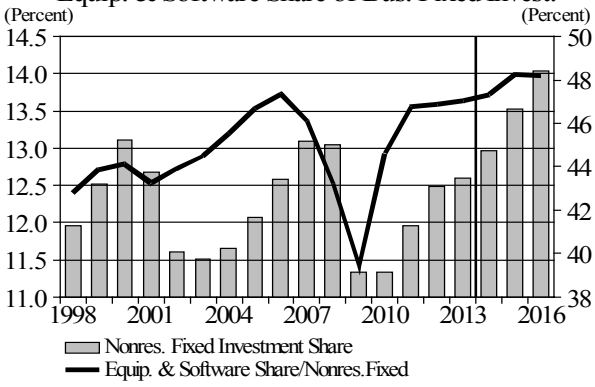
Change in Real Business Inventories
(3-yr. Moving Average)



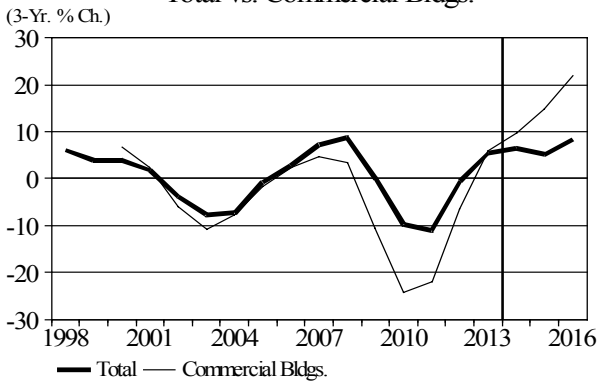
Real Investment-Equipment & Software
Info. Processing Equip. vs. Other Equip.



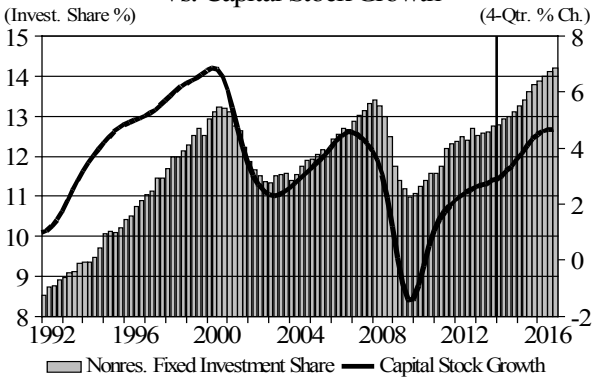
Nonres. Fixed Investment Share of Real GDP Vs.
Equip. & Software Share of Bus. Fixed Invest.



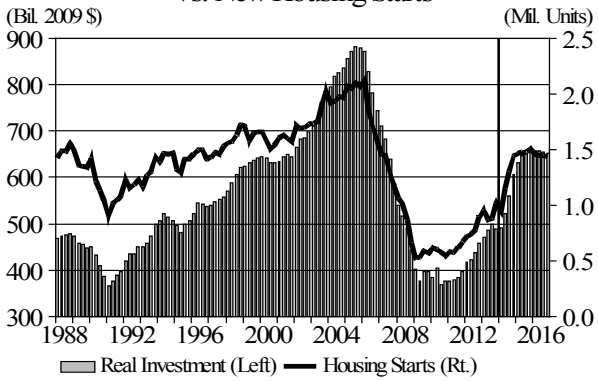
Real Investment in Nonresidential Structures
Total vs. Commercial Bldgs.



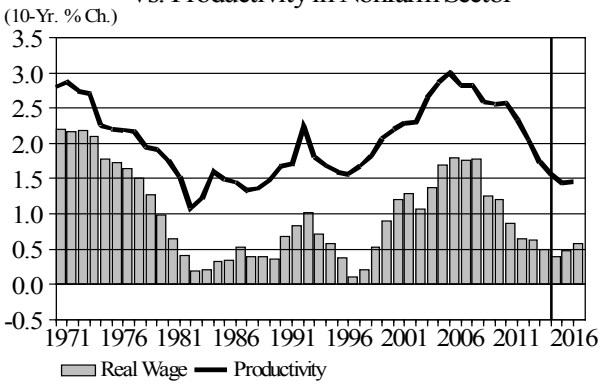
Nonresidential Fixed Investment Share of Real GDP
Vs. Capital Stock Growth



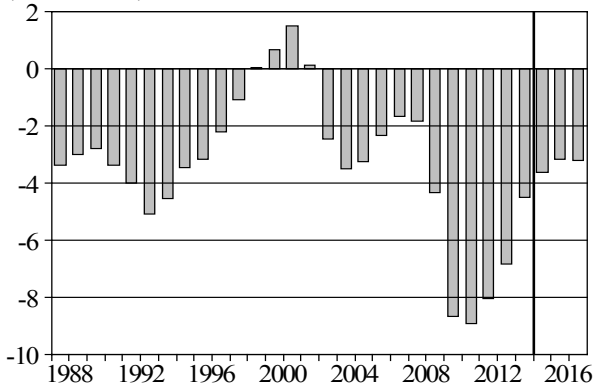
Real Investment in Residential Structures
Vs. New Housing Starts



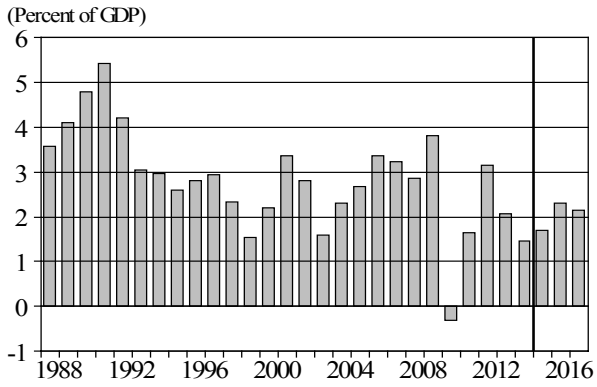
Real Hourly Wage Compensation
Vs. Productivity in Nonfarm Sector



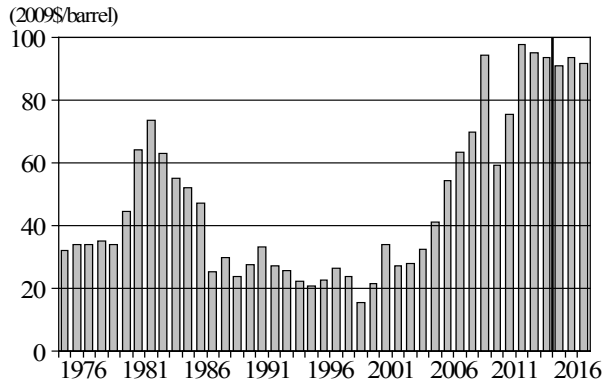
Federal Surplus or Deficit



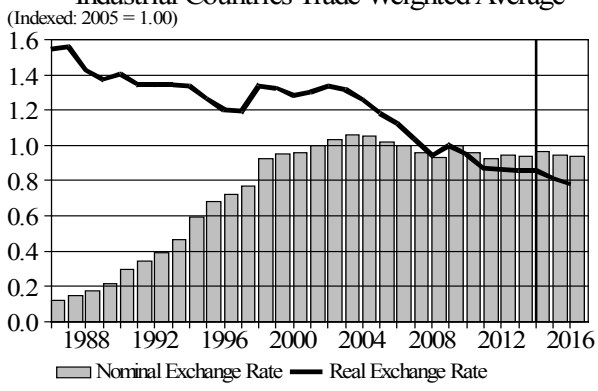
Consumer Price Index Inflation



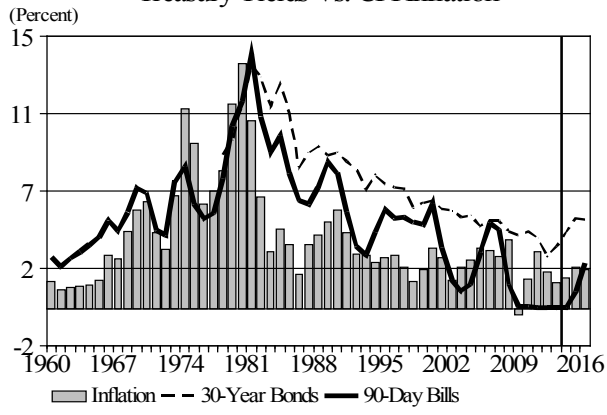
Real Refiner's Cost of Crude Oil



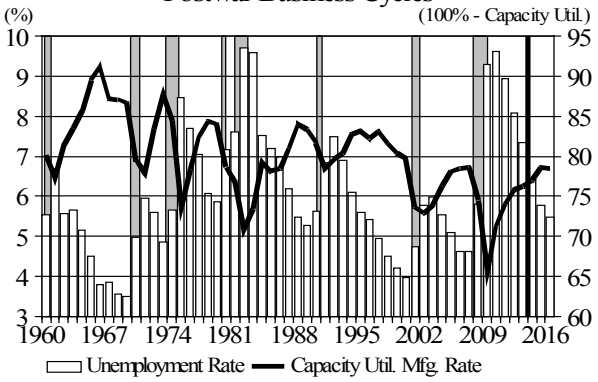
Real and Nominal Exchange Rate
Industrial Countries Trade Weighted Average



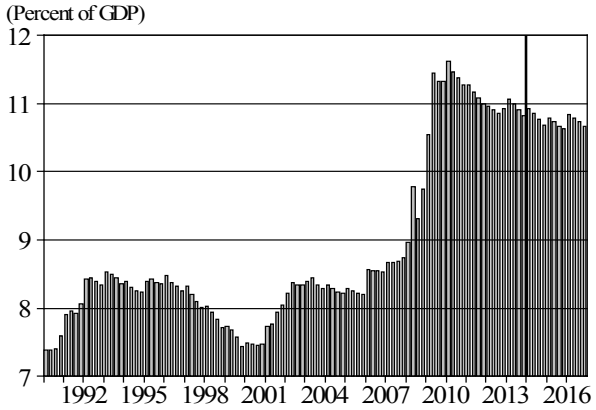
Treasury Yields Vs. CPI Inflation



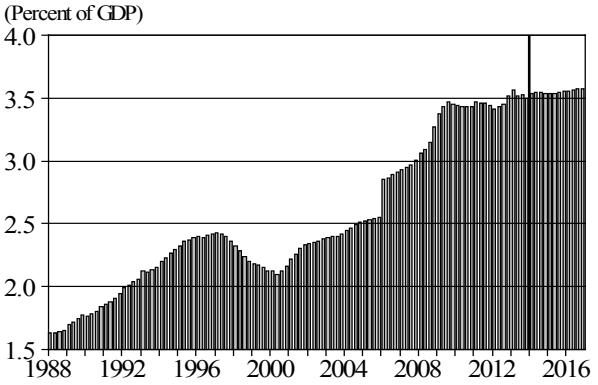
Unemployment and Capacity Utilization Mfg.
Postwar Business Cycles



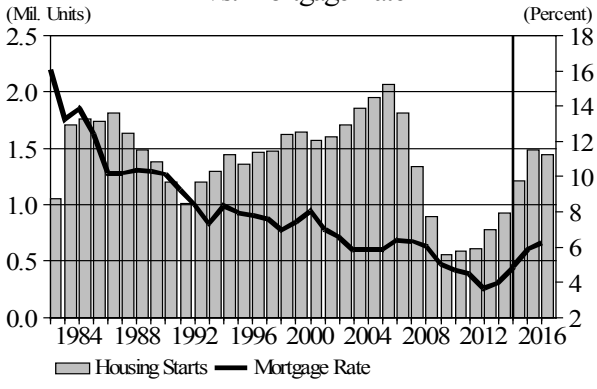
Federal Transfers to Persons



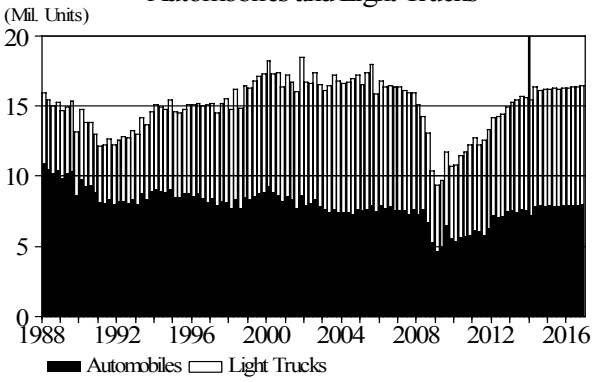
Federal Transfers to Persons
For Health Insurance



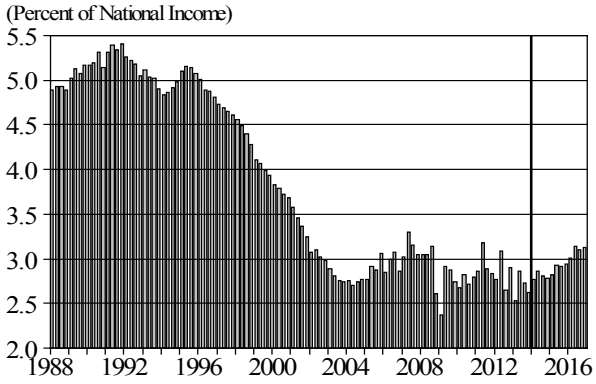
U.S. Housing Starts
Vs. Mortgage Rate



U.S. Retail Sales of
Automobiles and Light Trucks



Federal Net Interest Payments on
National Debt



THE UCLA ANDERSON FORECAST FOR THE NATION

MARCH 2014 REPORT

Tables

Table 1. Summary of the UCLA Anderson Forecast for the Nation

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Monetary Aggregates and GDP (% Ch.)												
Money Supply (M1)	2.0	0.2	-0.2	4.5	14.2	6.4	15.4	15.0	10.2	8.3	-2.1	-9.6
Money Supply (M2)	4.3	5.2	6.2	6.8	8.0	2.5	7.3	8.6	6.7	5.5	4.1	3.2
GDP Price Index	3.2	3.1	2.7	1.9	0.8	1.2	2.0	1.7	1.4	1.9	2.0	2.1
Real GDP	3.4	2.7	1.8	-0.3	-2.8	2.5	1.8	2.8	1.9	2.6	3.3	3.0
Interest Rates (%) on:												
Federal Funds	3.2	5.0	5.0	1.9	0.2	0.2	0.1	0.1	0.1	0.1	1.0	2.5
90-day Treasury Bills	3.1	4.7	4.4	1.4	0.2	0.1	0.1	0.1	0.1	0.1	1.0	2.5
10-year Treasury Bonds	4.3	4.8	4.6	3.7	3.3	3.2	2.8	1.8	2.4	3.3	4.2	4.3
30-year Treasury Bonds	4.6	4.9	4.8	4.3	4.1	4.3	3.9	2.9	3.4	4.2	5.0	4.9
Moody's Corporate Aaa Bonds	5.2	5.6	5.6	5.6	5.3	4.9	4.6	3.7	4.2	5.0	5.9	5.9
30-yr Bond Less Inflation	1.7	2.2	2.3	1.2	4.1	2.6	1.5	1.1	2.3	2.9	3.1	2.8
Federal Fiscal Policy												
Defense Purchases (% Ch.)												
Current $	6.7	5.6	5.7	11.1	4.5	5.6	0.4	-2.2	-5.7	-1.0	1.1	0.5
Constant $	2.0	2.0	2.5	7.5	5.4	3.2	-2.3	-3.2	-7.0	-2.4	-0.3	-0.9
Other Expenditures (% Ch.)												
Transfers to Persons	6.2	6.6	6.4	9.0	17.1	6.9	-0.4	0.4	2.9	4.1	5.1	6.3
Grants to S&L Gov't	3.4	-0.7	5.3	3.4	23.5	10.3	-6.5	-6.2	0.2	7.7	8.1	9.4
Billions of Current Dollars, Unified Budget Basis, Fiscal Year												
Receipts	2153.4	2406.7	2567.7	2523.6	2104.4	2161.7	2302.5	2449.1	2774.0	2993.5	3275.2	3475.0
Outlays	2472.1	2654.9	2729.2	2978.4	3520.1	3455.9	3599.3	3538.3	3453.2	3605.4	3849.8	4049.0
Surplus or Deficit (-)	-318.7	-248.2	-161.5	-454.8	-1415.7	-1294.2	-1296.8	-1089.2	-680.3	-612.0	-574.5	-574.0
As Shares of GDP (%), NIPA Basis												
Revenues	17.5	18.3	18.4	17.0	15.5	16.0	16.2	16.4	18.1	18.7	19.0	19.0
Expenditures	19.9	19.9	20.2	21.3	24.1	24.9	24.2	23.2	22.6	22.3	22.1	22.2
Defense Purchases	4.6	4.6	4.7	5.1	5.5	5.6	5.4	5.0	4.6	4.3	4.2	4.0
Transfers to Persons	11.3	11.3	11.6	12.4	14.8	15.3	14.6	14.1	14.0	13.9	13.9	14.1
Surplus or Deficit (-)	-2.3	-1.6	-1.8	-4.3	-8.7	-8.9	-8.0	-6.8	-4.5	-3.6	-3.2	-3.2
Details of Real GDP (% Ch.)												
Real GDP	3.4	2.7	1.8	-0.3	-2.8	2.5	1.8	2.8	1.9	2.6	3.3	3.0
Final Sales	3.4	2.6	2.0	0.2	-2.0	1.1	2.0	2.6	1.7	2.8	3.2	3.1
Consumption	3.5	3.0	2.2	-0.4	-1.6	2.0	2.5	2.2	2.0	2.5	2.9	2.9
Nonres. Fixed Investment	7.0	7.1	5.9	-0.7	-15.6	2.5	7.6	7.3	2.8	5.5	7.8	6.9
Equipment	9.6	8.6	3.2	-6.9	-22.9	15.9	12.7	7.6	3.1	6.2	9.9	6.8
Intellectual Property	6.5	4.5	4.8	3.0	-1.4	1.9	4.4	3.4	3.4	4.8	3.9	4.0
Structures	1.7	7.2	12.7	6.1	-18.9	-16.4	2.1	12.7	1.4	5.2	8.8	11.0
Residential Construction	6.6	-7.7	-19.0	-24.3	-21.4	-2.7	0.4	13.1	12.2	12.2	18.6	1.4
Exports	6.0	8.9	8.9	5.7	-9.1	11.5	7.1	3.5	2.7	4.3	4.8	6.0
Imports	6.1	6.1	2.3	-2.6	-13.7	12.8	4.9	2.2	1.4	2.8	6.7	4.2
Federal Purchases	1.7	2.5	1.7	6.8	5.7	4.3	-2.6	-1.4	-5.2	-2.0	-0.1	-1.0
State & Local Purchases	-0.0	0.9	1.5	0.3	1.6	-2.7	-3.6	-0.7	-0.2	0.4	0.8	0.9
Billions of 2009 Dollars												
Real GDP	14235.6	14615.2	14876.8	14833.6	14417.9	14779.4	15052.4	15470.7	15759.0	16175.2	16705.2	17198.4
Final Sales	14171.3	14543.6	14841.3	14867.2	14565.5	14721.1	15018.8	15413.1	15676.0	16118.7	16642.1	17159.3
Inventory Change	64.3	71.6	35.6	-33.7	-147.6	58.2	33.6	57.6	83.0	56.5	63.1	39.1

Table 2. Summary of the UCLA Anderson Forecast for the Nation

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Industrial Production and Resource Utilization												
Industrial Prod. (% Ch.)	3.2	2.2	2.5	-3.4	-11.3	5.7	3.4	3.6	2.6	2.9	4.6	3.1
Capacity Util. Manuf. (%)	78.1	78.4	78.6	74.5	65.7	71.3	74.0	75.8	76.3	76.9	78.6	78.4
Real Bus. Investment as % of Real GDP	18.3	18.2	17.5	16.4	14.0	13.9	14.5	15.3	15.7	16.3	17.4	17.9
Nonfarm Employment (mil.)	134.0	136.4	137.9	137.2	131.2	130.3	131.8	134.1	136.4	138.7	141.7	144.5
Unemployment Rate (%)	5.1	4.6	4.6	5.8	9.3	9.6	8.9	8.1	7.4	6.4	5.8	5.5
Inflation (% Ch.)												
Consumer Price Index	3.4	3.2	2.9	3.8	-0.3	1.6	3.1	2.1	1.5	1.7	2.3	2.2
Total less Food & Energy	2.1	2.5	2.3	2.3	1.7	1.0	1.7	2.1	1.8	1.8	2.4	2.5
Consumption Chain Index	2.9	2.7	2.5	3.1	-0.1	1.7	2.4	1.8	1.1	1.3	1.9	2.1
GDP Chain Index	3.2	3.1	2.7	1.9	0.8	1.2	2.0	1.7	1.4	1.9	2.0	2.1
Producers Price Index	7.3	4.7	4.8	9.8	-8.7	6.8	8.8	0.5	0.6	2.5	1.2	1.1
Factors Related to Inflation (% Ch.)												
Nonfarm Business Sector												
Wage Compensation	3.6	3.9	4.3	2.7	1.1	2.1	2.5	2.6	1.6	2.4	3.5	4.0
Productivity	2.1	0.9	1.6	0.8	3.2	3.3	0.5	1.5	0.5	1.5	0.7	1.1
Unit Labor Costs	1.6	3.0	2.6	2.0	-2.0	-1.2	2.0	1.2	1.1	0.9	2.7	2.8
Farm Price Index	-3.8	-1.2	22.5	12.4	-16.5	12.2	23.6	3.1	1.4	-2.0	-1.0	0.6
Crude Oil Price ($/bbl)	56.5	66.1	72.3	99.6	61.7	79.4	95.1	94.2	98.0	99.1	102.0	100.3
New Home Price ($1000)	234.2	243.1	243.7	230.4	214.5	221.2	224.3	242.1	263.6	266.0	267.0	272.0
Income, Consumption and Saving (% Ch.)												
Disposable Income	4.4	6.8	4.7	4.6	-0.5	2.8	4.8	3.9	1.9	3.6	5.8	5.9
Real Disposable Income	1.5	4.0	2.1	1.5	-0.5	1.1	2.4	2.0	0.7	2.3	3.8	3.7
Real Consumption	3.5	3.0	2.2	-0.4	-1.6	2.0	2.5	2.2	2.0	2.5	2.9	2.9
Savings Rate (%)	2.6	3.4	3.0	5.0	6.1	5.6	5.7	5.6	4.6	4.3	5.0	5.7
Housing and Automobiles--millions of units												
Housing Starts	2.073	1.812	1.342	0.900	0.554	0.586	0.612	0.783	0.931	1.213	1.482	1.446
Auto & Light Truck Sales	16.9	16.5	16.1	13.2	10.4	11.6	12.7	14.4	15.5	16.0	16.2	16.4
Corporate Profits												
Billions of Dollars												
Before Taxes	1653.3	1851.4	1748.4	1382.4	1468.2	1834.8	1847.4	2190.0	2260.3	2654.4	2640.4	2636.2
After Taxes	1240.9	1378.1	1302.9	1073.3	1198.7	1464.3	1473.1	1755.3	1843.1	2081.0	1996.0	1971.3
Percent Change												
Before Taxes	31.8	12.0	-5.6	-20.9	6.2	25.0	0.7	18.5	3.2	17.4	-0.5	-0.2
After Taxes	30.8	11.1	-5.5	-17.6	11.7	22.2	0.6	19.2	5.0	12.9	-4.1	-1.2
International Trade Factors												
Nominal												
U.S. Dollar--% change												
Industrial Countries	-1.9	-1.5	-5.6	-4.5	4.3	-3.0	-5.9	3.7	3.4	2.6	0.8	0.6
Developing Countries	-3.1	-2.5	-3.8	-2.6	7.2	-4.1	-3.5	2.0	-0.3	2.5	-2.1	-0.5
Exports	10.8	12.8	12.7	10.7	-14.1	16.4	14.0	4.5	2.9	5.7	6.5	7.4
Imports	12.7	10.6	6.0	7.6	-22.7	19.5	13.0	2.7	0.5	1.9	7.9	5.9
Net Exports (bil. $)	-716	-762	-710	-713	-392	-518	-569	-547	-497	-421	-489	-478
Real												
U.S. Dollar--% change												
Industrial Countries	-2.2	-2.4	-6.4	-5.3	7.8	-0.5	-7.4	4.2	4.6	3.2	0.6	-0.5
Developing Countries	-6.0	-5.1	-7.5	-9.5	6.4	-5.2	-8.3	-0.6	-0.9	-0.0	-5.1	-4.2
Exports	6.0	8.9	8.9	5.7	-9.1	11.5	7.1	3.5	2.7	4.3	4.8	6.0
Imports	6.1	6.1	2.3	-2.6	-13.7	12.8	4.9	2.2	1.4	2.8	6.7	4.2
Net Exports (bil. '09$)	-777	-786	-704	-547	-392	-463	-446	-431	-412	-392	-458	-440

Table 3. Quarterly Summary of the UCLA National Anderson Forecast for the Nation

	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2
Monetary Aggregates and GDP (% Ch.)											
Money Supply (M1)	9.7	12.7	7.1	4.1	1.2	-2.6	-4.3	-8.6	-11.0	-10.2	-10.1
Money Supply (M2)	6.4	6.5	4.0	5.0	4.4	4.4	3.9	3.4	3.1	3.3	3.0
GDP Price Index	1.6	1.9	1.9	2.5	1.9	2.0	1.8	2.0	1.9	2.3	2.1
Real GDP	2.4	1.4	3.0	3.2	3.4	3.5	3.2	3.1	2.8	2.8	2.9
Interest Rates (%) on:											
Federal Funds	0.1	0.1	0.1	0.1	0.1	0.4	0.7	1.2	1.6	2.0	2.4
90-day Treasury Bills	0.1	0.0	0.0	0.1	0.1	0.4	0.6	1.2	1.6	2.0	2.4
10-year Treasury Bonds	2.7	2.9	3.2	3.5	3.7	4.1	4.2	4.3	4.3	4.3	4.3
30-year Treasury Bonds	3.8	3.8	4.1	4.4	4.6	4.9	5.0	5.1	5.0	5.0	5.0
Moody's Corporate Aaa Bonds	4.6	4.6	4.8	5.2	5.4	5.8	5.9	6.0	5.9	5.9	5.9
30-yr Bond Less Inflation	2.7	2.6	3.2	2.2	2.6	3.0	3.1	3.0	3.1	2.7	2.9
Federal Fiscal Policy											
Defense Purchases (% Ch.)											
Current $	-11.6	0.5	3.5	2.7	2.2	1.1	-0.6	-0.6	0.8	1.9	-0.1
Constant $	-14.5	-0.2	2.2	1.4	1.1	-1.5	-1.6	-1.6	-0.2	-1.0	-1.0
Other Expenditures (% Ch.)											
Transfers to Persons	-3.2	13.4	1.7	2.5	2.5	13.2	2.2	2.8	3.3	16.8	2.6
Grants to S&L Gov't	-10.8	30.4	2.2	3.1	3.3	24.1	2.8	4.0	4.6	26.0	4.5
Billions of Current Dollars, Unified Budget Basis, NSA											
Receipts	664.6	648.3	908.8	771.7	748.7	727.6	980.3	818.6	799.4	772.9	1037.4
Outlays	838.2	939.4	908.8	919.1	945.1	992.7	951.1	960.9	988.1	1039.4	1005.6
Surplus or Deficit (-)	-173.6	-291.0	-0.0	-147.3	-196.4	-265.1	29.3	-142.3	-188.8	-266.5	31.9
As Shares of GDP (%), NIPA Basis											
Revenues	18.3	18.3	18.6	19.0	18.8	19.1	19.0	18.9	18.9	19.1	19.1
Expenditures	22.1	22.5	22.4	22.3	22.1	22.3	22.2	22.1	22.0	22.4	22.3
Defense Purchases	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.1	4.1	4.1	4.0
Transfers to Persons	13.8	14.1	14.0	13.9	13.8	14.0	13.9	13.9	13.8	14.2	14.1
Surplus or Deficit (-)	-3.8	-4.2	-3.8	-3.3	-3.2	-3.2	-3.2	-3.1	-3.0	-3.2	-3.2
Details of Real GDP (% Ch.)											
Real GDP	2.4	1.4	3.0	3.2	3.4	3.5	3.2	3.1	2.8	2.8	2.9
Final Sales	2.4	2.3	3.9	3.2	3.5	3.2	3.0	3.1	3.0	3.2	3.1
Consumption	2.6	2.6	2.8	2.8	2.8	3.1	2.9	2.9	2.7	3.2	2.9
Nonres. Fixed Investment	7.3	3.0	7.2	5.7	7.5	8.2	8.0	9.3	7.8	6.0	6.2
Equipment	10.6	2.1	11.2	6.4	10.0	11.2	10.6	9.7	8.4	4.8	5.5
Intellectual Property	8.0	4.1	4.2	5.0	4.2	4.0	3.5	3.2	3.2	3.7	4.4
Structures	0.2	3.1	3.6	5.1	6.9	8.0	9.0	17.1	12.7	11.1	9.9
Residential Construction	-8.9	2.6	29.0	33.2	35.7	18.0	10.1	3.2	2.3	1.8	-1.1
Exports	9.4	-0.8	6.5	3.2	3.6	4.5	5.3	6.2	6.4	5.3	6.1
Imports	1.5	-1.4	4.9	6.5	6.5	7.9	6.9	5.9	5.1	3.0	3.0
Federal Purchases	-12.8	0.6	2.5	1.4	0.9	-0.4	-1.5	-1.4	-0.1	-1.5	-0.9
State & Local Purchases	-0.5	0.1	0.5	0.2	0.9	0.6	1.2	0.9	0.9	0.8	0.9
Billions of 2009 Dollars											
Real GDP	15932.9	15989.6	16106.5	16234.7	16370.1	16513.4	16645.3	16772.3	16890.0	17008.5	17132.0
Final Sales	15815.5	15905.8	16058.9	16184.1	16325.9	16453.6	16577.2	16706.0	16831.8	16966.0	17095.8
Inventory Change	117.4	83.8	47.5	50.5	44.2	59.8	68.1	66.3	58.2	42.4	36.2

Table 4. Quarterly Summary of The UCLA National Anderson Forecast for the Nation

	2013:4	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2
Industrial Production and Resource Utilization											
Production--% change	5.5	0.7	2.2	4.6	4.9	6.1	4.1	3.8	3.1	2.9	2.9
Capacity Util. Manuf. (%)	76.6	76.1	76.6	77.2	77.7	78.4	78.7	78.8	78.7	78.4	78.4
Real Bus. Investment as % of Real GDP	15.8	15.9	16.2	16.5	16.8	17.1	17.3	17.5	17.7	17.8	17.8
Nonfarm Employment (mil.)	137.2	137.7	138.3	139.0	139.7	140.5	141.4	142.2	142.9	143.5	144.2
Unemployment Rate (%)	7.0	6.6	6.5	6.3	6.2	6.0	5.8	5.7	5.6	5.6	5.5
Inflation--% change											
Consumer Price Index	1.1	1.7	1.3	3.0	2.7	2.3	2.1	2.1	1.8	2.3	2.1
Total less Food & Energy	1.6	1.6	2.0	2.4	2.4	2.5	2.3	2.4	2.5	2.6	2.5
Consumption Deflator	1.0	1.2	0.9	2.2	2.0	1.9	1.9	2.1	2.0	2.2	2.1
GDP Deflator	1.6	1.9	1.9	2.5	1.9	2.0	1.8	2.0	1.9	2.3	2.1
Producers Price Index	-0.7	8.5	1.3	0.9	1.8	1.7	0.4	1.6	0.5	1.3	0.9
Factors Related to Inflation--%change											
Nonfarm Business Sector											
Wage Compensation	1.7	2.4	2.9	3.2	3.1	3.7	3.4	3.8	4.0	4.4	3.9
Productivity	1.8	1.1	1.1	0.5	0.9	0.9	0.3	0.7	0.9	1.2	1.4
Unit Labor Costs	-0.1	1.3	1.7	2.7	2.2	2.8	3.2	3.2	3.1	3.2	2.4
Farm Price Index	-10.8	9.2	1.0	-3.1	-2.1	-2.1	0.0	2.1	0.0	0.0	1.1
Crude Oil Price ($/bbl)	97.5	98.5	98.2	98.4	101.3	101.3	103.3	102.7	100.6	100.2	100.3
New Home Price ($1000)	266.5	268.9	277.5	259.5	258.1	271.2	265.9	266.6	264.5	272.1	270.3
Income, Consumption and Saving--%change											
Disposable Income	1.7	2.9	4.0	5.1	5.2	6.8	6.1	5.9	5.3	7.1	5.2
Real Disposable Income	0.7	1.6	3.1	2.8	3.1	4.8	4.1	3.8	3.3	4.7	3.1
Real Consumption	2.6	2.6	2.8	2.8	2.8	3.1	2.9	2.9	2.7	3.2	2.9
Savings Rate (%)	4.5	4.3	4.3	4.3	4.3	4.7	5.0	5.2	5.3	5.6	5.6
Housing and Automobiles--millions of units											
Housing Starts	1.016	0.950	1.151	1.307	1.444	1.464	1.476	1.480	1.507	1.459	1.444
Auto and Light Truck Sales	15.6	15.4	16.4	16.1	16.2	16.2	16.3	16.2	16.3	16.3	16.4
Corporate Profits											
Billions of Dollars											
Before Taxes	2321.9	2600.9	2638.1	2676.9	2701.9	2635.7	2639.7	2645.6	2640.7	2592.4	2628.3
After Taxes	1897.7	2093.7	2082.0	2065.3	2083.1	1998.8	1997.5	1997.1	1990.7	1930.9	1960.1
Percent Change											
Before Taxes	6.3	57.4	5.8	6.0	3.8	-9.4	0.6	0.9	-0.7	-7.1	5.7
After Taxes	6.4	48.2	-2.2	-3.2	3.5	-15.2	-0.3	-0.1	-1.3	-11.5	6.2
International Trade											
Nominal											
U.S. Dollar--% change											
Industrial Countries	-3.6	7.8	1.8	3.0	1.3	1.6	-0.5	-1.5	0.1	0.8	1.3
Developing Countries	-0.8	7.2	0.8	-1.0	-3.2	-2.0	-2.8	-2.5	-1.3	0.2	0.4
Exports--% change	9.9	1.6	8.6	5.1	5.4	6.2	6.9	7.9	7.7	6.9	7.4
Imports--% change	1.6	-1.9	2.4	5.5	8.5	9.6	8.9	8.1	7.1	4.6	4.3
Net Exports (bil. $)	-456.8	-434.4	-402.1	-410.3	-436.2	-465.7	-487.5	-498.0	-502.9	-494.2	-479.4
Real											
U.S. Dollar--% change											
Industrial Countries	-2.8	8.3	2.2	3.5	1.5	1.4	-1.0	-2.2	-1.0	-0.5	0.0
Developing Countries	-2.7	4.3	-2.3	-3.9	-6.1	-4.8	-5.9	-5.8	-4.9	-3.7	-3.4
Exports--% change	9.4	-0.8	6.5	3.2	3.6	4.5	5.3	6.2	6.4	5.3	6.1
Imports--% change	1.5	-1.4	4.9	6.5	6.5	7.9	6.9	5.9	5.1	3.0	3.0
Net Exports (bil. '09$)	-382.8	-378.2	-374.8	-397.1	-418.4	-444.1	-459.7	-464.7	-463.3	-454.4	-440.8

Table 5. Part A. Gross Domestic Product

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						Billions of Current Dollars						
Gross Domestic Product	13095.4	13857.9	14480.4	14720.3	14418.0	14958.3	15533.8	16244.6	16797.5	17546.9	18484.4	19426.7
Personal Consumption Expenditures	8790.3	9297.5	9744.4	10005.5	9842.9	10201.9	10711.8	11149.6	11496.2	11940.3	12522.1	13161.7
Durable Goods	1127.2	1156.1	1184.6	1102.3	1023.3	1070.7	1129.9	1202.7	1262.8	1294.0	1353.6	1415.0
Autos and Parts	410.0	394.9	400.6	339.6	317.1	342.0	368.7	401.7	424.3	447.5	466.4	488.2
Nondurable Goods	1953.0	2079.7	2176.9	2273.4	2175.1	2292.1	2472.8	2567.0	2623.8	2689.1	2798.8	2910.0
Services	5710.1	6061.7	6382.9	6629.8	6644.5	6839.1	7109.1	7379.9	7609.6	7957.1	8369.6	8836.7
Gross Private Domestic Investment	2527.1	2680.7	2643.7	2424.8	1878.1	2100.8	2232.1	2475.2	2673.7	2864.7	3210.4	3424.4
Residential	856.1	837.4	688.7	515.9	392.3	381.1	385.8	439.2	516.8	610.9	741.9	774.4
Nonres. Structures	345.6	415.6	496.9	552.4	438.2	362.0	380.6	437.3	457.1	500.2	564.9	649.9
Equipment	790.7	856.1	885.8	825.1	644.3	731.8	832.7	907.6	939.4	998.3	1101.8	1184.6
Intellectual Property	475.1	504.6	538.0	563.4	550.9	564.4	596.6	625.0	652.5	691.5	728.6	769.9
Change In Inv.	59.6	67.0	34.5	-32.0	-147.6	61.5	36.4	66.1	107.9	63.9	73.2	45.6
Net Exports	-715.7	-762.4	-709.8	-713.2	-392.2	-518.5	-568.8	-547.2	-497.3	-420.7	-488.5	-477.6
Exports	1310.4	1478.5	1665.7	1843.2	1583.8	1843.5	2101.1	2195.9	2259.8	2388.4	2543.9	2732.3
Imports	2026.1	2241.0	2375.6	2556.4	1976.0	2362.0	2669.9	2743.1	2757.0	2809.2	3032.4	3209.8
Government Purchases	2493.7	2642.2	2801.9	3003.2	3089.1	3174.0	3158.7	3167.0	3124.9	3162.6	3240.4	3318.2
Federal	946.3	1002.0	1049.8	1155.6	1217.7	1303.9	1304.1	1295.7	1245.9	1239.8	1256.4	1262.7
Defense	608.3	642.4	678.7	754.1	788.3	832.8	835.9	817.2	770.8	763.1	771.4	775.1
Other	338.1	359.6	371.1	401.5	429.4	471.1	468.2	478.6	475.1	476.6	485.0	487.6
State and Local	1547.4	1640.2	1752.2	1847.6	1871.4	1870.2	1854.7	1871.3	1879.0	1922.9	1984.0	2055.4
						Billions of 2009 Dollars						
Gross Domestic Product	14235.6	14615.2	14876.8	14833.6	14417.9	14779.4	15052.4	15470.7	15759.0	16175.2	16705.2	17198.4
Personal Consumption Expenditures	9527.8	9814.9	10035.5	9999.2	9842.9	10035.9	10291.3	10517.6	10723.0	10993.9	11310.1	11642.5
Durable Goods	1046.9	1091.5	1141.7	1083.2	1023.3	1085.7	1157.1	1246.7	1333.1	1396.0	1475.6	1552.7
Autos & Parts	400.0	385.1	392.8	340.8	317.1	323.4	339.4	364.0	382.0	401.1	415.4	430.6
Nondurable Goods	2132.3	2202.2	2239.3	2214.7	2175.1	2223.5	2266.0	2296.8	2342.8	2399.7	2457.9	2517.6
Services	6349.4	6519.8	6650.4	6700.6	6644.5	6727.2	6871.1	6982.7	7062.3	7217.8	7403.7	7606.9
Gross Private Domestic Investment	2672.6	2730.0	2644.1	2396.0	1878.1	2120.4	2224.6	2436.0	2569.6	2713.7	2988.4	3126.6
Residential	872.6	806.6	654.8	497.7	392.3	382.4	384.3	433.8	486.4	545.0	645.6	655.1
Nonres. Structures	421.2	451.5	509.0	540.2	438.2	366.3	374.1	421.6	427.4	449.6	489.0	543.0
Equipment	801.6	870.8	898.3	836.1	644.3	746.7	841.7	905.9	934.2	992.0	1090.1	1163.9
Intellectual Property	495.0	517.5	542.4	558.8	550.9	561.3	586.1	605.8	626.3	656.4	682.2	709.3
Change In Inv.	64.3	71.6	35.6	-33.7	-147.6	58.2	33.6	57.6	83.0	56.5	63.1	39.1
Net Exports	-777.1	-786.2	-703.6	-546.9	-392.2	-462.6	-445.9	-430.8	-412.3	-392.1	-458.0	-439.6
Exports	1388.4	1512.4	1647.3	1741.8	1583.8	1765.6	1890.6	1957.5	2010.0	2096.9	2197.1	2328.1
Imports	2165.5	2298.6	2350.9	2288.7	1976.0	2228.1	2336.4	2388.2	2422.3	2489.0	2655.1	2767.7
Government Purchases	2826.2	2869.3	2914.4	2994.8	3089.1	3091.4	2992.3	2963.1	2896.4	2879.5	2892.6	2898.3
Federal	1034.8	1060.9	1078.7	1152.3	1217.7	1270.7	1237.9	1220.3	1157.4	1134.3	1133.6	1122.7
Defense	665.5	678.8	695.6	748.1	788.3	813.5	794.6	769.1	715.0	697.9	695.4	689.0
Other	369.4	382.1	383.1	404.2	429.4	457.1	443.3	451.2	442.5	436.5	438.2	433.7
State and Local	1792.3	1808.9	1836.2	1842.5	1871.4	1820.8	1754.5	1742.8	1738.7	1744.8	1758.5	1774.9

Table 5. Part B. Gross Domestic Product

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Annual Rates of Change of Current Dollar GDP Components (%)												
Gross Domestic Product	6.7	5.8	4.5	1.7	-2.1	3.7	3.8	4.6	3.4	4.5	5.3	5.1
Personal Consumption Expenditures	6.4	5.8	4.8	2.7	-1.6	3.6	5.0	4.1	3.1	3.9	4.9	5.1
Durable Goods	4.4	2.6	2.5	-7.0	-7.2	4.6	5.5	6.4	5.0	2.5	4.6	4.5
Autos and Parts	0.2	-3.7	1.4	-15.2	-6.6	7.9	7.8	8.9	5.6	5.5	4.2	4.7
Nondurable Goods	7.3	6.5	4.7	4.4	-4.3	5.4	7.9	3.8	2.2	2.5	4.1	4.0
Services	6.6	6.2	5.3	3.9	0.2	2.9	3.9	3.8	3.1	4.6	5.2	5.6
Gross Private Domestic Investment	11.0	6.1	-1.4	-8.3	-22.5	11.9	6.2	10.9	8.0	7.1	12.1	6.7
Residential	14.2	-2.2	-17.8	-25.1	-24.0	-2.9	1.2	13.8	17.7	18.2	21.5	4.4
Nonres. Structures	14.5	20.2	19.6	11.2	-20.7	-17.4	5.1	14.9	4.5	9.4	12.9	15.0
Equipment	9.9	8.3	3.5	-6.8	-21.9	13.6	13.8	9.0	3.5	6.3	10.4	7.5
Intellectual Property	7.5	6.2	6.6	4.7	-2.2	2.5	5.7	4.8	4.4	6.0	5.4	5.7
Exports	10.8	12.8	12.7	10.7	-14.1	16.4	14.0	4.5	2.9	5.7	6.5	7.4
Imports	12.7	10.6	6.0	7.6	-22.7	19.5	13.0	2.7	0.5	1.9	7.9	5.9
Government Purchases	5.8	6.0	6.0	7.2	2.9	2.7	-0.5	0.3	-1.3	1.2	2.5	2.4
Federal	6.0	5.9	4.8	10.1	5.4	7.1	0.0	-0.6	-3.8	-0.5	1.3	0.5
Defense	6.7	5.6	5.7	11.1	4.5	5.6	0.4	-2.2	-5.7	-1.0	1.1	0.5
Other	4.9	6.4	3.2	8.2	7.0	9.7	-0.6	2.2	-0.7	0.3	1.8	0.5
State and Local	5.6	6.0	6.8	5.4	1.3	-0.1	-0.8	0.9	0.4	2.3	3.2	3.6
Annual Rates of Change of Constant Dollar GDP Components (%)												
Gross Domestic Product	3.4	2.7	1.8	-0.3	-2.8	2.5	1.8	2.8	1.9	2.6	3.3	3.0
Personal Consumption Expenditures	3.5	3.0	2.2	-0.4	-1.6	2.0	2.5	2.2	2.0	2.5	2.9	2.9
Durable Goods	5.4	4.3	4.6	-5.1	-5.5	6.1	6.6	7.7	6.9	4.7	5.7	5.2
Autos & Parts	-1.4	-3.7	2.0	-13.2	-7.0	2.0	4.9	7.2	5.0	5.0	3.6	3.7
Nondurable Goods	3.3	3.3	1.7	-1.1	-1.8	2.2	1.9	1.4	2.0	2.4	2.4	2.4
Services	3.2	2.7	2.0	0.8	-0.8	1.2	2.1	1.6	1.1	2.2	2.6	2.7
Gross Private Domestic Investment	6.4	2.1	-3.1	-9.4	-21.6	12.9	4.9	9.5	5.5	5.6	10.1	4.6
Residential	6.6	-7.6	-18.8	-24.0	-21.2	-2.5	0.5	12.9	12.1	12.1	18.5	1.5
Nonres. Structures	1.7	7.2	12.7	6.1	-18.9	-16.4	2.1	12.7	1.4	5.2	8.8	11.0
Equipment	9.6	8.6	3.2	-6.9	-22.9	15.9	12.7	7.6	3.1	6.2	9.9	6.8
Intellectual Property	6.5	4.5	4.8	3.0	-1.4	1.9	4.4	3.4	3.4	4.8	3.9	4.0
Exports	6.0	8.9	8.9	5.7	-9.1	11.5	7.1	3.5	2.7	4.3	4.8	6.0
Imports	6.1	6.1	2.3	-2.6	-13.7	12.8	4.9	2.2	1.4	2.8	6.7	4.2
Government Purchases	0.6	1.5	1.6	2.8	3.1	0.1	-3.2	-1.0	-2.3	-0.6	0.5	0.2
Federal	1.7	2.5	1.7	6.8	5.7	4.3	-2.6	-1.4	-5.2	-2.0	-0.1	-1.0
Defense	2.0	2.0	2.5	7.5	5.4	3.2	-2.3	-3.2	-7.0	-2.4	-0.3	-0.9
Other	1.3	3.5	0.3	5.5	6.2	6.5	-3.0	1.8	-1.9	-1.4	0.4	-1.0
State and Local	-0.0	0.9	1.5	0.3	1.6	-2.7	-3.6	-0.7	-0.2	0.4	0.8	0.9

Table 6. Employment

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						Employment (Millions)						
Total	141.7	144.4	146.1	145.4	139.9	139.1	139.9	142.5	143.9	146.0	149.4	151.7
Nonagricultural	134.0	136.4	137.9	137.2	131.2	130.3	131.8	134.1	136.4	138.7	141.7	144.5
Natural Res. & Mining	0.6	0.7	0.7	0.8	0.7	0.7	0.8	0.8	0.9	0.9	0.9	1.0
Construction	7.3	7.7	7.6	7.2	6.0	5.5	5.5	5.6	5.8	6.1	6.7	7.3
Manufacturing	14.2	14.2	13.9	13.4	11.8	11.5	11.7	11.9	12.0	12.2	12.5	12.6
Trans. Warehous. Util	4.9	5.0	5.1	5.1	4.8	4.7	4.9	5.0	5.0	5.1	5.3	5.5
Trade	21.0	21.3	21.5	21.2	20.1	19.9	20.2	20.5	20.8	21.2	21.4	21.6
Financial Activities	8.2	8.4	8.3	8.2	7.8	7.7	7.7	7.8	7.9	7.9	8.0	8.0
Information	3.1	3.0	3.0	3.0	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.7
Professional & Busi.	17.0	17.6	17.9	17.7	16.6	16.7	17.3	17.9	18.6	19.4	20.5	21.1
Education & Health	17.6	18.1	18.6	19.2	19.5	19.9	20.2	20.7	21.1	21.3	21.7	22.2
Leisure & Hospitality	12.8	13.1	13.4	13.4	13.1	13.0	13.4	13.8	14.2	14.5	14.8	15.0
Other Services	5.4	5.4	5.5	5.5	5.4	5.3	5.4	5.4	5.5	5.5	5.4	5.4
Government	21.8	22.0	22.2	22.5	22.6	22.5	22.1	21.9	21.9	21.9	22.0	22.1
Federal	2.7	2.7	2.7	2.8	2.8	3.0	2.9	2.8	2.8	2.7	2.7	2.6
State & Local	19.1	19.2	19.5	19.7	19.7	19.5	19.2	19.1	19.1	19.2	19.3	19.5
						Population and Labor Force (Millions)						
Population aged 16+	231.4	234.2	237.0	239.6	242.2	244.6	247.0	249.2	251.4	253.6	255.9	258.1
Labor Force	149.3	151.4	153.1	154.3	154.2	153.9	153.6	155.0	155.4	156.0	158.6	160.5
Unemployment (%)	5.1	4.6	4.6	5.8	9.3	9.6	8.9	8.1	7.4	6.4	5.8	5.5

Table 7. Personal Income and Its Disposition

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						Billions of Current Dollars						
Personal Income	10610.3	11389.9	11995.8	12430.6	12082.1	12435.2	13191.3	13743.8	14135.2	14675.6	15522.5	16422.1
Wages & Salaries	5692.9	6058.2	6396.0	6532.8	6252.2	6377.5	6638.7	6926.8	7138.3	7422.6	7843.8	8265.7
Other Labor Income	966.8	997.6	1041.4	1075.1	1077.5	1120.4	1145.4	1170.6	1190.6	1211.1	1263.3	1337.8
Nonfarm Income	932.6	1017.7	941.1	979.5	937.6	986.7	1082.6	1149.6	1220.6	1295.2	1376.3	1447.9
Farm Income	46.4	36.0	38.1	47.0	35.5	46.0	72.6	75.4	127.7	107.0	102.9	103.2
Rental Income	238.4	207.5	189.4	262.1	333.7	402.8	484.4	541.2	590.5	617.7	621.7	616.1
Dividends	578.3	723.7	816.6	805.5	547.9	544.6	680.5	746.9	768.7	821.2	891.9	929.5
Interest Income	1088.2	1214.8	1350.1	1361.6	1263.9	1195.0	1204.1	1211.6	1229.1	1260.6	1398.0	1580.3
Transfer Payments	1512.0	1609.7	1722.8	1884.0	2140.2	2276.9	2306.9	2358.3	2444.6	2547.5	2678.6	2842.4
Personal Contributions For Social Insurance	445.3	475.2	499.7	516.9	506.3	514.7	423.8	436.4	574.9	607.4	653.9	700.9
Personal Tax and Nontax Payments	1208.5	1352.1	1487.9	1435.2	1144.9	1191.5	1404.0	1498.0	1659.3	1748.2	1848.2	1940.8
Disposable Income	9401.8	10037.7	10507.9	10995.4	10937.2	11243.7	11787.4	12245.8	12475.9	12927.4	13674.3	14481.4
Consumption	8790.3	9297.5	9744.4	10005.5	9842.9	10201.9	10711.8	11149.6	11496.2	11940.3	12522.1	13161.7
Interest	248.8	275.1	305.9	289.6	274.0	250.8	248.0	248.4	248.1	255.5	272.8	293.4
Transfers To Foreigners	48.4	51.6	59.3	66.2	66.1	73.0	74.1	71.9	75.0	76.8	81.7	87.0
Personal Saving	242.7	336.9	317.3	551.3	670.7	634.2	668.2	687.4	566.2	556.1	689.6	821.2
Personal Saving Rate(%)	2.6	3.4	3.0	5.0	6.1	5.6	5.7	5.6	4.6	4.3	5.0	5.7

Table 8. Personal Consumption Expenditures By Major Types

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						Billions of Current Dollars						
Personal Consumption	8790.3	9297.5	9744.4	10005.5	9842.9	10201.9	10711.8	11149.6	11496.2	11940.3	12522.1	13161.7
Durable Goods	1127.2	1156.1	1184.6	1102.3	1023.3	1070.7	1129.9	1202.7	1262.8	1294.0	1353.6	1415.0
Autos and Parts	410.0	394.9	400.6	339.6	317.1	342.0	368.7	401.7	424.3	447.5	466.4	488.2
Nondurable Goods	1953.0	2079.7	2176.9	2273.4	2175.1	2292.1	2472.8	2567.0	2623.8	2689.1	2798.8	2910.0
Services	5710.1	6061.7	6382.9	6629.8	6644.5	6839.1	7109.1	7379.9	7609.6	7957.1	8369.6	8836.7
						Billions of 2009 Dollars						
Personal Consumption	9527.8	9814.9	******	9999.2	9842.9	10035.9	10291.3	10517.6	10723.0	10993.9	11310.1	11642.5
Durable Goods	1046.9	1091.5	1141.7	1083.2	1023.3	1085.7	1157.1	1246.7	1333.1	1396.0	1475.6	1552.7
Autos and Parts	400.0	385.1	392.8	340.8	317.1	323.4	339.4	364.0	382.0	401.1	415.4	430.6
Nondurable Goods	2132.3	2202.2	2239.3	2214.7	2175.1	2223.5	2266.0	2296.8	2342.8	2399.7	2457.9	2517.6
Services	6349.4	6519.8	6650.4	6700.6	6644.5	6727.2	6871.1	6982.7	7062.3	7217.8	7403.7	7606.9
						Annual Rates of Real Growth						
Personal Consumption	3.5	3.0	2.2	-0.4	-1.6	2.0	2.5	2.2	2.0	2.5	2.9	2.9
Durable Goods	5.4	4.3	4.6	-5.1	-5.5	6.1	6.6	7.7	6.9	4.7	5.7	5.2
Autos and Parts	-1.4	-3.7	2.0	-13.2	-7.0	2.0	4.9	7.2	5.0	5.0	3.6	3.7
Furniture	6.6	5.1	0.8	-4.6	-8.7	7.0	5.5	6.1	6.1	2.7	4.1	4.4
Other Durables	7.4	7.2	4.7	-3.3	-5.0	4.2	5.3	5.7	7.2	4.0	3.0	2.4
Nondurable Goods	3.3	3.3	1.7	-1.1	-1.8	2.2	1.9	1.4	2.0	2.4	2.4	2.4
Food and Beverages	3.8	3.1	1.3	-1.2	-1.5	2.1	1.6	1.3	1.4	2.6	1.8	1.7
Gasoline and Oil	0.8	0.4	-0.3	-3.9	-0.8	-0.1	-1.7	-0.7	0.6	-0.5	0.5	0.9
Fuel	-13.3	-6.6	1.1	-11.3	15.0	-7.9	-11.5	-10.5	-2.8	1.8	-2.8	-0.2
Clothing and Shoes	5.4	3.5	2.0	-0.5	-4.9	5.3	3.8	1.2	1.3	1.9	3.6	3.7
Other Nondurables	3.4	4.9	2.7	0.4	-1.7	2.3	3.4	2.7	3.6	3.6	3.4	3.2
Services	3.2	2.7	2.0	0.8	-0.8	1.2	2.1	1.6	1.1	2.2	2.6	2.7
Housing	4.6	2.7	0.9	1.5	1.3	1.1	1.8	1.3	0.5	0.8	1.2	1.5
Transportation Serv.	1.0	0.2	1.0	-5.2	-9.8	-0.9	2.5	1.3	0.7	2.3	4.8	3.8
Health Care	3.3	2.3	2.5	2.3	1.8	1.3	2.7	2.7	2.2	4.2	3.6	3.9
Recreational Service	2.5	3.5	3.9	-0.8	-3.3	1.3	2.1	1.4	0.9	2.1	2.3	2.3
Food Svcs. Accom.	3.6	3.2	1.3	-1.0	-4.1	1.5	4.0	3.6	2.8	2.1	2.7	2.5
Financial Services	5.3	2.3	3.1	-0.7	-2.5	2.1	3.0	-1.3	1.4	3.1	1.9	2.2
Other Services	0.2	2.2	2.4	-1.0	-1.7	0.7	0.9	1.5	-1.2	1.0	4.2	4.0

Table 9. Residential Construction and Housing Starts

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						Housing Starts (Millions of Units)						
Housing Starts	2.073	1.812	1.342	0.900	0.554	0.586	0.612	0.783	0.931	1.213	1.482	1.446
Single-family	1.719	1.474	1.036	0.616	0.442	0.471	0.434	0.537	0.622	0.829	1.045	1.036
Multi-family	0.354	0.338	0.306	0.284	0.112	0.114	0.178	0.247	0.309	0.384	0.437	0.410
						Residential Construction Expenditures (Billions of Dollars)						
Current Dollars	856.1	837.4	688.7	515.9	392.3	381.1	385.8	439.2	516.8	610.9	741.9	774.4
2009 Dollars	872.6	806.6	654.8	497.7	392.3	382.4	384.3	433.8	486.4	545.0	645.6	655.1
% Change	6.6	-7.6	-18.8	-24.0	-21.2	-2.5	0.5	12.9	12.1	12.1	18.5	1.5
						Related Concepts						
Treas. Bill Rate	3.15	4.73	4.35	1.37	0.15	0.14	0.05	0.09	0.06	0.06	0.96	2.53
Conventional 30-year Mortgage Rate	5.87	6.41	6.34	6.04	5.04	4.69	4.46	3.66	3.98	4.87	5.87	6.23
Median Sales Price of New Homes (Thous $)	234.2	243.1	243.7	230.4	214.5	221.2	224.3	242.1	263.6	266.0	267.0	272.0
Real Disp. Income	9401.8	10037.7	10507.9	10995.4	10937.2	11243.7	11787.4	12245.8	12475.9	12927.4	13674.3	14481.4
% Change	1.5	4.0	2.1	1.5	-0.5	1.1	2.4	2.0	0.7	2.3	3.8	3.7

Table 10. Nonresidential Fixed Investment and Inventories

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Billions of Current Dollars												
Nonres. Fixed Investment	1611.5	1776.3	1920.6	1941.0	1633.4	1658.2	1809.9	1970.0	2049.0	2190.0	2395.3	2604.4
Equipment	790.7	856.1	885.8	825.1	644.3	731.8	832.7	907.6	939.4	998.3	1101.8	1184.6
Intellectual Property	475.1	504.6	538.0	563.4	550.9	564.4	596.6	625.0	652.5	691.5	728.6	769.9
Nonresidential Structures	345.6	415.6	496.9	552.4	438.2	362.0	380.6	437.3	457.1	500.2	564.9	649.9
Buildings	211.5	244.8	293.9	317.5	249.1	173.7	170.2	190.9	204.0	227.3	273.5	339.6
Commercial	112.8	128.4	150.7	148.9	95.4	64.7	66.8	75.6	82.7	95.5	123.6	165.0
Industrial	28.4	32.3	40.2	52.8	56.3	39.8	38.9	45.8	48.0	51.2	56.8	65.1
Other Buildings	70.3	84.2	103.0	115.8	97.4	69.2	64.5	69.5	73.4	80.6	93.1	109.5
Utilities	54.3	63.6	89.6	104.6	104.3	93.3	90.8	110.9	104.3	103.3	100.9	104.1
Mining Exploration	69.4	96.0	102.2	117.0	75.0	86.2	110.2	125.5	138.1	157.9	178.7	193.5
Other	10.5	11.1	11.2	13.3	9.9	8.9	9.4	10.0	10.6	11.6	11.9	12.6
Billions of 2009 Dollars												
Nonres. Fixed Investment	1717.4	1839.6	1948.4	1934.5	1633.5	1673.8	1800.4	1931.8	1986.3	2095.8	2258.3	2414.9
Equipment	801.6	870.8	898.3	836.1	644.3	746.7	841.7	905.9	934.2	992.0	1090.1	1163.9
Intellectual Property	495.0	517.5	542.4	558.8	550.9	561.3	586.1	605.8	626.3	656.4	682.2	709.3
Nonresidential Structures	421.2	451.5	509.0	540.2	438.2	366.3	374.1	421.6	427.4	449.6	489.0	543.0
Buildings	250.8	268.7	305.2	317.9	249.1	179.3	172.4	188.4	195.8	210.2	244.0	290.6
Commercial	137.6	144.3	159.9	151.7	95.4	66.6	67.4	74.0	79.0	88.7	111.0	142.2
Industrial	34.2	36.5	43.1	53.8	56.3	40.8	39.1	45.0	46.1	46.8	49.7	54.4
Other Buildings	79.7	88.5	102.6	112.8	97.4	71.9	65.9	69.3	70.6	74.6	83.4	94.1
Utilities	64.9	70.0	94.3	103.6	104.3	89.8	82.8	97.9	90.8	88.1	83.9	84.3
Mining Exploration	92.1	99.5	97.9	105.0	75.0	87.8	109.0	124.1	130.5	141.4	152.7	160.9
Other	10.7	10.8	10.6	12.6	9.9	9.2	9.7	10.1	10.2	10.5	10.1	10.1
Percent Change in Real Nonresidential Fixed Investment												
Nonres. Fixed Investment	7.0	7.1	5.9	-0.7	-15.6	2.5	7.6	7.3	2.8	5.5	7.8	6.9
Equipment	9.6	8.6	3.2	-6.9	-22.9	15.9	12.7	7.6	3.1	6.2	9.9	6.8
Intellectual Property	6.5	4.5	4.8	3.0	-1.4	1.9	4.4	3.4	3.4	4.8	3.9	4.0
Nonresidential Structures	1.7	7.2	12.7	6.1	-18.9	-16.4	2.1	12.7	1.4	5.2	8.8	11.0
Buildings	-0.9	7.2	13.6	4.2	-21.7	-28.0	-3.8	9.2	3.9	7.3	16.1	19.1
Commercial	-1.3	4.9	10.8	-5.2	-37.1	-30.2	1.1	9.8	6.8	12.2	25.1	28.2
Industrial	13.6	6.6	18.2	24.8	4.6	-27.5	-4.1	15.1	2.4	1.4	6.3	9.5
Other Buildings	-5.3	11.0	16.0	9.9	-13.7	-26.2	-8.3	5.1	1.8	5.7	11.8	12.9
Utilities	3.8	7.9	34.6	9.9	0.7	-13.9	-7.8	18.3	-7.3	-3.0	-4.8	0.5
Mining Exploration	9.4	8.0	-1.6	7.3	-28.6	17.1	24.2	13.8	5.2	8.3	8.0	5.4
Other	3.2	0.8	-1.4	18.0	-21.3	-7.4	6.2	3.9	1.2	3.1	-4.1	0.1
Related Concepts												
Annual Growth-Price Deflator For:												
Producers Dur. Equip.	0.3	-0.3	0.3	0.1	1.3	-2.0	0.9	1.3	0.4	0.1	0.4	0.7
Structures	12.6	12.2	6.1	4.8	-2.2	-1.2	2.9	2.0	3.0	4.1	3.8	3.6
Moody's AAA Rate(%)	5.2	5.6	5.6	5.6	5.3	4.9	4.6	3.7	4.2	5.0	5.9	5.9
Capacity Utilization in Manufacturing(%)	78.1	78.4	78.6	74.5	65.7	71.3	74.0	75.8	76.3	76.9	78.6	78.4
Final Sales(Bil. 2009 $)	14171.3	14543.6	14841.3	14867.2	14565.5	14721.1	15018.8	15413.1	15676.0	16118.7	16642.1	17159.3
Change in Business Inventories												
Current Dollars	59.6	67.0	34.5	-32.0	-147.6	61.5	36.4	66.1	107.9	63.9	73.2	45.6
2005 Dollars	64.3	71.6	35.6	-33.7	-147.6	58.2	33.6	57.6	83.0	56.5	63.1	39.1

Table 11. Federal Government Receipts and Expenditures

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						Billions of Current Dollars						
Unified Budget Basis, Fiscal Year												
Receipts	2153.4	2406.7	2567.7	2523.6	2104.4	2161.7	2302.5	2449.1	2774.0	2993.5	3275.2	3475.0
Outlays	2472.1	2654.9	2729.2	2978.4	3520.1	3455.9	3599.3	3538.3	3453.2	3605.4	3849.8	4049.0
Surplus or Deficit (-)	-318.7	-248.2	-161.5	-454.8	******	-1294.2	-1296.8	-1089.2	-680.3	-612.0	-574.5	-574.0
National Income & Products Accounts Basis, Calendar Year												
Current Receipts	2298.1	2531.7	2660.8	2505.7	2230.1	2391.8	2516.7	2663.0	3040.1	3279.4	3508.4	3699.0
Current Tax Receipts	1384.6	1558.5	1637.1	1448.1	1163.8	1305.0	1496.2	1636.0	1751.5	2004.2	2171.0	2277.3
Personal Current Taxes	932.1	1049.6	1164.4	1101.7	857.2	893.8	1077.0	1149.2	1282.8	1371.2	1456.8	1533.8
Taxes - Corporate Income	341.0	395.0	362.8	233.6	200.4	298.7	294.3	351.1	328.4	473.8	542.4	562.3
Taxes - Production/Imports	99.4	99.2	94.6	94.0	91.4	96.8	108.6	118.0	120.3	138.1	149.8	158.3
Contributions for Soc. Ins.	853.4	905.7	947.3	974.4	950.8	970.9	904.4	937.8	1093.9	1152.8	1235.0	1319.3
Income Receipts on Assets	27.3	28.9	33.4	33.9	48.5	54.6	57.5	52.9	164.6	85.6	57.5	52.5
Current Transfer Receipts	32.0	36.8	41.0	48.6	66.2	64.4	66.1	49.7	54.5	59.5	64.9	67.7
Surplus of Gov't. Enterprises	0.9	1.8	2.0	0.8	0.7	-3.1	-7.3	-13.4	-24.4	-22.6	-20.0	-17.8
Current Expenditures	2603.5	2759.8	2927.5	3140.9	3479.9	3721.3	3764.9	3772.7	3792.9	3916.2	4092.2	4319.3
Consumption Expenditures	723.4	763.9	798.3	879.8	933.7	1003.9	1008.7	1011.7	970.9	964.4	979.4	989.0
Defense	475.9	500.3	526.1	582.8	613.3	653.2	662.9	652.0	612.0	603.6	610.8	616.8
Nondefense	247.5	263.6	272.3	297.0	320.4	350.7	345.8	359.7	358.9	360.8	368.7	372.2
Transfer Payments	1475.1	1572.4	1673.5	1823.5	2135.6	2282.5	2274.3	2283.6	2349.7	2446.5	2570.3	2731.1
Government Social Benefits	1079.7	1184.2	1258.9	1391.9	1608.9	1710.1	1728.2	1772.5	1838.3	1896.5	1978.6	2089.8
To the Rest of the World	11.3	12.5	13.3	15.5	16.0	16.5	17.1	18.0	18.5	18.9	19.3	19.7
Grants-in-Aid												
To S&L Governments	343.4	340.8	359.0	371.0	458.1	505.3	472.5	443.2	444.0	478.1	517.0	565.5
To the Rest of the World	40.9	35.0	42.3	45.1	52.7	50.6	56.5	49.9	49.0	52.9	55.4	56.2
Interest Payments	344.4	372.4	408.2	388.0	353.6	380.6	422.6	420.6	414.3	451.0	490.2	547.8
Subsidies	60.5	51.1	47.5	49.6	56.9	54.3	59.4	56.8	57.9	54.2	52.3	51.4
Surplus or Deficit (-)	-305.5	-228.1	-266.7	-635.1	******	-1329.5	-1248.3	-1109.7	-752.8	-636.7	-583.9	-620.3

Table 12. State and Local Government Receipts and Expenditures

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						Billions of Current Dollars						
Receipts	1166.5	1254.5	1321.3	1328.9	1268.1	1305.7	1366.3	1405.2	1459.3	1499.5	1564.7	1632.1
As Share of GDP	8.9	9.1	9.1	9.0	8.8	8.7	8.8	8.7	8.7	8.5	8.5	8.4
Personal Tax and Nontax Receipts	276.4	302.5	323.5	333.5	287.8	297.6	327.0	348.8	376.6	377.0	391.4	407.0
Corporate Profits	55.0	59.2	57.9	47.4	45.6	47.7	50.8	51.4	55.3	67.5	68.3	67.7
Indirect Business Tax and Nontax Accruals	835.1	892.7	940.0	947.9	934.8	960.4	988.5	1004.9	1027.4	1055.1	1105.0	1157.4
Contributions For Social Insurance	24.6	21.5	18.9	18.7	18.6	18.2	18.3	17.5	17.6	18.0	19.1	20.1
Federal Grants-In-Aid	343.4	340.8	359.0	371.0	458.1	505.3	472.5	443.2	444.0	478.1	517.0	565.5
Expenditures	1775.4	1850.3	1973.3	2074.1	2191.2	2235.9	2243.0	2292.1	2320.4	2393.6	2486.6	2598.7
As Share of GDP	13.6	13.4	13.6	14.1	15.2	14.9	14.4	14.1	13.8	13.6	13.5	13.4
Purchases	1547.4	1640.2	1752.2	1847.6	1871.4	1870.2	1854.7	1871.3	1879.0	1922.9	1984.0	2055.4
Transfer Payments	406.6	403.9	433.3	455.4	492.6	523.8	532.0	544.3	561.7	603.3	647.8	697.0
Interest Received	35.0	25.4	17.3	36.0	114.3	123.0	126.7	146.8	143.3	138.7	139.9	145.7
Net Subsidies	7.7	11.5	25.6	25.0	22.8	21.4	17.0	14.7	15.8	15.5	14.7	13.9
Dividends Received	2.0	2.1	2.2	2.6	2.2	2.3	2.3	2.4	2.3	2.4	2.4	2.5
Net Wage Accruals												
Surplus Or Deficit	-66.6	-39.4	-72.7	-165.1	-271.9	-237.3	-213.1	-252.7	-219.1	-206.1	-180.5	-161.8

Table 13. U.S. Exports and Imports of Goods and Services

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Billions of Current Dollars												
Net Exports-Goods & Serv.	-715.7	-762.4	-709.8	-713.2	-392.2	-518.5	-568.8	-547.2	-497.3	-420.7	-488.5	-477.6
Current Account Balance	-739.8	-798.5	-713.4	-681.3	-381.6	-449.5	-457.7	-440.4	-379.4	-312.3	-416.9	-413.1
Merchandise Balance	-790.9	-848.4	-835.0	-848.8	-522.6	-672.8	-761.0	-759.4	-729.3	-670.8	-736.3	-744.2
Exports-Goods & Services	1310.4	1478.5	1665.7	1843.2	1583.8	1843.5	2101.1	2195.9	2259.8	2388.4	2543.9	2732.3
Merchandise	925.3	1048.1	1165.3	1297.6	1064.7	1278.4	1473.6	1536.0	1566.9	1658.4	1771.0	1893.1
Food, Feeds & Beverages	59.0	66.0	84.3	108.3	93.9	107.7	126.2	132.8	132.1	136.9	134.5	142.3
Industrial Supplies	236.8	279.1	316.3	386.9	293.5	388.6	484.7	482.3	492.1	538.1	572.8	615.4
Motor Vehicles & Parts	98.4	107.3	121.3	121.5	81.7	112.0	132.9	146.2	152.1	155.7	169.9	187.8
Capital Goods, Ex. MVP	302.5	339.5	360.0	383.7	316.8	375.9	413.1	433.3	429.3	446.9	484.5	521.0
Computer Equipment	45.5	47.6	45.6	43.9	37.7	43.8	48.4	49.3	48.1	47.6	51.0	59.5
Other	257.0	291.9	314.5	339.8	279.0	332.1	364.7	384.0	381.2	399.3	433.5	461.4
Consumer Goods, Ex. MVP	115.3	129.1	146.0	161.3	149.4	165.3	174.9	181.8	188.7	200.0	216.2	226.5
Other	57.4	62.7	64.5	62.0	54.6	57.1	61.7	65.3	67.0	67.5	71.5	74.8
Services	385.1	430.4	500.4	545.5	519.1	565.1	627.6	659.9	692.9	730.0	772.8	839.2
Imports-Goods & Services	2026.1	2241.0	2375.6	2556.4	1976.0	2362.0	2669.9	2743.1	2757.0	2809.2	3032.4	3209.8
Merchandise	1716.2	1896.5	2000.3	2146.4	1587.3	1951.2	2234.6	2295.4	2296.2	2329.3	2507.3	2637.3
Foods, Feeds & Beverage	69.1	76.1	83.0	90.4	82.9	92.5	108.3	111.1	116.1	118.1	124.6	131.0
Petroleum & Products	263.2	316.7	346.7	476.1	267.7	353.7	462.2	433.9	386.8	367.7	375.0	365.1
Indus Supplies Ex. Petr	268.0	293.5	297.9	318.7	196.6	249.4	293.0	290.0	291.9	294.4	325.1	341.3
Motor Vehicles & Parts	238.7	256.0	258.5	233.2	159.2	225.7	255.3	298.6	310.0	317.4	329.1	337.2
Capital Goods, Ex. MVP	357.0	394.2	414.6	423.2	343.4	419.1	477.9	511.6	511.0	539.1	591.8	648.7
Computer Equipment	93.5	101.6	105.5	101.2	94.2	117.3	119.7	122.2	121.4	126.5	125.1	131.0
Other	263.5	292.6	309.2	322.0	249.2	301.9	358.2	389.3	389.6	412.7	466.7	517.7
Consumer Goods, Ex. MVP	412.9	447.9	480.0	486.7	431.4	486.5	517.5	519.7	536.2	542.6	580.6	615.6
Other	81.5	83.8	85.1	82.5	75.5	93.1	85.1	90.6	97.9	100.9	130.0	145.2
Services	309.9	344.5	375.3	410.0	388.7	410.8	435.3	447.7	460.9	479.9	525.1	572.6
Billions of 2009 Dollars												
Net Exports-Goods & Serv.	-777.1	-786.2	-703.6	-546.9	-392.2	-462.6	-445.9	-430.8	-412.3	-392.1	-458.0	-439.6
Exports-Goods & Services	1388.4	1512.4	1647.3	1741.8	1583.8	1765.6	1890.6	1957.5	2010.0	2096.9	2197.1	2328.1
Imports-Goods & Services	2165.5	2298.6	2350.9	2288.7	1976.0	2228.1	2336.4	2388.2	2422.3	2489.0	2655.1	2767.7
Exports and Imports -- % Change												
Current Dollars												
Exports	10.8	12.8	12.7	10.7	-14.1	16.4	14.0	4.5	2.9	5.7	6.5	7.4
Imports	12.7	10.6	6.0	7.6	-22.7	19.5	13.0	2.7	0.5	1.9	7.9	5.9
Constant Dollars												
Exports	6.0	8.9	8.9	5.7	-9.1	11.5	7.1	3.5	2.7	4.3	4.8	6.0
Imports	6.1	6.1	2.3	-2.6	-13.7	12.8	4.9	2.2	1.4	2.8	6.7	4.2
Production Indicators - % Change												
U.S. Industrial Production	3.2	2.2	2.5	-3.4	-11.3	5.7	3.4	3.6	2.6	2.9	4.6	3.1
Real GDP -- Industrial Countries	2.6	2.8	2.7	0.6	-3.5	2.9	1.9	1.0	1.2	2.0	2.2	2.2
Real GDP -- Developing Countries	5.5	6.7	6.6	3.9	-0.0	7.4	5.3	4.0	3.5	4.0	4.5	4.7
Price Indicators												
Price Deflators (% Ch)												
Exports	4.4	3.6	3.4	4.6	-5.5	4.4	6.4	0.9	0.2	1.3	1.6	1.4
Imports	6.2	4.2	3.7	10.5	-10.5	6.0	7.8	0.5	-0.9	-0.8	1.2	1.6
Crude Oil Prices ($/barrel)	56.5	66.1	72.3	99.6	61.7	79.4	95.1	94.2	98.0	99.1	102.0	100.3
Real U.S. Dollar												
Ex. Rate-Indust. Countries	1.07	1.05	0.98	0.93	1.00	1.00	0.92	0.96	1.00	1.04	1.04	1.04
%Change	-2.2	-2.4	-6.4	-5.3	7.8	-0.5	-7.4	4.2	4.6	3.2	0.6	-0.5
Ex. Rate-Dev. Countries	1.18	1.12	1.04	0.94	1.00	0.95	0.87	0.86	0.86	0.86	0.81	0.78
%Change	-6.0	-5.1	-7.5	-9.5	6.4	-5.2	-8.3	-0.6	-0.9	-0.0	-5.1	-4.2

Table 14. Price Indexes for GDP and Other Inflation Indicators (Percent Change)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Implicit Price Deflators												
GDP	3.2	3.1	2.7	1.9	0.8	1.2	2.0	1.7	1.4	1.9	2.0	2.1
Consumption	2.9	2.7	2.5	3.1	-0.1	1.7	2.4	1.8	1.1	1.3	1.9	2.1
Durables	-1.0	-1.6	-2.0	-1.9	-1.7	-1.4	-1.0	-1.2	-1.8	-2.1	-1.0	-0.7
Motor Vehicles	1.5	0.1	-0.6	-2.3	0.3	5.7	2.8	1.6	0.6	0.4	0.7	1.0
Furniture	0.0	-0.5	-0.8	-0.7	-0.4	-4.2	-1.6	-0.3	-2.0	-3.2	-0.5	-0.0
Other Durables	-0.6	1.5	2.6	3.3	1.1	0.4	3.2	0.6	-0.1	-1.2	1.1	1.5
Nondurables	3.8	3.1	2.9	5.6	-2.6	3.1	5.9	2.4	0.2	0.1	1.6	1.5
Food	1.7	1.7	3.9	6.1	1.2	0.3	4.0	2.3	1.1	0.5	1.1	1.7
Clothing & Shoes	-0.9	-0.4	-0.9	-0.8	0.9	-0.7	1.7	3.6	1.0	0.1	0.4	0.5
Gasoline	22.5	12.9	8.3	18.0	-27.2	18.1	25.8	3.4	-2.3	-2.3	3.0	-1.0
Fuel	33.0	13.7	6.9	35.6	-31.5	17.0	27.2	1.3	-1.3	3.1	1.2	0.4
Motor Vehicle Fuel	21.6	12.8	8.4	16.6	-26.8	18.2	25.7	3.5	-2.4	-2.7	3.1	-1.1
Services	3.3	3.4	3.2	3.1	1.1	1.7	1.8	2.2	2.0	2.3	2.5	2.8
Housing	2.6	3.5	3.6	2.7	1.8	0.1	1.3	2.3	2.4	2.9	3.0	2.8
Utilities	8.9	8.0	3.1	7.8	-2.2	1.3	1.9	-0.2	3.4	6.2	0.4	0.8
Electricity	6.2	12.1	3.9	6.4	3.0	0.2	1.9	-0.0	2.2	5.5	0.0	0.2
Natural Gas	19.4	2.4	-1.2	13.8	-21.9	-2.0	-2.8	-9.7	5.0	13.3	-3.2	-1.6
Water & Sanit.	5.2	4.9	5.1	5.9	6.1	6.3	5.2	5.6	4.5	3.4	3.5	3.3
Health Care	3.2	3.0	3.7	2.7	2.7	2.5	1.8	1.8	1.4	1.8	3.3	3.5
Transportation	3.6	4.1	2.3	5.3	3.1	2.0	2.7	1.9	1.1	1.4	1.8	2.0
Recreation	2.8	3.4	2.8	3.1	1.2	1.1	1.7	2.7	1.7	1.9	1.9	2.3
Food & Accomm.	3.2	3.4	3.9	3.9	2.2	1.3	2.5	2.8	2.1	2.0	2.2	2.4
Financial & Insur.	3.1	2.7	2.9	1.1	-4.4	4.0	1.9	3.9	1.8	1.9	2.6	2.8
Other Services	4.8	4.0	3.1	4.6	2.8	3.1	2.5	2.5	2.7	2.0	2.3	2.8
Investment Deflators:												
Nonresidential	2.9	2.9	2.1	1.8	-0.3	-0.9	1.5	1.4	1.2	1.3	1.5	1.7
Structures	12.6	12.2	6.1	4.8	-2.2	-1.2	2.9	2.0	3.0	4.1	3.8	3.6
Equipment	0.3	-0.3	0.3	0.1	1.3	-2.0	0.9	1.3	0.4	0.1	0.4	0.7
Intellectual Prop.	0.9	1.6	1.7	1.7	-0.8	0.5	1.2	1.4	1.0	1.1	1.4	1.6
Residential	7.2	5.8	1.3	-1.5	-3.5	-0.4	0.7	0.9	5.0	5.4	2.6	2.9
Government Purchases	5.1	4.4	4.4	4.3	-0.3	2.7	2.8	1.3	0.9	1.8	2.0	2.2
Federal	4.2	3.3	3.0	3.0	-0.3	2.6	2.7	0.8	1.4	1.5	1.4	1.5
State & Local	5.6	5.0	5.2	5.1	-0.3	2.7	2.9	1.6	0.7	2.0	2.4	2.6
Exports	4.4	3.6	3.4	4.6	-5.5	4.4	6.4	0.9	0.2	1.3	1.6	1.4
Imports	6.2	4.2	3.7	10.5	-10.5	6.0	7.8	0.5	-0.9	-0.8	1.2	1.6
Other Inflation Related Indicators												
Consumer Price Index												
All Urban	3.4	3.2	2.9	3.8	-0.3	1.6	3.1	2.1	1.5	1.7	2.3	2.2
Producers Price Index	7.3	4.7	4.8	9.8	-8.7	6.8	8.8	0.5	0.6	2.5	1.2	1.1
Nonfarm Sector Indicators												
Wage Compensation	3.6	3.9	4.3	2.7	1.1	2.1	2.5	2.6	1.6	2.4	3.5	4.0
Productivity	2.1	0.9	1.6	0.8	3.2	3.3	0.5	1.5	0.5	1.5	0.7	1.1
Unit Labor Costs	1.6	3.0	2.6	2.0	-2.0	-1.2	2.0	1.2	1.1	0.9	2.7	2.8
Crude Oil Prices (dollars/barrel)												
West Texas Intermediate	56.46	66.10	72.28	99.61	61.69	79.41	95.07	94.21	97.96	99.10	101.99	100.27

Table 15. Producers Price Indexes

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						Annual Percent Change						
All Commodities	7.3	4.7	4.8	9.8	-8.7	6.8	8.8	0.5	0.6	2.5	1.2	1.1
Industrial Commodities	8.6	5.4	3.8	9.8	-9.0	7.0	8.0	0.0	0.4	3.0	1.5	1.1
Textiles & Apparel	1.5	1.4	1.0	2.4	0.5	1.7	7.6	0.3	0.8	1.2	0.9	1.0
Fuels	23.2	6.6	6.6	20.5	-25.8	17.1	16.0	-1.8	-0.2	5.4	-0.2	-0.8
Chemicals	10.1	7.2	4.4	14.3	-6.5	7.5	11.5	0.5	1.0	2.7	2.7	2.7
Rubber & Plastics	7.5	6.9	0.8	7.0	-0.4	3.3	7.1	2.3	1.1	2.1	1.8	1.8
Lumber & Wood	0.4	-1.1	-1.0	-0.6	-4.4	5.4	1.1	3.5	6.6	4.5	5.0	1.2
Pulp & Paper	3.5	3.6	3.4	4.6	-0.5	5.0	3.5	-0.4	1.8	2.7	2.8	2.8
Metals & Products	7.5	12.9	6.5	10.1	-12.2	11.1	8.8	-2.7	-2.9	2.4	3.2	2.2
Equipment	1.3	2.0	0.9	1.9	1.2	-0.1	1.3	1.1	0.7	1.3	0.9	0.9
Trans. Equipment	1.6	1.1	1.6	2.3	2.3	0.7	1.7	2.2	1.1	2.2	2.3	1.9
Farm	-3.8	-1.2	22.5	12.4	-16.5	12.2	23.6	3.1	1.4	-2.0	-1.0	0.6
Processed Foods & Feeds	1.3	0.4	7.3	9.3	-2.4	3.4	8.4	3.9	1.5	0.7	0.0	1.0
By Stage of Processing												
Crude Materials	14.6	1.4	12.2	21.5	-30.5	21.3	17.4	-3.2	2.1	5.5	-0.8	-0.1
Intermediate Materials	8.0	6.4	4.0	10.3	-8.2	6.4	8.9	0.5	0.0	2.0	1.6	1.0
Finished Goods	4.9	2.9	3.9	6.4	-2.6	4.2	6.0	1.9	1.2	2.6	1.0	1.1
Consumers	5.8	3.4	4.5	7.4	-3.8	5.5	7.5	2.0	1.3	2.8	0.9	1.0
Producers	2.3	1.5	1.9	2.9	1.8	0.4	1.5	1.9	0.9	1.6	1.6	1.5

Table 16. Money, Interest Rates and Corporate Profits

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						Billions of Dollars						
Money Supply (M1)	1371.8	1374.8	1372.7	1434.5	1637.8	1742.1	2009.7	2311.4	2548.3	2759.7	2701.3	2442.1
Money Supply (M2)	6505.6	6846.8	7268.6	7764.3	8385.0	8592.8	9221.3	10010.6	10685.8	11277.8	11744.8	12123.2
						Percent Change						
Money Supply (M1)	2.0	0.2	-0.2	4.5	14.2	6.4	15.4	15.0	10.2	8.3	-2.1	-9.6
Money Supply (M2)	4.3	5.2	6.2	6.8	8.0	2.5	7.3	8.6	6.7	5.5	4.1	3.2
						Interest Rates (Percent)						
Short-term Rates												
3-Month Treas. Bills	3.15	4.73	4.35	1.37	0.15	0.14	0.05	0.09	0.06	0.06	0.96	2.53
Prime Bank Loans	6.19	7.96	8.05	5.09	3.25	3.25	3.25	3.25	3.25	3.25	4.04	5.52
U.S. Government Bond Yields												
5 Year Maturity	4.05	4.75	4.43	2.80	2.19	1.93	1.52	0.76	1.17	1.89	2.73	3.56
10 Year Maturity	4.29	4.79	4.63	3.67	3.26	3.21	2.79	1.80	2.35	3.33	4.23	4.30
30 Year Maturity	4.56	4.87	4.84	4.28	4.07	4.25	3.91	2.92	3.45	4.21	5.01	4.94
State and Local Governments Bond Yields												
Domestic Municipal Bonds	4.40	4.40	4.39	4.86	4.62	4.29	4.50	3.73	4.26	4.99	5.71	5.73
Corporate Bond Yields												
Moodys AAA Corp. Bonds	5.23	5.59	5.56	5.63	5.31	4.94	4.64	3.67	4.24	5.01	5.87	5.89
Conventional Mortgage Rate	5.87	6.41	6.34	6.04	5.04	4.69	4.46	3.66	3.98	4.87	5.87	6.23
						Corporate Profits (Billions of Dollars)						
Profits Before Taxes	1653.33	1851.43	1748.43	1382.43	1468.18	1834.80	1847.35	2190.03	2260.32	2654.43	2640.43	2636.25
Inventory Valuation Adj.	-32.13	-35.68	-39.50	-36.95	6.68	-41.03	-56.05	-10.03	0.66	-16.07	-7.02	-7.08
Profits After Taxes	1240.93	1378.08	1302.88	1073.33	1198.73	1464.28	1473.13	1755.25	1843.15	2081.03	1996.01	1971.26

THE UCLA ANDERSON FORECAST FOR CALIFORNIA

MARCH 2014 REPORT

Parched Land in the Golden State: End of the Recovery?

Problems and Solutions fot Los Angeles' Economy:
Human Capital, Public Education and Migration

Parched Land in the Golden State: End of the Recovery?

Jerry Nickelsburg
Senior Economist, UCLA Anderson Forecast
Adjunct Professor of Economics, UCLA Anderson School
March 2014

"It's So Dry The Trees Are Bribing The Dogs"... Old Texan Saying

"It's been a long hot summer and not a drop of rain"...Gravitational Pulls, lyrics by Robert Earl Keen

"During the medieval period, there was over a century of drought in the Southwest and California. The past repeats itself,"
B. Lynn Ingram, Paleoclimatologist, U. C. Berkeley

Recent torrential rains notwithstanding; a question garnering considerable attention these days is what will be the economic impact of the current severe drought in California? For us at the UCLA Anderson Forecast the answer is important in preparing our employment and income outlook for the coming years. Unfortunately, the answer to this question is: it's complicated. There are plenty of economic models with partial answers being blown around by the dry winds, however even the most sophisticated models require assumptions about water delivery, ground water pumping, irrigation, markets, water swaps, and acreage in order to generate a dollar value of the lost output.[1] But therein lies the rub. To answer the question requires so many assumptions that it is quite difficult to come to an a priori estimate of loss.[2] In this essay we will try to delineate the factors affecting the overall aggregate economic impact on California, and infer from macroeconomic data how that ought to affect the outlook for California's economic recovery. The essay proceeds with a review of the economics of a drought, a discussion on the economic consequences of California being a recurrent drought state, a statistical analysis of the impact of previous droughts in California, a statistical analysis of droughts in states that do not typically have cycles of recurrent drought, and a conclusion as to how the forecast should be adjusted to account for the 2014 drought episode.

The Economics of Droughts

There are three key components in understanding the economics of a drought; demand, supply and a forecast of future drought conditions. With respect to demand, there are four players in California; agriculture, fisheries and the environment (strangely linked together in this case), households, and industry. On the supply side rainfall and transpiration of ground water are not the only determinates of supply. Water authorities may choose to pump more or less groundwater, and more or less reservoir water adjusting supply to meet specific criteria. The third element, the meteorological forecast is important because the expected length of a drought affects the demand and supply responses. For example, if we expect 2014 to be the start of a new more arid California our actions will be different from those if we expect a very wet 2015.

Since agriculture is the largest user of water in the state, consuming approximately 80% of all delivered water, the focus of drought impact analysis is usually on this sector. However, to the extent that a larger percentage of water would be assigned to agricultural uses in a time of more limited supply, a smaller percentage would be delivered to environmental, industrial and household uses. Consequently

the yield of commercial and sport fishing would diminish, manufacturing output, profit and employment would drop, and households would experience a loss in consumption. So on the demand side of the equation a measure of the aggregate impact requires an understanding of who gets the limited quantity of water, how the allocations are made, (e.g. rationing, pricing, or a hybrid system) and the consequent financial and employment impact for each of the end users.

These broad categories, while useful, only touch the surface. For example, the Monterey Amendments transferred the previously state owned Kern Water Bank to the Kern County Water Agency, a quasi-public agency with significant control resting with several entities of Paramount Farms.[3] Thus, decisions by this supplier of water will be influenced by the competitive calculations of one of its most important owners. Similarly the Imperial Irrigation District has sold some of the Colorado River water allocated to Imperial Valley Farmers to the San Diego County Water Authority over the objection of some of those farmers.[4] So, even within agriculture, water interests are not all aligned in the same direction.

Typically an assessment of the agricultural impact takes the acreage not planted times the average yield of the acreage times the price previously received for output from the acreage in order to calculate the economic loss to the farmer and hence to the economy. A rational farmer will not take the average acre out of production, but the marginal acre. Thus the lost output is overstated in most studies. Moreover, if a drought were to cause a significant reduction in the output of a crop, prices will go up and the farmer will receive a higher, drought induced, price for the remaining crop. This is non-trivial as nearly half of all fruits, nuts and vegetables consumed in the U.S. are produced in California.

Estimating the environmental and fisheries impact would be even more challenging. Environmental decay typically happens over time and the timing and shape of outcomes are uncertain. For example, were the allocation of water to the Delta Wetlands reduced in 2014 it could have only a temporary impact on Delta fisheries and the spawning of salmon or it could be enough to reach a tipping point. The reduction in commercial fishing yields and sport fishing revenues is difficult to ascertain. A falling stock of fish maybe due to reduced water flow, to increased temperature, or to overfishing of some species further down the food chain. These inter-temporal linkages are important as evidenced by some sport fishing guides supporting river closures today in order to protect future income.

Evaluating the economic gains and losses for industrial and household users is a bit more straightforward. Economic models called input/output models explicitly account for water usage and models of household behavior in the face of rationing and price increases in California are well established. Thus, all that is required for these users is an estimate of the water supply, an estimate that will depend on the actions of a large number of water authorities, the State, and the Federal Government.

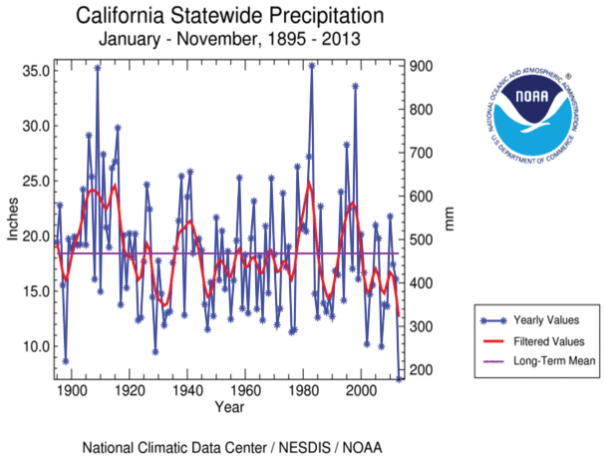
Finally, decisions made with respect to the extraction of ground and reservoir water will diminish the current year impact, but may induce future year costs. Annual meteorological forecasts give us probabilities, but not certainties. For example, NOAA predicts a 50:50 chance that 2015 will be an el Nino wet year. Which side of the bet one takes in an economic impact analysis is critical.

California's Recurrent Droughts

All of this may seem to make the problem of assessing the aggregate impact of the current drought intractable. However, the fact that California is a state with a long history of droughts simplifies matters. Major droughts were recorded in 1864-1865, 1928-1935, 1947-1950, 1976-1977, and 1987-1992. California droughts are famous in history and literature. NOAA statistics record 57 years of subnormal rainfall since 1890. Over this time California has experienced the beginning of a drought episode about once every 15 years. It is no accident that California hillsides are covered with drought resistant ceanothus, manzanita, and yucca, and Californians know what the plants know as evidenced by their adaptation of their economic and personal lives to a recurrent drought environment.

The fact is, aridity and recurrent drought, if expected or normal, are not a detriment to economic growth. Arid states in the U.S. over the past decade have not performed worse then their wetter brethren. Agriculture, Industry, Fisheries and Households are not passive players in this game but react to drought-based incentives. The Great Drought of 1864 is a case in point. Prior to this time the Ranchos of California relied on cattle as their main product. The drought ruined the cattle industry and the Ranchos were sold off, sub-divided, and put to uses more tolerant of recurrent droughts. More recently in the aftermath of the 1976-77 drought widespread use of drip irrigation in agriculture and conservation in household use became and remain common in today's California.

Figure 1



Source: NOAA

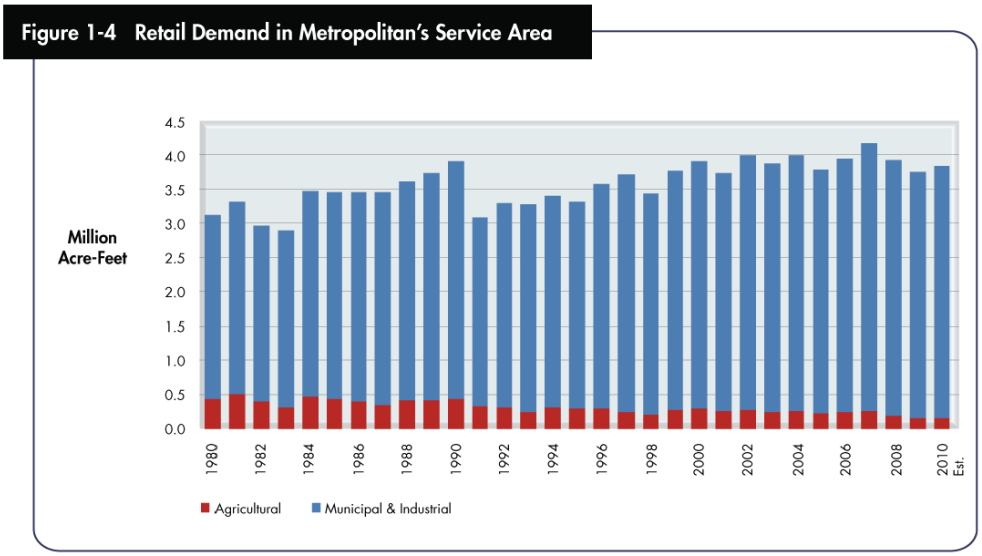
As a consequence of this adaptation, California does not even make the top 12 states in the volume of freshwater for industrial usage. Households also respond by planting drought resistant landscapes and installing low flow appliances. The incentives have been sufficiently powerful that the amount of water used in Southern California is no greater today than it was more than 20 years ago when the region had a much smaller population. What this means is that users of California's fickle water supply have already mitigated somewhat the impact and therefore the economic cost of the current drought.

The Economic Impact of Past California Droughts

Where does this leave us in the assessment of the economic impact of the 2014 drought? There are two questions to answer. First, since California is a drought adapted state, what is the past relationship between episodes of drought and the growth rates of income and employment? Second, if, as President Obama stated, there is a permanent change in California's aridity, then what do abnormal droughts do to the growth of employment and income.

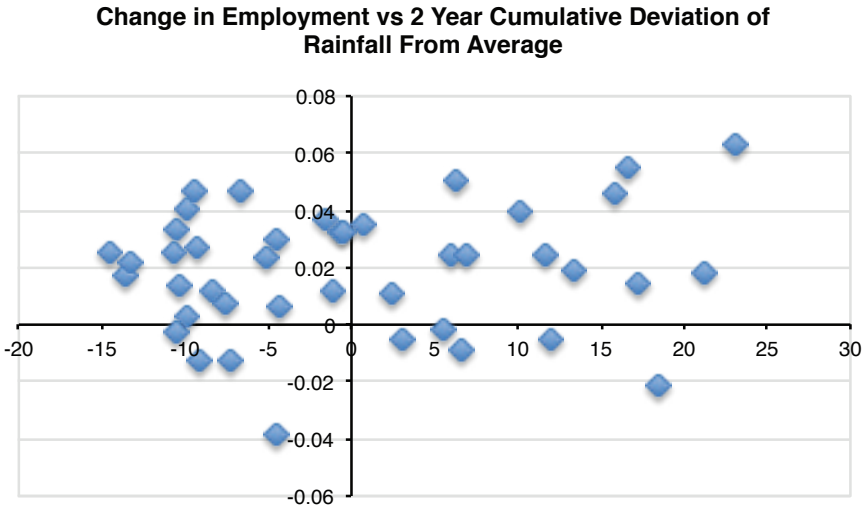
To answer the first a statistical analysis of droughts and employment in California from 1969 to 2012 was performed. For total employment, there is no relationship between drought and growth rates. Even after sterilizing the data for recessions, the lack of a relationship holds. The same is not true for farm employment. In wet years, whether because more water is available from State resources or because the ground is holding more rain water or both, farm employment growth rates are on average positive while in dry years they are negative. The correlation between droughts and employment on the farm does not show up in the aggregate data because farm employment is a small fraction of total employment. Farm work averages about 2.5% of all state

Figure 2



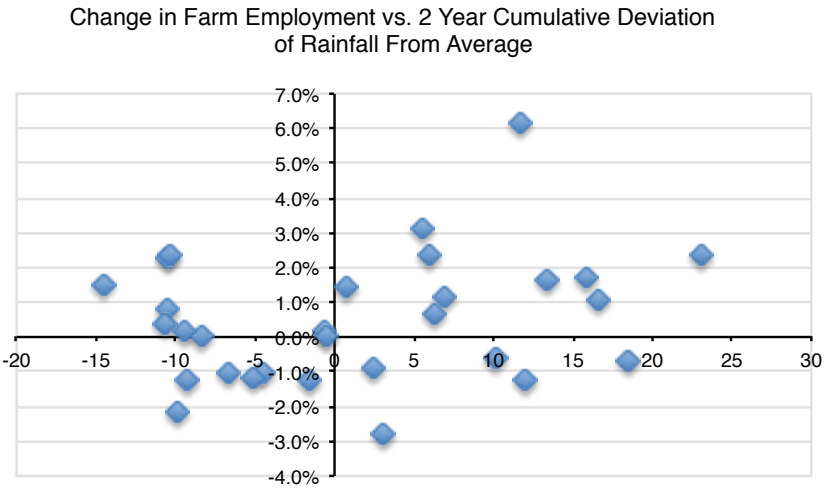
Source: Metropolitan Water District, "The Regional Urban Water Management Plan," 2010

Figure 3



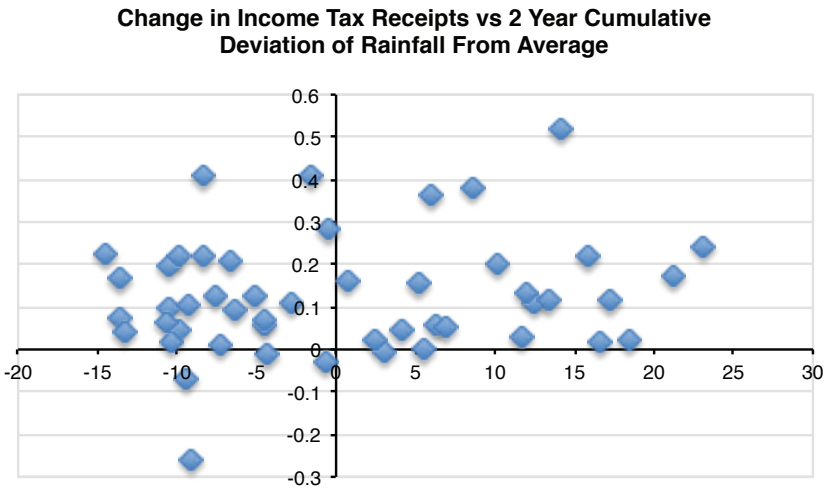
Source: EDD, NOAA

Figure 4



Source: EDD, NOAA

Figure 5



Source: California Department of Finance, NOAA

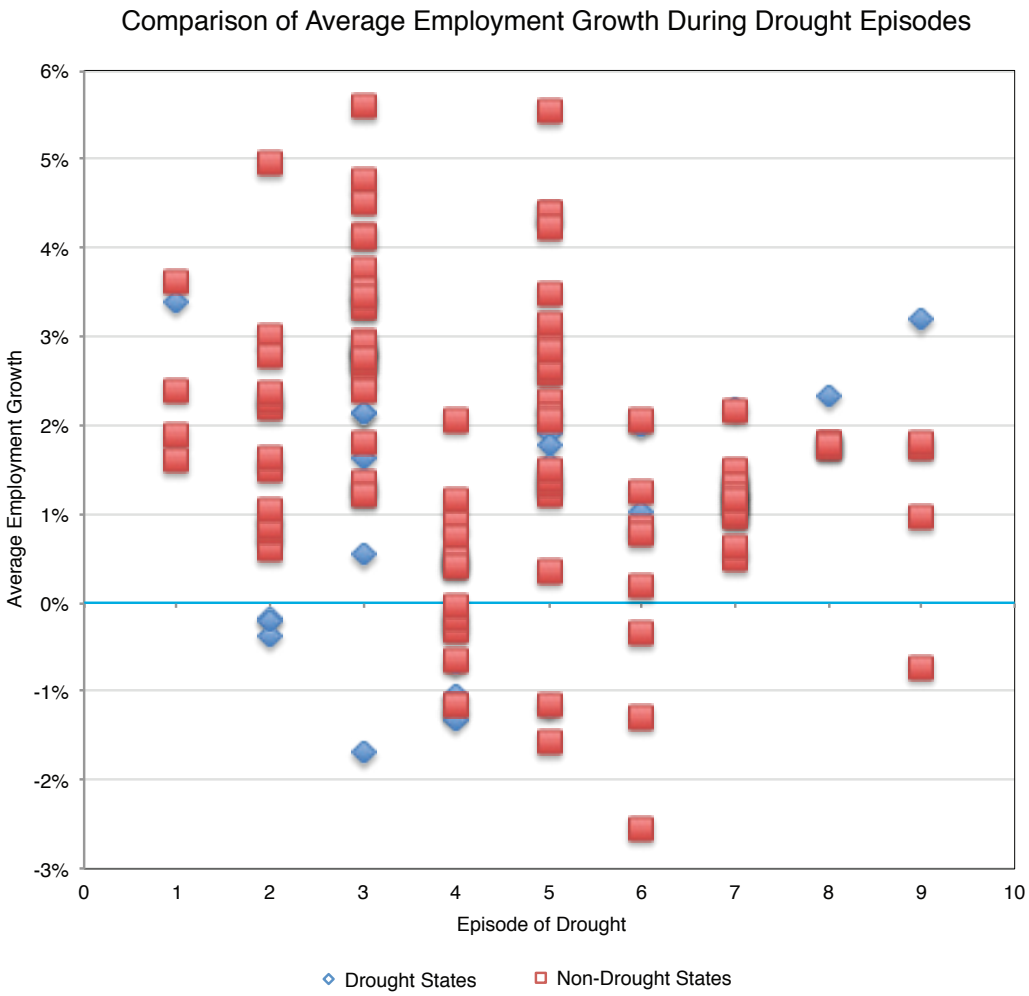
jobs which means that a 1% increase in farm jobs results in the addition of only 4,000 jobs in a 16 million job economy.

State income can be inferred from income tax receipts over the same period. The result is the same. There is no correlation between the amount of rainfall, or the lack thereof, and the growth of income tax revenue. Again this result holds when the data are adjusted for slower income growth during recessions. Thus on an aggregate level, we conclude that while a "normal" recurrent drought has an impact on agriculture, it is difficult to pick up a significant change in the trajectory of the California economy as a consequence of it.

Unusual Droughts: Lessons From Other Episodes

But we may not be in a normal drought. If the change in aridity is in part a permanent change in average rainfall, the aggregate impact may well be significant. To understand this we studied droughts across the U.S. comparing the growth rates of the drought states to growth rates of non-drought states in the same year. These data were from 1976 to present and included 9 episodes of drought in all parts of the U.S. The 9 events show a mixed picture. Episodes 1 and 9 are California droughts and the Golden State grew at or above average for the drought years. Episodes 6, 7, and 8 do not show any significant difference between drought and non-drought state growth rates. These episodes include the recent droughts in Colorado and Texas, two states that are increasingly drought prone. For the remaining four episodes, drought impacted states perform significantly worse than non-drought states. Employment growth during a drought is estimated to be 1.1% below average for all drought episodes including those in Texas and Colorado, but excluding California. This result gives us some sense of the aggregate impact of the drought if indeed we are in an abnormal period. Of course the forecasting problem is both meteorological and economic. We will not know until after the fact if this year is an anomaly, or the beginning of a long arid era.

Figure 6



Source: BEA.gov, NOAA, Wikipedia

Concluding Remarks: Implications For The California Economy

In assessing how much of the results with respect to unusual droughts ought to be incorporated in the California Forecast, we must incorporate drought assistance packages. There are two plans to counter the impact of the drought; one proposed by Governor Brown and one proposed by President Obama. The Governor's plan has been enacted and will be going into effect, while the final shape of the President's proposal is yet to be determined.

The State Program allocates $687M in State funds as transfer payments. These funds will come from the "rainy day fund," (perhaps dry-dusty-day fund?), previously authorized bond issues, and a small amount of "pollution tax" money. In other words a large transfer of income will be injected into the California economy. The bulk of the transfers will be for water conservation and water treatment infrastructure. A smaller part of the funds will be emergency grants to farm workers put out of work by the reduction in planted acreage and yields of fruit and nut trees.

The President has promised transfers of an additional $165M to the State. These funds will in be allocated between farm owners, idled farm workers and water conservation infrastructure. If all of these funds are approved, $847M will be infused into the California economy.

The California Farm Water Coalition is estimating agricultural losses of up to $2.2B and a UC Davis model predicts a loss of $657M. The differences relate to the assumed quantity of groundwater to be pumped and the substitution effects from farmers adapting to more arid conditions. To be sure, the State and Federal transfer payments will not all be going to those who are suffering losses. Nevertheless, these transfers cut the aggregate impact by at least half. Using the higher Farm Water Coalition numbers, the direct losses will be $1.35B which is less than 1% of total California GSP and using the UC Davis numbers the impact will be marginal. Importantly, higher prices for California produce may (but may not) completely cover the balance.

All of this cumulative evidence suggests that while the drought is real, and it will cause economic losses, particularly in certain agricultural quarters, overall the State is not likely to be greatly impacted. But given our fragile recovery from the Great Recession, and the potential for this drought to drive industrial and agricultural structural change towards an adaptation to a more arid environment, a prudent incorporation of the drought impact would be to lower the forecast employment growth rates for the next few years by about 0.2%. This is more a recognition that disruptions are not without cost than a significant change in our economic forecast for the Golden State.

Endnotes

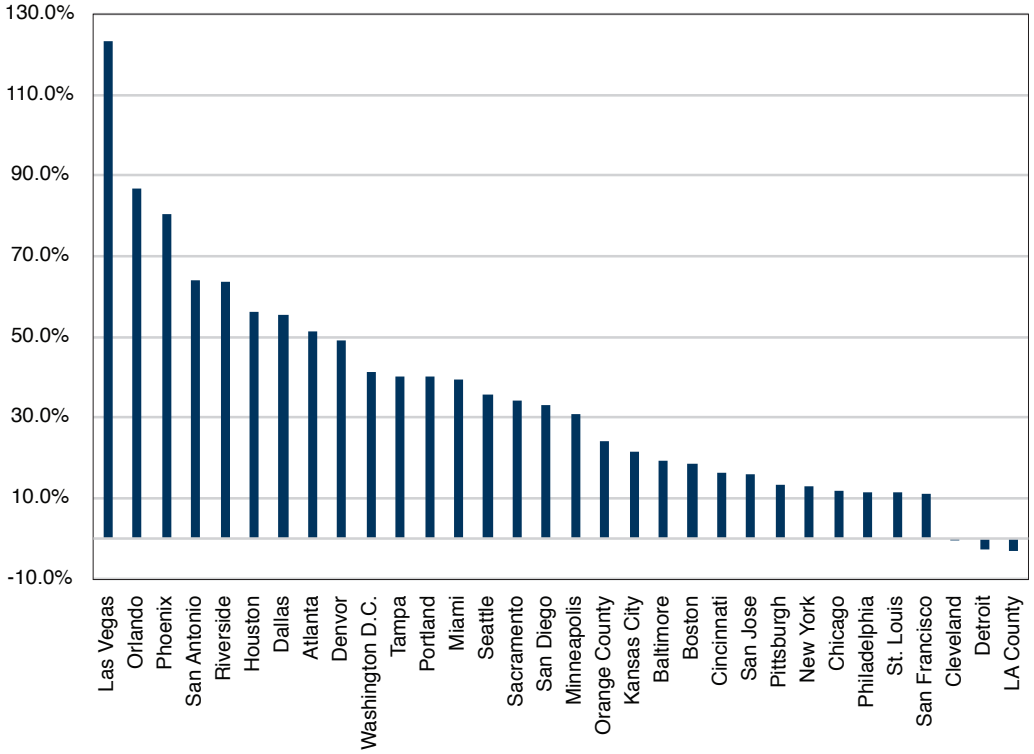
1. *For example: The California Economic Summit held in Los Angeles November 7, 2013.*
2. *http://www.arc.gov/appalachian_region/TheAppalachianRegion.asp*
   Ronald L. Lewis and Dwight B. Billings, "Appalachian Culture and Economic Development," West Virginia University Regional Research Institute, 1995.
   John Solomon Otto, "The Decline of Forest Farming In Southern Appalachia," Journal of Forest History, 1983.
   Niles M. Hansen, "Some Neglected Factors In American Regional Development Policy: The Case of Appalachia," Journal of Land Economics, 1966.
3. *"Regional Employment Recessions and California's Uneven Growth," UCLA Anderson Forecast, March 2008.*
   "The Bifurcated Recovery," UCLA Anderson Forecast, June 2010.
   "California: Bifurcation and Buffeting," UCLA Anderson Forecast, September, 2011.
   "Where Are The Jobs California?" UCLA Anderson Forecast, September 2013.
4. *Jerry Nickelsburg, "Switching To A Future Track," California Policy Options, UCLA Press, ed. Dan Mitchell, January 2014.*

Problems and Solutions for Los Angeles' Economy: Human Capital, Public Education and Migration

William Yu
Economist, UCLA Anderson Forecast
March 2014

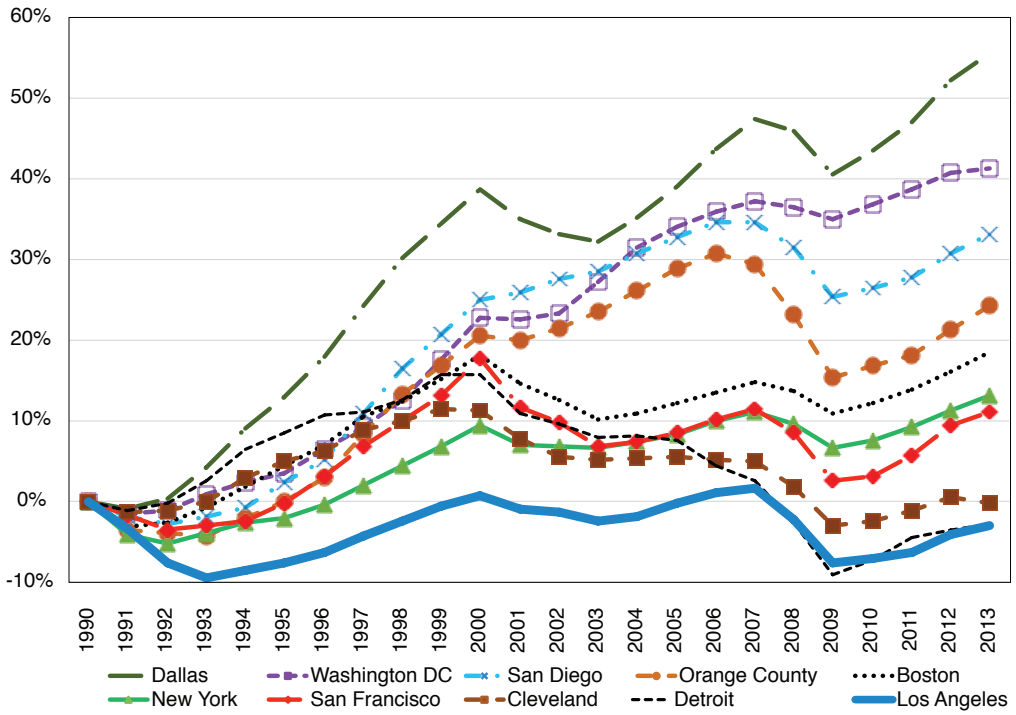
The most alarming economic problem facing Los Angeles is its anemic job growth, especially when compared to the nation's and other major cities'. Figure 1 shows the nonfarm payroll job growth from December 1990 to December 2013 for the 32 largest metropolitan areas in the U.S. Los Angeles comes in last. Among these metros, only three cities have negative job growth: Cleveland (-0.2%), Detroit (-2.8%), and Los Angeles (-3.1%). To put it in perspective, L.A. has gone 23 years without positive job growth. Figure 2 depicts the dynamic pattern of job growth during this period for selected cities. During most of it, L.A.'s growth is again at the bottom.

Figure 1 Nonfarm Payroll Employment Growth Rate From December 1990 to December 2013 for 32 Largest Metropolitan Areas



Source: Bureau of Labor Statistics

Figure 2 Nonfarm Payroll Employment Percentage Change From December 1990 to December 2013 for 10 Selected Metros



Source: Bureau of Labor Statistics

Why is L.A. falling behind? We believe that there are three major reasons.

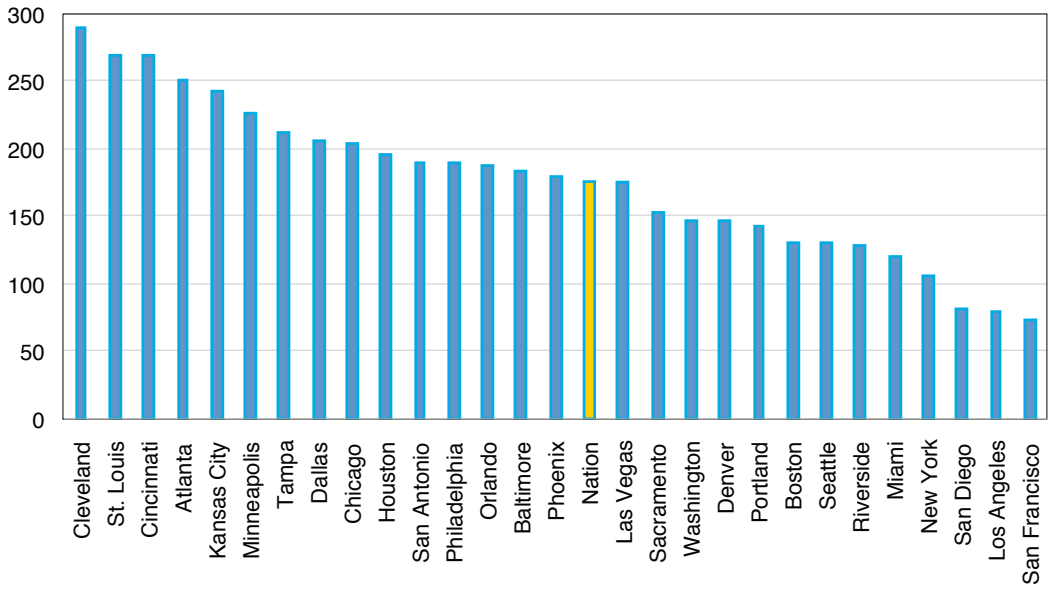
1) High Cost of Living in Terms of Housing and Commuting

A median single-family house costs $531,000 in L.A. this year while one costs only $220,000 in Phoenix. Suppose an employee received similar nominal salary offers from similar companies; he is more likely to go to Phoenix because the purchasing power of the same salary will be higher in Phoenix than in L.A. For an employer, when she is considering expanding or establishing a business, it is less likely that she will choose L.A. because it will cost her more in rent and wage compared to other cities with lower costs of living but not necessary lower quality (amenities) of life.

Over the past 10 to 15 years, L.A. home price growth has been among the highest of major cities despite its bleak job growth. Why? There are reasons from demand side and supply side. For demand side, due to its beautiful ocean and balmy weather, L.A. is a good place to live for one who can afford it. We suggest that high and rising housing prices driven by demand is a good thing for the city. On the supply side, limited residential building permit growth causing a lack of home supply, result in escalating home prices.[1] We suggest that high and rising housing prices driven by the lack of supply is detrimental to city's growth. Figure 3 presents the Housing Affordability Index of 2013, considering the average resident's income and housing cost in the city from National Association of Realtors (NAR). Housing is less affordable as you move toward the right of the graph and more affordable as you move left. L.A. is the second least affordable city in the U.S. to live in, trailing only San Francisco. Comparing Figures 1 and 3, we can see that high job growth cities like Orlando, Phoenix, San Antonio, Houston, Dallas, and Atlanta also have a more affordable housing index.

Based on its GPS data, TomTom Americas Traffic Index shows that Los Angeles is the most congested city in

Figure 3 Housing Affordability Index for the Nation and Major Cities, 2013



Source: National Association of Realtors

Note: A value of 100 means that a family with the median income has exactly enough income to qualify for a mortgage in the city on a median-priced home assuming a 20% down-payment. A value of 170 means that a median family has 170% of the income needed to qualify for a conventional mortgage for a median home. That is, the higher the value, the more affordable the home is. The less the value, the less affordable the home is.

the U.S. in 2013.[2] In fact, those of us who live here don't need statistics to tell us how bad the traffic is in L.A. Even worse, unlike New York, Washington D.C., Boston, and San Francisco, there is not an adequate interconnecting mass public transportation system for L.A. commuters who don't want to drive their own cars.

Congestion not only increases the cost of doing business in L.A. but also lowers the quality of life for residents. More subtly, it places an invisible ceiling on city growth in terms of population, jobs, building, and housing. Whenever L.A. has the chance to grow, we know it would likely make congestion even worse. Therefore, those who prefer their current low-density city lifestyle are more apt to fight any growth projects that arise. Cities with an effective public transportation system, on the other hand, have fewer congestion problems and therefore fewer reasons to fight growth. They can expand upward and outward, by increasing high rises and by sprawling into the suburbs. Where effective public transportation would allow for increased density without increased congestion, L.A.'s lack thereof means growth is undesirable.

2) Unfriendly Environment for Businesses

It should not be surprising that a business is less likely to start up, relocate, or expand its business in a city who is business unfriendly, especially when there are many other business friendly cities from which to choose in the U.S. According to the 2013 Thumbtack Small Business Friendliness Survey,[3] L.A. County received a "D" for overall friendliness. The detailed categories are as follows: Ease of starting a business (D+), Ease of hiring (B), Regulation (D), Health & safety (D), Employment, labor, & hiring (D), Tax code (D+), Licensing (D), Environmental (D+), Zoning (D), and Training & networking programs (C).

In contrast, cities with great job growth in Figure 1 are more likely to have received high grades for business friendliness, such as Las Vegas (B), San Antonio (A+), Houston (A+), Dallas (A), Atlanta (A-), Denver (A-), Washington D.C. (B), Portland (B-), Seattle (B-), and Minneapolis (B+).

To test our argument that housing affordability and business friendliness could influence city's growth of jobs, we conduct a simple regression[4] in which there are 50 met-

Job Growth = -.02 + .007 × Business Friendliness Ranking + .001 × Housing Affordability
(tstat) (3.1) (3.5)
Adjusted R Squared:0.30 Observations:50

ros. To explain the nonfarm payroll growth from January 1990 to January 2014, we use two variables: (1) NAR's 2011 Housing Affordability Index,[5] and (2) the city ranking of 2013 Thumbtack Small Business Survey. Note that among these cities, L.A. ranks 47th.

With the positive and statistically significant coefficients of business friendliness ranking and housing affordability, we suggest that city job growth does respond positively to afriendly business environment[6] and more affordable housing.

3) Low Level of Human Capital

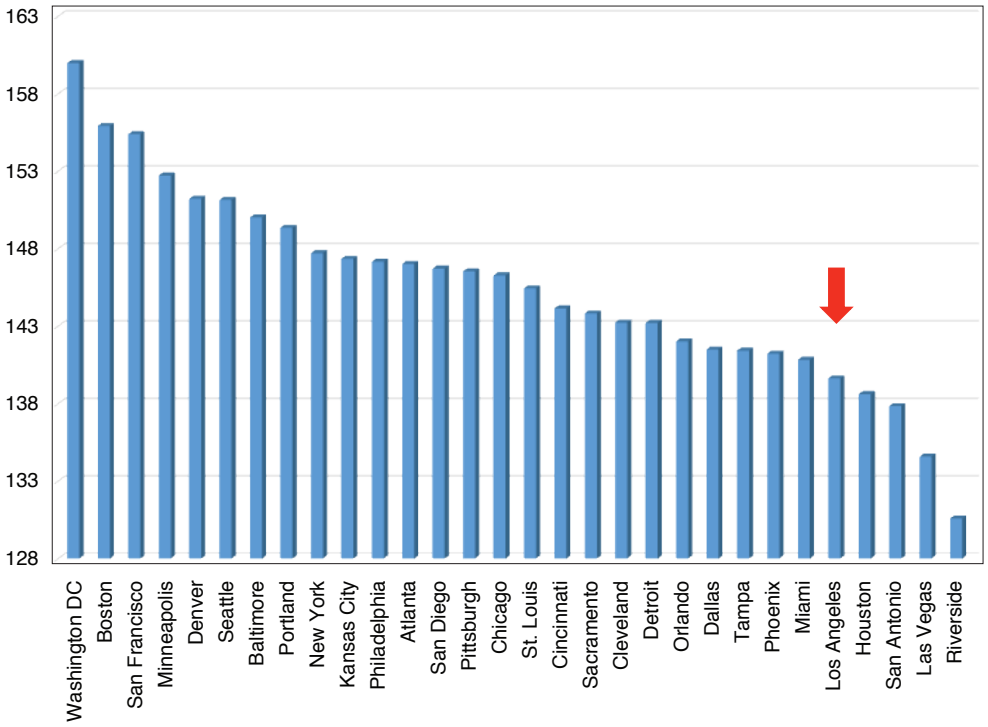
We believe that the strongest contributing factor to L.A.'s lag is it's low level of human capital.[7] In the globalized world of the 21st Century, the U.S. has a remarkable comparative advantage in the technological and innovative sectors, both of which require a highly educated workforce, while China and other developing countries have a comparative advantage in the manufacturing sectors, which require a low-skilled and low-educated workforce. Robots, microchips and automation have also replaced a tremendous number of middle-skill jobs. The across-ocean division of labor, paired with technological advancements, creates winners and losers in the U.S. The winners are the more educated workforce who live in high human capital cities, and the losers are the less educated workforce who live in low human capital cities.

Figure 4 shows the First 5 LA/UCLA City Human Capital Index (CHCI) in 2012. L.A. metro, with a CHCI of 140, ranked 26th among the 30 largest metros in 2012. L.A. County, with a CHCI of 137, ranked 21st among the 30 largest counties. It is not a coincidence that cities with high human capital, e.g. Washington D.C., Boston, Minneapolis, Denver, and Seattle have also had high job growth over the past two decades as seen in Figure 1. Some other coastal California cities such as San Francisco and San Diego also have a very high cost of housing (see Figure 3) and an unfriendly business environment like L.A. For instance, according to the Thumbtack Survey, San Francisco received a "C" and San Diego received an "F". Why do they still have higher job growth than L.A.? We suggest the reason is that both San Francisco and San Diego have high human capital, which mitigates the other two negative factors for job growth.

Figure 5 shows a significant correlation between CHCI and the employment to population ratio across 3143 counties in the U.S. in 2010. That said, poorly educated workers suffer more unemployment spells and are more likely to drop out of the labor force. Figure 6 demonstrates an evident correlation between CHCI and median household income across 3143 counties in the U.S. In other words, highly educated workers are more productive and earn a higher wage.

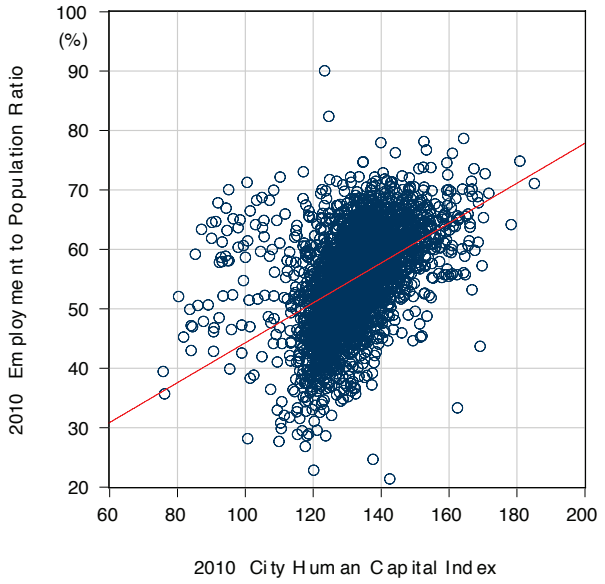
It's worth noting that L.A. County is the largest county in the nation with a population of 10 million. The huge

Figure 4 2012 City Human Capital Index for the 30 Largest Cities in the U.S.



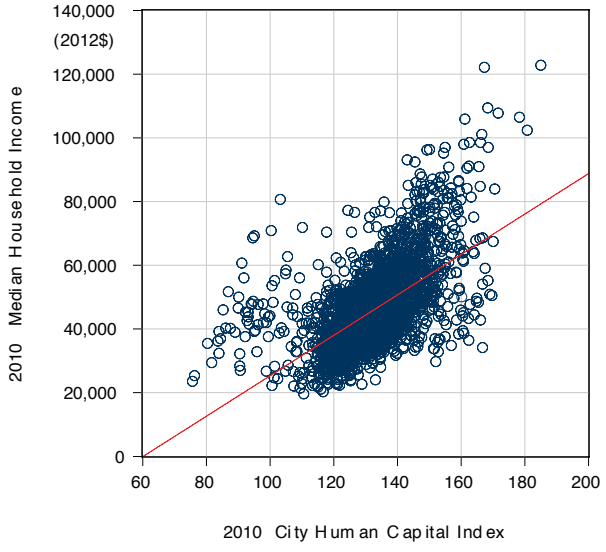
Source: Author's calculation based on the 1-year American Community Survey, 2012.

Figure 5 The Correlation between City Human Capital Index and the Employment to Population Ratio Across 3143 Counties in the U.S.



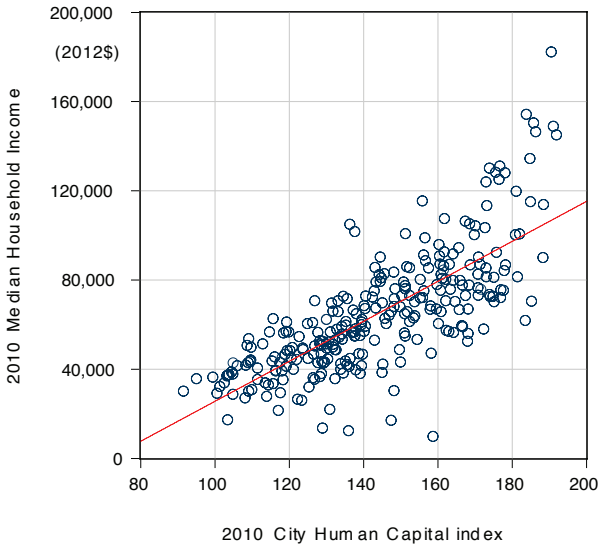
Source: 5-year American Community Survey, 2008-2012. The med-year is 2010.

Figure 6 The Correlation between City Human Capital Index and Median Household Income Across 3143 Counties in the U.S.



Source: 5-year American Community Survey, 2008-2012. The med-year is 2010.

Figure 7 The Correlation between City Human Capital Index and Median Household Income Across 285 Zip Codes in L.A. County



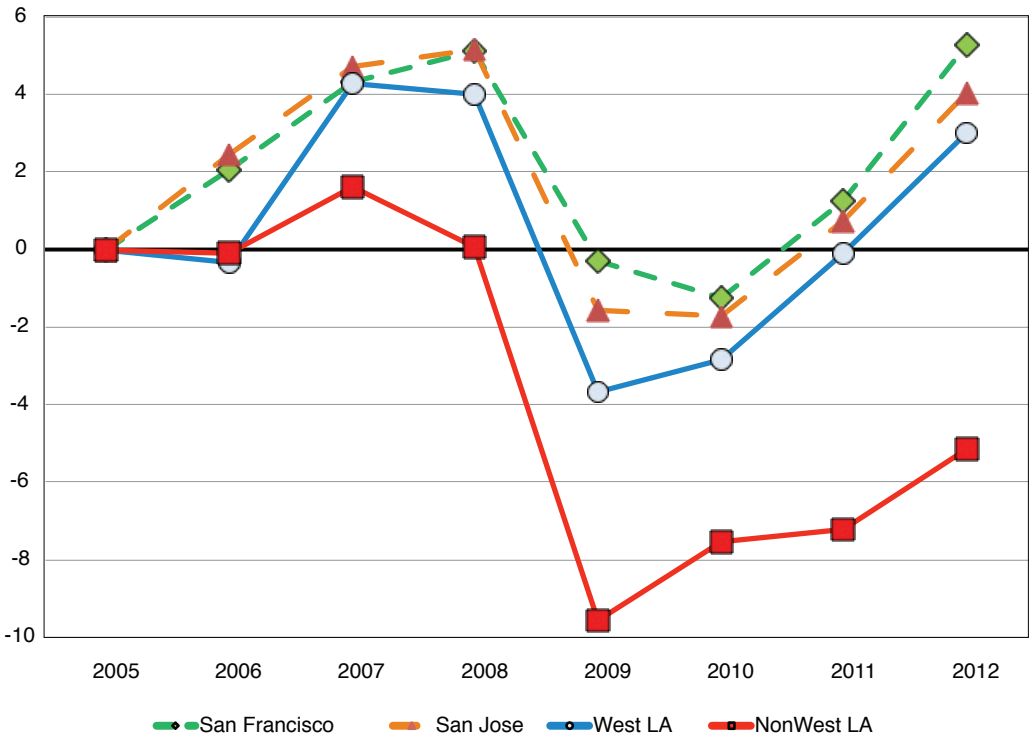
Source: 5-year American Community Survey, 2008-2012. The med-year is 2010.

disparity of human capital within the county also projects the difference in household income within L.A. Figure 7 clearly portrays a positive relationship between CHCI and the median household income by zip codes in L.A. County. In terms of job creation, we also see the dichotomy. We divide L.A. County into West L.A. and the rest of L.A., where West L.A. includes areas such as Silicon Beach. West L.A. has a population of 932,000 and a CHCI of 174. Figure 8 displays a tale of two cities in terms of job growth. From 2005 to 2012, West L.A. had a payroll job growth of 3% while the rest of L.A. took a 5.1% hit in job loss. West L.A., with its high human capital, has seen job growth and higher incomes like other cities with high human capital (San Jose, San Francisco, Seattle, etc.).

Solutions for Los Angeles Economic Problems

If we can agree on the main causes of L.A.'s lagging problems, the next step is to seek solutions. In this report, our main focus will be on how to improve the low level of human capital in L.A.

Figure 8 The Nonfarm Payroll Employment Percentage Change since 2005 for West L.A. and Nonwest L.A.



Source: California Employment Development Department

With regard to the problem of the high cost of living for housing, we suggest that the most straightforward way is to encourage high-density, multi-unit residential housing and to streamline the time, process, and regulations of housing projects. This policy is not only pro-growth but also pro-environment. For the problem of the high cost of living in terms of commuting, L.A. needs to encourage all kinds of alternatives that depend less on the current system of a single person driving his or her car for every commute.

Regarding the problem of the current unfriendly environment for businesses, local governmental leaders should take the lead, as suggested in "A Time For Truth," the L.A. 2020 Commission Report, in becoming more business friendly, more efficient, more innovative, and more welcoming to entrepreneurs.

Human Capital and Public Education

How can we enhance L.A.'s relatively low level of human capital? There are two direct solutions. First, encourage highly educated people to move to L.A. from other cities or abroad. Second, improve L.A.'s public schools in order to build high human capital into the next generation. The second solution will also help achieve the first solution because good school districts will attract more educated people who mostly care about their children's education.

In the U.S., it is well known that public schools in low-income neighborhoods have not been doing an adequate job in terms of student academic performance. The problem is particularly serious in the City of Los Angeles. Why? How can we explain the stunning discrepancies in public school performance within and across cities?

We know public schools in high-income areas tend to do much better than those in low-income areas. The first obvious reason is that in the high-income neighborhood, residents are more educated and therefore expect their children to be educated as well. With good parenting and more resources, teaching is easier and more rewarding because students tend to be more motivated. Positive outcomes attract more educated parents to move to this high human capital area. Virtual cycles continue.

On the other hand, in low-income neighborhoods, residents are more likely to be poor, unemployed, and less-educated. Therefore, their children's education might not be their first priority. With inattentive parenting and fewer resources, teaching is harder and more frustrating because students tend to be less motivated. Negative environments scare more educated parents away from this low human capital area. Vicious cycles perpetuate.

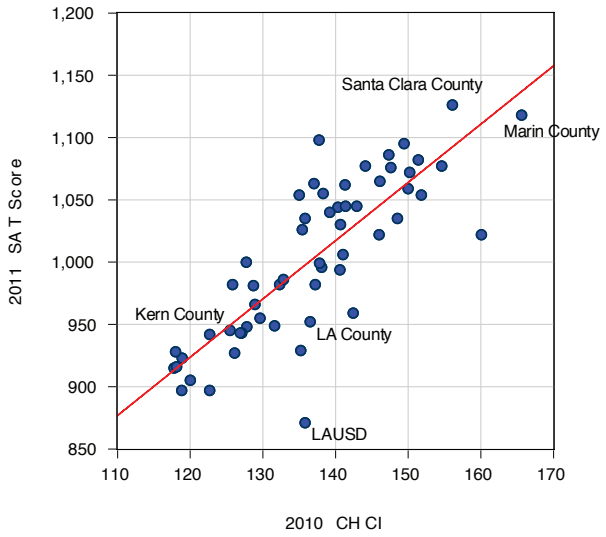
The question is: beyond the human capital of local adult residents, are there any other factors that could explain a student's learning outcomes? Is it possible to turn vicious cycles into virtual cycles? Is LAUSD (Los Angeles Unified School District), the nation's second largest school system, performing worse than other school districts in California?

Note that the First 5 LA/UCLA City Human Capital Index (CHCI) is calculated mainly based on the quantity of education attained by adult residents adjusted by its productivity.[8] We assign residents without a high school diploma a CHCI of 80, residents with a high school diploma a CHCI of 120, bachelor's degrees are assigned a CHCI of 190, and master's degrees or higher a CHCI of 230. The goal of the quality adjusted CHCI is to be an easy barometer for the level of human capital of a city across the nation and over time. How can CHCI, mainly based on adult residents' human capital, explain the outcome of public education?

CHCI and SAT in California

Figure 9 depicts a clear correlation between CHCI and the average SAT score of public high school students in 57 counties and L.A. Unified School District (LAUSD) in

Figure 9 The Correlation between CHCI and SAT in California Counties



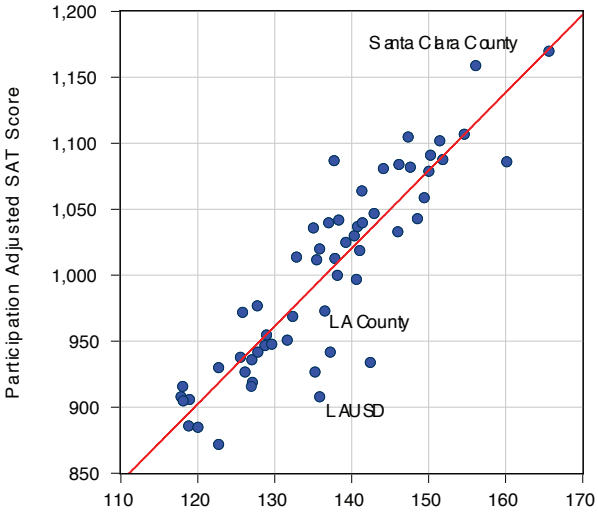
Source: California Department of Education and Anderson Forecast

California.[9] By and large, a county with high adult human capital will see higher SAT scores (for reading and math scores combined; full score: 1600) from the county's youth. In other words, the CHCI is a fair predictor of public education's outcome. However, the devil is in the detail. Some counties, e.g. Santa Clara County (SAT: 1126), is above its predicted red line (around 1080) given its CHCI of 156. In contrast, LAUSD (SAT: 871) falls below its predicted level given her CHCI.

The City of Los Angeles has a CHCI of 135.8, which is slightly lower than L.A. County's 136.5. Given this level of human capital, LAUSD's predicted SAT is supposed to be around 990. However, its actual SAT score is only 871. In other words, LAUSD is underperforming in terms of educating the next generation. To give you another example, let's take a look at Kern County, just north of L.A. County. Its CHCI is 122.7, well below City of Los Angeles's 135.8. However, its SAT score is 942, which is just about what it is supposed to be and is much higher than LAUSD's 871.

We do notice that SAT participation rate is associated with SAT scores as shown in the following regression result. That is, the counties with high SAT participation rates tends to have lower SAT scores. The reason could be that those counties with higher participation rates encourage their students to take the test for the prospect of going to college. Those students who were encouraged (not voluntary) might have lower performance.

Figure 10 The Correlation between CHCI and SAT in California Counties, Adjusted for County Size



Source: California Department of Education and Anderson Forecast

Is LAUSD really underperforming? We will investigate more in the following sections. What can we learn from Santa Clara County's public education? Figure 11 explains the roadmap of how the City of Los Angeles should improve its public education and human capital. The upward-sloping red solid line represents the predicted relationship between

$$SAT\ Score = 262 + 5.9 \times CHCI - 1.96 \times Test\ Participation\ Rate$$
$$(tstat) \qquad (9.9) \qquad (-2.3)$$
$$Adjusted\ R\ Squared{:}0.73 \qquad Observations{:}58$$

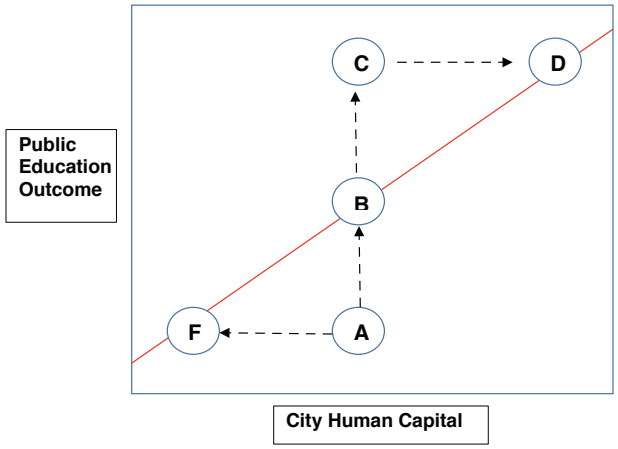
Even when we adjust SAT scores per county based on student's participation, we still can see that LAUSD underperforms while Santa Clara County outperforms as shown in Figure 10.

a city's adult human capital (current generation) and their children's learning outcomes. It is not surprising to conjecture that high public school outcomes today will lead to high city human capital in the future. If LASUD is really

underperforming, then its position is currently located at underachieving Point A. The first step is to improve its public education outcome to Point B.

But even Point B is not good enough. As we show in Figure 4, L.A.'s human capital is falling behind other major cities. Therefore, the second step is to outperform its destined result of Point B and move to Point C. If Santa Clara County could do it, so can LAUSD. Over time, when the next generation matures and becomes the main workforce of L.A., it will naturally improve the city's human capital level to Point D: high human capital and positive school outcomes. If L.A. fails to improve, when these underachieveing children grow up, L.A. human capital might decline even further to Point F.

Figure 11 The Dynamic Relationship of City Human Capital and Its Public Education Outcome in the Long Run

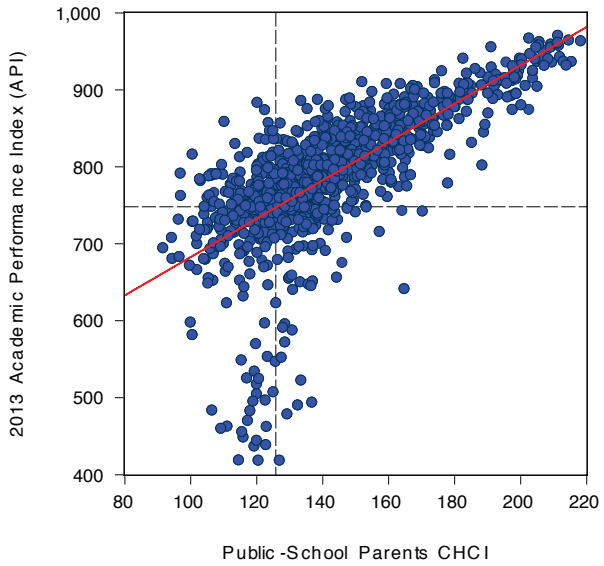


CHCI and Academic Performance Index (API) in California

The previous empirical evidence is using county level data with a small sample size of 58. Moreover, SAT is only for high school students and students are not required to take the test. For instance, only 45% of enrolled students take the SAT in L.A. County and 53% in LAUSD. So here we use another common measurement of K-12 students' academic performance—Academic Performance Index (API), which all Californian public school students are required to take. This allows us to take a look at a more detailed relationship between CHCI and student learning outcomes by examining 983 school districts and 9199 individual schools in California.

Here we calculate CHCI from a more direct source: the education attainment of students' parents. In California, schools and districts will ask students to report their parents' education information. We use the same method of calculating CHCI to develop this public-school parents' (PSP) CHCI for each school and district. In Figure 12, each dot represents a school district in California with its corresponding PSP CHCI and API. Again, we see a clear upward sloping line, which means the PSP CHCI predicts the student's learning outcome in that district. Note that LASUD's PSP CHCI is 125.8 and its API is 748. (See the intersection of the dashed lines in Figure 12.) That is to say, given its PSP CHCI, LAUSD's performance is just what is expected, no better no worse.

Figure 12 The Correlation between Public-School Parents' CHCI and Students' API among 983 School Districts in California



Source: California Department of Education and Anderson Forecast Explorer, 2010 inflation adjusted dollars, by Census block group

However, in Figure 12, we see some deviation of each district's performance from its predicted line according to CHCI. What other factors could explain these deviations? In addition to the CHCI, we consider the following factors based on our prior hypothesis: (1) The percentage of enrolled students who are socioeconomically disadvantaged or in poverty for each school. These students will get a free or reduced price for meals. (2) The school is in L.A.

County (if so 1; if not 0). There are 78 districts (2163 public schools) in L.A. County. (3) Percentages of enrollments in elementary schools and high schools, (middle schools are the benchmark).

schools in L.A. County than other schools by 28 points! In other words, as a whole L.A. County is doing better than its expected level (red line in Figure 12). This result is consistent with that in Figure 10.

$$API = 463 + 2.04 \times CHCI - 0.34 \times Poverty + 28 \times LA\ County + 1.26 \times Elementary - 0.25 \times High$$

(tstat) (13) (-2.2) (6.2) (3.9) (-1.2)

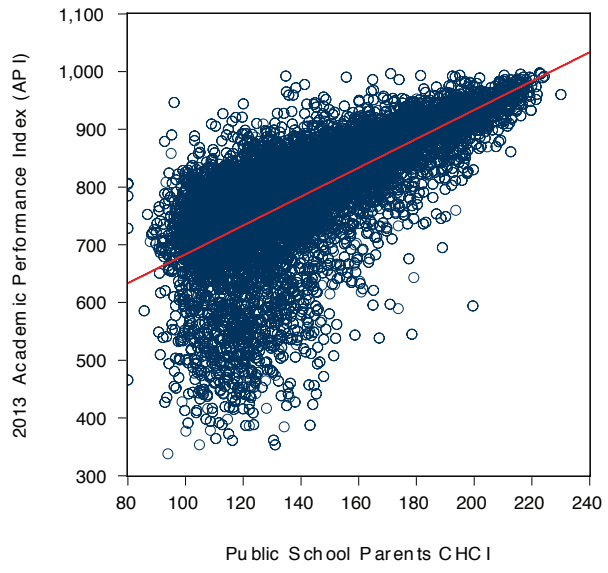
Adjusted R Squared:0.64 Observations:983

The regression results are presented above. All the factors are statistically significant, except for the high school percentage. Let's explain the results in plain English. First, other things being equal, if the school's PSP CHCI improves by 10, meaning that the parents' have one more schooling year of education on average, we predict the school's API will increase by 20 points. The CHCI is not only statistically but also economically significant.

Second, after controlling PSP CHCI, the influence of poverty from a student's family is less important than a parent's education level in both economical and statistical ways. Third, other things being equal, API is better in

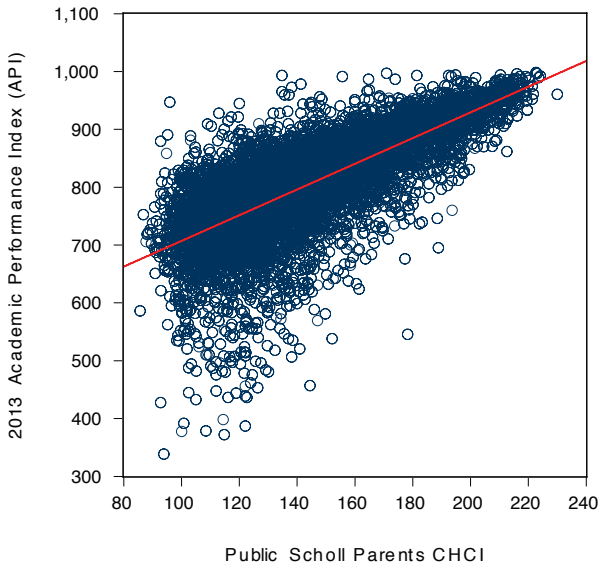
Next, let's take a look at the detailed relationship of API and PSP CHCI for individual schools as shown in Figure 13. Again, we can get an evident association between PSP CHCI and its API. Note that in addition to some normal deviations of dots from the regression line, there are a certain number of schools, located in the southwest corner of the figure, which are not explained well by CHCI. So here we add one more variable: alternative school dummy (if so 1, if not 0) to see if it can explain this. Alternative schools are serving those highly mobile and at-risk students based on California's Alternative Schools Accountability Model (ASAM). Figure 13a presents the same correlation excluding those alternative schools. As a result, we see fewer dots in the southwest corner.

Figure 13 The Correlation between Public-School Parents' CHCI and Students' API among 9199 Public Schools in California



Source: California Department of Education and Anderson Forecast

Figure 13a The Correlation between Public-School Parents' CHCI and Students' API among 8963 Public Non-alternative Schools in California



Source: California Department of Education and Anderson Forecast

API = 522 + 2.01 × CHCI - .19 × Poverty - 142 × Alternative + 16 × LA County + .18 × Elementary-.57 × High
(tstat) (23) (-2.3) (-29) (7.9) (11) -(20)
Adjusted R Squared:0.72 Observations:9199

CHCI is still the most important factor that determines school's API. Not only is CHCI a direct indicator of parents' education level but it is also a good indicator of families' income and other socioeconomic factors as shown in Figures 5 to 7. Poverty is statistically significant but still not economically significant. Why? One of the reasons could be that the factor is not informative enough because the majority of students fall into the category for free or reduced fee meals (California: 59%, L.A. County: 67%, and LAUSD: 79%). It is not surprising to see those students performing worse than normal students at alternative schools (142 points lower). This factor could explain those dots in the southwest corner in Figure 13. Again, other things being equal, schools in L.A. County are performing better than its predicted level. If we add LAUSD as a factor in the regression, we find no evidence that LAUSD is either doing better or worse than it is expected to be after controlling relative variables.

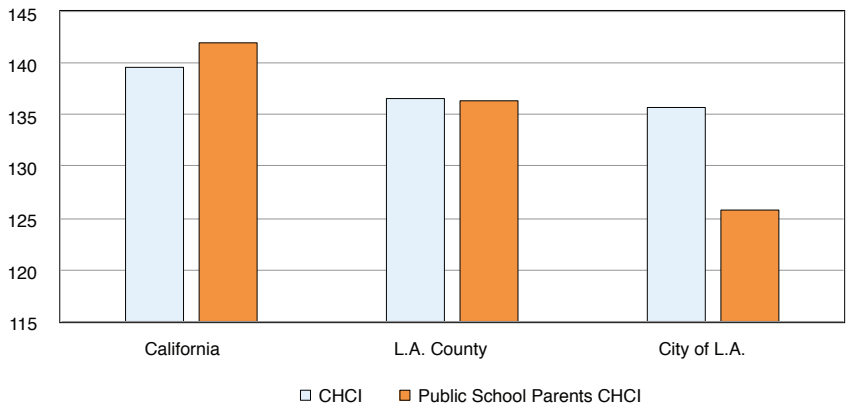
Revisit Human Capital in City of Los Angeles

Here it seems we see contradictory evidence. In Figures 9 and 10, it suggests that LAUSD is underperforming by considering its level of city human capital. In Figures 12 and 13, it suggests that LAUSD is neither under- or over-achieving. What is going on? There may be two reasons for this disparity. First, the measurements of students' academic performances are different. The former is the voluntary SAT score, designed by College Board; the latter is the mandatory APT score, designed and calculated by the California Department of Education. We are not sure which one is a better measurement.

Second, the former figures use CHCI based on the data from the American Community Survey for all adult residents from the U.S. Census. Note that we also examine the CHCI for the ages 46 to 64 (see following section). Their CHCIs are very similar. This CHCI is more like social or community human capital. On the other hand, the latter ones use parents' educational attainment data as reported by those students enrolling in public schools. This public school parents' CHCI is more like an individual or family CHCI than a community one.

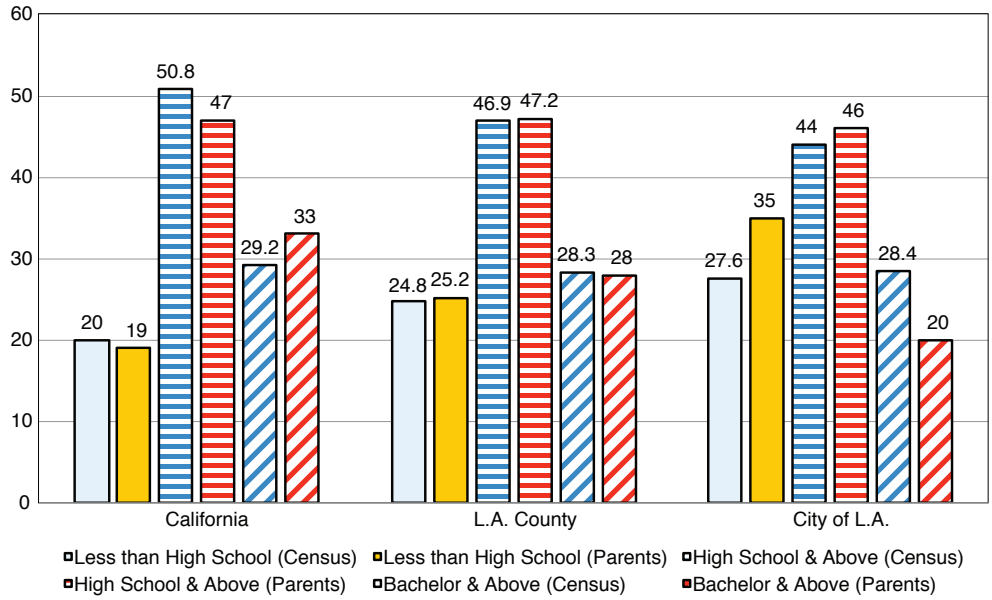
Let's compare CHCI based on Census data and PSP CHCI based on individual students' reports. For California, its CHCI is 139.7 and its PSP CHCI is 141.9. They are pretty similar. For L.A. County, its CHCI is 136.5 and its PSP CHCI is 136.4. They are also almost the same. For the City of Los Angeles (LAUSD), its CHCI is 135.8 but its PSP CHCI is only 125.8! The stunning discrepancy is shown in Figure 14. According to the Census, 27.6% of City of L.A. residents have less than a high school degree while according to public school data, 35% of LAUSD parents have less than a high school degree. The difference is illustrated in

Figure 14 The CHCI and Public School Parent CHCI for California, L.A. County, and City of L.A.



Source: 5-year American Community Survey, 2008-2012 and California Department of Education

Figure 15 The Components of CHCI and Public School Parents CHCI for California, L.A. County, and City of L.A.



Source: 5-year American Community Survey, 2008-2012 and California Department of Education

Figure 15. The Census shows 28.4% of City of L.A. residents have a bachelor's degree or higher while according to public school data, only 20% of LAUSD parents have that level of educational attainment.

Why is the PSP CHCI in LAUSD much lower than its CHCI in the City of L.A.? There are three possible reasons. (1) LAUSD covers a geographic area larger than the City of Los Angeles. Those additional areas in LAUSD are predominantly low-educated area, such as East Los Angeles, South Gate, Huntington Park, etc. (2) In the City of L.A., more educated residents send their children to study in private schools. According to the American Community Survey 2010, K-12 private school's enrollment is 13.3% of all K-12 students in the City of L.A., higher than 11.1% in L.A. County and 9.8% in California. (3) There are more undocumented immigrants who do not participate in Census survey in the city than county or state. We are not sure which reason is more important than others.

In summary, we suggest two things. First, based on its aggregate CHCI, LAUSD or the City of L.A. is underperforming. By and large, it implies that as a whole city, L.A. could do a better job. Second, based on its individual public-school parents CHCI, LAUSD does not underperform compared to other schools in California. The overall disappointing performances in LAUSD simply reflect its more difficult background of its student demographics. However, there is no room for complacency. Put it differently, L.A. is already in Point F of Figure11! Compared to other cities in the nation and in the world, L.A. will not be competitive with such a low CHCI, by both social and individual standards. L.A. has to improve to Point B, C and D in Figure 11.

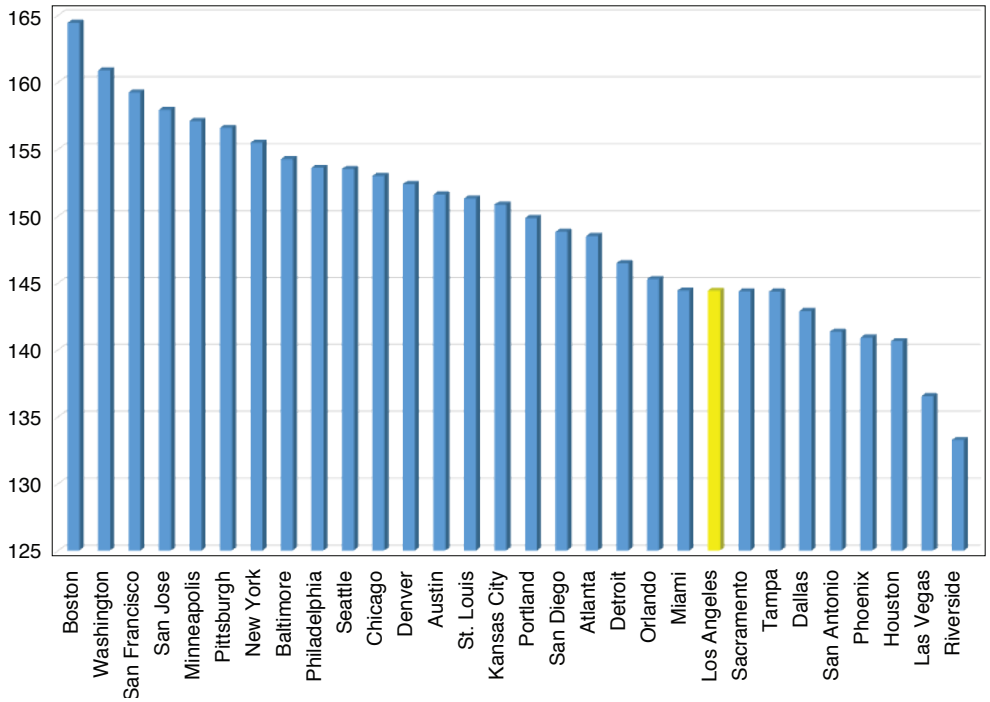
Note that there is no reason that improving public education should only start from kindergarten. On the contrary, it is evident that the focus on quality early childhood education will significantly increase the success of K-12 education.

City Human Capital Index by Age Category

So far we have shown the aggregate CHCI by metros, counties, and zip codes. How will it look differently based on different age cohorts? Here, we use a similar formula to measure CHCI for the (1) young ages of 25 to 34, (2) ages 35 to 44, (3) ages 45 to 64, and (4) elderly ages above 65. In 2010, L.A.'s CHCI for ages 25 to 34 is 144.4; its CHCI for ages 35 to 44 is 141.3; its CHCI for ages 45 to 64 is 141.1; and its CHCI for ages above 65 is 135.1. As cohorts age, their CHCI decline. This simply explains the expansion of higher education in America after World War II.

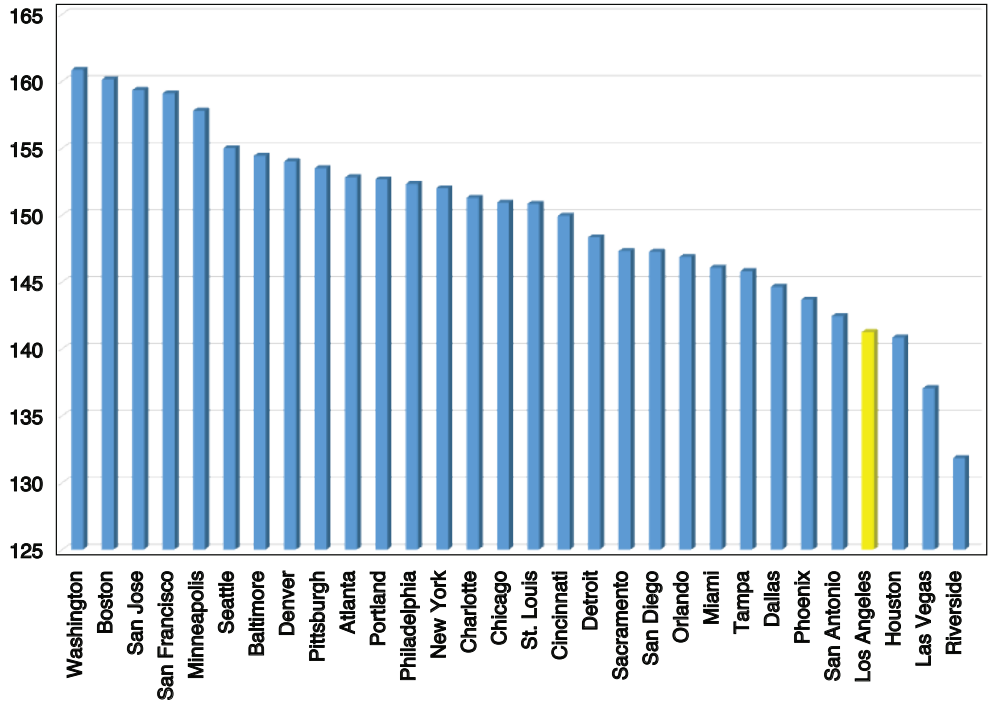
The rankings of CHCI for the 30 largest metros based on its corresponding age cohorts are displayed in Figures 16 to 19. We find that L.A. ranks better in the young cohort (ages of 25 to 34) and the elderly cohort (ages above 65). Why? We suggest three possible reasons. First, L.A. used to have 20% of manufacturing jobs in 1990 that did not require high skill and education. Unfortunately, those jobs are now gone but less-educated workers (ages of 35 to 64) are still struggling to find a job. Second, the Great Recession and its aftermath reduces the attraction of young and less skill immigrants from Mexico and Latin America. Third, L.A. is home of many colleges. When the college students graduate, they stay. So the young cohort has a relatively higher CHCI. Because of the poor public schools in L.A., when residents have children, those who care about education might leave the city, therefore driving down the middle-age CHCI. When they are older, when they don't need to worry about their children's education and finding a good job, the more educated and the rich come back to expensive L.A. to retire.

Figure 16 2010 City Human Capital Index for Ages 25 to 34 in the 30 Largest Cities



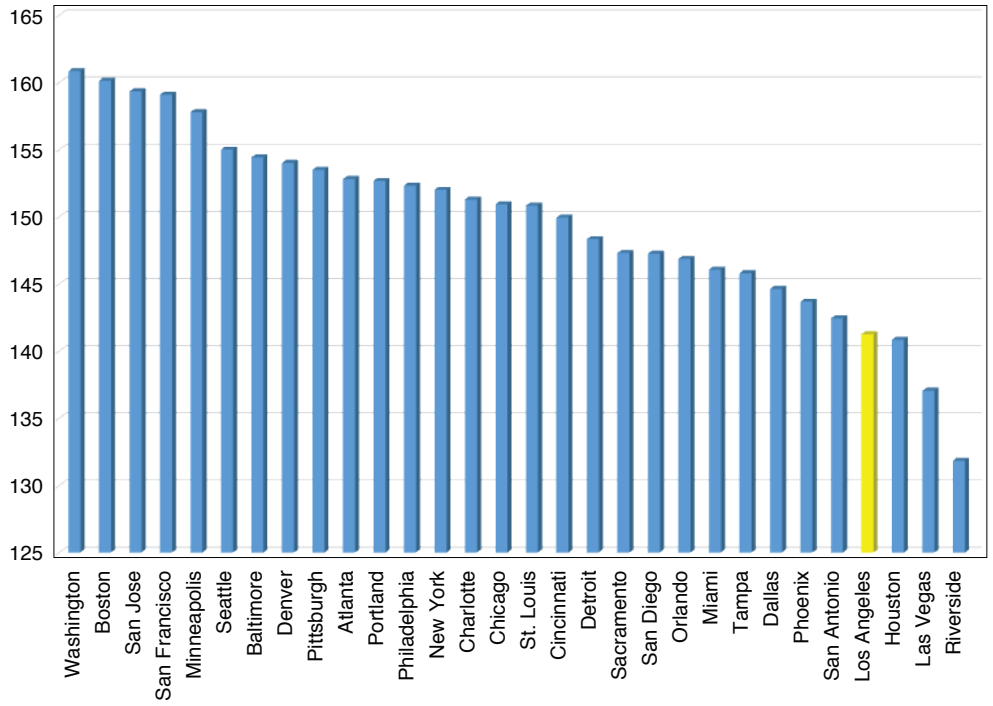
Source: 5-year American Community Survey, 2008-2012. The med-year is 2010

Figure 17 2010 City Human Capital Index for Ages 35 to 44 in 30 Largest Cities



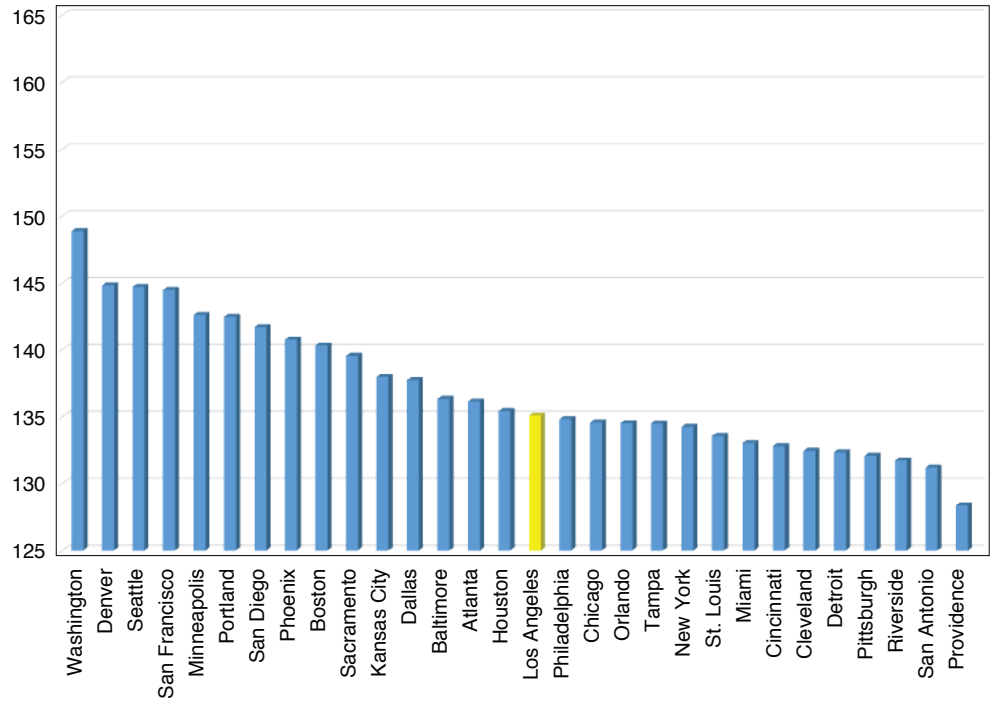
Source: 5-year American Community Survey, 2008-2012. The med-year is 2010.

Figure 18 2010 City Human Capital Index for Ages 45 to 64 in 30 Largest Cities



Source: 5-year American Community Survey, 2008-2012. The med-year

Figure 19 2010 City Human Capital Index for Ages Above 65 in 30 Largest Cities



Source: 5-year American Community Survey, 2008-2012. The med-year

Bifurcated L.A. Might Need Bifurcated Policies

Combined Figures 16 to 19 and Figure 8, we know that young Angelenos with high human capital living in West L.A. are more likely to get a good job while those middle-age Angelenos with low human capital living in the rest of L.A. are not. In the long run, it is imperative to enhance human capital through improving our public education as suggested in Figure 11. But how about in the short and medium run? How can we help those middle-age Angelenos with low education who got trapped in the 21st century to get a job?

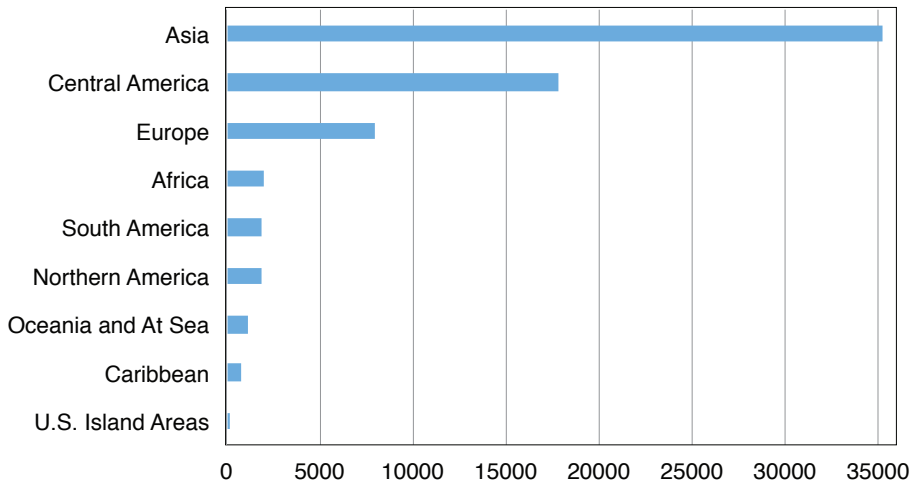
Figures 17 and 18 might provide cue. Two cities, Houston and San Antonio, with low human capital still see impressive job growth over the past two decades, mostly because of its business-friendly environment. Therefore, L.A. could develop bifurcated policies toward these two L.A.s. For high human capital L.A., we continue to maintain its high quality of living to attract and retain the best and most creative talents. For low human capital L.A., we provide more business friendly incentives to generate jobs for those less-educated to gain foot.

Migration of Human Capital

As we mentioned in the previous report,[10] the exodus of high-skill workers due to the contraction of the aerospace industry out of L.A. with the influx of low-skill immigrants into L.A. in the 1990s explained the deep slump of L.A. human capital. What is the current migration trend in L.A.? Based on the latest data, the 5-year American Community Survey for county-to-county migration flows, we can see the migration pattern on average in the midst of the Great Recession during the period of 2007 to 2011. During this period, L.A. County saw a net domestic migration outflow of 115,651. Meanwhile, L.A. has a net international migration inflow of 68,856 as shown in Figure 20. As a result, the total net migration is an outflow of 46,795.

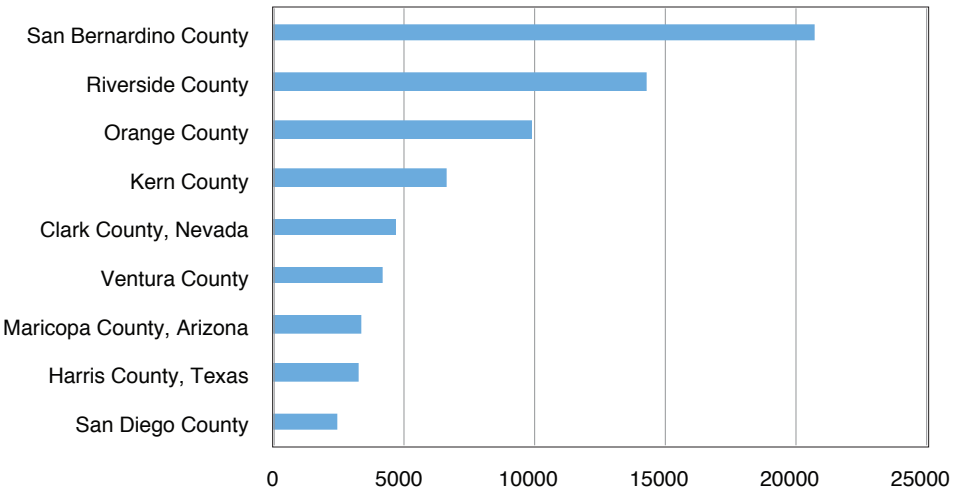
From Figure 20, we can see that most of the international migration is from Asia, followed by Central America, including Mexico, and finally Europe. While we do not know the education attainment of these international immigrants, we do know about domestic migration's human capital and which counties they are moving from and where

Figure 20 Net International Migration Inflow from Foreign Countries into L.A. County, 2007-2011



Source: U.S. Census County-to-County Migration Flows based on 5-year American Community Survey, 2007-2011

Figure 21 Net Domestic Migration Outflow from L.A. County to Other Counties, 2007-2011



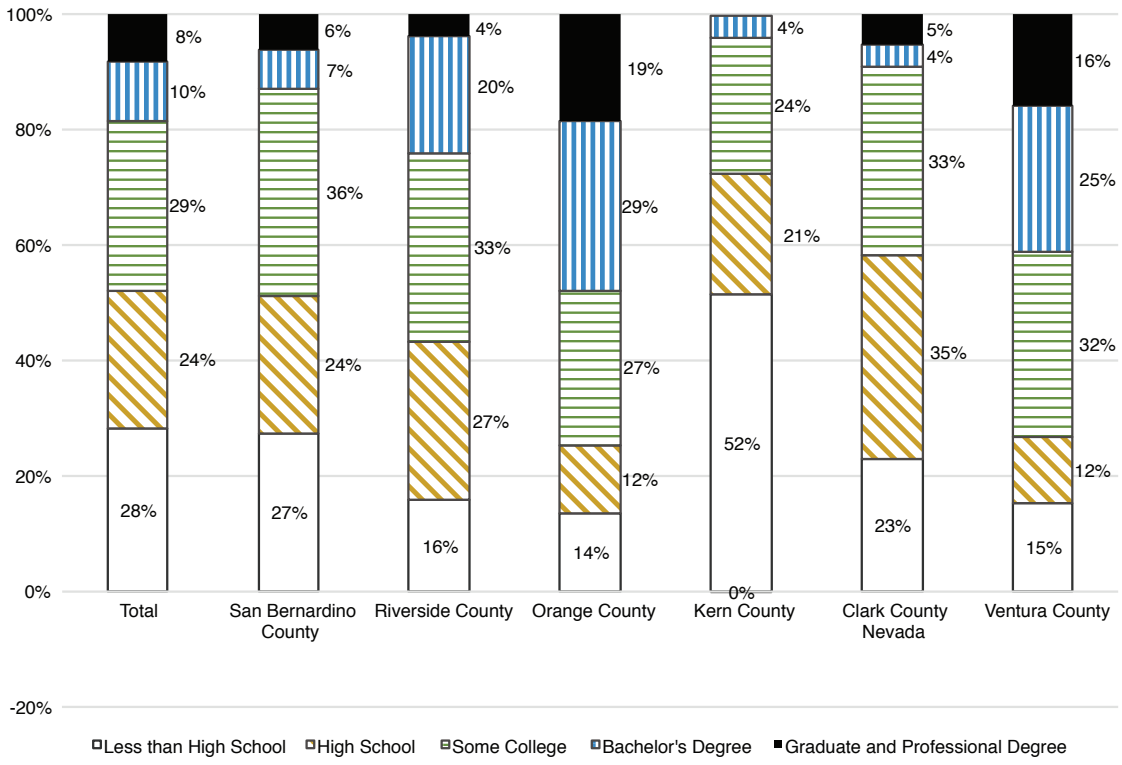
Source: U.S. Census County-to-County Migration Flows based on 5-year American Community Survey, 2007-2011

they move to. Figure 21 displays the 9 largest counties attracting residents moving from L.A. It is not surprising to see most of the migration outflow is to L.A. neighboring counties, such as San Bernardino, Riverside, and Orange Counties.

How about the human capital component of migration? On the bar furthest to the left in Figure 22, we see the breakdown of education attainment for the net migration. 28% is less than high school, 24% is with a high school diploma, 29% is with some college, 10% is with a bachelor's degree, and 8% is with a graduate or professional degree. That said, on average, during the period of 2007 to 2011, low-educated residents out migrate more than high-educated residents. This might partly explain the CHCI improvement in L.A. over this period.

For these six largest destination of out migration from L.A., we can see an interesting dichotomy. Residents who moved to San Bernardino, Riverside, Kern, and Clark Counties, Nevada tend to be less educated while those who moved to Orange County and Ventura County tend to be

Figure 22 The Education Attainment Percentage of L.A. Migration Flow, 2007-2011



Source: U.S. Census County-to-County Migration Flows based on 5-year American Community Survey, 2007-2011

more educated. Why? There might be three reasons. First, the former counties have fewer high-skilled jobs so they attract fewer high-educated workers while the latter have more high-skilled jobs so attract more high-educated workers from L.A. Second, the cost of living in the former counties is lower, thus attracting more lower-educated workers who are less likely to be able to afford living in L.A. Third, Orange County and Ventura County have better schools so they attract higher-educated parents.

Note that this was the migration pattern for L.A. during the Great Recession. We are not sure that in a period of normal expansion, the migration of human capital will remain the same.

Conclusions

The take-away points from this report are as follows:

- L.A. has anemic job growth over the past two decades as a whole. West L.A. with high human capital has a better job recovery while the rest of L.A. with low human capital still lags behind.
- In the long run, it is imperative for L.A. to improve its human capital by improving its public education and by attracting higher-educated talents to L.A.
- In the short run, L.A. could become more business friendly to create jobs particularly for those with low human capital.
- L.A. County's human capital is low compared to other major metros, but the City of L.A.'s human capital could be much lower.
- Considering its student demographics, LAUSD is neither outperforming nor underperforming. But it is crucial for LAUSD to outperform its public education outcome for our next generation.

Endnotes

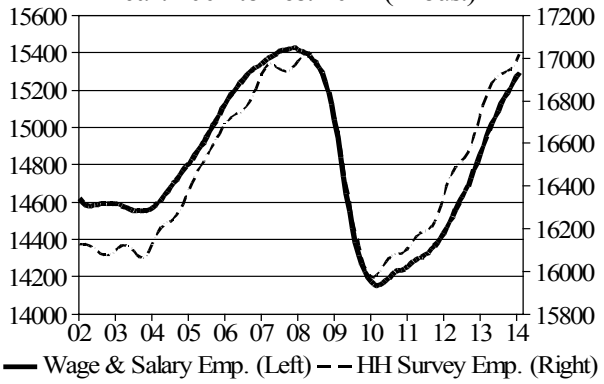
1. *See William Yu, "What Predicts the Long-Term Home Price Appreciation of A City?" Anderson Forecast, June 2013.*
2. *http://www.tomtom.com/en_gb/trafficindex/*
3. *http://www.thumbtack.com/ca/los-angeles/#2013/city*
4. *The regression assumes that the business friendliness ranking and the relative housing affordability do not change substantially during the sample period (1990 to 2014).*
5. *We cap the value of Housing Affordability Index to 260 because we assume that when the index above this threshold level, the affordability is less relevant and the extreme affordability is driven mostly by the lack of housing demand dominated by the demand side. The cities with the value higher than 260 are Atlanta, Cincinnati, Cleveland, Columbus, Detroit, Rochester, St. Louis, and Wichita.*
6. *The meaning of the coefficient value of 0.007 for business friendliness is that if L.A.'s business friendliness increases from the current 47th to 7th, its job growth over this 23-year period is predicted to be 28% higher.*
7. *See William Yu, "Human Capital: The Key to Los Angeles' Long-Term Prosperity." Anderson Forecast, March 2013.*
8. *See William Yu, "Growing Apart in Los Angeles." Anderson Forecast, December 2013.*
9. *Alpine County is not in the sample because there is no students taking SAT due to its small population.*
10. *See William Yu, "The Evolution of Human Capital, Workforce, and Innovation in Los Angeles over the Past Two Decades." Anderson Forecast, September 2013.*

THE UCLA ANDERSON FORECAST FOR CALIFORNIA

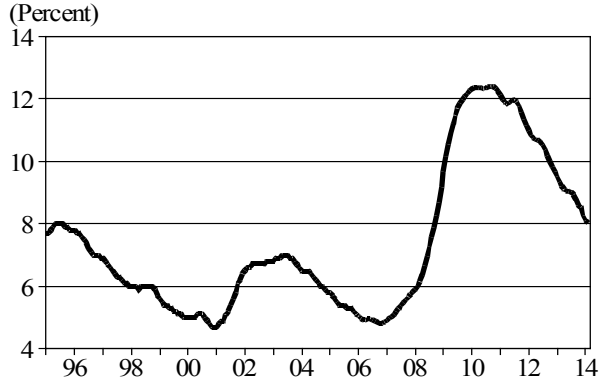
MARCH 2014 REPORT

Charts

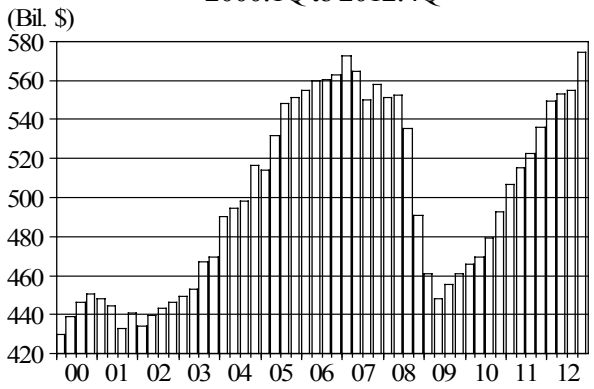
California Employment (6-mo. moving avg.)
Jan. 2002 to Feb. 2014 (Thous.)



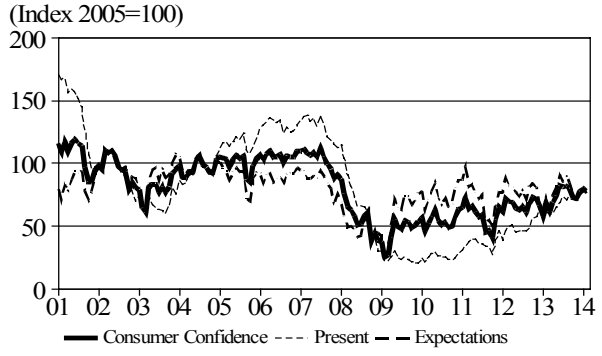
California Unemployment Rate
Jan. 1995 to Feb. 2014



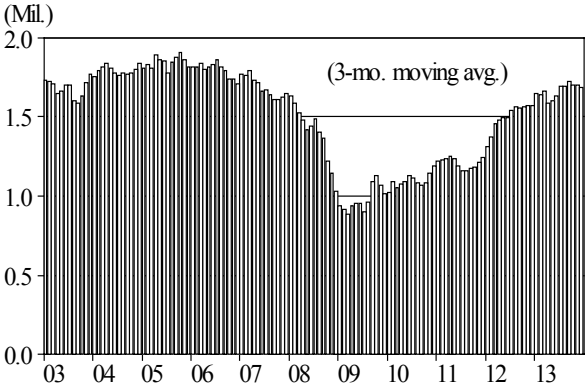
Taxable Sales in California
2000:1Q to 2012:4Q



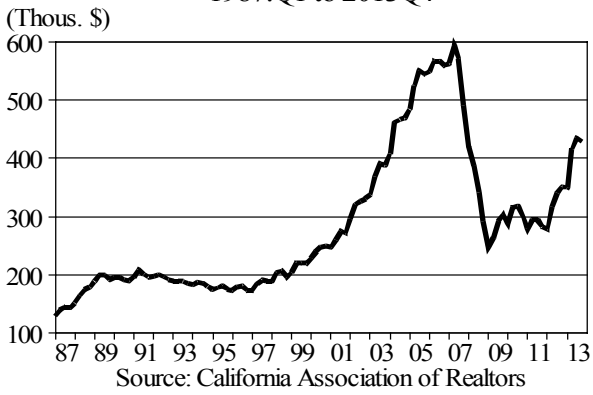
Indexes of Consumer Attitudes
Conference Board
Jan. 2001 to Feb. 2014



California New Car Registrations
Jan. 2003 to Dec. 2013

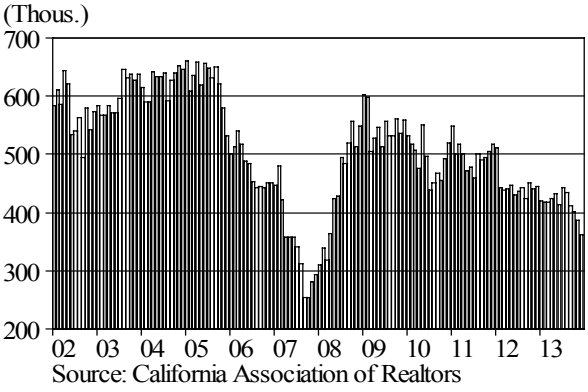


California Existing-Home Prices
1987:Q1 to 2013Q4



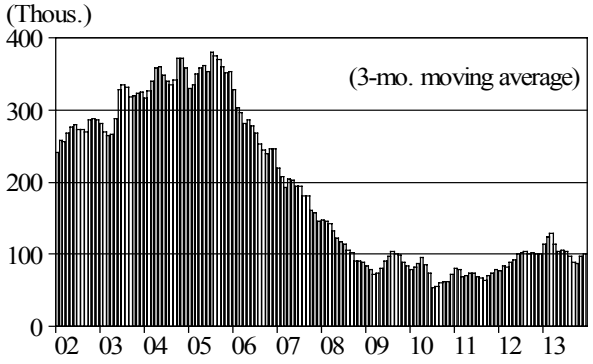
Source: California Association of Realtors

California Existing-Home Sales
Jan. 2002 to Dec. 2013

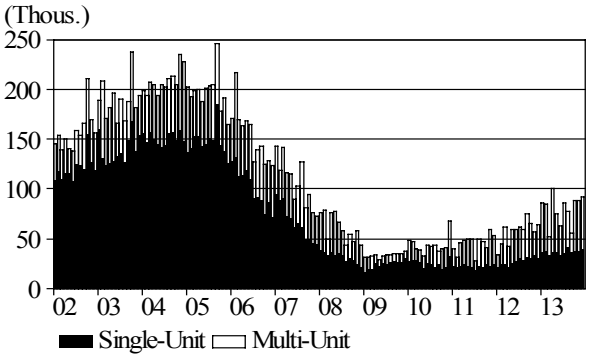


Source: California Association of Realtors

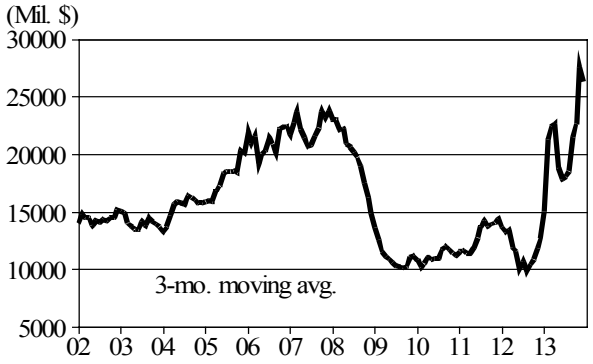
New One-Family Houses Sold
Western Region
Jan. 2002 to Dec. 2013



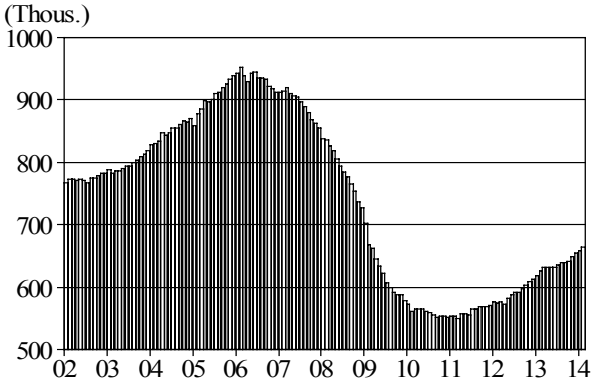
New Residential Units Through
California Building Permits
Jan. 2002 to Dec. 2013



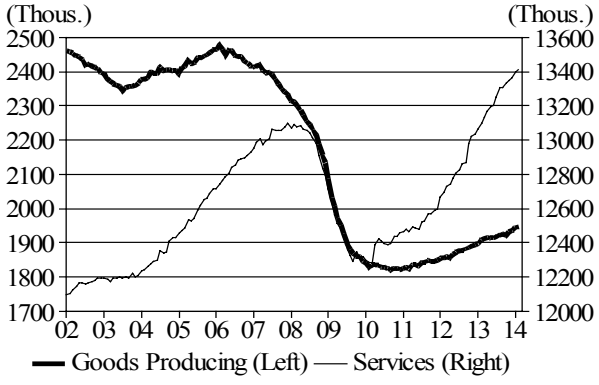
Building Permit Valuations
Total Nonresidential
Jan. 2002 to Dec. 2013



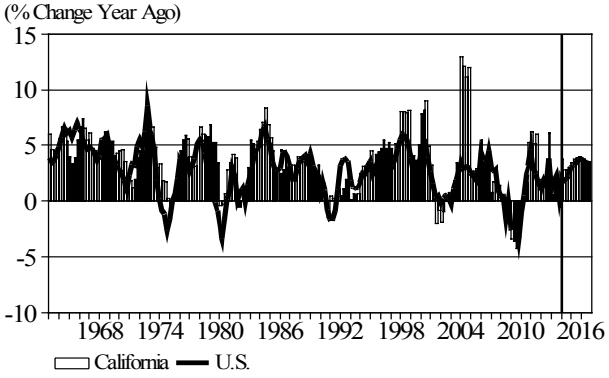
California Construction Employment
Jan. 2002 to Feb. 2014



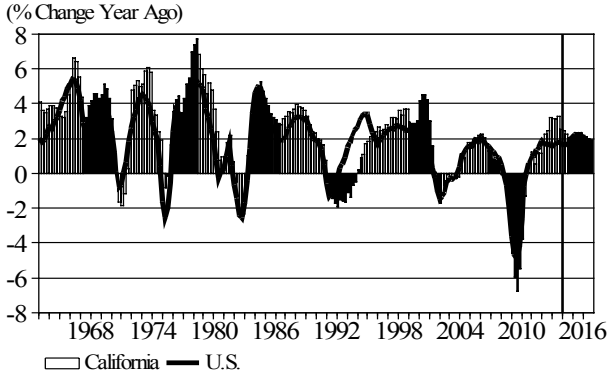
California Employment by Sector
Jan. 2002 to Feb. 2014



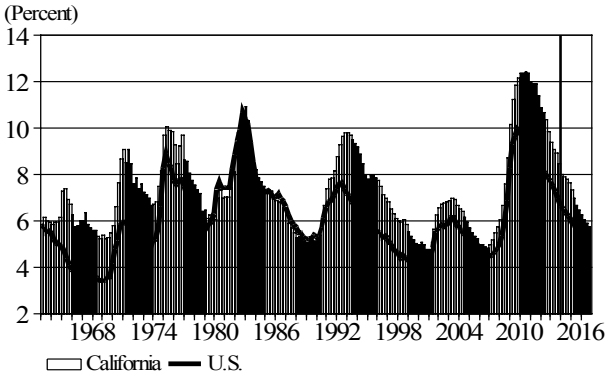
Real Personal Income
California versus U.S.



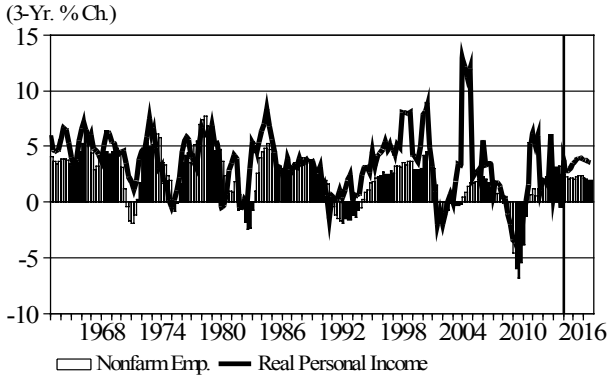
Nonfarm Employment
California versus U.S.



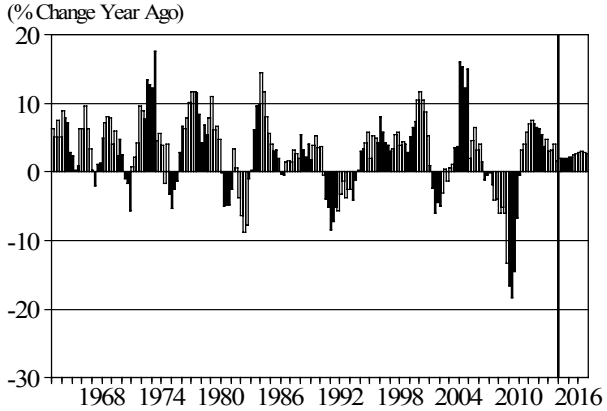
Rates of Unemployment
California versus U.S.



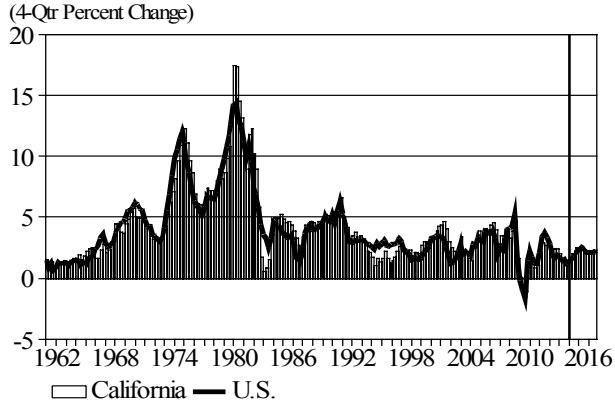
California Employment versus
Real Personal Income



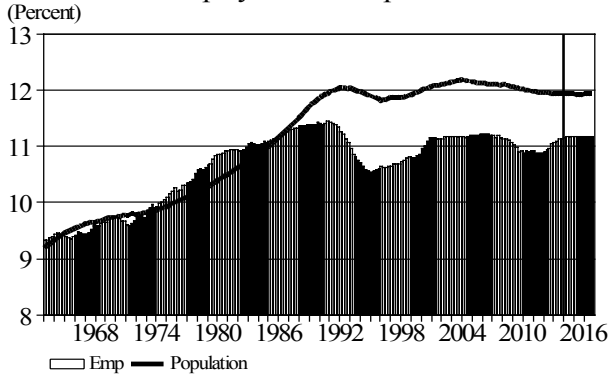
Real California Taxable Sales
(% Change Year Ago)



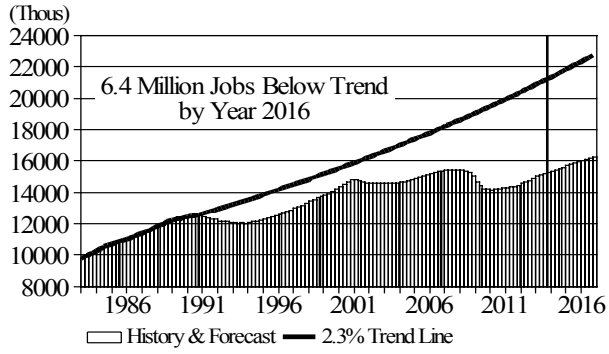
California Consumer Price Inflation
(4-Qtr Percent Change)



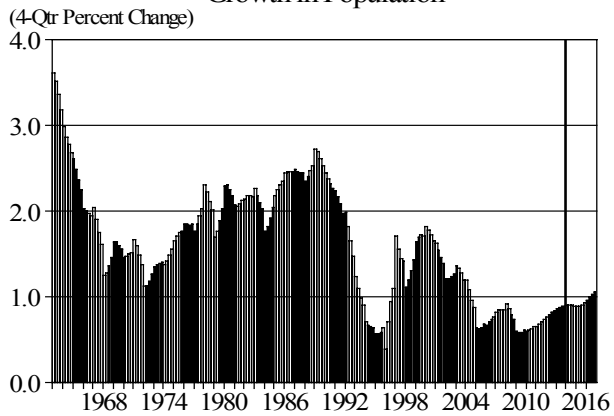
California Share of U.S.
Employment and Population
(Percent)



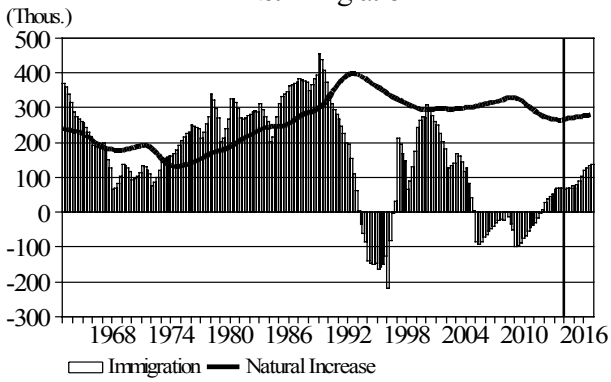
California Nonfarm Employment
History & Forecast
Vs. 2.3% Trend from 1990:3
(Thous)



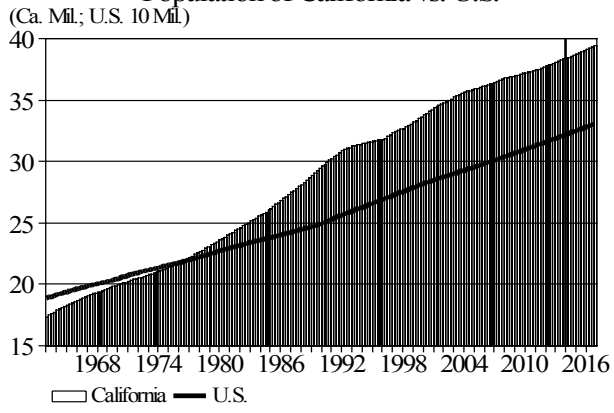
Growth in Population



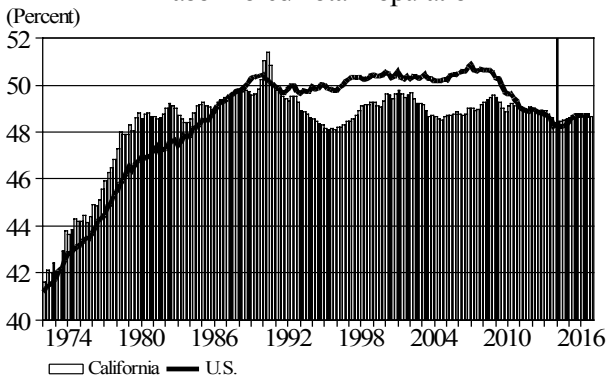
California Net Natural Increase and Net Inmigration



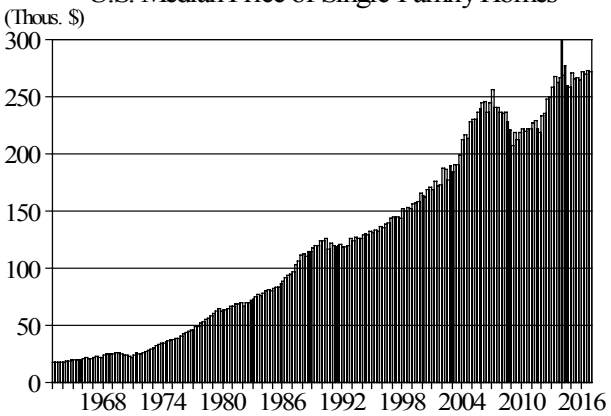
Population of California vs. U.S.



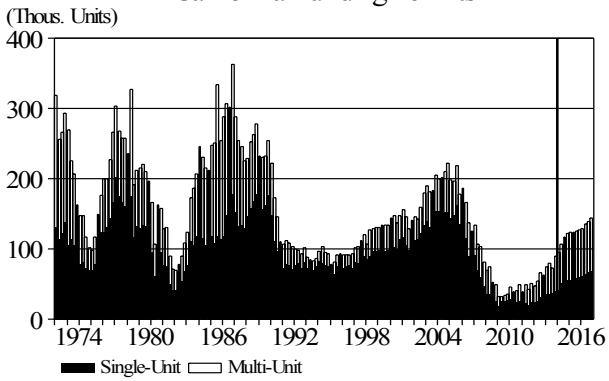
Gross Labor Force Participation Rate
Labor Force/Total Population



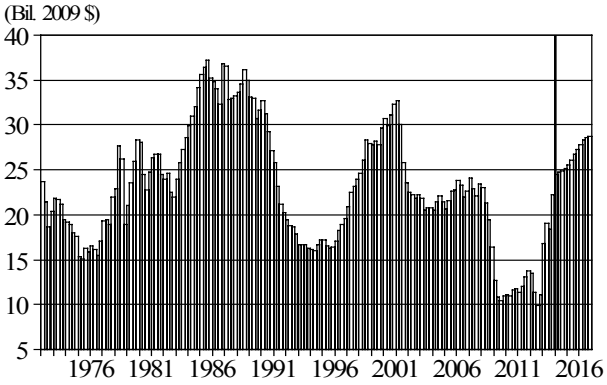
U.S. Median Price of Single-Family Homes



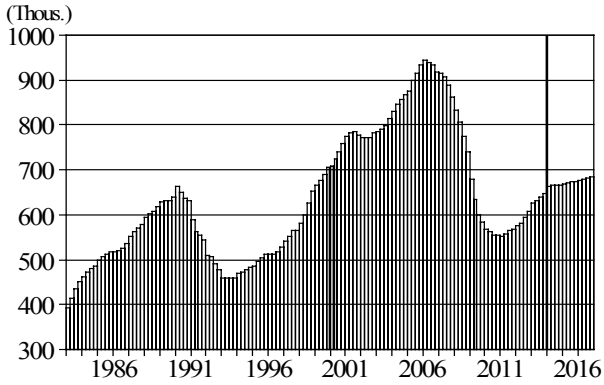
New Residential Units Through California Building Permits



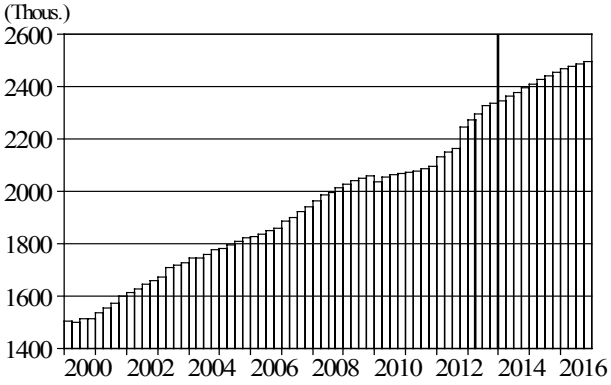
Real Value of Nonresidential Construction in California



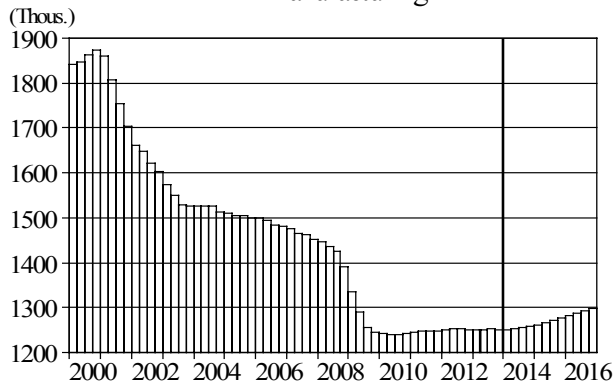
California Employment in Construction



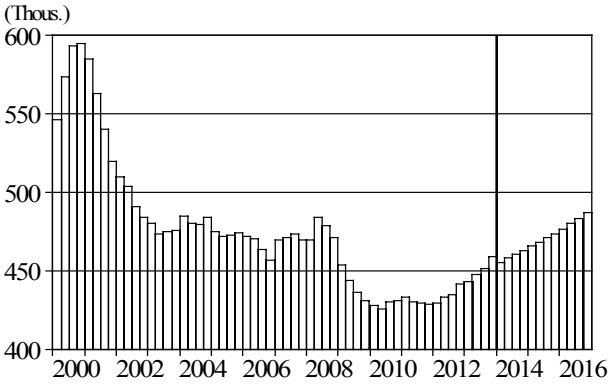
California Employment
in Education and Health Services



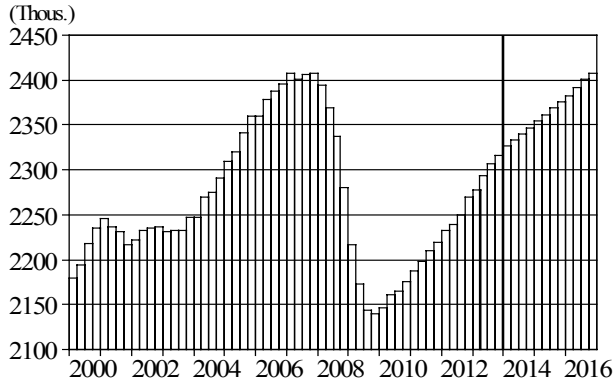
California Employment
in Manufacturing



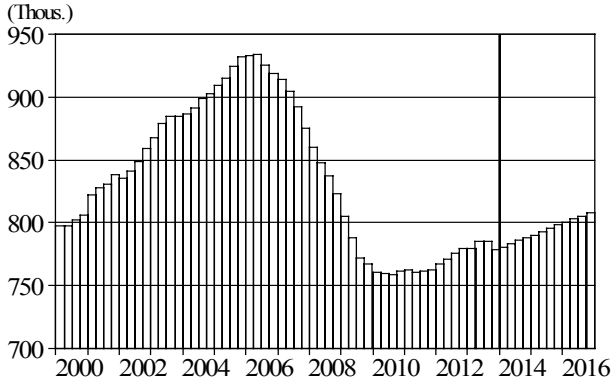
California Employment
in Information



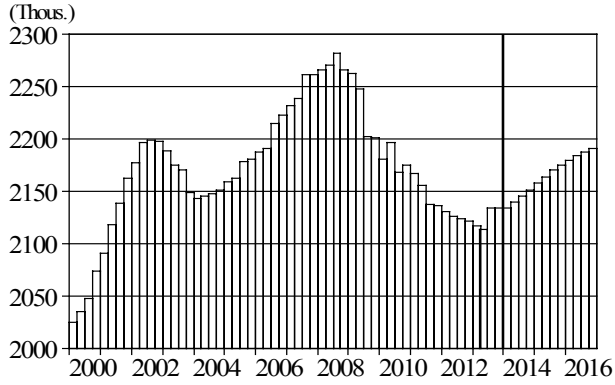
California Employment
in Trade



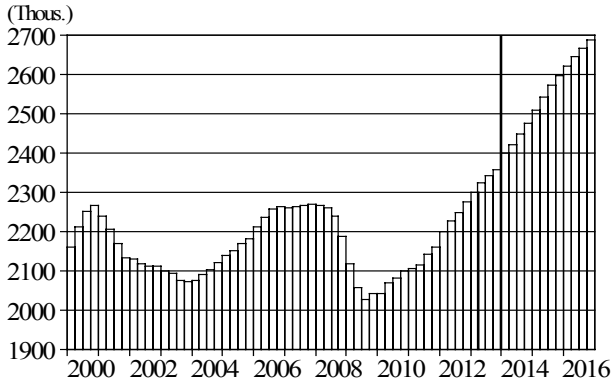
California Employment
in Financial Activities



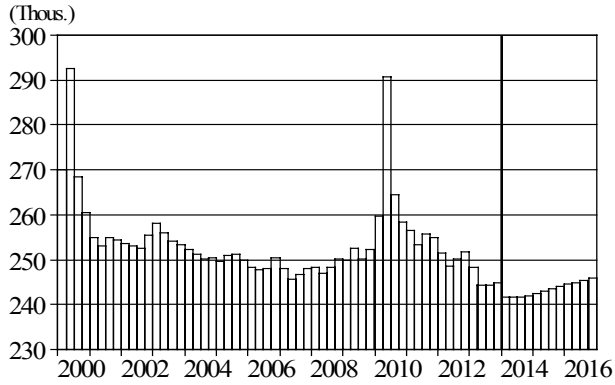
California Employment
in State and Local Government



California Employment
in Professional & Business Services



California Employment
in Federal Government



THE UCLA ANDERSON FORECAST FOR CALIFORNIA

MARCH 2014 REPORT

Tables

Table 1. Summary of the UCLA Forecast for California

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Personal Income, Taxable Sales, and Price Inflation (%Change)											
Personal Income (Bil.$)	1499.5	1564.4	1596.3	1536.4	1579.1	1683.2	1768.0	1811.1	1900.8	2014.3	2134.1
Calif. (% Ch)	7.4	4.3	2.0	-3.7	2.8	6.6	5.0	2.4	5.0	6.0	6.0
U.S.(% Ch)	7.3	5.3	3.6	-2.8	2.9	6.1	4.2	2.8	3.8	5.8	5.8
Pers. Income (Bil. 2009$)	1582.8	1604.8	1595.5	1536.4	1559.0	1630.0	1676.4	1693.5	1745.8	1811.9	1878.3
Calif. (% Ch)	3.9	1.4	-0.6	-3.7	1.5	4.6	2.8	1.0	3.1	3.8	3.7
U.S. (% Ch)	4.6	2.7	0.6	-2.7	1.2	3.6	2.3	1.7	2.5	3.8	3.6
Taxable Sales (Bil.$)	559.5	561.3	532.4	456.6	477.0	520.2	558.0	582.7	604.6	632.1	664.2
(% Ch)	4.3	0.3	-5.2	-14.2	4.5	9.1	7.3	4.4	3.8	4.5	5.1
(Bil. 2009$)	590.6	575.9	532.1	456.5	470.9	503.7	529.1	544.9	555.3	568.6	584.6
(% Ch)	0.9	-2.5	-7.6	-14.2	3.1	7.0	5.0	3.0	1.9	2.4	2.8
Consumer Prices (% Ch)	3.9	3.3	3.4	-0.3	1.3	2.6	2.3	1.5	2.0	2.3	2.3
Employment and Labor Force (Household Survey, % Change)											
Employment	1.4	0.9	-0.4	-4.3	-0.6	1.1	2.1	2.1	1.8	2.2	2.1
Labor Force	0.8	1.3	1.6	0.1	0.6	0.5	0.6	0.4	0.5	1.1	1.1
Unemployment Rate (%)	4.9	5.3	7.2	11.3	12.3	11.8	10.4	8.9	7.8	6.9	6.0
U.S.	4.6	4.6	5.8	9.3	9.6	8.9	8.1	7.4	6.4	5.8	5.5
Total Nonfarm			**Nonfarm Employment (Payroll Survey, % Change)**								
Calif.	1.8	0.8	-1.1	-5.7	-1.1	1.0	2.4	3.0	2.2	2.3	2.0
U.S.	1.8	1.1	-0.6	-4.3	-0.7	1.2	1.7	1.7	1.7	2.2	1.9
Construction	3.2	-4.4	-11.7	-20.9	-10.2	0.2	5.1	7.9	4.6	0.9	1.3
Manufacturing	-1.0	-1.7	-2.7	-10.0	-3.1	0.5	0.4	-0.1	0.3	1.2	1.6
Nondurable Goods	-0.6	-1.1	-2.0	-8.1	-2.5	-0.4	0.4	-0.1	-1.1	1.1	2.0
Durable Goods	-1.2	-2.1	-3.0	-11.2	-3.5	1.0	0.4	-0.1	1.2	1.2	1.4
Trans. Warehousing & Util	1.8	2.3	-0.5	-6.0	-1.7	1.7	2.8	3.4	3.2	2.5	2.1
Trade	2.0	1.1	-2.5	-7.5	-0.3	2.0	2.0	2.3	1.7	1.2	1.3
Information	-1.6	1.1	1.1	-7.3	-2.8	0.4	1.0	3.5	2.0	2.3	2.6
Financial Activities	0.8	-3.4	-6.1	-7.0	-2.9	0.2	1.5	1.1	0.3	1.2	1.3
Professional Busi. Serv.	3.8	1.0	-1.2	-7.9	0.6	2.7	5.0	4.1	4.5	4.9	3.9
Edu. & Health Serv.	2.3	3.8	4.0	2.7	0.6	1.3	4.2	6.2	2.7	2.7	2.0
Leisure & Hospitality	3.0	2.7	0.8	-4.4	-0.1	2.3	4.1	4.6	2.4	2.4	2.5
Other Services	0.3	1.0	-0.2	-4.9	-0.3	1.8	2.2	2.1	2.6	3.2	3.2
Federal Gov't	-0.7	-0.6	0.5	1.1	6.8	-4.9	-1.8	-2.0	-1.5	0.6	0.8
State & Local Gov't	1.6	2.0	1.0	-1.9	-2.2	-1.4	-1.1	-0.0	0.8	1.1	0.8
Nonfarm Employment (Payroll Survey, Thous.)											
Total Nonfarm	15284	15411	15243	14373	14211	14357	14706	15148	15481	15831	16153
Construction	934	893	788	624	560	561	590	636	666	672	681
Manufacturing	1490	1464	1425	1282	1242	1248	1252	1251	1255	1270	1291
Nondurable Goods	543	536	526	483	471	469	471	470	465	470	479
Durable Goods	948	928	900	799	771	779	781	781	791	800	812
Trans. Warehousing & Util	496	508	505	475	466	474	487	504	520	533	544
Trade	2380	2405	2345	2168	2162	2204	2248	2299	2337	2365	2396
Information	466	471	476	441	429	431	435	450	459	470	482
Financial Activities	928	897	842	783	760	762	773	782	784	794	804
Professional Busi. Serv.	2243	2266	2239	2061	2074	2131	2238	2331	2436	2555	2654
Edu. & Health Serv.	1843	1913	1990	2044	2056	2084	2172	2307	2369	2433	2481
Leisure & Hospitality	1519	1560	1573	1503	1502	1536	1599	1671	1712	1753	1796
Other Services	507.0	512.1	511.3	486.2	485.0	493.6	504.7	515.2	528.4	545.0	562.5
Federal Gov't	248.7	247.1	248.4	251.2	268.3	255.2	250.5	245.5	241.7	243.3	245.2
State & Local Gov't	2203.9	2247.9	2271.0	2228.2	2180.1	2149.3	2125.7	2124.9	2142.6	2167.0	2185.4
Population and Migration											
Net Inmigration(Thous)	-53	-24	-25	-89	-51	-11	39	67	69	85	128
Population (Thous)	36247	36553	36856	37077	37309	37570	37872	38205	38549	38899	39294
(% Ch)	0.7	0.8	0.8	0.6	0.6	0.7	0.8	0.9	0.9	0.9	1.0
Construction Activity											
Residential Building Permits (Thous. Un.)	153.1	106.5	60.9	33.2	43.2	45.0	56.7	78.7	109.9	124.2	136.4
Nonres.Permits (Mil.'09$)	22976	23181	18825	10912	11330	12880	11287	20624	24949	26704	28520

Table 2. Quarterly Summary of the UCLA Forecast for California

	2014:1	2014:2	2014:3	2014:4	2015:1	2015:2	2015:3	2015:4	2016:1	2016:2	2016:3	2016:4
Personal Income, Taxable Sales, and Price Inflation (%Change)												
Personal Income (Bil.$)	1866.0	1886.9	1912.4	1937.8	1972.1	2000.0	2028.7	2056.2	2091.1	2120.1	2148.1	2177.2
Calif.(% Ch)	5.5	4.6	5.5	5.4	7.3	5.8	5.9	5.5	7.0	5.7	5.4	5.5
U.S. (% Ch)	3.3	4.3	5.5	4.9	7.0	5.8	5.6	5.4	7.0	5.3	5.2	5.5
Pers. Income (Bil. 2009$)	1727.7	1738.4	1751.5	1765.7	1788.0	1803.8	1820.1	1835.6	1856.3	1871.6	1885.5	1900.0
Calif.(% Ch)	3.3	2.5	3.0	3.3	5.1	3.6	3.7	3.4	4.6	3.3	3.0	3.1
U.S. (% Ch)	2.0	3.4	3.2	2.9	5.0	3.8	3.4	3.3	4.6	3.2	3.0	3.1
Taxable Sales (Bil. $)	595.4	601.2	607.6	614.2	620.7	627.8	635.8	644.0	652.2	660.2	668.1	676.5
(% Ch)	3.8	4.0	4.3	4.5	4.2	4.7	5.2	5.3	5.1	5.0	4.9	5.2
(Bil. 2009$)	551.3	553.9	556.5	559.7	562.7	566.2	570.4	574.9	578.9	582.8	586.4	590.4
(%Ch)	1.6	1.9	1.9	2.3	2.2	2.5	3.0	3.2	2.8	2.7	2.5	2.7
Consumer Prices (% Ch)	2.5	2.3	2.6	2.6	2.3	2.2	2.2	2.1	2.4	2.3	2.3	2.4
Employment and Labor Force (Household Survey, % Change)												
Employment	3.1	1.7	1.8	1.8	2.5	2.6	2.4	2.0	2.1	2.0	1.9	1.8
Labor Force	1.1	1.1	1.3	1.3	1.1	1.0	1.1	1.1	1.2	1.1	1.1	1.1
Unemployment Rate (%)	8.0	7.9	7.8	7.6	7.3	7.0	6.7	6.5	6.3	6.1	5.9	5.7
U.S.	6.6	6.5	6.3	6.2	6.0	5.8	5.7	5.6	5.6	5.5	5.4	5.4
Total Nonfarm **Nonfarm Employment (Payroll Survey, % Change)**												
Calif.	2.5	1.8	2.0	2.1	2.5	2.4	2.3	2.1	1.9	1.9	1.9	1.9
U.S.	1.3	1.7	2.1	2.0	2.4	2.5	2.2	2.0	1.8	1.9	1.8	1.9
Construction	10.3	0.4	0.3	0.9	1.0	1.3	1.3	0.8	1.0	1.6	1.8	2.1
Manufacturing	0.6	0.6	0.6	0.7	1.4	1.5	1.6	1.4	1.7	1.9	1.6	1.9
Nondurable Goods	0.3	0.1	0.2	0.1	1.6	1.9	1.8	1.6	1.8	3.0	1.8	2.0
Durable Goods	0.9	1.0	0.9	1.1	1.2	1.3	1.5	1.3	1.6	1.3	1.4	1.8
Trans. Warehousing & Util.	1.4	4.0	3.2	2.3	2.3	2.3	2.2	2.0	2.2	2.1	2.0	1.9
Trade	1.9	1.0	1.3	1.1	1.3	1.2	1.2	1.2	1.1	1.6	1.5	1.2
Information	-3.1	2.5	2.5	1.9	2.4	2.3	2.4	2.0	2.8	3.0	2.8	2.8
Financial Activities	1.0	1.4	1.3	1.0	1.2	1.5	1.3	1.4	1.2	1.2	1.3	1.2
Professional Busi. Serv.	7.4	4.0	4.3	4.5	5.5	5.4	4.8	4.0	3.7	3.6	3.3	3.4
Edu. & Health Serv.	1.6	2.8	2.6	2.8	2.9	2.6	2.5	2.5	1.9	1.5	1.5	1.5
Leisure & Hospitality	3.1	0.6	1.9	2.0	2.9	2.6	3.0	2.8	2.2	2.2	2.3	2.2
Other Services	2.7	3.1	2.7	3.2	3.0	3.5	3.1	3.7	3.0	3.1	3.1	3.0
Federal Gov't	-5.1	-0.2	0.0	0.5	0.9	1.1	0.7	0.8	0.8	0.8	0.7	0.8
State and Local Gov't	-0.0	0.9	1.1	1.1	1.3	1.1	1.1	1.0	0.9	0.6	0.7	0.7
Nonfarm Employment (Payroll Survey, Thous.)												
Total Nonfarm	15370	15440	15518	15598	15693	15787	15879	15963	16039	16116	16191	16267
Construction	665	665	666	667	669	671	673	674	676	679	682	686
Manufacturing	1252	1254	1256	1259	1263	1268	1273	1277	1282	1288	1293	1300
Nondurable Goods	465	465	465	465	467	469	471	473	475	479	481	483
Durable Goods	788	790	791	794	796	799	802	804	807	810	813	816
Trans. Warehousing & Util.	513	518	522	526	528	532	535	537	540	543	546	548
Trade	2327	2333	2340	2347	2354	2361	2368	2376	2382	2392	2401	2408
Information	455	458	461	463	466	468	471	474	477	480	484	487
Financial Activities	781	783	786	788	790	793	796	798	801	803	806	808
Professional Busi. Serv.	2399	2422	2448	2475	2508	2542	2572	2597	2621	2644	2665	2688
Edu. & Health Serv.	2345.2	2361.2	2376.4	2392.7	2409.8	2425.6	2440.9	2456.0	2467.3	2476.3	2485.8	2495.0
Leisure & Hospitality	1703.3	1706.0	1714.2	1722.7	1735.0	1746.3	1759.2	1771.6	1781.3	1791.1	1801.4	1811.3
Other Services	522.6	526.6	530.1	534.2	538.2	542.9	547.0	552.0	556.2	560.4	564.6	568.8
Federal Gov't	242	242	242	242	242	243	244	244	245	245	245	246
State and Local Gov't	2134	2139	2145	2151	2158	2164	2170	2175	2180	2184	2187	2191
Population and Migration												
Net Inmigration(Thous)	65.8	66.9	69.5	74.1	68.3	78.4	90.1	101.8	119.4	126.8	131.8	135.3
Population (Thous)	38420	38506	38592	38679	38764	38852	38943	39038	39139	39241	39345	39450
(% Ch)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.1	1.1	1.1
Construction Activity												
Residential Building Permits (Thous. Units)	94.3	106.8	116.3	122.3	122.8	123.1	124.6	126.3	127.8	134.8	139.3	143.8
Nonres.Permits (Mil. '09$)	24566	24815	25091	25325	25814	26397	27033	27573	28074	28508	28681	28817

Table 3. Personal Income, Taxable Sales, Construction and Population in California

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
						Aggregates					
(Bil $)											
Personal Income	1499.5	1564.4	1596.3	1536.4	1579.1	1683.2	1768.0	1811.1	1900.8	2014.3	2134.1
Disposable Income	1302.2	1349.1	1395.3	1375.1	1406.2	1480.9	1549.3	1584.0	1660.4	1760.4	1865.1
(Bil 2009$)											
Personal Income	1582.8	1604.8	1595.5	1536.4	1559.0	1630.0	1676.4	1693.5	1745.8	1811.9	1878.3
Disposable Income	1374.6	1383.9	1394.6	1375.1	1388.3	1434.1	1469.0	1481.1	1525.1	1583.5	1641.6
						(Nominal %Ch)					
Personal Income	7.4	4.3	2.0	-3.7	2.8	6.6	5.0	2.4	5.0	6.0	6.0
Disposable Income	6.7	3.6	3.4	-1.5	2.3	5.3	4.6	2.2	4.8	6.0	5.9
						(Real %Ch)					
Personal Income	3.9	1.4	-0.6	-3.7	1.5	4.6	2.8	1.0	3.1	3.8	3.7
Disposable Income	3.3	0.7	0.8	-1.4	1.0	3.3	2.4	0.8	3.0	3.8	3.7
						Components of Personal Income (Bil $)					
Personal Income	1499.5	1564.4	1596.3	1536.4	1579.1	1683.2	1768.0	1811.1	1900.8	2014.3	2134.1
Wages & Salaries	791.5	834.4	842.9	799.5	814.5	849.7	899.7	925.3	965.6	1013.6	1068.3
Other Labor Income	194.6	200.7	204.8	197.1	203.9	219.1	222.7	225.4	241.1	264.8	289.1
Farm	4.9	7.5	5.2	5.7	6.3	10.5	10.7	9.7	10.3	11.7	13.1
Other Income	448.0	452.5	457.9	415.1	415.3	457.0	483.9	508.3	542.9	582.5	622.0
Transfer Payments	181.6	192.1	210.3	239.9	261.0	261.3	269.6	281.3	291.9	304.7	319.1
Social Insurance	120.9	122.6	124.8	120.8	121.8	114.2	118.1	138.5	150.8	162.8	177.1
							Taxable Sales				
Nominal											
Level (Bil $)	559.5	561.3	532.4	456.6	477.0	520.2	558.0	582.7	604.6	632.1	664.2
%Ch	4.3	0.3	-5.2	-14.2	4.5	9.1	7.3	4.4	3.8	4.5	5.1
Real											
Level (Bil. 2009$)	590.6	575.9	532.1	456.5	470.9	503.7	529.1	544.9	555.3	568.6	584.6
%Ch	0.9	-2.5	-7.6	-14.2	3.1	7.0	5.0	3.0	1.9	2.4	2.8
							New Automobile Sales (Mil Un.)				
New Registrations	1.79	1.68	1.34	0.99	1.11	1.21	1.52	1.68	1.72	1.76	1.80
U.S. Sales	16.50	16.09	13.19	10.40	11.55	12.73	14.44	15.49	16.03	16.24	16.38
							Construction Activity				
Residential Building Permits (Thous.)											
Total	153.1	106.5	60.9	33.2	43.2	45.0	56.7	78.7	109.9	124.2	136.4
Single-Family	101.6	66.2	31.6	24.0	25.0	22.2	27.3	36.3	50.2	57.1	64.4
Multi-family	51.5	40.3	29.3	9.2	18.2	22.8	29.4	42.4	59.7	67.0	72.0
Nonresidential Permit Valuation											
Nominal (Mil. $)	21142.6	22631.0	19197.0	10912.7	11200.7	13114.2	11706.5	22037.6	27756.7	30846.4	34129.1
%Ch	15.8	7.0	-15.2	-43.2	2.6	17.1	-10.7	88.3	26.0	11.1	10.6
Real (Mil. 2009$)	22976.5	23180.8	18824.8	10911.9	11330.1	12879.6	11286.7	20624.0	24949.2	26704.0	28520.2
%Ch	3.4	0.9	-18.8	-42.0	3.8	13.7	-12.4	82.7	21.0	7.0	6.8
							Population (Thous.)				
Net Inmigration	-52.8	-24.2	-25.2	-89.0	-51.2	-11.0	39.0	67.0	69.1	84.7	128.3
Net Natural Increase	314.0	329.9	328.9	310.0	283.0	272.0	264.0	266.0	274.6	274.6	283.5
Population	36246.8	36552.5	36856.2	37077.2	37309.0	37570.0	37872.0	38205.0	38549.3	38899.4	39293.9

The Los Angeles Department of Water and Power (DWP), established at the beginning of the century is the largest municipally-owned utility in the nation. It exists under and by virtue of the Charter of the City of Los Angeles enacted in 1925.

With a work force in excess of 9,000, the DWP provides water and electricity to some 3.5 million residents and businesses in a 464-square-mile area.

DWP's operations are financed solely by the sale of water and electric services. Capital funds are raised through the sale of bonds. No tax support is received.

A five-member Board of Water and Power Commissioners establishes policy for the DWP. The Board members are appointed by the Mayor and confirmed by the City Council for five-year terms.

The Los Angeles County Metropolitan Transportation Authority (Metro) is unique among the nation's transportation agencies. It serves as transportation planner and coordinator, designer, builder and operator for one of the country's largest, most populous counties. More than 9 million people – one-third of California's residents – live, work, and play within its 1,433-square-mile service area.

Besides operating over 2,000 coaches in the Metro Bus fleet, Metro also designed, built and now operates over 73 miles of Metro Rail service. The Metro Rail system currently consists of 62 stations and several more are in the planning and/or design stage.

In addition to operating its own services Metro funds 16 municipal bus operators and funds a wide array of transportation projects including bikeways and pedestrian facilities, local road and highway improvements, goods movement, and the popular Freeway Patrol and Call Boxes.

Recognizing that no one form of transit can solve urban congestion problems, Metro's multimodal approach uses a variety of transportation alternatives to meet the needs of the highly diverse population in the region.

Metro's Mission is to insure the continuous improvement of an efficient and effective transportation system for Los Angeles County. In support of this mission, our team members provide expertise and leadership based on their distinct roles: operating transit system elements for which the agency has delivery responsibility, planning the countywide transportation system in cooperation with other agencies, managing the construction and engineering of transportation system components and delivering timely support services to the Metro organization.

Metro was created in the state legislature by Assembly Bill 152 in May 1992. This bill merged the Los Angeles County Transportation Commission (LACTC) and the Southern California Rapid Transit District (RTD) to become the Los Angeles County Metropolitan Transportation Authority. The merger became effective on April 1, 1993.

Metro is governed by a 13-member Board of Directors comprised of: the five Los Angeles County Supervisors, the Mayor of Los Angeles, three Los Angeles mayor-appointed members, four city council members representing the other 87 cities in Los Angeles County and one non-voting member is appointed by the Governor of California.

LAO
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The nonpartisan Legislative Analyst's Office (LAO) has been providing fiscal and policy advice to the California Legislature for more than 65 years. It is particularly well known for its fiscal and programmatic expertise and nonpartisan analyses relating to the state budget, including making recommendations for operating programs in the most effective and cost-efficient manner possible. Its responsibilities also include making economic and demographic forecasts for California, and fiscal forecasts for state government revenues and expenditures. It also prepares fiscal analyses for all propositions that appear on the California statewide ballot, including bond measures.

For more information about the LAO, please visit our website at www.lao.ca.gov or call us at 916-445-4656.

The Legislature and Governor created the California Research Bureau (CRB) within the California State Library in the 1991 Budget Act. The bureau provides objective, nonpartisan, timely, and confidential research to the Governor's Office, members of both houses of the Legislature, and other state constitutional officers. The Bureau provides these clients with research, policy assistance through written reports and other documents, consultations, seminars, and other training and assistance in preparing legislative proposals. The Bureau has five branches: Environmental and Natural Resources; Education and Human Services; Economics; General Law and Government; and Information Services. It maintains a small office at the State Capitol in Room 5210 to make reference services conveniently available.

City of Hermosa Beach

The Los Angeles Magazine has named Hermosa an "outstanding coastal town" praising many of our businesses and shops. From traditional Surf and Turf to more exotic cuisines, from Comedy to Jazz, Hermosa Beach has many fine dining and entertainment places from which to choose. Our hotel and lodging facilities offer breath taking ocean views and all the comforts of home which are surrounded by a Mecca of restaurants, upscale shops and tourist delights. Come to Hermosa Beach, relax and enjoy the warmth of our hospitality.

The State of California's Department of Finance is responsible for submitting to the State's fiscal year budget to the Governor in January of each year. The Department is part of the State's Executive Branch and part of the Governor's Administration. The Director of Finance is appointed by the Governor and is his chief fiscal advisor. The Director sits as a member of the Governor's cabinet and senior staff. Principal functions include:

Establish appropriate fiscal policies to carry out the Administration's Programs.

Prepare, enact and administer the State's Annual Financial Plan.

Analyze legislation which has a fiscal impact.

Develop and maintain the California State Accounting and Reporting System (CALSTARS).

Monitor/audit expenditures by State departments to ensure compliance with approved standards and policies.

Develop economic forecasts and revenue estimates.

Develop population and enrollment estimates and projections.

Review expenditures on data processing activities of departments.

In addition, the Department of Finance interacts with the Legislature through various reporting requirements, by presenting and defending the Governor's Budget and in the legislature.

The Department interacts with other State departments on a daily basis on terms of administering the budget, reviewing fiscal proposals, establishing accounting systems, auditing department expenditures and communicating the Governor's fiscal policy to departments.

Health Net, Inc. is among the nation's largest publicly traded managed health care companies. Its mission is to help people be healthy, secure and comfortable. The company's health plans and government contracts subsidiaries provide health benefits to approximately 6.7 million individuals across the country through group, individual, Medicare, Medicaid and TRICARE and Veterans Affairs programs. Health Net's behavioral health subsidiary, MHN, provides mental health benefits to approximately 7.0 million individuals in all 50 states. The company's subsidiaries also offer managed health care products related to prescription drugs, and offer managed health care product coordination for multi-region employers and administrative services for medical groups and self-funded benefits programs.

The Employment Development Department's Labor Market Information Division (LMID) regularly collects, analyzes, and publishes information about California's labor market, which has approximately 1,068,000 employers covered by Unemployment Insurance and a civilian labor force of approximately 16.6 million. In addition to employment and unemployment data, LMID provides economic development and planning information; industry and occupational characteristics, trends, and wage information; and social and demographic information. Most of these data are available for the state and counties. Some data are available for other geographic regions a well.

In addition to basic labor market information, the LMID provides technical assistance, training seminars for data users, and standard and customized reports for state and sub-state geographic areas. Labor market information is available electronically and in print.

For more information, visit our website at www.calmis.ca.gov or call 916-262-2162.

The energy industry is changing rapidly and dramatically. As global competition transforms the way companies do business, energy issues are no longer simply local, or even national. At the same time, its clear that the importance of providing reliable local service has never been more important.

Our heritage at Southern California Edison is based on reliability. For more than 100 years we have provided high-quality, reliable electric service to more than 4.2 million business and residential customers over a 50,000 square mile service area in coastal, central, and southern California.

Of course, recent changes in the California's electric industry have affected us as well. In 1997, as part of the restructuring of the electric industry in our state, SCE sold its 12 fossil fuel generating stations and overhauled nearly every aspect of its business to prepare for the changing environment. While we still own and operate hydro and nuclear power facilities that serve our area, our main role is that of power transmission and distribution. The power needed for our customers is largely purchased from the California Power Exchange and provided by SCE to our customers without a price markup.

At SCE we want you to know that even in times of change, we retain our proven commitment to service, reliability, innovation, and the community.

The Irvine Company is a nearly 150-year-old, privately held best-of-class real estate investment company with operations throughout California. Its management structure is concentrated in two main operating groups: Community Development, an affiliate responsible for the planning and development of all for-sale residential housing communities and other land sales; and the Investment Properties Group, which plans and guides the development, marketing and management of the company's large and diverse statewide portfolio of retail, office, apartment and resort properties.

•The Irvine Company is one of America's most respected and diversified private real estate companies.

•It owns and manages a high-quality investment portfolio of nearly 95 million square feet that includes 116 apartment communities, 484 office buildings, 41 retail centers, and five yacht marinas.

•The portfolio also contains world-class resort properties including Pelican Hill®, which features 204 rooms and suites, 128 villas and two 18-hole championship golf courses overlooking the Pacific Ocean.

•Guided by an unwavering pursuit of excellence, the company is highly respected for its stewardship and master planning of The Irvine Ranch® in Orange County, California.

•Donald Bren is Chairman of the Irvine Company. He oversees a Board of Directors that includes some of the nation's most accomplished and respected business leaders and former public officials.

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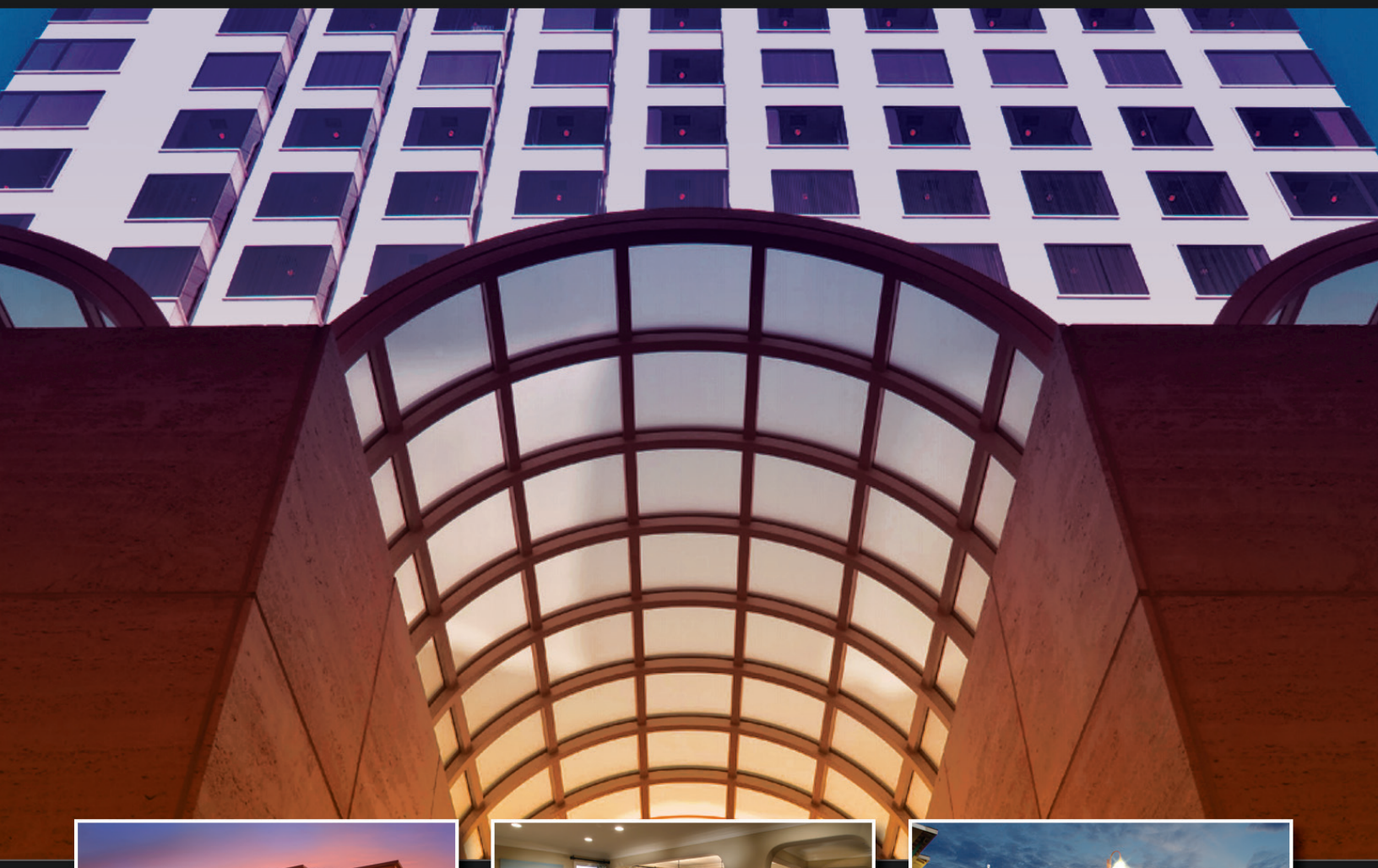

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POLICY STATEMENT

EARLY CHILDHOOD CARE AND EDUCATION WORKFORCE DEVELOPMENT

At First 5 Los Angeles (F5LA), we believe high quality early childhood education programs are essential to a child's preparation for school, and are proven to provide an incredible return for our society and state. We believe public policy decisions that prioritize resource availability for developing, implementing, and monitoring a high quality early childhood care and education system are critical to preparing our children for jobs in the 21st century and beyond.

At F5LA, we believe continued investments in early learning programs that support vulnerable families provide positive outcomes for the state's youngest children. We believe that when children from 0 to 5 are physically and emotionally healthy, ready to learn, and safe from harm, it is a direct result of an effective, well-compensated and diverse early care and education workforce.

Early Care and Education

ECEWORKS!

A project of First 5 LA

ECE Works! is an early care and education (ECE) public policy project of First 5 LA aimed at creating policy change to promote and professionalize the ECE workforce and increase investment in the sector to promote long-term retention. Through ECE Works!, F5LA is creating a movement and building a strong network of local, state, and national policy makers, ECE stakeholders, and business and civic leaders that will create long-term sustainable change for the early care and education industry.

Through a partnership with the Los Angeles County Office of Education (LACOE), UCLA Anderson School of Management, and the UCLA Luskin School of Public Affairs, ECE Works! is committed to ensuring that Los Angeles County remains a strong and globally competitive region.

ECEWORKS!
An investment in Today and Tomorrow

Los Angeles County Office of Education
Serving Students ▪ Supporting Communities
Leading Educators

FIRST 5 LA

To join the conversation visit our website: www.eceworks.org or join us on Facebook or Twitter

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CALIFORNIA ASSOCIATION OF REALTORS®

C.A.R. Announces the Inaugural California Real Estate Summit

November 14, 2014
Hyatt Regency
Century Plaza
Los Angeles, CA

In partnership with the UCLA Anderson Forecast and the state's top universities, C.A.R. is convening the 2014 summit to address the future of real estate.

For more information on how to participate, contact jeannetteb@car.org

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Cal Recycle
California Air Resources Board
California Association Of Realtors
California Department of Transportation
California State Board of Equalization
California State Polytechnic University, Pomona
California State University, Fullerton
California State University, Sacramento
California Steel Industries, Inc
Cathay Bank
CB Richard Ellis
Chartwell Capital Solutions
Chicago Title
Chu & Waters, LLP
City of Carlsbad
City of Garden Grove
City Of Sacramento
City of San Diego
City of San Jose
City of Santa Clara
City of Torrance
City of Torrance - Kenneth Flewellyn
Community Bank
Consulate General of Japan
Cornerstone Real Estate Advisers LLC
County of San Diego

Crystal Cruises
CSU Chico
Desmond, Marcello & Amster
East West Bank
FDIC
Fidelity Investments Money Management Inc.
GHD Inc
Gilmore Bank
Goodwin Procter LLP
Granite Rock Company
Harold Davidson & Associates Inc.
Heritage Bank of Commerce
Howard Hsieh
HR and A Advisors, Inc.
JETRO, Los Angeles
Kinecta Federal Credit Union
KPMG
Lehigh Southwest Cement Company
Lloyd Management Corporation
Logix Federal Credit Union
Londre Marketing Consultants, LLC
Los Angeles Public Library - Business Economics Dept
Los Angeles Times
Massmann International Booksellers
Maynard Consulting Services
Metropolitan Water Dist
Northern California Power Agency
Orange County Executive Office - Budget
Orange County Resources & Development
Pacific Western Bank
Pasadena Public Library
Preferred Employers Insurance Company
RBC Capital Markets
San Diego Gas & Electric Co.
School Services of California Inc.
SMUD
Stanford University
State Compensation Insurance Fund
State of Hawaii - Department of Taxation
Sully-Miller Contracting Co
Teichert Aggregates
The Aerospace Corporation
The Olson Company
United Methodist F.C.U.
University of California Library, Berkeley
University of California San Diego
University of Cincinnati
University of Hawaii Library
University of Richmond
USS-POSCO Industries
Visterra Credit Union
Vulcan Materials
Warland Investments
Wells Fargo Securities
York Universities Libraries

Mayor Eric Garcetti
City of Los Angeles

Eric Garcetti is the 42nd Mayor of Los Angeles. His "back to basics" agenda is focused on job creation and solving everyday problems for L.A. residents.

Garcetti was elected four times by his peers to serve as President of the Los Angeles City Council from 2006 to 2012. From 2001 until taking office as Mayor, he served as the Councilmember representing the 13th District which includes Hollywood, Echo Park, Silver Lake, and Atwater Village -- all of which were dramatically revitalized under Garcetti's leadership.

Garcetti was raised in the San Fernando Valley and earned his B.A. and M.A. from Columbia University. He studied as a Rhodes Scholar at Oxford and the London School of Economics and taught at Occidental College and USC. A fourth generation Angeleno, he and his wife, Amy Elaine Wakeland, have a young daughter. He is a Lieutenant in the U.S. Navy reserve and is an avid jazz pianist and photographer.

UCLAAnderson FORECAST

Edward E. Leamer
Director

Edward E. Leamer is the Chauncey J. Medberry Professor of Management, Professor of Economics and Professor of Statistics at UCLA. He received a B.A. degree in mathematics from Princeton University and a Ph.D. degree in economics and an M.A. degree in mathematics from the University of Michigan. After serving as Assistant and Associate Professor at Harvard University he joined the University of California at Los Angeles in 1975 as Professor of Economics and served as Chair from 1983 to 1987.

In 1990 he moved to the Anderson Graduate School of Management and was appointed to the Chauncey J. Medberry Chair. Professor Leamer is a Fellow of the American Academy of Arts and Sciences, and a Fellow of the Econometric Society. He is a Research Associate of the National Bureau of Economic Research and a visiting scholar at the International Monetary Fund and the Board of Governors of the Federal Reserve System. Dr. Leamer has published over 100 articles and 4 books . This research has been supported by continuous grants for over 25 years from the National Science Foundation, the Sloan Foundation and the Russell Sage Foundation. His research papers in econometrics have been collected in Sturdy Econometrics, published in the Edward Elgar Series of Economists of the 20th Century. His research in international economics and econometric methodology has been discussed in a chapter written by Herman Leonard and Keith Maskus in New Horizons in Economic Thought: Appraisals of Leading Economists. Recent research interests of Professor Leamer include the North American Free Trade Agreement, the dismantling of the Swedish welfare state, the economic integration of Eastern Europe, Taiwan and the Mainland, and the impact of globalization on the U.S. economy.

UCLAAnderson FORECAST

David Shulman
Senior Economist

David Shulman is currently managing member of his own LLC and engages in educational and charitable activities, including being a Distinguished Visiting Professor at Baruch College and a Visiting Professor at the University of Wisconsin. Dr. Shulman is currently a member of NAREIT's Real Estate Investment Advisory Council. He blogs at Shulmaven.blogspot.com. Shulman received a bachelor's degree from Baruch College in 1965, an MBA in 1966 from the Graduate School of Management at UCLA; and his Ph.D. in 1975 with a specialization in Finance.

From 1986 to 1997, Dr. Shulman was employed by Salomon Brothers Inc. in various capacities. He was their director of real estate research from 1987 to 1991 and became Chief Equity Strategist from 1992 to 1997. As Chief Equity Strategist, he was responsible for developing the firms overall equity market view and maintaining their list of recommended stocks. Dr. Shulman was widely quoted in print and electronic media and he coined the terms "Goldilocks Economy" and "New Paradigm Economy." In 1991, he was named a Managing Director; and in 1990, he won the First Annual Graaskamp Award for Excellence in real estate research from the Pension Real Estate Association.

In March 2005, Dr. Shulman retired from Lehman Brothers, where he was Managing Director and head Real Estate Investment Trust Analyst. Before joining Lehman Brothers in 2000, he was a member and Senior Vice President at Ulysses Management LLC from 1998-1999, an Investment Manager of a private investment partnership and an offshore corporation, whose investment capital approximated $1 billion at the end of 1999.

UCLAAnderson FORECAST

Jerry Nickelsburg
Senior Economist

Jerry Nickelsburg joined the UCLA Anderson Forecast in 2006 as an economist. At the Anderson Forecast he plays a key role in the economic modeling and forecasting of the Los Angeles, Southern California and California economies. He has conducted special studies into the future of manufacturing in Los Angeles, the distribution of income, the economic impact of the writer's strike, the aerospace industry, the undocumented construction and manufacturing labor force, the ports of Los Angeles and Long Beach and the garment industry, focusing on the development of new data and the application of economic theory and statistical methods to sectoral issues. He is a regular presenter at the Los Angeles Mayor's Economic Conference and has been cited in the national and local media including the Financial Times, New York Times, Los Angeles Times, Reuters, Variety, CNBC, NBC, PBS, and L.A. Business Journal.

He received his Ph.D. in economics from the University of Minnesota in 1980 specializing in monetary economics and econometrics. He was formerly a professor of Economics at the University of Southern California and has held executive positions with McDonnell Douglas, Flight Safety International, and Flight Safety Boeing during a fifteen year span in the aviation business.

From 2000 to 2006, he was the Managing Principal of Deep Blue Economics, a consulting firm he founded. He held a position with the Federal Reserve Board of Governors developing forecasting tools, and has advised banks, investors and financial institutions. He has been the recipient of the Korda Fellowship, USC Outstanding Teacher, India Chamber of Commerce Jubilee Lecturer and is a Fulbright Scholar. He has published over 40 articles on monetary economics, econometrics, aviation economics, and industrial organization.

UCLAAnderson FORECAST

William Yu
Economist

William Yu joined the UCLA Anderson Forecast in 2011 as an economist. At Forecast he focuses on the economic modeling and forecasting of Los Angeles and other regional economies in California. He also conducts research and forecast on Asian emerging economies, especially China, and their impacts on the US economy. His research interests include a wide range of economic and financial issues, such as time series econometrics, stock, bond and commodity price dynamics, public health, human capital, higher education, and economic sustainability. He has published over a dozen research articles in Journal of Forecasting, International Journal of Forecasting, Journal of International Money and Finance, Journal of Health Care Finance, Journal of Education Finance, Economic Affairs, and Global Economic Review, etc. He has also served as a reviewer for various journals, such as Journal of Money, Credit, and Banking, Journal of Banking and Finance, Japan and the World Economy, and Energy Journal, etc.

He received his bachelor's degree in finance from National Taiwan University in 1995 and was an analyst in Fubon Financial Holding in Taipei from 1997 to 2000. In 2006, he received his Ph.D. degree in economics from the University of Washington where he was also an economics instructor and won two distinguished teaching awards. In 2006, he worked for the Frank Russell Investment Group for Treasury and corporate yields modeling and forecasting. From 2006 to 2011, he served as an assistant and an associate professor of economics at Winona State University where he taught courses including international economics, forecasting methods, intermediate macroeconomics, introductory macroeconomics, money and banking, and Asian economies.