California County-Level Economic Forecast Methodology Update

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Transportation Economics Branch
Office of Data Analytics Services
California Department of Transportation
1120 “N” Street
P.O. Box 942874 (MS- 32)
Sacramento, CA 94274-0001
Michael Wilson, Economist
(916) 767-4570

This publication was prepared by:

The California Economic Forecast
Mark Schniepp, Director
5385 Hollister Ave Box 207
Santa Barbara, CA 93111
(805) 692–2498
www.californiaforecast.com

Methodology Update

Introduction

The methodology report describes the principal structure of the model and provides some validating characteristics of the model for the 2022 forecast.

This 2022 update report explains the modeling approach in full incorporating any changes made for the latest forecast. It also describes the historical data throu8gh 2021 used to forecast the county level economic indicators.

The county models comprise an elaborate forecast system for projecting economic activity regionally in the state.

The modeling system is the only county level forecast in California where all county economies are forecast.

The modeling system has been routinely updated, evaluated, revised and improved since the year 2000----the year in which this annual assignment for Cal Trans commenced.

The Econometric Model: A Brief Description

The county models are independent: each model consists of a series of equations that is autonomous from other county economies. While each county model is independent, it is nevertheless symmetrical with all other county models. The symmetry is important because all models produce forecasts for economic indicators common to all counties, using the same base years, the same inflation rate, the same units of measurement.

All models have the same outputs, and the exogenous forecasts used in the equations for the county models are drawn from the same, and always current, pool of indicators generated by the UCLA Anderson Forecast for California and the U.S.

This is advantageous because all county forecasts can be summed to derive a statewide total. They can also be compared to one another (in an apples to apples comparison) to determine relative performance, such employment growth, population growth, per capita income, average household size, retail spending per person, average annual salary per worker, workers per household, or the employment to population ratio.

The models are county-specific, and the specifications are built with the objective of considering unique attributes of each county economy.

Each county model is comprised of 6 blocks of equations: 40 to 50 stochastic behavioral relationships and 20 to 25 accounting identities.[1] The model is characterized by simultaneous interaction and determination of local employment, income, population, wages, retail spending, and the demand for housing.

The stochastic equations are estimated using the ordinary least squares regression method and the entire system is solved using the Gauss-Seidel iterative algorithm.

The model is a "satellite model," requiring forecasts of various California and U.S. economic variables which are treated as exogenous to the local county area.

The county-level models are each moderately detailed. As we noted above, their equation systems are estimated as a model, independent of other counties. However, some interactions between counties have been accommodated where we have detected interdependence. For example, the visitor industry in Napa and Sonoma Counties, or transportation and warehousing in Riverside and San Bernardino Counties.

All of the stochastic equations in a county model are evaluated each time revised historical data or new data are introduced into the models. This is also true when a re-specification of an equation, or of the block structure occurs.

Outputs

The economic and demographic indicators that are forecast for each county are shown in the table on the following page. Forecast values are prepared over a 30 year time period beginning with the year in which actual data are not yet available. Forecasts are derived for each county independently.

[1] There are 58 counties and a minimum of 40 stochastic equations per county that need to be re-estimated and re-calibrated every year. That's 40*58= 2,320 equations that must be evaluated for plausibility, consistency, and stability. Some counties are now up to 64 stochastic equations.

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Table 1

Principal Indicators Forecast by the Models

- Non-farm employment by principal two-digit NAICS sector
- Farm employment
- Total wage and salary employment
- Unemployment rate
- Personal income
- Per capita personal income
- Number of housing units permitted and total housing stock
- Taxable retail and total taxable sales
- Population
- Births
- Deaths
- Net in-migration
- Number of households
- Number of vehicle registrations
- Existing home sales
- Median housing values
- Total value of agricultural produduction
- The regional inflation rate
- Total value of industrial production

MODEL STRUCTURE

General Characteristics

The county models use a macroeconomic structure consisting of interdependent equations. Each endogenous variable (determined by the model) is a function of other endogenous variables, exogenous variables (determined outside the model), and an error term. Implicitly, each equation may be represented as:

$$Yit = f(Yjt, Xkt, ut)$$

where

Yit = endogenous variable i in period t
Yjt = endogenous variable j in period t
Xkt = exogenous variable k in period t
ut = error term in period t

The determination of Yit by a variable determined elsewhere in the model is the essence of a simultaneous equation model. The endogenous variables interact within the model as they do in the real world.

The structure of the model is simultaneous, arranged in blocks of equations. Each block is comprised of a system of equations that define the block, or sector. All sectors are linked, meaning feedback exists between blocks. The equations within each block are either stochastic (that is, measured with error) or deterministic (i.e., are determined by an identity or formula having no measurable error).

The equations have been arranged in 6 blocks to aid in organizing the model.

Sector 1: Housing and new building
Sector 2: Demographics
Sector 3: Income
Sector 4: Consumer spending
Sector 5: Employment
Sector 6: All other equations including the farm sector

For each sector, a particular set of endogenous variables are specified to meet the principal objectives of the county forecasting model, which are to generate forecasts for the indicators listed in Table 1. A number of other endogenous variables are needed as intermediate stages in the determination of the key variables that are typically reported in the long term forecast tables.

Estimation Period

The database associated with each county was assembled from as far back in time that data have been recorded to the most current year for which actual information is available. Annual observations are used in the estimation and forecast.

Due to the varying availability of economic and demographic data at the sub-national level, each block in the system has its own number of observations associated with it. Consequently, the estimators calculated for the forecasting equations were derived from varying numbers of observations.

For the Employment block, all counties include NAICS data that began in 1990, 1991, or 1992. For the larger counties, NAICs categorized employment data was backcast using the previous classification system for which the data was reported in, the Standard Industrial Classification system. The backcasted information begins in 1983 and ends in 1989. The additional 17 observations provide for more robust estimates and stability of the forecasts in the larger county models.

Income data commences in 1969 and is available for all 58 counties of California.

For the Housing Sector Block, the number of households and housing stock begin in 1980 for most counties. For some of the smaller counties, the data begin with the 1984 calendar year. The building permit data all begin in 1969 for all counties in

Methodology Update

California. Median home selling prices typically begin in 1990 for all counties. For some of the larger counties including those comprising Southern California and the Bay Area, data as reported by the California Association of Realtors has been recorded since 1980.

The Consumer Spending Block, which consists of retail sales and retail store permits, begins for all counties in 1969.

In the Demographic Block, the observations begin in 1970 or 1980 depending on the county. Population in all cases begins in 1970. Net migration, births, deaths, and population by age also begin in 1970.

For the farm sector, farming output or sales by county is available beginning in 1972 for most counties. Data for Alpine County is combined with data for Nevada County.

Equations within the various blocks are estimated with as long a time series as possible, though that will vary depending on the county, the block, and the exogenous right-hand side indicators that form the equations. The ultimate length of time that is incirporated into each equation is limited by the indicator with the fewest historical data points.

In general however, nearly all equations of the forecasting model for all counties rely on data starting in at least 1990. Consequently, through the 2022 forecast, estimated equations were generated from at least 31 years of historical data and often the time period is 40 years for the counties with more data.

Other Indicators

The consumer price index (CPI) for the north and the southern regions of California, and the California composite CPI is available from 1920 to present. The statewide home mortgage rate begins in 1970.

Methodological Sequence for Developing the County Level Forecasts

1. Update county level databases: 58 Counites x 66 variables or indicators per county. Ditto for the state. The update includes adding a new calendar year of actual data and revising the past history

2. Update county level models with new and revised data. All county level equations are re-estimated to update and optimize the estimated coefficients.

3. Solve each of the county forecasting models and produce a preliminary forecast.

4. Evaluate the estimated equations and the forecast;
   a. Perform validation criteria to evaluate the forecasts.
   b. Re-calibrate equations as necessary.
   c. Re-specify equations as necessary and produce a final forecast.

5. Incorporate special considerations for the county forecasts, such as a recovery from natural disasters, the development of a new and significant industry, or new growth policies that have been established in the county. Adjust the forecast if necessary.

6. Produce the narrative explaining the forecast and update all forecast charts and tables.

7. Ensure that the text is ADA compliant.

8. Using publication software, produce the forecast for each county as an independent chapter that will comprise the full document of forecasts for all California counties, and for the state.

Accommodating Special Circumstances

Every year, the rural counties are researched for significant changes in new development which will alter the forecast for new housing or non-residential building and therefore influence job creation. Special data pertaining to specific counties is gathered (or updated) to explain economic circumstances unique to that county. For example, because prisons can be the dominant driver of a small county's economy, prison inmate populations and employment are routinely updated for Lassen County, where three large prisons are located in Susanville.

In Yolo County, UC Davis dominates government employment. Consequently, enrollment for the campus is used to explain the variation in Yolo County government employment. Enrollment forecasts for the short term are typically provided by the UC system.

The methodology of accommodating special handing of particular sectors of a county's economy is updated over time from experience gained in understanding the many nuances of the smaller county economies. This is especially true for the 30 smallest counties in California.

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Forecast Validation Criteria

County Validation

As part of the evaluation of the county point estimate forecasts over time, a number of ratios are constructed to validate the forecast. Ratios of the county forecast for indicator i to the same indicator for the state are calculated:

Xi,c / Xi,California

where Xi,c is indicator i for county c, and Xi,California is the same indicator for all of California.

The California indicator forecasts are produced independently by the UCLA Anderson Forecast.

This ratio is taken over the entire long term forecast period to evaluate the extent of the county forecast.

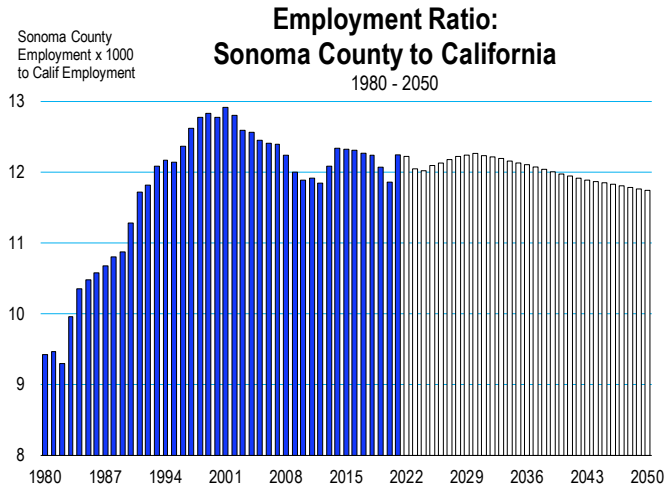
The forecast trajectory or path of

Xi,c / Xi,California

should be relatively constant or trending according to its historical movement. Under these circumstances, the county's forecast for indicator i is typically deemed reasonable. If the forecast deviates from the historical path, there may be issues with the forecast, or such a deviation may be explained by circumstances known to characterize Xi for county c over time.

Either way, the calculation of county forecast ratios with the state provide us with information necessary to either validate the forecast, dismiss it, or accept it when either known or expected circumstances warrant it.

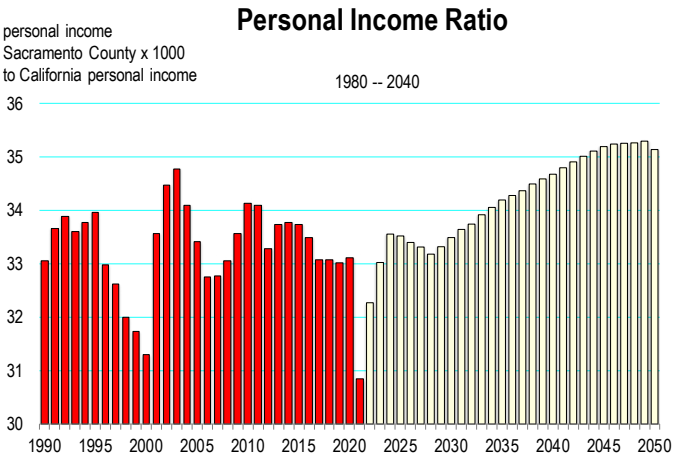
For example, the ratio of employment for Sonoma County and California demonstrates that employment relative to California was more impacted in the county during the pandemic than in California, largely because tourism is more concentrated in Sonoma relative to the state. The forecast shows employment relative to California returning to the same path it was on for much of the previous 20 year history.



Another example is the ratio of county personal income to California personal income. History indicates that personal income in Sacramento County has been roughly constant between 1990 and 2020. Following the pandemic recession, Sacramento personal income recovers sharply climbs as a share of the state over the forecast. This is plausible because we know that the Sacramento County forecast calls for a faster pace of growth in population and employment than most other counties in California, especially the Bay Area and Southern California counties.

Aggregate Validation

Aggregate validation occurs when the sum (or average) of indicator i is then compared with the same indicator i for the state. It is commonly assumed that the sum of the counties or the weighted average of the counties equals the state total or



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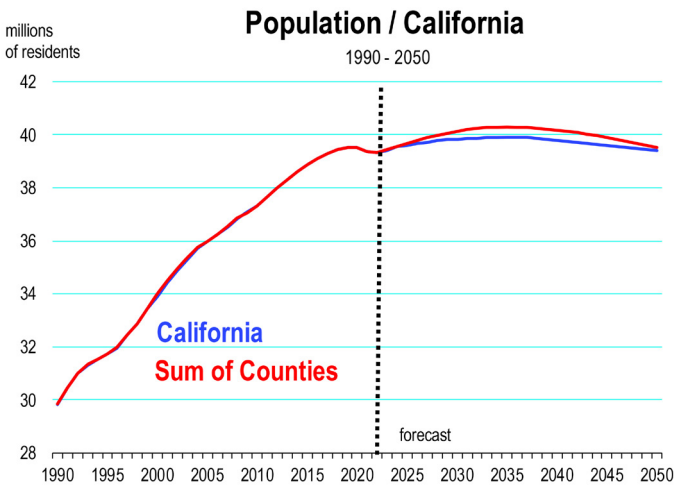
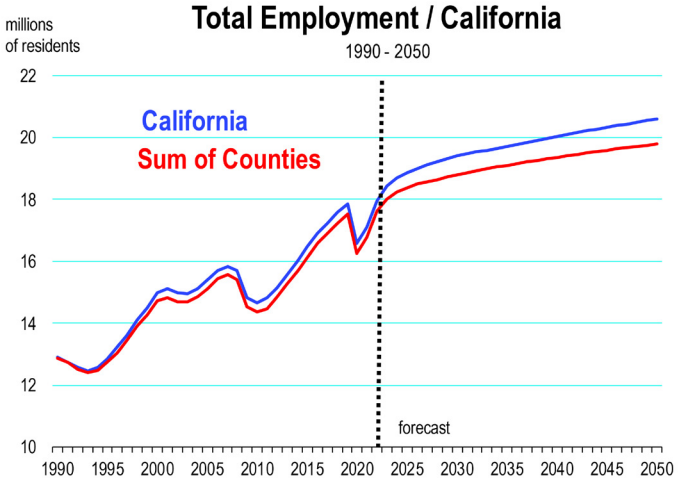


average. Theoretically, this should be the case. However, for many economic indicators reported at the county level, the sum of the counties is less than the state total. This is true for total wage and salary employment, taxable retail sales, personal income, and vehicle registrations. Historically, there is natural error between the sum of the counties and the state total, usually 3 percent or less. This is because not all employment or taxable sales occurring in the state are allocated to a particular county. In the case of vehicle registrations, a driver can obtain a registration over multiple counties or a state of California registration.

Consequently, the forecast of the aggregate indicator i should fall within a reasonable level relative to the state, factoring in the normal historical deviation. Typically an acceptable forecast error for most indicators is 5 percent. However, for volatile series such as net in-migrating populations, which itself is measured with error, higher forecast errors are considered acceptable.



The sum of all 58 county population forecasts over the entire forecast horizon is compared to the statewide forecast by the UCLA Anderson Forecast. The county sum deviates from the statewide total by one percent for all years.

For total wage and salary employment, the normal deviation between the county sum and the statewide total averages 1.9 percent per year (from 2000 to 2021). Historically, this is the natural error between the sum of the counties and the state total, because not all statewide employment is allocated to all the counties. Over the forecast, the average annual forecast error is 3.2 percent.

ENDOGENOUS FACTORS
(ECONOMIC INDICATORS THAT ARE FORECAST)

These variables appear on the left hand side of each equation that is modeled using a behavioral relationship specification comprised of both exogenous factors and other endogenous variables.

There are more endogenous economic indicators forecast as part of the modeling system than we typically present in the county forecast presentations. This is because many more endogenous variables need to be forecast because they are used as exogenous factors used to determine the core economic indicators.

Sectors of the Model

The model is arranged into 6 sectoral blocks of equations. However the blocks are not recursive, that is, they are not estimated independently and determined (or solved for) sequentially. The models are characterized by simultaneous interaction and determination of local employment, income, population, wages, and housing demand.

Housing and New Building

Stochastic equations

- Number of households (HH)
- Single family units (SFU)
- Multifamily units (MFU)
- Residential building value permitted, constant dollars
- Non-residential building value permitted, constant dollars
- Average building value for new residential units, constant dollars
- Median home selling price, constant dollars
- Number of existing home re-sales

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Identities

- Housing stock: HS = HS(t-1) + UNITS(t-1)
- New single and multiple family housing permits: SFU + MFU = UNITS
- Ratio of single family units to total residential units permitted: SFU / UNITS
- Total building value permitted, the sum of residential and non-residential value
- The ratio of the county median price to the national median selling price

Demographics

Stochastic equations

- Births (calendar year series)
- Deaths (July series)
- Deaths (calendar year series)
- Net in-migrating population (July-June series)
- Number of registered vehicles
- Unemployment rate
- Employed labor force
- Civilian labor force
- Number of registered passenger cars

Identities

- Population on July 1 (POPJUL) = POPJUL(t-1) + births(t) – deaths(t) + net in-migration(t)
- Population growth: (POPJUL(t)-POPJUL(t-1))/ POPJUL(t-1)
- Change in population: POPJUL(t) – POPJUL(t-1)
- Persons per vehicle: POPJUL / number of vehicles
- Average household size: POPJUL / number of households

Income

Stochastic equations

- Transfer payment income, constant dollars
- Property (or asset) income, constant dollars
- Proprietor income, constant dollars
- Residence adjustment income, constant dollars
- Average earnings per worker (or average salary per worker), constant dollars (REPW)

Identities

- Total wage and salary earnings, constant dollars = total employment*RYEPW
- Total personal income, constant dollars = Total wage and salary earnings, constant dollars + transfer, property, proprietor, and residence income, constant dollars
- Per capita personal income, constant dollars: personal income / population
- Wage ratio = county average salary / california average salary

Consumer Spending (Retail Sales)

Stochastic equations

- Retail sales (taxable retail sales), constant dollars
- Number of retail outlets or stores
- Total taxable sales, constant dollars

Identities

- Retail sales per store = retail sales / retail outlets
- Ratio of retail sales to personal income = retail sales / personal income

Employment (non-farm sector)

Stochastic equations

- Employment in mining
- Employment in construction
- Employment in manufacturing
- Employment in durable manufacturing
- Employment in transportation, warehousing, and public utilities
- Employment in retail trade
- Employment in wholesale trade
- Employment in information
- Employment in financial activities
- Employment in professional and business services
- Employment in private education and healthcare services
- Employment in leisure, accommodation, and recreation services
- Employment in other services
- Employment in state and local government (ESLG)
- Employment in federal government (EFG)
- Number of proprietors (self-employed workers)

Methodology Update

Identities

- Employment in government = ESLG+EFG
- Total wage & salary employment (ETWS) = sum of all non-farm employment sectors plus the farm sector
- Change in total employment: ETWS(t) – ETWS(t-1)
- Employment to population ratio: ETWS / population
- Growth rate of employment: (ETWS(t)-ETWS(t-1))/ ETWS(t-1)

Farm Sector and Misc. Equations

Stochastic equations

- Wage and salary employment in farming
- total agricultural crop value, constant dollars
- Southern and Northern California inflation rate (I)

Identities

- Consumer Price Index, Southern (Northern) California (CPI) = CPI (t-1)*(1+[I(t)/100])

EXOGENOUS VARIABLES

There are approximately 100 to 120 exogenous variables that we had selected in the initial development of the model. Most of these factors have remained relevant for use in the models over time. However, as the economy changes, new exogenous factors may be added to the models to explain the variation in county level economic indicators.

Not all of these exogenous variables are used. However, these variables have been found to be important in the original specification tests based on goodness of fit criteria together with their theoretical propriety. The exogenous variables are updated annually and made available for updating the equations in the model and/or enhancing the specifications as needed.

Currently, all blocks in the model are driven by exogenous factors, as well as endogenous factors that are determined in other blocks of the general model.

The exogenous variables include the following:

(1) California economic and demographic variables
(2) National economic variables
(3) Local county demographic variables: These factors are age specific population counts from the Department of Finance. The model uses 10 of these to drive various equations in the Employment and Demographic blocks of the model.
(4) Housing variables: the California median home price, California re-sales, mortgage rates, and notices of default and foreclosures in California
(5) Special circumstance exogenous factors as needed. This would include forecasts by the Department of Corrections of prison populations, forecasts of UC enrollment for particular campuses, or forecasts of State Budget revenues and/or expenditures by the Legislative Analyst's Office.

Most of the exogenous variables used to drive the county level forecasts come from the UCLA Anderson forecast for the State and the Nation.[2] These forecasts are updated four times per year. We use the most recent update, typically the June forecast of each year to drive the county level forecasts which are routinely completed in September or October of the same year. This part of the modeling infrastructure that we have developed over the years is entirely in place. Therefore, new exogenous forecasts from UCLA can be incorporated into our county models within a day or two of their release.

The local county demographic variables include age specific populations that are estimated by the Department of Finance, Demographic Research Unit every 2 years. They produce forecasts for these age specific population indicators through the year 2060.

Housing sale and price indicators are developed in an independent housing model for California and the Nation. See below.

HOUSING MODEL

The purpose of the housing model is to forecast home prices and existing home sales for California, because these forecasts are not part of the UCLA Anderson Forecast for the State and Nation.

The housing model uses exogenous inputs from the UCLA California and National forecasts.

Mortgage rates and economic variables such as employment,

[2] We are partners with the Anderson Forecast and routinely participate at their seminars and conferences held throughout the year at UCLA and at UC Irvine. UCLA's California forecasts are used by the Employment Development Department, the Governor's Office and the State Controller's office.

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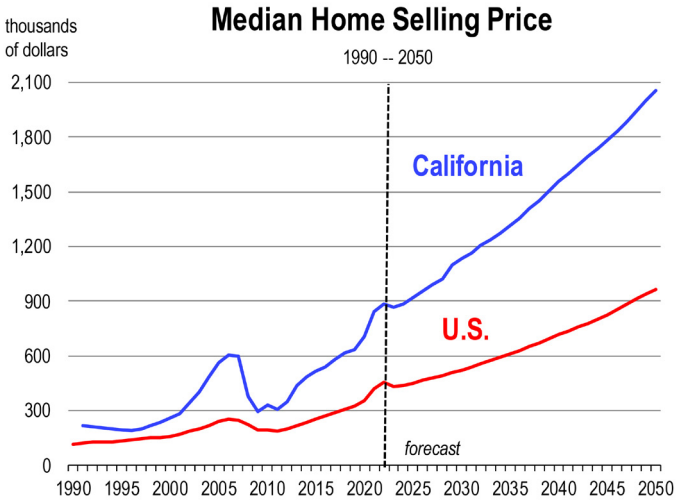

income, and building are used to predict the future direction of the housing market in terms of sales and housing values. The model does not attempt to forecast future housing cycles, but rather provides reasonable trend forecasts for what can be expected given the future demand for housing, plausible income estimates, and availability or constraints on supply represented by new home production.

The national median home value for new housing and for existing housing are interrelated. An exogenous forecast for one will provide us with an attendant forecast for the other. Furthermore, the movement in national home values is correlated with movements in statewide housing prices. The U.S. median home selling value for existing homes has a strong correlation with median home selling values in California.

Home sales in California are correlated with the rate of home sales in most counties (because after all, home sales in the counties are the component parts of statewide home sales). And the variation in California homes sales can be explained by statewide forces such as job creation or demographic trends.

However, the variation in county home sales in further influenced by local job creation, population growth, and homeowner distress that might be specific to a particular county, such as a natural disaster or the departure (or arrival) of a large and significant employer.

The forecast for California home values is driven by national home price movements, mortgage rates, and economic factors indicative of the business cycle. When the California home price forecast is used to drive the county level home price, all of the factors that produced the California forecast are embodied in the county level home price forecast. And much of the variation is explained by statewide housing price movements.

But other local influences such as housing production, job creation, or population growth may also account for specific within-county variation in home prices, as they do with home sales.

Because of the critical importance that homeowner distress had on the housing market during the Great Recession, notices of default and foreclosures were added to the housing model. They have been much less important over the last 10 years as selling values have steadily risen in California and home foreclosures have largely been irrelevant over this time period. Instead, the demand for housing has been relatively strong in tandem with job and income creation. Hence, home prices have been nearly runaway over the last decade in California.

Note on the direction of the housing market in 2022

The actual direction of the housing market during calendar 2022 indicated relatively strong demand during the first 4 months and declining demand thereafter, resulting in a modest decline in home selling values over the last half of 2022 that generally did not cause the annual median selling value for 2022 to decline, relative to 2021. Selling values are likely to move lower throughout 2023, generating the first year-over-year decline in home prices since 2011.

Because the forecast for new housing supply remains constrained in many areas of California today and for the foreseeable future, even a modest pace of demand growth would push general housing values higher in California, and in most if not all of the regional housing markets in the state.

DATABASE, DATA SOURCES

Indicators in all County Models (Primary Data Source)

Taxable Retail Sales (Department of Tax and Fee Administration)
Retail Store Outlets (Department of Tax and Fee Administration)
Total Taxable Sales (Department of Tax and Fee Administration)
Personal Income (Bureau of Economic Analysis)
Components of Personal Income (Bureau of Economic Analysis
Total Employment (Employment Development Department)
Employment by Sector (Employment Development Department)
Unemployment Rate (Employment Development Department)

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Vehicle Registrations (Department of Motor Vehicles)
Births, Deaths (Centers for Disease Control and Prevention)
Population, Net Migration (Department of Finance)
Population by Age Group (Department of Finance)
Residential building permits (CIRB)
Non-residential bldg. Permits (CIRB)
Median Home Selling Price (Corelogic)
Home Sales (Corelogic)
Agricultural Production (County Agricultural Commissioners)
Households (Department of Finance)
Housing Stock (Department of Finance)
Industrial Production (Bureau of Economic Analysis)
Registered Vehicles (Department of Motor Vehicles)
UC and CSU student enrollment (University of California, Cal State University)
Airline passengers (Individual Airports: San Francisco, Los Angeles, Oakland, San Diego, Sacramento, San Jose)
K-12 student enrollments (California Dept of Education)
Los Angeles Area Consumer Price Index (Bureau of Labor Statistics)

Indicators in all County Models (Primary Data Source) *continued*

Bay Area Consumer Price Index (Bureau of Labor Statistics)
California Consumer Price Index (Bureau of Labor Statistics)
Public School Enrollment (Department of Education)

All county-level dollar variables are deflated using the local consumer price deflator or the statewide price deflator. The base year is the most recent calendar year just completed.

Indicators in Select County Profiles (Primary Data Source) and Relevant Counties

Oil Prices (Department of Energy)
- Kern

Airline Passengers (SFO, LAX, San Diego Intl. Airport)
- San Mateo
- San Diego
- Los Angeles

Wine Grape Production (US Department of Agriculture)
- Napa
- Sonoma

California General Fund Balance (Legislative Analyst's Office
- Sacramento

University Enrollment (UC and CSU Systems)
- Yolo
- Butte
- San Luis Obispio
- Santa Cruz
- Merced
- Santa Barbara

Prison Staffing and Population (Department of Corrections)
- Del Norte
- Lassen
- Amador

Cannabis Permits (Dept. of Food and Agriculture)
- Humboldt
- Trinity
- Mendocino

Constant Dollars

All county-level dollar variables are deflated using the local consumer price deflator or the statewide price deflator. The base year is the most recent calendar year just completed.

2021 Data

The modeling process for every county begins with the collection of the most readily available data. All data updates include revisions to the historical data by the issuing agency. For all counties, identical sources and vintages of data are used, organized as follows:

- Agriculture
- Building units (units permitted, residential and commercial valuations)
- Vehicle registrations
- Housing
- Population
- Income
- Taxable sales and permits
- Employment by industry
- K-12 School Enrollments
- Real Industrial Production

Agriculture

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Agriculture includes the total value of all crop production in the county, excluding timber. The crop reports for every county are typically available with a one year lag from each county's agricultural commissioner. To estimate the latest completed year's crop value, the trend in the trajectory of historical crop values from the previous 10 years of data is used.

Building

All building data comes from the Construction Industry Research Board. The data specifically includes the number of new single and multi-family unit building permits issued, and their corresponding values, the values of all new non-residential permits (broken down into commercial, industrial, and other), and the value of all renovation activity on residential and non-residential structures. All building data is updated through the calendar 2021 year.

Vehicle Registrations

Vehicle registration data comes from the California Department of Motor Vehicles. The county data includes the number of automobiles, trucks, trailers, and motorcycles. The county total represents the sum of these categories. The most current annual vehicle registration data is available through 2021.

Housing

The housing indicators forecast include home sales and the median selling price. The source for both series is Corelogic because this vendor provides a consistent time series for these indicators for all 58 counties in California. Home sales and prices are for the composite of single family detached and attached housing. Consequently, housing transactions and values include condominiums and not just traditional single family homes.

Second, housing stock data, including total units, single-family units, multi-family units, and the number of households are acquired from the California Department of Finance, Demographic Research Unit. Housing stock that is occupied is defined as a Household.

Income

Components of personal income are acquired from the Bureau of Economic Analysis. The latest information is through 2020; the 2021 components of income are estimated based on (1) the growth of each income component at the state level, and (2) how the variation in state income historically explains each county's income.

Taxable Retail Sales and Total Taxable Sales

The California Department of Tax and Fee Administration is the source for taxable retail sales and total taxable sales by county. Data is available through the 2021 calendar year.

Employment By Industry

The Labor Market Information Division of the Employment Development Department produces the estimates of employment by county.

The Current Employment Statistics (CES) Program issues monthly estimates of employment by 2 and 3 digit NAICS. We use 2 digit NAICS employment in each county-level forecast model. Currently, the data is updated through calendar 2021 for use in the current year (2022) model assignment. However, because preliminary CES data is published monthly, we are able to evaluate how the first year employment forecast is tracking the actual information for the partial (current) year in which the forecast is being produced. We are able to make adjustments to the county models so that the first year forecast moves in alignment with the cumulative CES data for the current year.