California Uninsured Vehicles as of June 1, 1997

Robert O. Bernstein
Policy Research Bureau
California Department of Insurance

February 1999

Table of Contents

Tables

Maps

Figures

Executive Summary

California, like virtually all other states, requires minimum financial responsibility for vehicles driven on the public roads. These requirements for at least $15,000 per person, $30,000 per accident coverage for bodily injury or death caused by an at fault vehicle and $5,000 property damage were established in 1967. Despite the rather low limits and the longevity of the financial responsibility requirements, many vehicles are on the road without insurance.

The issue of uninsured vehicles is both a practical and a statistical issue. As a practical issue, there is much public concern about stories of catastrophic loss suffered by innocent victims due to drivers who have neither insurance nor resources to compensate for the damage they cause. As a statistical issue, it is a question of how to determine the number of offenders of the state's financial responsibility laws. This involves how to count who should be covered and who is not and leads into many issues of data sources and assumptions.

This paper reports on a major effort by the California Department of Insurance to determine the number of vehicles on the road who should be insured and who are not. It relies upon the entire Department of Motor Vehicles (DMV) file as of June 1, 1997, of all vehicles registered in California during the last five years. All California auto insurers provided the vehicle identification of all insureds in their files as of that same date. Matching these enormous files presented considerable problems for programming and analysis which are described in full.

Of course there are a number of vehicles on the road that are neither registered nor insured but should be. No measure of the uninsured populations is complete without an estimate of these on the road.

The file match and unregistered estimate process resulted in finding that on June 1, 1997, there were 23.5 million vehicles – cars, trucks, motorcycles, vans, etc. – potentially insurable. Of these, 18.2 million had insurance and 5.3 million were considered uninsured.

When the location of these uninsured vehicles was examined, most of the vehicles by count are in Los Angeles county (over a third) and eleven counties, mostly in the south, account for over three-quarters of the total.

Comparing the highest and lowest zip codes by uninsured rates found that most of the high uninsured rate zips had rather low median family (under $26,000 in 1990) compared to the low uninsured rate zip codes that had median family income of $50,000 or more.

The lowest rate zip codes had relatively few families on public assistance while the high uninsured rate zip codes had more than 10 percent on public assistance.

In 1995 the statewide average annual premium for minimum limits BI/PD was $322. Of the 176 highest premium zip codes, 173 were in Los Angeles County. The 12 highest premium zips were also among the highest uninsured.

When the uninsured rate and average premium are compared, higher premiums tend to be correlated with higher uninsured rates, but not totally so. Other factors seem to be affecting the relationship between cost and uninsured rate. For example, the relationship between uninsured rates and median household income (1997 estimates) shows a cluster between $25,000 and $50,000, above which insurance is increased regardless in most cases of the premium cost.

This is shown when a regression analysis is calculated using uninsured status as the dependent variable versus median household income and average premium as the independent variables. The results show only about half the variation in uninsured rates is explained by these two factors. Also this shows that each $22 increase in annual premiums increases the average uninsured rate by 1 percent while an increase in income $2,200 would decrease it by 1 percent.

Regression results in just those ZIP Codes with uninsured rates of 30 percent or more, estimate that dropping the average annual premium of $395 in those ZIP Codes, to $300 would drop the uninsured rate by about 3 to 4 percentage points.

.

Introduction

One basic way to answer the question of how many uninsured vehicles there are in California would be to compare the number of insured vehicles with the number on the road. In order to find out details of the uninsured vehicles, the insured vehicles would have to be matched with the on road vehicles. Details of the non matching vehicles could then be used to describe the location, type, age, etc. of uninsured vehicles. Matching data on insured vehicles with data on registered vehicles (as a proxy for all on-road vehicles) should be a simple straightforward way to develop a data set containing the necessary identifying information. From this apparently simple concept comes a complex problem of implementation.

There are two basic areas of data addressed in this study: data on all insured vehicles and data on all vehicles on the road. Data on all insured vehicles comes from three basic sources: personal lines insurance companies, commercial lines insurance companies and self insured data from the California Department of Motor Vehicles (DMV). The largest source of data on vehicles in California is the 44 million record DMV database. This file includes more than 21 million currently registered on-road vehicles (excluding government owned vehicles).

However, the 21 million excludes a substantial number of vehicles that are unregistered and believed to be still on the road. Estimated vehicles on the road would include the DMV set of currently registered vehicles and a set of DMV non registered vehicles that are estimated to be representative of the unknown set of unregistered vehicles still operating on the road.

The 44 million records at DMV include many vehicles that are not of interest (boats and mopeds for example), some of interest that are excluded from our analysis for public policy reasons (public safety personnel owned vehicles for example), and others that would not have to be insured such as inoperative or off road vehicles.

Matching the insured vehicle data against the DMV on-road data produced the initial estimate of uninsured vehicles. This required a specific date be set for matching both data sources and a common vehicle identification data field in each file. June 1, 1997 was the specified date and the Vehicle Identification Number (VIN), a 17-character code on most vehicles, was the main common data element. Where the VIN did not match, other fields were used.

Any file of 44 million records input by thousands of employees all over the state is bound to have data input errors. Additional errors were likely contained in some of the documents sent to DMV for input. The 16 million records in the insurance files likewise had data entry errors, under or non-reporting and some commercially insured vehicles were part of fleet policies where individual vehicles could not be identified.

This paper will discuss the steps taken to overcome these problems and report the results of the year long effort to identify California's uninsured vehicles.

Data Collection

Basic identifying data were collected from most insurance companies and the California Department of Motor Vehicles (DMV) as of June 1, 1997. The two sets of data were then compared to estimate the number of insured and uninsured vehicles as of June 1, 1997.

Insurance Data Collection

In December 1996 the Department of Insurance sent out a preliminary notice to all automobile insurers informing them that during the next year (1997) they would receive a request for data for every vehicle they insured. In February a follow up letter detailed specifications for submitting data to the department. Data was required for all vehicles carrying at least the legally mandated liability limits. Insurers were to provide data for all vehicles licensed for operation on the street, including automobiles, trucks, motorcycles, antiques, vans, etc. Off highway vehicles, trailers and other vehicles not required to be licensed for the road were excluded along with government owned vehicles.

The following seven items were required for every insured vehicle:

VIN (vehicle identification number)
License plate state code*
License plate number*
Rating ZIP Code
Mailing ZIP Code
Vehicle make code
Vehicle model year

* The license plate information was later made optional since few insurers kept this information.

The VIN is a 17 character alphanumeric code that uniquely identifies every vehicle manufactured. Prior to 1980 some of the VINs were longer or shorter than 17 characters. VINs are now standardized at 17 characters. The first 11 characters of the VIN provide information about the vehicle (model, engine size, etc.). A unique identifier is contained in the last six digits.

License plate state codes were used to avoid matching California license plates with out-of-state license plates. The license plate numbers are the alphanumeric characters on the license plate of every vehicle.

Two ZIP Codes were obtained, the rating ZIP Code and the mailing ZIP Code. The rating ZIP Code is the ZIP Code of the physical location where the car is garaged. The mailing ZIP Code is just the ZIP Code of the mailing address of the vehicle's owner. This may or may not match the rating ZIP Code. Mailing ZIP Codes include out of state ZIP Codes and ZIP Codes that are only for post office (PO) Boxes. PO Box only ZIP Codes, such as 95609, are ZIP Codes that identify a set of PO Boxes and do not represent any geographic area. Persons living any where in the world could use PO Boxes in California. The mailing ZIP Code was collected since it is usually more accurate and since the DMV data contains no rated ZIP Code, the mailing ZIP Code is the only common ZIP Code available to match between the two files.

The vehicle make code represents the manufacture's name. Chevrolet might be coded CHEV in order to reduce storage space in the computer necessary to hold a longer name. Make codes in this study were a maximum of five characters, with most codes only four characters long.

The vehicle model year is simply the model year of the vehicle, which is not the same as the year of manufacture. Model years usually start several months prior to the beginning of the calendar year. Our study, which collected data on June 1, 1997 included vehicles that were 1998 model year vehicles. The data was recorded using two digits, but all future studies will need four digits to accurately record model years 2000 and beyond. In this study all model years of 00 were assumed to be for the year 1900 or coded that way since the exact model year might have been unknown.

Insurers provided data on their in-force policies as of June 1, 1997. In order to let insurers update their records, the data was not due in until July 18, 1997 for personal line insurers and August 1, 1997 for commercial line insurers. Insurers sent in 94 mainframe tapes and cartridges, and 141 PC diskettes. One insurer group sent in their file attached to an E-mail message. Based on 1996 written premiums more than 99.8% of the personal line insurers and more than 65% of the commercial line insurers provided data. Personal line's insurers provided 16.6 million records. Commercial line's insurers sent in 700,000 records.

Quality of the data varied by insurer. Some insurers input the VIN into their computer and the computer uses the first eleven characters to rate the vehicle specific information for the policy. These insurers should have a lower error rate than insurers that do not use the VIN. Insurers that did not have the VIN sometimes used a partial VIN, put in "UNKNOWN" or place all zeros or nines in the VIN field.

Although we calculated the percent of compliance using 1996 premiums, we cannot tell if any companies left out data. We did not do an audit of every insurer to check the number of records provided.

DMV Data Collection

DMV was not able to supply an exact list of vehicles with their registered owners as of June 1, 1997. In order to get the best estimate of what the data looked like on June 1, 1997, the data was run on June 13, 1997. This allowed a two-week lag to process changes effective June 1, 1997. However, some information on the file would be for a time period after June first (between June 2 and June 13) and some data that should have changed on or before June 1 was not yet updated.

DMV supplied almost 44 million records. However, many records were provided that were not appropriate for this analysis. We removed records from the study database for vehicles that were not used on the highway, government owned vehicles and duplicate entries. Records removed included: disabled placards (not even real vehicles), off-highway vehicles, farm vehicles, boats, government owned vehicles, trailers, mopeds and duplicate records. Data were used for all on-road vehicles, including all types of personal and commercial vehicles.

DMV and insurance company data contained some errors. However, when two records that should have matched (one from the insurer and one from DMV) failed to match, we usually could not tell which one was in error. After 1980, VINs had 17 characters, so we could tell which VIN was missing a character in those cases. The last six digits should be numbers, again, if that was where the error was we could tell which file was wrong. Other data elements contained errors, such as thousands of vehicles in outdated ZIP Codes in both files, erroneous vehicle make codes (possibly in the millions) and other errors.

DMV data were also used to estimate the number of unregistered vehicles on the road. Since we are interested in the uninsured rate for all vehicles on the road, we need more than just the number of registered vehicles. Everyone has probably seen cars on the road with expired registration stickers on their license plate. Many more may have stolen stickers or stolen license plates. All of these vehicles are driven on the road even though they are not currently registered.

The unregistered on-road vehicles estimate was assumed to equal the number of vehicles that have expired registrations within the last 12 months prior to June 1, 1997. Most vehicles that have expired registrations within the last 12 months are not on the road. However, our best estimate of the total number of unregistered vehicles on the road is the number of expired registrations within the last 12 months. This methodology is similar to that used by the California Energy Commission (CEC) to predict energy demand.

Starting in April 1997, proof of insurance was required in order to renew a vehicle's registration. This caused an increase in the number of vehicles that are no longer registered but are still on the road. Future study is expected to more accurately estimate the number of unregistered vehicles on the road. This might involve surveys, tracking DMV expired records, analyzing violations issued for unregistered vehicles or other methods. CEC is currently working on a revised method for estimating the number of unregistered vehicles on the road. For a more complete analysis of the unregistered problem see "Estimating the Uninsured Motorist Rate: Sensitivity to Data and Assumptions" by Lyn Hunstad, California Department of Insurance, 1998.

Total Adjustments

Total adjustments are used to expand the amount of available data to equal the estimated total. This is necessary for two reasons. First, less than 100% of the data were collected for every vehicle from the insurance company files. Second, the data that were reported contained some records that were missing some items or contained invalid data for others. The percentage collected thus varied by item. Since the valid data were less than 100% of the total, the valid data had to be increased in order to fully represent the total number of insured vehicles.

The total number of insured vehicles was calculated by increasing the number of reported insured vehicles to include the estimated number of vehicles insured by those companies that did not provide any data. This increase was based on the percentage of reporting companies' 1996 premium. As an example, if companies representing 80% of the total 1996 earned premiums had reported 15 million vehicles, the number of vehicles reported would have to be increased by 125% (100 divided by 80) to 18 million to fully represent all insured vehicles. The adjustment factor was calculated by dividing 100 by the percent reported, 80% in this example. The actual adjustments were less for all items and are listed in the results section.

Self insured

DMV data were also used to identify vehicles owned by self-insured entities. DMV provided a list of all self-insured entities and the names were matched with the names on the DMV records. More than 420,000 vehicles were identified as owned by self-insured entities. The matching was a slow process as companies use a variety of names on their registration forms. As an example, Pacific Gas & Electric Company has their name listed as:

P G & E
PAC GAS/EL
P G/E
PG/E
P G AND E
P G E
PG AND E
PG E CO
PG/G
PGE
PGE/

Many more variations of their name also exist. Many of the names also had an internal tracking number after the name. The name on the DMV file would look like:

P G/E   MT100078

These internal tracking numbers would be different for each vehicle. This resulted in a long and resource intensive process of developing searches on the name field to correctly identify all of the vehicles and only those vehicles, which were owned by the self insured companies.

Insurance company owned vehicles, which did not match any records provided by insurers, were also identified as self-insured. The data base was searched for certain words (such as “insurance”, “casualty”, etc.) as well as specific names of the major insurance companies, in order to identify insurance company owned vehicles. However, in at least two ZIP Codes we found large numbers of insurance company owned vehicles where none should have been. These two places turned out to be ZIP Codes where the insurer sells the vehicles to salvage operations or simply holds title to stolen vehicles that probably are no longer on the road. These vehicles were excluded from the count of on road vehicles.

Methods

Matching programs

Programs were written to match the VINs from the DMV files with the VINs from the insurer files. The programs were part of a long series of programs, which included programs to read in the raw data, check for obvious errors in the data, fix vehicle make codes, eliminate duplicate VINs (in both the insurer and DMV data bases) and merge data from all 64 DMV cartridges together into one file and data from all insurers together in another file.

Data that contained obvious errors or duplicate VINs were eliminated before the matching programs. Data for duplicate VINs were saved for later analysis that did not involve exact matching of records. Some obvious errors included short VINs (after 1980 all VINs should be 17 characters long), VINs that contained all 9's or all 0's, blank VINs and other errors.

After the matching on the VIN, other matches were also attempted. Since VINs are not supposed to contain any letter O's, all O's were converted to 0 (zero), the file was sorted and the VINs matched again. The remaining unmatched records were then matched on license plate number. Few insurers provided license plate information, but there were some matches.

Many errors were contained in the VIN in both data sets. Characters were changed, many times from 2 to S, B to 8, Z to 2, I to 1, 5 to S, etc. Some zeros were accidentally input as O's. Many other items are transposed when they are input into a computer. This created the necessity for secondary matching programs.

After the initial round of matching, unmatched records were placed in exception files. Records in the two unmatched exception files were matched by a combination of the year, make and mailing ZIP Code. Matches were then checked for close VINs, off by only one character or containing a set of transposed characters. If they met this definition of "close" and the vehicle make, model year and ZIP Code matched, they were considered a secondary match.

Since there were still almost two million unmatched records in the insurer exception file and almost 16 million in the DMV exception file, a method needed to be developed to match the VINs from one file to the other without checking every possible combination. To check every record in the insurer exception file with every record in the DMV exception file would result in 32,000,000,000,000 comparisons between the two files. Each check would also include comparing each one of the 17 digits for each of those 32 trillion comparisons!

Secondary match programs were written that first sorted each file by make, model year and ZIP Code. The DMV exception file was then analyzed to determine the location (observation number) of each combination of make/model year/ZIP Code. This information was then used to narrow down the number of possible matches to allow the program to match only those with the same make/model year/ZIP Code from insurer file with each possible match in the DMV file. The program used complicated logic and was the basis for presentations at the Sacramento Statistical

Association's 19th Annual Institute on Research and Statistics on April 8, 1998[1] and on October 15, 1998 at the 6th Annual Western Users of SAS Software Conference[2].

Before the secondary matching programs were run, both data sets were examined to correct differences in vehicle make codes. DMV uses around ten thousand different make codes in their system. Although DMV tried to standardize their codes, many codes on their files were not on their official list[3]. Most Insurers did not use any standardized codes and several submitted copies of their code lists along with their data. Programs were written to convert all codes to a common coding scheme. Some codes, such as Mercedes and Mercury could both be coded as merc. However, the official codes used by DMV were merz for Mercedes and merc for mercury. Errors in these type of codes could not be corrected without the use of VIN analysis software, which was not used in this study.

ZIP Code Calculations

ZIP Code insured rates were calculated as follows:

1. ZIP Code information was obtained from the following four sources:

    a. The matched files, both VIN and secondary match, which used the DMV ZIP Code.

    b. A self insured file, which used only the DMV information.

    c. An unmatched insurer record file, which included some erroneous insurer records with valid ZIP Codes.

    d. Unmatched on road vehicles from the DMV file, which also excluded the self insured records.

2. Files a, b and c were summed to obtain ZIP Code totals for insured vehicles. Files a, b and d were totaled to obtain the on road estimate by ZIP Code.

3. Each of the two sets of estimates contained bad ZIP Code data (missing values, zeros or out of state ZIP Codes). The totals for the insured and on road good ZIP Code data files were multiplied by their respective adjustment factors, in order to get the ZIP Code totals

---

[1] Bernstein, Robert, "Cntlin Option, More Than Just Another Pretty Format," April 1998: presentation in Sacramento, CA

[2] Bernstein, Robert, "Cntlin Option, More than Just Another Pretty Format," Proceedings of the 6th Annual Western Users of SAS Software Conference, 1998, pp. 27-32

[3] DMV, "Vehicle Registration Make Abbreviations Manual," July 1996: Sacramento, CA

to match the estimated insured and on road vehicle totals. The adjustment factors were the total number of vehicles insured (or on the road) divided by the number of records in each file which contained a valid ZIP Code. This adjustment allocates the vehicles in unknown, invalid or out-of-state ZIP Codes into the valid ZIP Codes based on the size of each valid ZIP Code.

To show uninsured rates by ZIP Code, only ZIP Codes that represent a physical area could be used in the ZIP Code calculations. ZIP Codes that were for a PO Box only were assigned to the rating ZIP Code. If no rating ZIP Code was available, the physical ZIP Code where the plurality of the PO Box ZIP Codes were rated (based on the insurer file) was used. Some were treated as bad ZIP Codes if insufficient data was available to decide which ZIP Code to use. Most of the time spent on ZIP Code calculations involved individually tracking invalid and PO Boxes only ZIP Codes in order to calculate rates only for those ZIP Codes that could be physically mapped[4].

The United States Postal Service (USPS)[5] web site was used to check for valid ZIP Codes. However, only a few of the PO Box only ZIP Codes were listed as PO Box only. Though we mapped the uninsured rate by ZIP Code for several counties, the mapped ZIP Code totals did not match the county totals since a few ZIP Codes remain unmapped. Unmatched ZIP Codes include mostly no longer valid ZIP Codes.

County Calculations

ZIP Code data were placed into the county containing all or the largest portions of each ZIP Code. PO Box ZIP Code data that were not matched to a non-PO Box ZIP Code were assigned to the county containing the PO Box ZIP Code. Thus, there was a smaller adjustment factor applied to the county data compared with the ZIP Code Adjustments. This adjustment was necessary to make the county totals match the insured and on road vehicle totals.

Type of Vehicle Calculations

The matched files and self insured files contained a "type of vehicle" code from the DMV. These data were used to place the vehicles into one of four categories: automobiles(noncommercial), commercial license, motorcycle and antique vehicle[6]. Since there was no type of vehicle indicator on the insurance files, the insurance non matching files could not be used to calculate the type of vehicle.

---

[4] A ZIP Code mapping file was purchased from Geographic Data Technology.

[5] http://www.usps.gov/ncsc/

[6] Some automobiles have commercial licenses and many commercially licensed vehicles are used only for personal use.

An adjustment factor was calculated to increase the type of vehicle numbers for the matched files to make the adjusted amount match the estimated insured vehicle total. The adjustment factor was the total number of vehicles divided by the number of vehicles with an identifiable vehicle type. The same adjustment factor was applied to every vehicle type. This adjustment allows the total number of vehicles by vehicle type to match the estimated total number of vehicles, both for the number of insured vehicles and the number of on road vehicles.

Vehicle Age Estimates

Vehicle age was calculated using the model year for each record. Model years of 97 and newer were assumed to be zero years old. Insurer and DMV files were totaled separately to obtain insured and on road estimates. Unlike ZIP Codes, the model year of a vehicle should not change between the insurer and DMV records. This eliminated the need of using the matched files. Adjustment factors were again used to get the insured and on road totals by age to match the estimated insured and on road totals.

RESULTS

Table 1 shows the results of the insured vehicle estimates. 18,160,000 insured vehicles are on the road. Table 2 shows the on road vehicle estimates.

Table 1 **Number of Insured Vehicles***	
Personal lines records submitted	16,570,000
Personal lines under reporting adjustment	30,000
Commercial lines records submitted	720,000
Commercial lines under reporting adjustment	420,000
Self insured** (commercial & personal)	420,000
Total Insured	**18,160,000**
* data are rounded to the nearest 10,000 ** based on DMV data	

Table 2 **Number of On Road Vehicles:**	
Total DMV records	43,940,000
Disabled placards	- 2,500,000
Off highway vehicles	- 550,000
Farm vehicles	- 160,000
Boats	-1,150,000
Exempt (government owned)	- 410,000
Trailers	-3,040,000
Mopeds	- 100,000
Duplicate records, in process	-5,430,000
Duplicate records, VINs	- 140,000
Net on-road type of vehicles	30,460,000
Insurance company title only vehicles	- 30,000
Junk/PNO vehicles	-2,180,000
Expired Registration more than one year ago	-4,790,000
Net insurable vehicles On Road	**23,460,000**

Uninsured vehicles were calculated by subtracting the 18,160,000 insured vehicles from the 23,460,000 vehicles on the road. This resulted in 5.3 million uninsured vehicles in California on June 1, 1997.

Record Matching

The matching programs used 30.4 million DMV records. This included about seven million vehicles that were no longer counted as on the road. There were 2.2 million junked/PNO vehicles (NPOs are Non Planned Operation vehicles that are not supposed to be on the road) and 4.8 million vehicles whose registration had expired more than 12 months ago. These two groups were included since some of them could still be on the road and thus still be insured. They are already indirectly included in the unregistered on-road estimate.

Not all of the insurers' data were run through the matching programs. About 16.4 million (95%) of the 17.3 million records (16.57 million personal and 0.72 million commercial) passed the initial set of screens designed to weed out obviously bad records. The screens checked for short VINs (model years after 1980 should have all 17 characters of the VIN), spaces in the middle of the VIN and other obvious errors. These screens did not identify all invalid VINs. Since the records with bad VINs still represented insured vehicles and most contained a valid ZIP Code and model year, they were still used in the ZIP Code and vehicle age calculations.

The VIN was the first match. Both data sets were sorted by VIN and the full 17 characters of the VIN were compared between the 16.4 million insurer file and the 30.4 million DMV records. More than 14.4 million records matched on the VIN. This left about two million records in the insurer exception file and 16 million records in the DMV exception file.

Since the VIN was not supposed to contain any letter O's, (just zeros) all O's were converted to 0's, the files resorted and the VINs compared again. This resulted in almost 68,000 additional matches. The exception files were then sorted and matched by license plate number. Less than 1,000 records matched on license plate number. Few companies supplied the license plate numbers for their vehicles since it was an optional item.

Almost 700,000 additional vehicles were matched using the first set of secondary match programs. These programs matched together vehicles from the DMV and insurer file based on the closeness of the VIN and matching model years, make code and ZIP Code. VINs off by one character or with a transposition of two characters (and the rest equal) were considered matched.

A second set of secondary match programs was developed to do additional matching. These programs matched each exception file by the last six digits of the VIN. The rest of the VIN was then compared to determine if the VINs were off by one digit or transposed. The records also need to match two out of three of the vehicle make, model year and ZIP Code fields to be counted as a match. More than 240,000 additional records were matched using the second set of secondary match programs.

Many records did not match because they are for vehicles that have never been registered in California. This may be the result of vehicles moving into California that have yet to register here or vehicles (mostly commercial) insured here, but registered in another state. We have no estimates but we know that vehicles exist in both categories.

Table 3 contains the results of the matching programs. Almost 94.5% of the possibly valid VIN insurer records were matched with the DMV data. Many possibly valid VINs contained errors that were not identified by the simple screens applied. Had we applied more comprehensive screens, the valid VIN match rate would have increased. The match rate for all insurer records was 89.4%.

Table 3			
Matching DMV and Insurer Records for Valid Insurer VINs*			
	Records	Percent	Cumulative
VIN match	14,454,756	88.4%	88.4%
O-0 VIN match	67,545	0.4%	88.8%
License match	964	0.0%	88.8%
Matching year/make/ZIP Code			
Off by one VIN character	664,947	4.1%	92.8%
Transpose	17,340	0.1%	93.0%
Matching last six VIN Characters & 2/3 of year/make/ZIP Code			
Off by one VIN character	238,518	1.5%	94.4%
Transpose	2,730	0.0%	94.4%
Total matches	15,446,800	94.4%	
Total checked	16,358,740	100.0%	
* Valid insurer VINs include many records with invalid VINs that still passed the simple VIN screens applied to the insurer records			

Personal Lines

Seven companies (or company groups) submitted more than 900,000 personal lines records each. The match rates, both primary (VIN and license plate only) and secondary matches (transpositions and one off in the VIN with matching make/year/ZIP Code), for these seven companies (in descending order of primary match rates) are in table 4.

Table 4
Personal Lines Matching Rates by Insurer

	Percentage of insurer records matching DMV records	
Seven largest Insurers	Primary Matching Only	Including Secondary Matching
Company 1	92.1%	95.9%
Company 2	89.4%	93.0%
Company 3	88.7%	94.9%
Company 4	87.6%	93.4%
Company 5	86.1%	93.6%
Company 6	82.7%	91.6%
Company 7	80.3%	81.1%
All personal	**85.5%**	**90.7%**

Commercial Lines

The data from many commercial line insurers were not usable for the matching portion of this project. Many commercial insurers do not know what vehicles or even how many, they insure. These companies rate (determine the premium) by other means. Some commercial policies use past experience, the number of full time equivalent drivers or some other method to calculate the premium. Since the insurer does not need to know how many vehicles their insured has, they do not collect this information.

Seven companies (or company groups) submitted more than 25,000 records each for commercial lines insurance. Company match rates are in table 5.

Table 5
Commercial Lines Matching Rates by Insurer

	Percentage of insurer records matching DMV records	
Seven Largest Insurers	Primary matching Only	Including Secondary Matching
Company A	74.6%	75.5%
Company B	73.9%	88.1%
Company C	72.1%	87.8%
Company D	63.1%	74.1%
Company E	55.4%	67.6%
Company F	39.0%	47.3%
Company G	26.0%	31.3%
All commercial	**49.0%**	**57.2%**

Secondary matching was a success. Both commercial and personal lines matches significantly increased by using the secondary matching programs. Only one of the top seven personal lines insurers was not able to match more than 91% of their records after the secondary matches. Secondary matching accounted for an additional 8 percent in the match rate for commercial lines insurers. Two commercial lines insurers increased their total match rates to almost 90% using the secondary matching programs. Only one Commercial insurer, Company A, did not show over a 5% increase due to the secondary matching programs.

Registration Status

The DMV matching files contained records for vehicles whose registration had expired and vehicles that were junk/PNO status which should not be on the road. Vehicles that had expired registration within the last 12 months had a 17% match rate with the insurer records. Almost 60,000 vehicles whose registration expired over 12 months ago matched insurer records, for a match rate of just over 1%.

Current PNO/Junk status vehicles matched 47% of the time. This high rate is partially due to the fact that many of these vehicles were in an accident within the last 12 months, and insured at the time. The insurance on these vehicles may not have been canceled in a timely fashion after the vehicle was totaled and thus still showed up on the insurer's record. Junk/PNO records expiring within the last 12 months had a 8% match rate and older junk/PNO vehicles had a 2% match rate.

In total, about 800,000 vehicles that were not currently registered matched. About 95% of these were matched in the primary matching program. Thus the high match rate was not due to possible errors in the secondary matching programs.

County Results

Table 6 shows the counties with the ten highest and lowest uninsured rates. Imperial has by far the highest uninsured rate. Los Angeles has the second highest rate with over 30% of the vehicles uninsured. Marin, at 12.8% has the lowest uninsured rate in the state. They are followed by three other counties at or below 15%. The top six lowest uninsured rate counties are all in northern California. With the exception of four lightly populated counties, all of the highest uninsured rates are located in Southern California and the southern part of the central valley. Appendix 1 contains the rates for all 58 counties, including estimates for the number of vehicles on the road and the number of insured vehicles.

Table 6
Highest and Lowest County Uninsured Rates

Highest Uninsured Rate Counties		Lowest Uninsured Rate Counties	
County	Uninsured Rate	County	Uninsured Rate
Imperial	46.5%	Marin	12.8%
Los Angeles	30.7%	San Mateo	13.1%
Tulare	27.1%	Placer	14.6%
Alpine	26.3%	Nevada	15.0%
Fresno	26.2%	Contra Costa	15.2%
San Bernardino	25.5%	Napa	15.2%
Sierra	25.4%	San Luis Obispo	15.3%
Lake	24.9%	Santa Clara	15.3%
Kings	24.5%	Sonoma	16.1%
Madera	24.4%	Santa Barbara	16.5%

Map 1 displays the map for California counties. The counties are listed for seven different uninsured rate categories. The darker solid grays are where the highest uninsured rates are. Only two counties, Imperial and Los Angeles, are in the highest uninsured rate category.
(NOTE: color versions of the maps are available for inspection at the Department of Insurance in Sacramento and can also be viewed at their web site at http://www.insurance.ca.gov)

County Unemployment Rates and the Uninsured

County unemployment rates for May 1997 were compared with the uninsured vehicle rates. Seven of the 10 counties with the lowest uninsured rates are also in the lowest 10 unemployment rate counties for May 1997. Nine of the 10 lowest uninsured rate counties had unemployment rates below the statewide average. Marin and San Mateo have the two lowest unemployment and uninsured rates in the state.

Five of the 10 counties with the highest uninsured rates are also in the bottom 12 for unemployment rates. All 10 counties with the highest uninsured rates had unemployment rates above the statewide average. Imperial County has the highest uninsured and unemployment rates in the state. The highest un-employment rate for any of the top 10 lowest uninsured rate counties was #19 for Nevada County, while the lowest unemployment rate for any of the 10 highest uninsured rate counties was San Bernardino at #21.

Cumulative Uninsured by County

Table 7 displays the counties in decreasing order of the number of uninsured vehicles. Los Angeles, with over 1.8 million uninsured vehicles tops the list. The top three counties, Los Angeles, San Diego and Orange, account for about half the 5.3 million uninsured vehicles. The top five counties are all in southern California and account for three out of every five uninsured vehicles in the state.

Table 7: Number of Uninsured and Cumulative Percent of Total

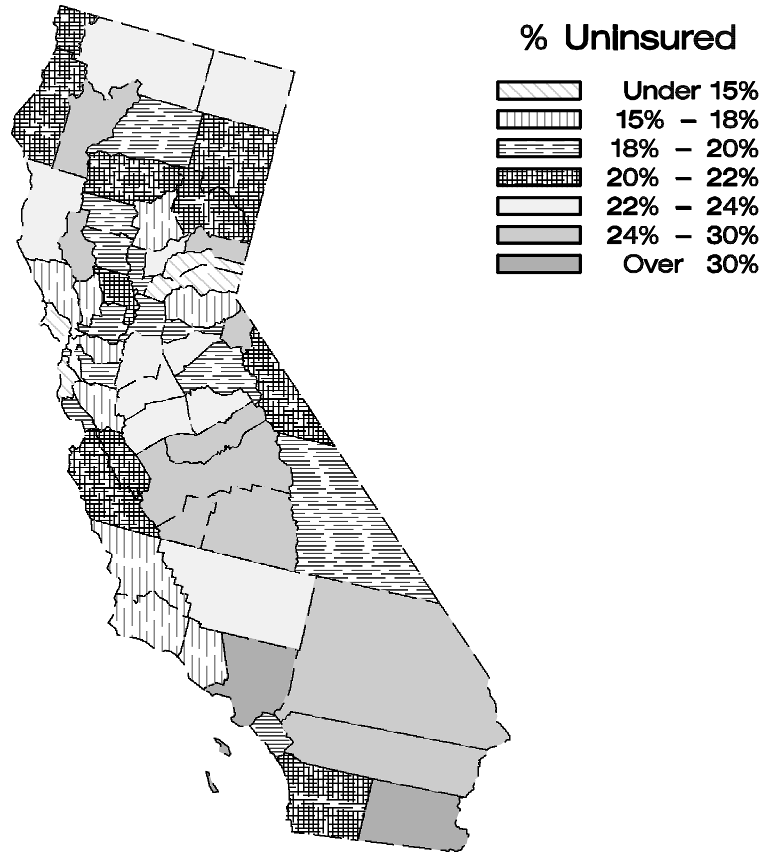
County	Uninsured Vehicles	Cumulative Percent
Los Angeles	1,848,024	34.88%
San Diego	400,902	42.44%
Orange	398,869	49.97%
San Bernardino	287,031	55.39%
Riverside	237,384	59.87%
Santa Clara	197,343	63.59%
Alameda	189,752	67.18%
Sacramento	155,357	70.11%
Fresno	133,796	72.63%
Contra Costa	107,886	74.67%
Kern	104,942	76.65%

.

Map 1

California Motor Vehicle Uninsured Rates by County

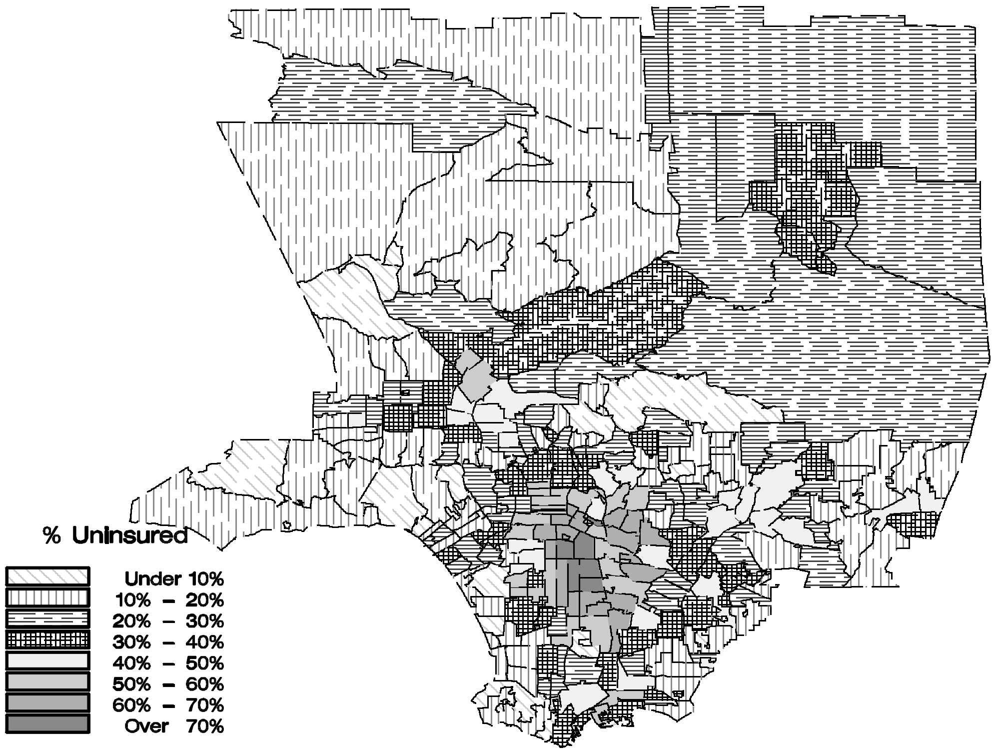
as of June 1, 1997



Maps 2 through 6 contain data by ZIP Code for five counties. These include Los Angeles, Orange, San Diego, San Francisco and Sacramento. Los Angeles has a different scale than the rest. Since the data include commercial vehicles, these maps will not match other estimates based solely on personal vehicles.

Map 2

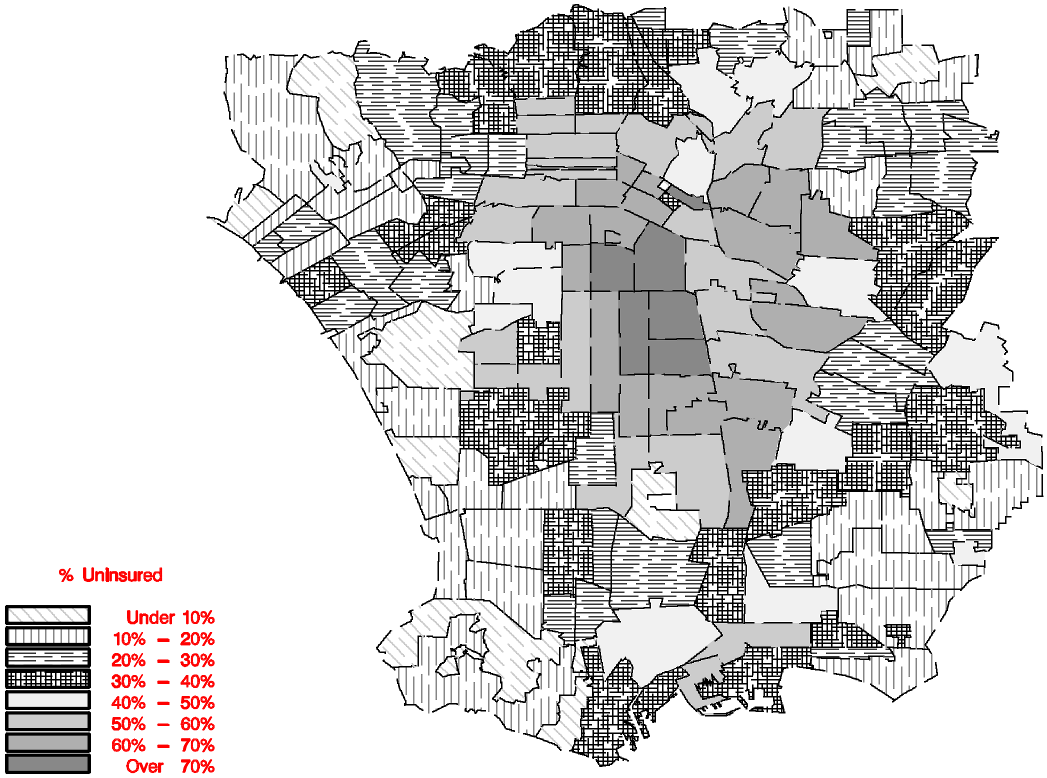
Uninsured Motor Vehicle Rates
Los Angeles County, by ZIP Code
as of June 1, 1997



NOTE: Los Angeles County has a Unique Scale

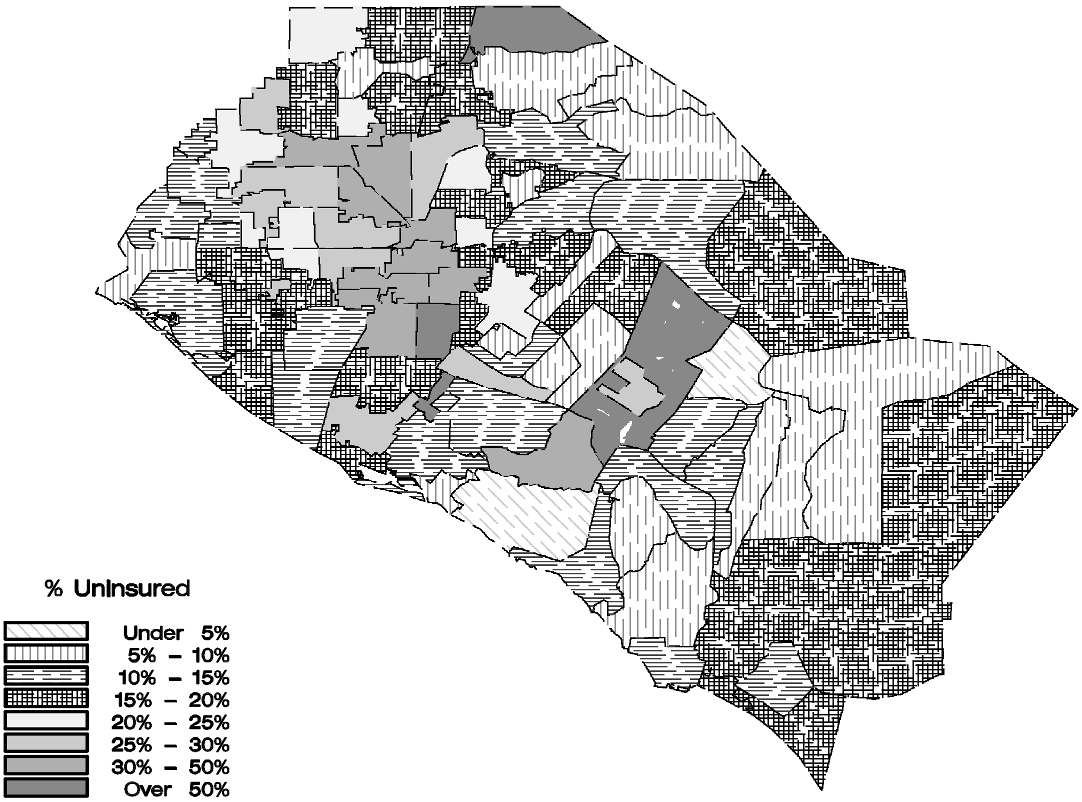
Map 2.1

Uninsured Motor Vehicle Rates
Downtown/Southern Los Angeles County
by ZIP Code, as of June 1, 1997



NOTE: Los Angeles County has a Unique Scale

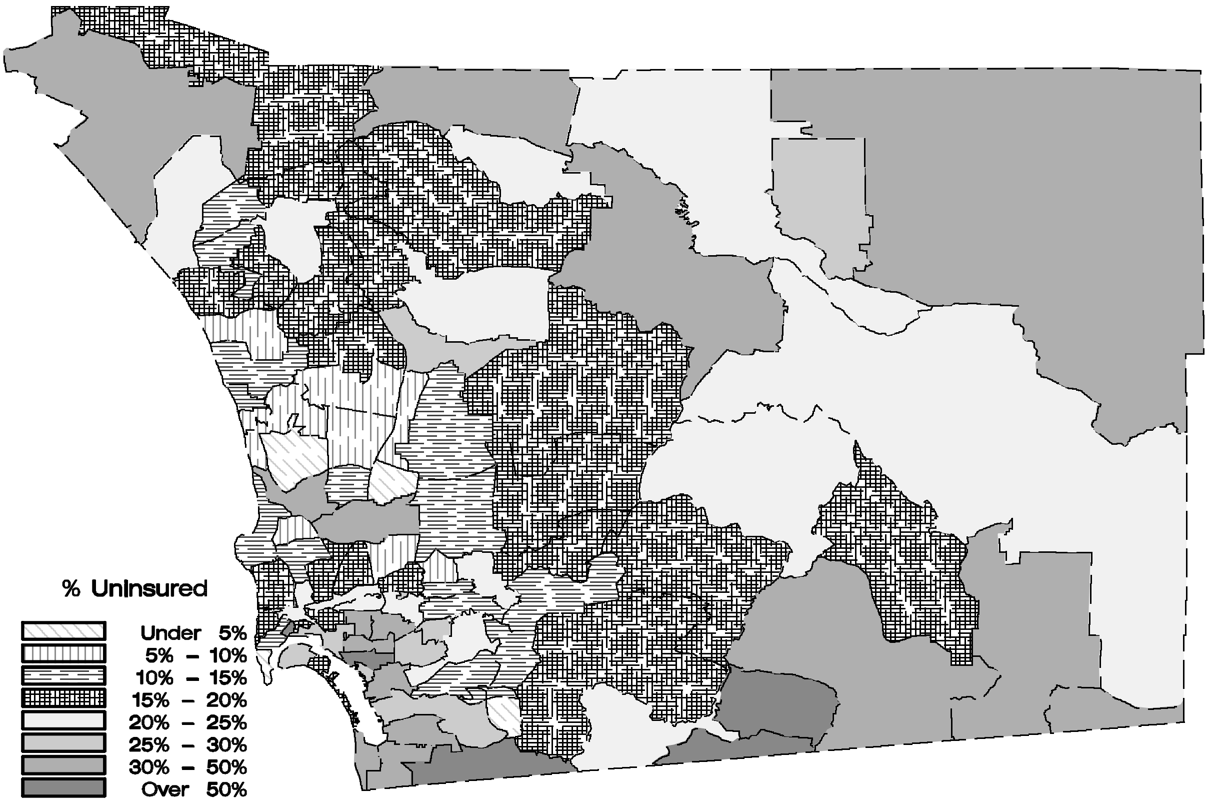
Map 3
Uninsured Motor Vehicle Rates
Orange County, by ZIP Code
as of June 1, 1997



Map 4

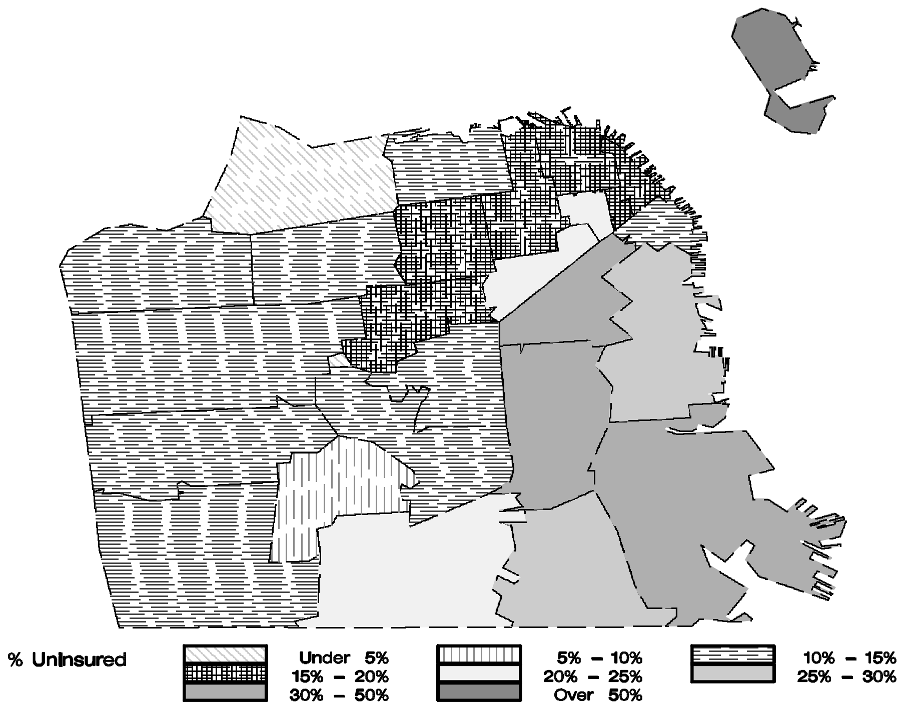
Uninsured Motor Vehicle Rates
San Diego County, by ZIP Code

as of June 1, 1997



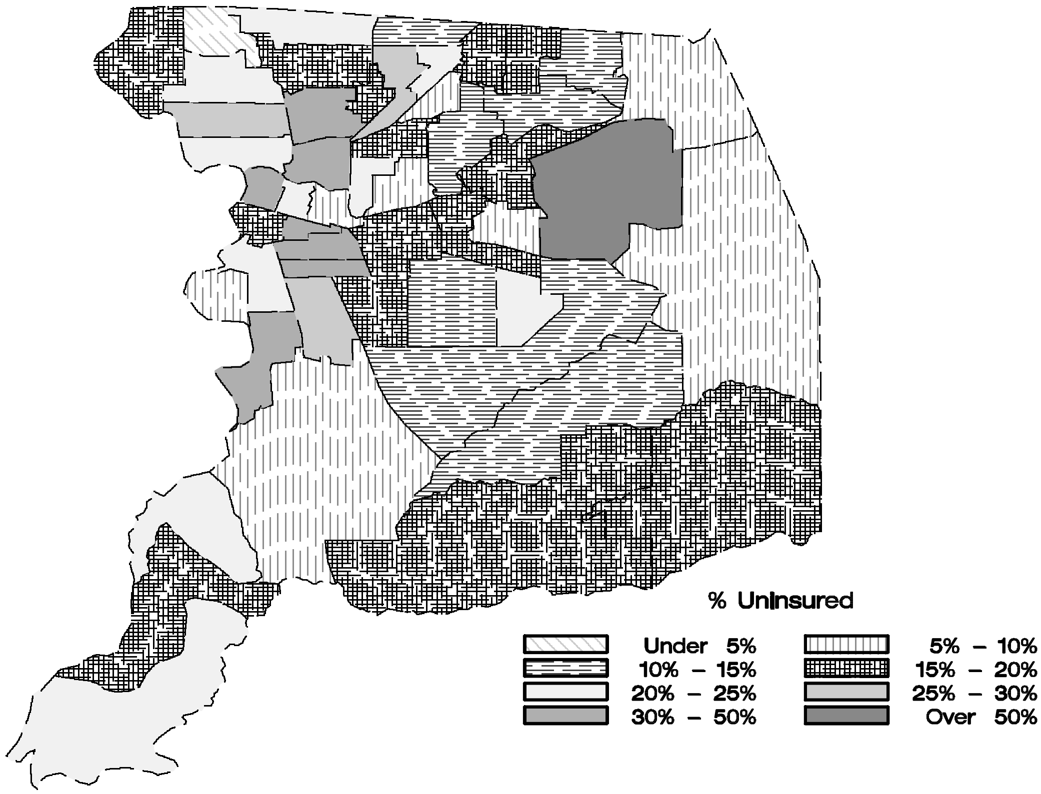
Map 5

Uninsured Motor Vehicle Rates
San Francisco, by ZIP Code
as of June 1, 1997



Map 6

Uninsured Motor Vehicle Rates
Sacramento County, by ZIP Code
as of June 1, 1997



ZIP Code Results

Appendix 2 contains the 40 ZIP Codes with the highest uninsured rates in the state. This only includes data for those ZIP Codes with more than 1,000 vehicles on the road. The data show that 9 of the 10 highest, and 30 of the 34 highest uninsured rate ZIP Codes, are in Los Angeles county. The highest uninsured rates in Los Angeles county are centered near downtown and to the south, including ZIP Codes 90013, 90011, 90003, 90002, 90037 and 90001 (all over 70% uninsured). These are seen in the solid dark gray areas of map 2 and map 2.1.

Map 2.1 enlarges the downtown and southern Los Angeles county area to get a better look at the highest uninsured ZIP Codes. This map covers from Santa Monica and Beverly Hills in the northwest corner, to the southern part of Pasadena in the northeast part of the map, down to Santa Fe Springs, Cerritos and Long Beach in the southeastern corner, and over to Palos Verde Peninsula and Rancho Palos Verdes in the southwest corner. This map shows a better view of the highest uninsured ZIP Codes, which are surrounded by ZIP Codes in the next two highest categories (60%-70% and 50%-60% uninsured). Coastal ZIP Codes have much lower uninsured rates compared to the interior areas of Los Angeles.

Orange county, map 3, has a different scale from Los Angeles, as do all of the other counties. This is due to their much lower uninsured rates. Orange county has a few pockets of high uninsured ZIP Codes, but nothing like Los Angeles. Many ZIP Codes in Orange county changed in 1996, resulting in many records containing invalid ZIP Codes, several of which could not be matched directly to a single new ZIP Code. The highest uninsured ZIP Codes, with good data and with over 10,000 vehicles on the road, include 92707, 92701, 92805 and 92703. This includes three Santa Ana and one Anaheim ZIP Code.

San Diego county, map 4, has more than half of their ZIP Codes with uninsured rates below 20%. Although San Diego county has five ZIP Codes listed with more than a 50% uninsured rate, the situation is not as bad as it looks. One ZIP Code is part of a Naval Base, with little data and suspect data at that. Two of the ZIP Codes are small, Potrero and Tecate, with less than 2,000 total uninsured vehicles combined. The two large ZIP Codes with high rates are 92173, San Ysidro, and 92113 in the city of San Diego. Two other city of San Diego ZIP Codes are in the 40%-50% uninsured range along with one ZIP Code in National City.

San Francisco, map 5, has only one ZIP Code over 50%, Treasure Island, which has very few vehicles. The five other ZIP Codes with uninsured rates more than 25% are below Market Street in the southern and eastern sections of the city. The only ZIP Codes under 5% uninsured, have about 500 vehicles combined. These ZIP Codes are the Presidio and UC Medical Center (94129 and 94143). Most of the city has uninsured rates of 10% to 15%, while the next largest area has rates between 15% and 20%.

Sacramento county, map 6, has only one ZIP Code over 50%, 95742 in Rancho Cordova. Three of the 30% to 50% range ZIP Codes are next to each other in the southeast part of the city of Sacramento, 95817, 95820 and 95824. The other high uninsured areas are downtown, 95814, the north area ZIP Codes of 95815 and 95838, and the area south of Meadowview road in ZIP Code 95832. The only ZIP Code under 5%, 95836, has less than 50 vehicles. The lowest rate

ZIP Codes with over 1,000 vehicles are Folsom (95762 and 95630), Sloughhouse/Rancho Murieta (95683) , Elk Grove (95758), Greenhaven/pocket area of the city of Sacramento (95831), part of the east Sacramento area (95864), CSU Sacramento area (95819) and part of the northeast area (95841).

Top and Bottom 40 Uninsured ZIP Codes versus Census Data

The data by uninsured rate were compared to the 1990 census data by ZIP Code. Some ZIP Codes that were mostly commercial or were added since the 1990 census, have not been included. The rest of the top and bottom 30 ZIP Codes in Appendixes 2 and 3 were examined. However, data was only available for 22 of the top 30 and 28 of the bottom 30 ZIP Codes. Some ZIP Codes are new since the 1990 census while others were left out if they were mostly commercial vehicles in the ZIP Code. Comparing personal data from the census to commercial ZIP Codes will not produce meaningful results.

The comparisons showed:

Only one of the top 30 lowest uninsured rate ZIP Codes had median household income below $50,000 in 1990.
All of the bottom 30 highest uninsured rate ZIP Codes had median household income below $26,000 in 1990

Top ten ZIP Codes all had median household income above $65,000 in 1990.
All of the bottom ten had median household income below $19,000 in 1990.

The top 30 ZIP Codes had at least 86% of the persons above 200% of the poverty level
None of the bottom 30 exceed 45% of persons with incomes above 200% of the poverty level and none of the bottom 13 exceed 40%.

Top 30 ZIP Codes all had less than 4% of the households on public assistance
The Bottom 30 ZIP Codes all exceeded 10% of the households on public assistance.

High and Low Premium Cost ZIP Codes

During 1995, the latest year for which ZIP Code specific cost data was available, the average premium for a basic limits liability only policy was $321.84 in California. Average premiums were calculated for 1,713 ZIP Codes in 1995. All of the top 176 highest premium cost ZIP Codes were in Los Angeles County, except for three college ZIP Codes, which had their average costs inflated by a large percentage of inexperienced drivers. The highest average cost ZIP Code outside of Los Angeles County that was not a college ZIP Code, was 92703, Santa Ana (Bristol). ZIP Code 92703 ranked as the 177th most expensive ZIP Code.

Highest and Lowest Cost ZIP Codes

All of the top 12 highest premium cost ZIP Codes in 1995 were also in the top 100 (out of a total of 1,717) highest uninsured rate ZIP Codes for 1997. In contrast, only one of the 12 lowest premium cost ZIP Codes was also in the top 100 (out of a total of 1,717) ZIP Codes with the lowest uninsured rates.

Highest Uninsured Rate ZIP Codes

Among the top 40 highest uninsured rate ZIP Codes (see appendix 2) only six were not in the top 100 of the most expensive premium cost list. These six included Tecate (number 3), Calexico (number 12), San Ysidro (number 18), San Diego - 92113 (number 35), Fresno - 93701 (number 36) and Oakland - Fitchburg (number 37). Two of these six ZIP Codes were had average 1995 premiums that placed them less costlier than over 1,000 other ZIP Codes. Fresno and Oakland were the only ZIP Codes of the six that had average premium costs above the statewide average.

Lowest Uninsured ZIP Codes

Among the lowest 40 uninsured ZIP Codes (see appendix 3), none were even in the 500 least expensive ZIP Codes. Almost half (19) of the 40 had average premium costs greater than the median! Three of the 40 were Los Angeles ZIP Codes which were in the top 20% of the costliest ZIP Codes.

Uninsured Rates Versus Average Premium[7]

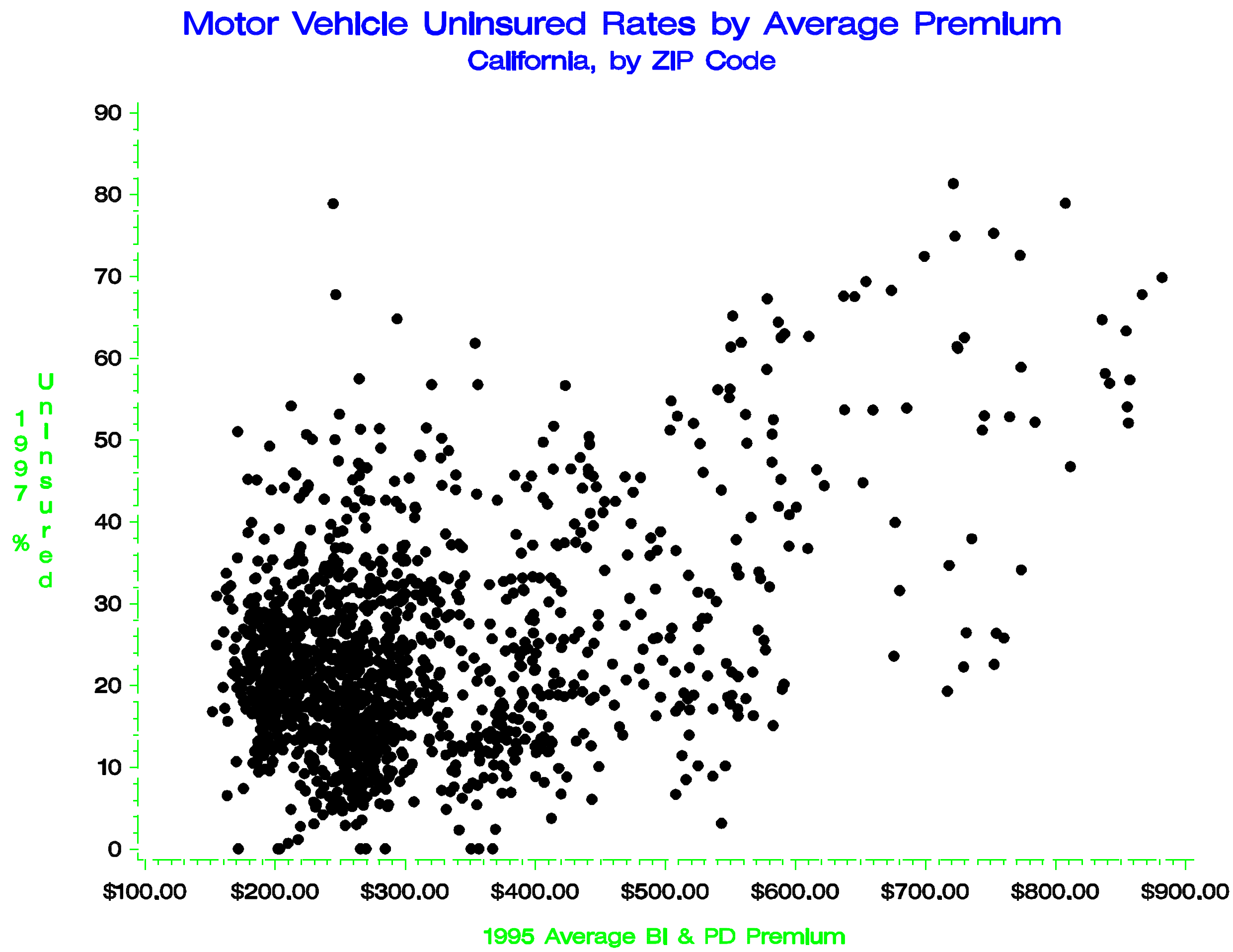
Figure 1 shows the relationship between average premiums (BI and PD basic limits) and the uninsured motorist rate by ZIP Code. Higher premiums may tend to result in higher uninsured rates, however many other factors are not included in this figure. Clearly, not all points fall on or even near any straight line which might be drawn through the center of the points. Most ZIP Codes are clustered between $200-$350 and less than 40% uninsured.

Figure 1 has several points that seem out of place when compared to the rest of the points. Seven points, those with high premium costs and low uninsured rates, are the farthest from the rest. All seven ZIP Codes have extremely high average household income, allowing them to purchase the higher priced policies. The lowest income ZIP Code averaged $86,760 per household while the other six all exceeded $110,000.

ZIP Codes on the other end, those with high uninsured rates (more than 55%) and low premium costs (less than $360), were also examined. All seven such ZIP Codes were low income ZIP Codes. The highest ZIP Code average household income was only $33,573 and the other six were all below $30,000.

[7]Analysis in these sections was limited to the 1,466 ZIP Codes which contained a minimum of 30 insured vehicles in both 1997 (uninsured data set) and 1995 (the average premium data set) and also had average household income data from the 1990 census.

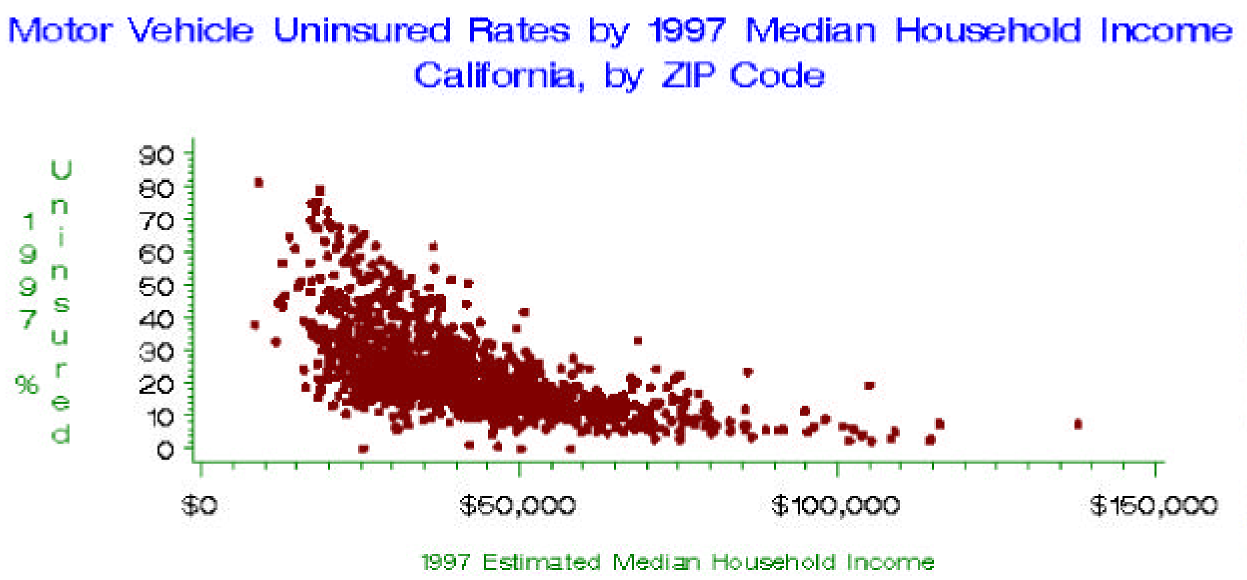
Figure 1



Uninsured Rates Versus Average Household Income

Figure 2 shows the relationship between median household income and the uninsured rate. Generally lower incomes will result in higher uninsured rates. Most ZIP Codes were clustered between $20,000-$50,000 and less than 40% uninsured. Higher household incomes did result in lower uninsured rates. Many, but not all, lower income ZIP Codes did have higher uninsured rates.

Figure 2



Several ZIP Codes were left out of Figure 2. These included ZIP Codes that did not seem to fit the normal pattern. This included mostly college and military ZIP Codes. These types of ZIP Codes have problems since the vehicle and insurance many times do not have matching ZIP Codes. A few small ZIP Codes with large numbers of commercial vehicles were also left out.

Statistical Relationships

Average household income and the average premium cost are both statistically related to the percent of uninsured vehicles in a ZIP Code. The correlation coefficient for average premium is 0.46. Median household income is negatively related to the percent of uninsured vehicles and the correlation coefficient is -0.61.

A multiple regression was run using percent uninsured as the dependant variable and average premium and median household income as the two independent variables. The R-square for this equation was 0.57[8]. This means just over half of the changes in the percent of uninsured vehicles among ZIP Codes is accounted for by changes in the average premium and the median household income.

Parameter estimates were 0.045 for average premium and -0.00047 for household income. This means that for each dollar increase in the average cost of insurance the estimated percent of uninsured vehicles would increase 0.045%. Each $22 increase in premium would increase the

[8] Since the relationship in Figure 2 does not seem to be linear, a regression was also run using the log of income in place of income. The R-square for this equation was 0.61 and the F value for the model increased from 950 to 1,121. Both were significant at the .01 level.

average uninsured rate by one percent. Household income increases of one hundred dollars would decrease the uninsured rate by 0.047%. It would take an increase of $2,200 per household to decrease the average percent of uninsured vehicles by 1 percent. These figures are the best available estimates based on the regression equations. They may not represent the actual changes of any ZIP Code.

All of the 1995 cost data were prior to the implementation of the current Auto Rating Factor Regulations. Differences in the way territories are treated would change these figures.

Vehicle Type

Figure 3 displays the results for the uninsured rates by type of vehicle. Vehicles were classified into four types: Automobiles, commercial licensed vehicles, motorcycles and antique vehicles. Uninsured rates are highest for the types of vehicles with the lowest liability insurance premiums, motorcycles and antique vehicles. Automobiles have a much lower uninsured rate compared to commercial licensed vehicles, which includes all large trucks, most pickups and some automobiles. Table 8 lists the vehicles on the road and uninsured vehicles, by vehicle type.

Figure 3
California Uninsured Rates by Vehicle Type, June 1, 1997

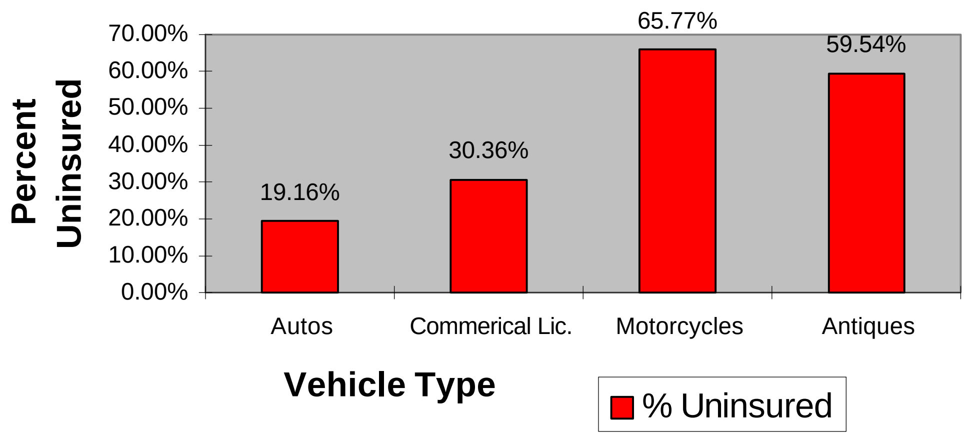
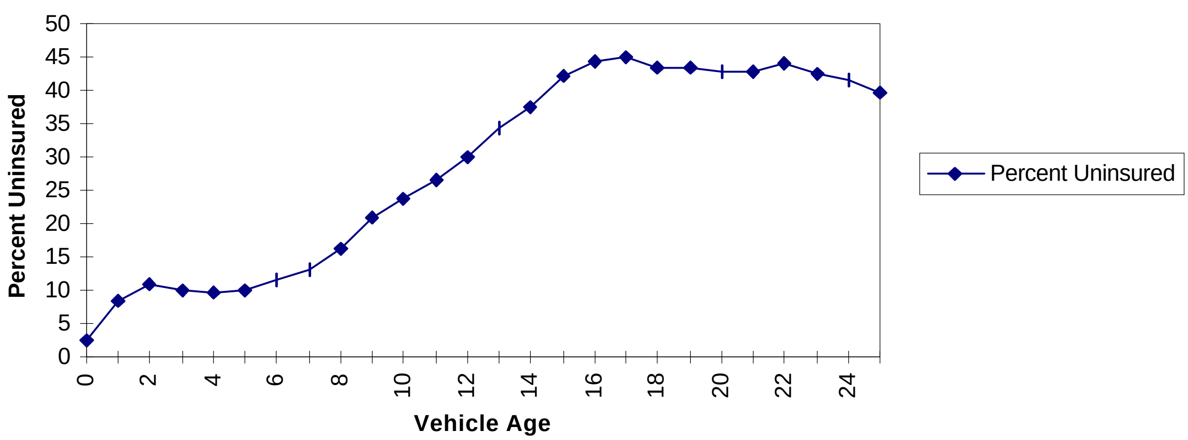


Table 8 Vehicles by Type of License			
Type of License	**Vehicles on the Road**	**Uninsured Vehicles**	**% Uninsured**
Automobiles	**17,977,000**	**3,444,000**	**19.2%**
Commercial License Vehicles	**4,938,000**	**1,499,000**	**30.4%**
Motorcycles	**523,000**	**344,000**	**65.8%**
Antiques	**19,000**	**11,000**	**59.5%**

Vehicle Age

Vehicle age influences insurance coverage. Generally, the newer the vehicle, the better chances are that it will have insurance coverage. Figure 4 displays the uninsured rate by vehicle age, for ages 0 through 25. The complete set of data by vehicle age is in appendix 4. Figure 4 shows that brand new vehicles have the lowest uninsured rates by far. Rates increase to age two and are fairly steady for ages two through six. Uninsured rates start escalating around age seven and plateau in a few percentage point range around age 15.

Figure 4
California Uninsured Vehicles by Vehicle Age



Discussion of Results

The results by ZIP Code show what everyone already suspected, the highest uninsured rates are in the poorest ZIP Codes. Newer vehicles, which are more likely to be owned by higher income individuals, are far more likely to be insured compared to older vehicles.

One minor surprise is that Los Angeles county does not have the highest uninsured rate. Even though by itself it contains over 1/3 of the states uninsured vehicles, Imperial county still has a far higher uninsured rate.

Automobiles are more likely to be insured when compared to commercially licensed vehicles, such as pickup trucks. Less than half of the motorcycles and antique vehicles are insured. Since antique vehicles are driven few, if any, miles on the roads and motorcycles can do a lot less damage compared to other vehicles, this might not be as major of a public policy issue as the uninsured rate for Automobiles and trucks.

Uninsured vehicle data in this report includes both commercial and personal vehicles. Since average premium and average household income data are personal data only, uninsured rates can never be fully explained by these two factors. Future study should separate commercially insured vehicles from personal use vehicles for this part of the analysis.

Generally, higher premium costs seem to result in higher uninsured rates. Lower income levels will also result in higher uninsured rates. Low premium costs are associated much less with low uninsured rates. The highest income levels also do not result in the lowest uninsured rates. Other factors, such as percent commercial vehicles, unemployment rate and other factors may also effect the percent of uninsured vehicles. One such factor may be income relative to the cost of insurance. Once income reaches a certain level, insurance is acquired as a protection against risk, even if the price exceeds the average. It is also possible that once income falls below a certain level, few if any drivers may purchase insurance regardless of how little it costs.

There may also be some areas of above average uninsured rates that neither income nor price can explain fully. This may represent a more serious problem since it may suggest a broad community attitude of disrespect for the law.

This report shows lower uninsured rates than past reports. Part may be due to differences in what is being measured (all vehicles v. only personal vehicles in most past reports), how the uninsured rate is measured (actual matching of VINs v. other methods in previous reports), the new mandatory insurance requirements that force people to provide proof of insurance before they can register their vehicle and the state of the California economy, which has been improving in the last few years. Increased competition and lower rates from proposition 213 have also reduced the percentage of uninsured vehicles.

Appendix 1
Uninsured Vehicle Data by County

COUNTY	Percent Uninsured	Uninsured Vehicles	On Road Vehicles
Alameda	18.6%	189,752	1,020,452
Alpine	26.3%	292	1,110
Amador	19.1%	6,274	32,846
Butte	17.7%	28,162	159,343
Calaveras	22.1%	9,163	41,435
Colusa	19.7%	3,244	16,448
Contra Costa	15.2%	107,886	709,571
Del Norte	21.9%	4,287	19,549
El Dorado	16.5%	20,126	121,718
Fresno	26.2%	133,797	510,944
Glenn	19.8%	4,529	22,914
Humbolt	20.4%	22,168	108,771
Imperial	46.5%	50,143	107,756
Inyo	19.1%	3,777	19,825
Kern	23.6%	104,942	444,353
Kings	24.5%	17,086	69,794
Lake	24.9%	13,545	54,389
Lassen	21.7%	5,938	27,368
Los Angeles	30.7%	1,848,023	6,021,566
Madera	24.4%	20,039	82,034
Marin	12.8%	27,141	211,714
Mariposa	22.6%	3,744	16,553
Mendocino	22.6%	18,014	79,567
Merced	22.4%	30,230	135,120
Modoc	23.3%	1,967	8,429
Mono	20.1%	2,136	10,653
Monterey	20.0%	51,499	257,495
Napa	15.2%	18,157	119,117
Nevada	15.0%	12,279	81,873
Orange	19.6%	398,870	2,036,056
Placer	14.6%	29,207	200,268
Plumas	20.2%	4,145	20,484
Riverside	24.3%	237,384	978,772
Sacramento	18.4%	155,357	845,659
San Benito	21.6%	7,657	35,431
San Bernardino	25.5%	287,031	1,123,538
San Diego	20.4%	400,902	1,961,068
San Francisco	19.3%	79,552	412,261
San Joaquin	22.7%	83,420	368,177

San Luis Obispo	15.3%	8,913	189,241
San Mateo	13.1%	90,979	692,736
Santa Barbara	16.5%	49,277	299,445
Santa Clara	15.3%	197,342	1,291,525
Santa Cruz	18.1%	37,918	209,546
Shasta	19.3%	27,341	142,007
Sierra	25.4%	883	3,481
Siskiyou	22.3%	10,223	45,863
Solano	18.5%	48,844	264,012
Sonoma	16.1%	60,240	375,228
Stanislaus	23.3%	72,034	309,331
Sutter	18.4%	10,940	59,355
Tehema	20.8%	8,638	41,618
Trinity	24.1%	3,168	13,126
Tulare	27.1%	65,513	241,620
Tuolumne	19.6%	9,741	49,579
Ventura	17.4%	99,904	575,700
Yolo	20.9%	24,186	115,782
Yuba	23.0%	10,252	44,578

Appendix 2 40 Highest Uninsured Rates by ZIP Code (ZIP Codes with more than 1,000 Vehicles)				
ZIP Code	ZIP Code Name	Vehicles on the Road	Percent Uninsured	Average Premium
90013	Los Angeles - Main Area 2	6,451	81.27%	$722
90011	Los Angeles - Washington	32,221	78.89%	$808
91980	Tecate	1,596	78.82%	$245
90003	Los Angeles - Broadway/Manchester	22,160	75.21%	$753
90002	Los Angeles - Watts	17,313	74.86%	$723
90037	Los Angeles - Green	19,491	72.52%	$773
90001	Los Angeles - Florence	22,840	72.40%	$699
90007	Los Angeles - Dockweiler	14,603	69.81%	$882
90033	Los Angeles - Boyle	17,561	69.32%	$655
90044	Los Angeles - Hancock	32,973	68.24%	$674
90006	Los Angeles - Pico Heights	19,672	67.73%	$867
92231	Calexico	30,818	67.71%	$247
90023	Los Angeles - Lugo	21,400	67.55%	$637
90059	Los Angeles - Greenmead	15,379	67.49%	$646
90222	Compton - Willow Brook	13,867	67.21%	$579
92823	Brea	4,893	65.79%	N/A
90221	Compton - Main Area 3	24,747	65.12%	$552
92173	San Ysidro	27,508	64.76%	$294
90015	Los Angeles - Del Valle	6,925	64.64%	$836
90270	Bell - Maywood	12,186	64.35%	$587
90057	Los Angeles - Foy	9,743	63.29%	$855
90063	Los Angeles - Hazard	24,075	62.94%	$592
90061	Los Angeles - Greenmead	11,771	62.61%	$611

Appendix 2 40 Highest Uninsured Rates by ZIP Code (ZIP Codes with more than 1,000 Vehicles)				
90062	Los Angeles - Westvern	12,981	62.48%	$730
90201	Bell	44,290	62.47%	$589
90262	Lynwood	31,252	61.88%	$559
90018	Los Angeles - Dockweiler	19,755	61.38%	$725
90022	Los Angeles - East Los Angeles	31,890	61.33%	$551
90017	Los Angeles - Foy	5,302	61.18%	$725
90021	Los Angeles - Market	5,682	58.85%	$774
90255	Huntington Park	33,345	58.57%	$578
90029	Los Angeles - Los Feliz	14,637	58.09%	$839
90038	Los Angeles - Wilcox	12,935	57.32%	$858
90005	Los Angeles - Sanford	11,462	56.87%	$842
92113	San Diego - Southeast	23,364	56.73%	$321
93701	Fresno - Main #2	5,262	56.71%	$356
94621	Oakland - Fitchburg	16,812	56.61%	$423
90304	Inglewood - Lennox	14,318	56.17%	$550
90280	South Gate	48,201	56.11%	$541
91331	Pacoima	53,891	55.13%	$549

Appendix 3 40 Highest Insured Rates by ZIP Code (ZIP Codes with more than 1,000 Vehicles)[1]			
ZIP Code	ZIP Code Name	Vehicles on the Road	Percent Insured
94030	Millbrae (mostly Hertz rental cars)	56,733	100.0%
90274	Palos Verdes Peninsula	28,623	97.61%
92657	Newport Beach	2,665	97.45%
95618	Davis - El Macero	1,022	97.26%
92131	San Diego - Mira Mesa # 2	17,620	97.12%
94556	Moraga	12,406	97.02%
94024	Los Altos	19,382	96.93%
92130	San Diego - Mira Mesa # 5	14,607	96.45%
90045	Los Angeles - LAX commercial area (more than 100,000 rental vehicles)	129,861	96.25%
95070	Saratoga	29,167	95.82%
94506	Danville	14,126	95.54%
94595	Walnut Creek	14,101	95.38%
91915	Chula Vista	3,117	95.16%
92610	El Toro	7,078	95.10%
94022	Los Altos	19,750	94.92%
94306	Palo Alto	21,372	94.88%
94598	Walnut Creek	22,529	94.84%
94708	Berkeley - Kensington	9,123	94.84%
92009	Carlsbad	26,472	94.81%
94028	Menlo Park	6,462	94.78%
94563	Orinda	16,170	94.72%
95762	El Dorado Hills	12,501	94.70%
92127	San Diego - Rancho Bernard #2	11,832	94.68%
95765	Rocklin	6,110	94.62%

Appendix 3 40 Highest Insured Rates by ZIP Code (ZIP Codes with more than 1,000 Vehicles)[1]			
94707	Berkeley - Kensington	10,508	94.59%
94920	Belvedere - Tiburon	10,601	94.45%
95135	San Jose - Hillview #4	9,820	94.45%
92625	Corona Del Mar	12,092	94.44%
94502	Alameda	8,757	94.31%
94526	Danville	30,888	94.24%
92128	San Diego - Rancho Bernard	31,622	94.18%
94065	Redwood City	7,907	94.17%
92210	Palm Desert - Indian Wells	2,886	94.07%
94301	Palo Alto	14,906	94.04%
95120	San Jose Almaden V	31,883	94.03%
92604	Irvine	30,461	93.95%
90746	Carson Area 2	71,262	93.95%
91361	Thousand Oaks	18,385	93.80%
92129	San Diego - Rancho Bernard #3	34,764	93.78%
94904	San Rafael - Kentfield	10,100	93.65%

1. Excludes military ZIP Codes and Unique single company ZIP Codes

Appendix 4
Uninsured Vehicle Data by Vehicle Age

Vehicle Age	Percent Uninsured	Percent Insured	Uninsured Vehicles	Insured Vehicles	Total Vehicles
0	2.4	97.6	23,298	935,529	958,827
1	8.4	91.6	114,218	1,249,099	1,363,317
2	10.9	89.1	161,608	1,322,669	1,484,277
3	10.0	90.0	128,889	1,165,071	1,293,960
4	9.7	90.3	120,853	1,122,733	1,243,586
5	10.1	89.9	111,576	992,947	1,104,523
6	11.5	88.5	149,119	1,142,772	1,291,891
7	13.0	87.0	170,194	1,139,326	1,309,520
8	16.4	83.6	238,848	1,220,931	1,459,779
9	21.0	79.0	287,525	1,080,925	1,368,450
10	23.6	76.4	322,476	1,042,148	1,364,624
11	26.6	73.4	354,160	976,772	1,330,932
12	30.0	70.0	352,583	821,721	1,174,304
13	34.3	65.7	348,447	667,988	1,016,435
14	37.5	62.5	249,376	415,346	664,722
15	42.3	57.7	242,543	331,149	573,692
16	44.4	55.6	213,743	267,693	481,436
17	45.1	55.0	193,548	236,113	429,661
18	43.4	56.6	221,193	288,179	509,372
19	43.5	56.5	188,971	245,532	434,503
20	42.7	57.3	151,021	202,552	353,573
21	42.7	57.3	101,269	135,938	237,207
22	44.0	56.0	69,872	88,998	158,870
23	42.6	57.4	80,118	107,839	187,957
24	41.7	58.3	88,023	123,185	211,208
25	39.6	60.4	73,486	111,888	185,374
26	40.7	59.3	57,518	83,659	141,177
27	40.8	59.2	56,933	82,574	139,507
28	40.0	60.0	54,645	81,977	136,622
29	39.9	60.1	44,292	66,601	110,893
30	37.9	62.1	37,676	61,626	99,302
31	36.3	63.7	34,623	60,702	95,325
32	42.4	57.6	48,155	65,324	113,479
33	45.2	54.8	33,167	40,192	73,359
34	47.2	52.8	23,836	26,647	50,483
35	48.9	51.1	16,793	17,525	34,318
36	50.0	50.0	10,570	10,591	21,161
37	50.0	50.0	11,212	11,193	22,405
38	51.1	48.9	10,577	10,139	20,716
39	50.7	49.3	7,248	7,050	14,298
40	47.9	52.1	12,405	13,507	25,912
41	48.9	51.1	12,165	12,712	24,877
42	50.1	49.9	11,635	11,574	23,209
43	53.9	46.1	6,166	5,277	11,443
44	52.9	47.1	6,028	5,364	11,392