The Impact of Pay-As-You-Drive Auto Insurance in California

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The current lump-sum pricing of auto insurance is inefficient and inequitable. Drivers who are similar in other respects—age, gender, location, driving safety record—pay nearly the same premiums if they drive five thousand or fifty thousand miles a year. Just as an all-you-can-eat restaurant encourages more eating, all-you-can-drive insurance pricing encourages more driving. That means more accidents, congestion, carbon emissions, local pollution, and dependence on oil. This pricing system is inequitable because low-mileage drivers subsidize insurance costs for high-mileage drivers, and low-income people drive fewer miles on average.

A better approach is simple and obvious: pay-as-you-drive (PAYD) auto insurance. With PAYD, insurance premiums would be priced per mile driven. All other risk factors will still be taken into account, so a high-risk driver would pay a greater per-mile premium than a low-risk driver. With insurance costs that vary with miles driven, people would be able to save money by reducing their driving, and this incentive would lead to fewer driving-related harms. PAYD would also be more equitable because it would eliminate the cross-subsidization of insurance costs from low-mileage to high-mileage drivers.

Given these potential benefits, there has been increased interest in California recently in encouraging PAYD insurance. The California Department of Insurance has undertaken a rulemaking process, and a bill is pending in the state Senate (AB 2800), both of which are aimed at overcoming various obstacles to offering PAYD in California. For example, Proposition 103 requires that mileage be among the top three factors on which auto insurance premiums are based, yet the regulations implementing Proposition 103 may actually stand in the way of offering true per-mile pricing. Those regulations may prohibit an insurance firm from charging a PAYD customer whose vehicle miles traveled (VMT) was verified a lower premium than a customer of identical risk profile whose VMT was not. Such a prohibition would preclude offering low-mileage drivers a premium that more accurately reflects their risk because other low-mileage drivers are paying a different (and higher) rate. In addition to the efforts to overcome such barriers, the California Air Resources Board (CARB) is also considering PAYD as part of its Draft Plan to lower the state's greenhouse gas emissions to meet its 2020 limit under AB 32.

This paper is intended to help policymakers and the general public understand and evaluate the potential impact of PAYD in California. It is based on a recently-released study of PAYD in the United States, "*Pay-As-You-Drive Auto Insurance: A Simple Way to Reduce Driving Related Harms and Increase Equity*," published by the Hamilton Project at the Brookings Institution. In that report we develop a method for estimating at a national level the potential driving reductions

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from PAYD, the social benefits of those driving reductions, and the distributional impact of per-mile premiums. In this paper we present and expand on the results specifically for the state of California. We find that California drivers would especially benefit from a switch to PAYD auto insurance pricing.

1. Main Findings

In California, we find that:

- PAYD would result in an 8 percent driving reduction from light-duty vehicles (cars, vans, pickup trucks, and sport utility vehicles). An 8 percent reduction would mean 24 billion fewer miles driven and 1.2 billion fewer gallons of gasoline consumed, based on 2006 data. Based on 2020 projections, the reduction in VMT would be 33 billion miles and the reduction in fuel consumption would be 1.3 billion gallons.

- Estimated gross annual social benefits from an 8 percent driving reduction total $10.8 billion based on current driving levels, and $21.1 billion based on 2020 projections. This is a benefit of $414 and $658 per vehicle, respectively. Most of these savings are from reduced accidents and congestion.

- The California state government would save $54 million annually based on 2006 data and $60 million annually based on 2020 projections due to reduced medical payments, reduced lost tax revenue from incapacitated or fatally injured workers, and reduced spending on emergency services.

- PAYD would generate 7 to 9 percent of the total CO_2 reductions needed to meet California's emissions targets for 2020. Annual CO_2 reductions would be 10.5 million metric tons (MMT) based on 2006 levels and 11.8 MMT based on 2020 projections, both of which would equal about 2 percent of total greenhouse gas (GHG) emissions in California. Total life-cycle, or well-to-wheel, reductions would be 13.4 MMT and 15 MMT, respectively, reductions of more than 2.5 percent of GHG emissions.

- Nearly two-thirds (64 percent) of households in California would have lower premiums under PAYD. The average savings for that group would be $276 per vehicle per year (in 2007 dollars).

- Low-income drivers would benefit especially. Since they drive fewer miles on average than high-income drivers, they are more likely to save money with PAYD. Every household income group making less than $47,500 (in 2001) saves on average. Even in higher income groups, a majority of households are better off. Indeed, a majority of households in every income group saves money on average.

- For every ethnicity, a majority of California households would save money with PAYD, contrary to the claims of some groups that PAYD would disproportionately impact certain ethnic groups.

- Because geography is a key risk-factor, a roughly equal proportion of rural (62.4 percent) and urban (64.2 percent) California households save money with PAYD.

2. Driving Reduction from PAYD

As detailed in Bordoff and Noel (2008), we estimate a switch from lump-sum to per-mile premiums would reduce driving from light-duty vehicles in California by 8 percent in the long-run. This estimate is consistent with previous academic studies (Edlin 2003, Parry 2005) and limited real-world experience (Cambridge Systematics 2006, Progressive 2007). It is based on applying an average per-mile premium of 6.8 cents (calculated from NAIC [2007] and average mileage per vehicle in the 2001 National Household Transportation Survey [NHTS]) to each California vehicle sampled in the 2001 NHTS. We follow Parry (2005) in assuming per-mile premiums as high as a vehicle's per-mile fuel costs would reduce that vehicle's mileage by 15 percent in the long-run.[2]

An 8 percent reduction from light-duty vehicles would decrease driving by 24 billion miles and fuel consumption by 1.2 billion gallons based on 2006 levels (Table 1). Using projections from

TABLE 1
Basic Data for PAYD in California

per-mile premium (cents)	6.8	
estimated driving reduction from light-duty vehicles (percent)	8	
Year	2006	2020
Initial mileage from all vehicles (millions)	327,478	436,300
Initial mileage from light-duty vehicles, (millions)	301,280	415,600
Driving reduction (millions)	24,092	33,248
Gallons of fuel saved (millions)	1,195	1,338

Source: Per-mile premium based on NAIC (2007) and average mileage per vehicle in California in the 2001 NHTS. Estimated driving reductions are authors' calculations. VMT in 2006 from U.S DOT (2006) and projected VMT in 2020 from California Energy Commission (2007). Fuel economy from California Energy Commission (2007).

[2] We use the most recent fuel price data at the time of the analysis, which was for 2007, when gasoline averaged $2.83 per gallon in California. If one assumes that gasoline remains at $4 per gallon, a back-of-the-envelope calculation would reduce the driving reduction to about 7 percent. We use 2007 fuel prices because they are the latest comprehensive data available at the time of our analysis and because future oil prices are notoriously difficult to forecast, recent increases notwithstanding (Bordoff and Noel 2008).

the California Energy Commission, we find that an 8 percent reduction from light-duty vehicles would decrease driving by 33 billion miles and fuel consumption by 1.3 billion gallons in 2020.

The 8 percent driving reduction estimate assumes that all light-duty vehicles adopt PAYD. As we argue in Bordoff and Noel (2008), once true per-mile pricing is offered, it is expected to create a virtuous circle whereby most or even all auto insurance premiums eventually switch to PAYD. As we show in Section 4, a substantial quantity of low-mileage drivers would have a large financial incentive to switch to PAYD once it were offered. Removing these low-mileage drivers from traditional risk pools would drive up average accident costs and thus annual premiums for the higher mileage drivers remaining in traditional auto insurance risk pools. Those higher premiums would induce a few more drivers to decide that PAYD pricing would be cheaper for them, and this cycle would continue until nearly all drivers eventually switch to PAYD.

3. Statewide Benefits from an 8 Percent Driving Reduction

We find that an 8 percent reduction in driving would generate gross social benefits of $10.8 billion per year based on 2006 driving levels and $21.1 billion per year based on 2020 projections (Table 2).[3] The benefits per vehicle are quite large, at $414 per on-road vehicle in 2006 and $658 per on-road vehicle in 2020.

In Bordoff and Noel (2008), we describe in detail our method for evaluating social benefits from reduced accidents, congestion, local pollution, carbon emissions, and oil dependence. Here we only provide a brief summary.

Individual auto insurance cost savings
With PAYD, drivers are able to save money on auto insurance by driving less. Assuming a linear driving demand, the net benefit per mile for them equals half of the per-mile insurance premium that is saved (to account for the lost benefit of miles forgone), or an average of 3.4 cents per mile in California. Total savings from reduced individual insurance premiums are $819 million based on 2006 driving levels and $1.1 billion based on 2020 projections.

External auto insurance cost savings
Each extra mile driven by any driver imposes a cost on all other drivers on the same road at the same time because they are now more likely to get into an accident. One way to measure this cost is to calculate how much all other drivers' insurance costs rise when any one driver decides to drive another mile. We use such a model developed by economists Aaron Edlin of UC Berkeley and Pinar Karaca-Mandic of the RAND Corporation (2006). At 31 cents per mile, California has the fourth-highest external accident cost in the nation (behind Hawaii, Washington, D.C. and New Jersey). To calculate the external cost in 2020, we use the mileage projections from the California Energy Commission and assume lane-miles continue to grow at their annual rate of the last four years, 0.45 percent per year. At this rate, the external accident

[3] All dollar figures in this paper are in 2007 dollars.

TABLE 2

Estimated Gross Annual Benefits of Adopting PAYD Auto Insurance in California

Impact of PAYD	Social values	Benefits (2006)		Benefits (2020)	
		State total ($ millions)	Per vehicle (dollars)	State total ($ millions)	Per vehicle (dollars)
Reduced Accidents					
Individual insurance cost savings net of lost driving benefits	3.4 cents/mile	819	31	1,130	35
External auto insurance cost savings	31 cents/mile in 2006, 53 cents/mile in 2020 (initial values)	6,844	262	16,000	499
Federal government accident cost savings	N/A	128	5	142	4
State government accident cost savings	N/A	54	2	60	2
Other accident cost savings[1]	N/A	289	11	321	10
Reduced congestion	6 cents/mile	1,446	55	1,995	62
Reduced local pollution	1.5 cents/mile	361	14	499	16
Reduced carbon emissions	$25 ton/$CO_2$ (22 cents/gallon)	263	10	294	9
Reduced oil dependence	50 cents/gallon	598	23	669	21
Total gross benefits		**10,802**	**414**	**21,110**	**658**

Source: Based on authors' estimated 8 percent driving reduction from light-duty vehicles. Initial VMT in 2006 from U.S DOT (2006) and projected VMT in 2020 from California Energy Commission (2007). Fuel economy and number of on-road vehicles from California Energy Commission (2007). Social values based on authors' calculations and Edlin and Karaca-Mandic (2006), National Highway Traffic Safety Administration (2002), Fischer and others (2007), Intergovernmental Panel on Climate Change (2007), Leiby (2007), Newbury (2005) and Delucchi and Murphy (2008).

Notes: Savings in 2007 dollars.

1. Other accident cost savings include reduced accident-related traffic delay, medical costs accruing to accident victims and their private medical insurance companies, and lost wages and household productivity incurred by accident victims who are incapacitated or fatally injured.

cost rises sharply in 2020 to 53 cents per mile.[4] At these rates, the social benefits from reduced external auto insurance costs total $6.8 billion at 2006 levels and $16 billion based on 2020 projections.[5]

[4] The external accident cost is a function of traffic density, which is defined as annual vehicle miles traveled divided by lane miles in the state. Higher traffic density increases the probability of any car having an accident. Edlin and Karaca-Mandic (2006) find a significant positive relationship between density and external accident costs.

Government accident cost savings
The state and federal governments also save money from reduced accidents due to lower medical payments through Medicare and Medicaid, less lost tax revenue from incapacitated or fatally injured workers, and less emergency services for responding to crashes. Based on California's share of these costs as reported in National Highway Traffic Safety Administration (NHTSA 2002), we estimate California would save $54 million based on 2006 levels and $60 million based on 2020 projections. The federal government also would save $128 million and $142 million in 2006 and 2020, respectively, if California implemented PAYD.

Other accident cost savings
All drivers (those not responsible for the crashes) benefit in other ways from reduced accidents. They save medical costs paid for out of their own savings or through private insurance plans such as Blue Cross-Blue Shield, HMOs, commercial insurance policies, or worker's compensation; they save lost wages and household productivity declines due to injury or death; and they save time lost in traffic due to accidents (which is estimated separately from delays caused by high traffic volumes discussed below). California's share of these savings from an 8 percent reduction, again based on NHTSA (2002), totals $289 million based on 2006 levels and $321 million based on 2020 projections.

In terms of lives saved and injuries avoided from reduced accidents, the impact of PAYD could be substantial. Based on data from the Fatality Analysis Reporting System (FARS) and NHTSA (2002), we estimate an 8 percent reduction in driving from 2006 levels would save 337 lives and avoid 31,586 injuries (Table 3). Extrapolating declining historical fatality and injury rates from these studies out to 2020, we estimate an 8 percent reduction in driving in that year would save 366 lives and would avoid 21,835 injuries. (Fatalities avoided are higher in 2020 than in 2006 because VMT is projected to rise faster than the fatality rate per VMT falls, whereas injuries avoided are lower in 2020 than in 2006 because VMT is projected to rise slower than the injury rate per VMT is falling). The economic benefit from lives saved and injuries avoided are already included in the above accident savings figures.

TABLE 3
Reduced Fatalities and Injuries from PAYD in California

	Year	
	2006	2020
Estimated fatalities avoided	337	366
Estimated injuries avoided	31,586	21,835

Source: Authors' calculations based on accident rates from the Fatality Analysis Reporting System and NHTSA (2002).

[5] These figures account for the fact that external accident costs fall as driving falls (Bordoff and Noel 2008).

Reduced congestion

In addition to accident costs, drivers also impose congestion costs on all other drivers who are on the same road at the same time. Congestion costs vary with traffic density, time of day, and the value of drivers' time. Unfortunately, a disaggregated model of congestion in California is not available at this time, so we follow the national estimate of Fischer and others (2007) at Resources for the Future and use 6 cents per mile for all driving on all roads at any time of day. Based on that estimate, an 8 percent driving reduction saves drivers $1.4 billion in travel delays based on 2006 driving levels and $2 billion based on 2020 projections. Table 4 shows the benefits for the 15 largest urban areas, based on VMT figures from the U.S. Department of Transportation's *Highway Statistics* (2006).

TABLE 4

Annual Congestion Savings from PAYD in California

City	Annual VMT (2006)	Estimated VMT from light-duty vehicles	Estimated driving reduction	Savings from reduced congestion ($ millions)
Los Angeles-Long Beach-Santa Ana	101,669,290	93,535,747	7,482,860	449
San Francisco-Oakland	25,378,815	23,348,510	1,867,881	112
San Diego	24,900,300	22,908,276	1,832,662	110
Riverside-San Bernardino	15,930,425	14,655,991	1,172,479	70
Sacramento	12,473,510	11,475,629	918,050	55
San Jose	13,550,260	12,466,239	997,299	60
Concord	5,416,600	4,983,272	398,662	24
Lancaster-Palmdale	1,637,755	1,506,735	120,539	7
Mission Viejo	4,340,580	3,993,334	319,467	19
Fresno	4,646,450	4,274,734	341,979	21
Santa Clarita	257,325	236,739	18,939	1
Indio-Cathedral City-Palm Springs	2,442,580	2,247,174	179,774	11
Bakersfield	2,981,685	2,743,150	219,452	13
Temecula--Murrieta	2,525,070	2,323,064	185,845	11
Victorville-Hesperia-Apple Valley	1,915,885	1,762,614	141,009	8
Subtotal major urban areas	*220,066,530*	*202,461,208*	*16,196,897*	*972*
All other VMT	107,411,470	98,818,792	7,905,503	474
Total	**327,478,000**	**301,280,000**	**24,102,400**	**1,446**

Source: Authors' calculations based on an 8 percent driving reduction, initial VMT in U.S. DOT (2006), and 6 cents per mile external congestion cost (Fischer et al. 2007).

Note: This analysis assumes the external congestion cost is the same in rural as in urban areas. In reality, congestion costs are likely to be higher in urban areas and lower in rural areas, so that the benefit reported for each urban area here is likely an underestimate while the benefit for "all other VMT" is likely an overestimate. The aggregate $1.4 billion benefit should be accurate though, according to Fisher and others (2007).

Reduced local pollution

Vehicles burning gasoline emit nitrogen oxides (NO_x) and hydrocarbons (HC) into the air. These create smog, which contaminates the air Californians breathe and contributes to various health problems. We follow Fisher and others (2007) and assume an external local pollution cost of 1.5

cents per mile. At that rate, an 8 percent driving reduction saves $361 million based on 2006 levels and $499 million based on 2020 projections.

Reduced CO_2 emissions

PAYD would have a significant impact on reducing CO_2 emissions in the transportation sector in California. Using the traditional figure for CO_2 emissions per gallon of fuel burned (0.0088 metric tons), we find that an 8 percent reduction in driving would reduce CO_2 emissions by 10.5 MMT based on 2006 levels and 11.8 MMT based on 2020 projections. The 2006 reductions are equivalent to 2.15 percent of California's total greenhouse gas (GHG) emissions (in 2004, the latest year for which that data is available), and the projected reductions for 2020 are equivalent to almost 2 percent of California's projected business as usual emissions in 2020. We also report life-cycle, or well-to-wheel, emissions reductions (Table 5). These include the CO_2 emitted in drilling, transporting, refining, and blending. Based on Brinkman, Wang, Weber, and Darlington (2005), we estimate well-to-wheel emissions from gasoline burned in light-duty vehicles at 0.0112 tons per gallon. At this rate, an 8 percent fall in driving would reduce CO_2 emissions by 13.4 MMT based on 2006 levels and 15 MMT based on 2020 projections. These reductions are 2.74 percent and 2.52 percent of 2004 and 2020 emissions levels, respectively.

TABLE 5
Estimated Annual CO_2 Reductions from PAYD in California

	Year			
	2006		2020	
	MMT	As a percent of total GHG emissions in 2004	MMT	As a percent of projected GHG emissions in 2020
Direct CO_2 emission reductions	10.52	2.15%	11.78	1.98%
Well-to-wheel CO_2 emission reductions	13.38	2.74%	14.99	2.52%

Source: Projected reductions are authors' calculations. Well-to-wheel emissions based on Brinkman and others (2005). Greenhouse gas (GHG) emissions in 2004 and projections for 2020 are from the California Air Resource Board.

If PAYD were universally adopted by 2020, it would generate 7 to 9 percent of the total 169 MMT of CO_2 reductions needed to meet California's emissions targets for 2020. The impact of PAYD thus would be comparable to the 'Low Carbon Fuel Standard' evaluated in CARB (2008) and greater than all the recommended Goods Movement, Vehicle Efficiency, and Heavy/Medium Duty Vehicle measures combined.

It is difficult to estimate the external cost of climate change from CO_2 emissions. Based mainly on the Intergovernmental Panel on Climate Change (2007) and on Metcalf (2007) and Stavins (2007) we use a central estimate of $25 per ton of CO_2. At this rate, social savings from CO_2 reductions in California from PAYD total $263 million based on 2006 levels and $294 million based on 2020 projections.

Reduced oil dependence
Finally, reducing driving by 8 percent would reduce fuel (mostly gasoline) consumption by 1.2 billion gallons based on 2006 levels and 1.3 billion gallons based on 2020 levels. This reduced oil consumption would have national and economic security benefits. Based on studies by Leiby (2007), Newbury (2005), and Delucchi and Murphy (2008), we take a central estimate of 50 cents per gallon for the external cost of oil dependence. At this rate an 8 percent driving reduction in California would save $598 million based on 2006 levels and $669 million based on 2020 projections.

Total benefits
As mentioned, total statewide annual gross social benefits come to $10.8 billion based on 2006 levels and $21.1 billion based on 2020 projections. California's benefits from switching to PAYD are 18 percent of the national benefits that we estimate would accrue if all states switched (Bordoff and Noel 2008). California thus disproportionately benefits from PAYD, given that it only accounts for 11 percent of the nation's VMT and 11 percent of the expected driving reductions from PAYD. PAYD is so beneficial in California because it has such a high traffic density that accident cost savings from reduced mileage are substantial.

Costs
There would be some cost for PAYD because insurers would need to monitor miles driven, but estimating this cost is difficult due to the various different methods of monitoring mileage and the uncertain cost of each method. Simple odometer readings performed by accredited safety and emissions inspectors would be relatively cheap and simple. As detailed in Bordoff and Noel (2008), another possibility is use of an electronic device that would record and transmit mileage data. Other methods also exist. Given the uncertainties we do not endeavor to predict costs. But even taking a high-end cost estimate, the benefits would be substantial. For example, if we assume a monitoring cost of $40 per vehicle per year (which would be the annual cost if a telematic device were $100, consumers replaced them every five years, and it cost $20 per year for wireless transmission of data), the annual net benefits of PAYD would still be $9.8 billion based on 2006 levels and $19.8 billion based on 2020 projections.

4. Distributional Impact of PAYD

In Bordoff and Noel (2008) we describe in detail our method for evaluating the distributional impact of PAYD. Table 6 presents the broad result from this analysis for households in California. Almost two-thirds of all households would save money from PAYD, with the average savings for those households that save totaling $276 per vehicle, which is 29 percent of current auto insurance premiums.[6] These savings come from two sources. First, they come from the elimination of the current subsidy from low-mileage to high-mileage drivers. Eliminating this cross-subsidization has the biggest impact on premiums, resulting in a savings of $259 per vehicle for the average low-mileage household and an extra expense of $441 per vehicle for the average high-mileage household. Second, all drivers would be able to save money by driving

[6] The 29 percent figure includes comprehensive premiums, which are not included in the per-mile premium because comprehensive risk does not vary with mileage.

less. Drivers in low-mileage households would save on average $18 per vehicle, and drivers in high-mileage households would save on average $48 per vehicle.

TABLE 6
Insurance Savings from PAYD in California

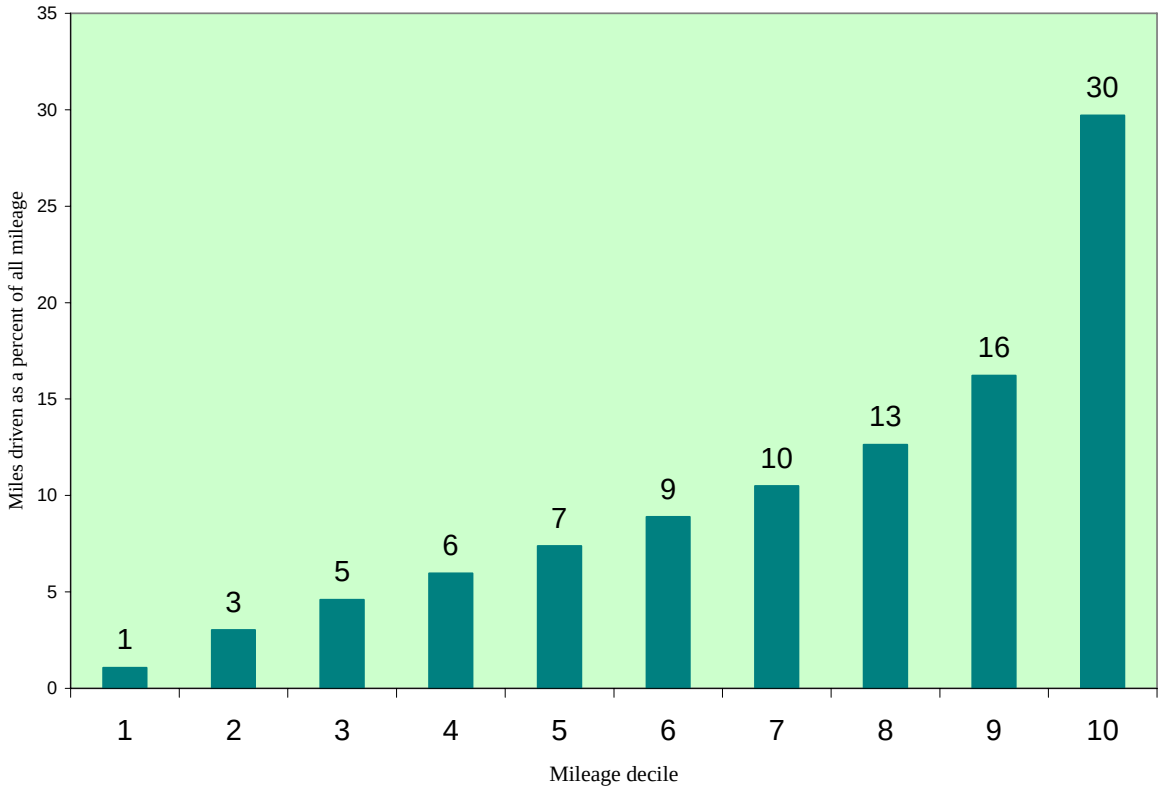
	64 percent of households save money	36 percent of households pay more
Average change in insurance premium per household	-$500	$746
Average change in insurance premium per vehicle	-$276	$393
Change in premium per vehicle from elimination of transfer from low mileage to high mileage drivers	*-$18*	*-$48*
Change in premium per vehicle from reduced mileage, net of lost driving benefits	*-$259*	*$441*
Change in premium as a percent of annual insurance premium (including comprehensive coverage)	-29%	41%

Source: Authors' calculations. Average annual insurance premiums from National Association of Insurance Commissioners (2007).
Note: Numbers may not add up due to rounding.

The high proportion of drivers that would pay less under PAYD reflects the fact that a minority of drivers are responsible for the majority of miles driven. As Figure 1 shows, the top 20 percent of drivers in California are responsible for 46 percent of all miles driven. Currently, the majority of low-mileage drivers are subsidizing insurance costs for the minority of high-mileage drivers. PAYD remedies this problem by effecting a transfer from high-mileage to low-mileage drivers.

Low-income drivers will especially benefit, on average, because they tend to drive less than high-income drivers, as Figure 2 shows. Figure 3 breaks down the accident cost and transfer savings by income group reported in the 2001 NHTS. As the figure shows, every household income group in California making less than $47,500 (in 2001) saves on average. This is especially significant because their savings make up a far greater proportion of their incomes, whereas the losses for the high-income groups who lose on average are virtually insignificant, as the line in Figure 3 shows. Figure 3 should not be construed as implying that most high-income drivers are worse off, however. Since a minority of drivers do most of the driving even among those with higher incomes, Figure 4 shows that a majority of drivers in each income group saves money with PAYD.

FIGURE 1
Distribution of Driving in California, by Mileage Decile



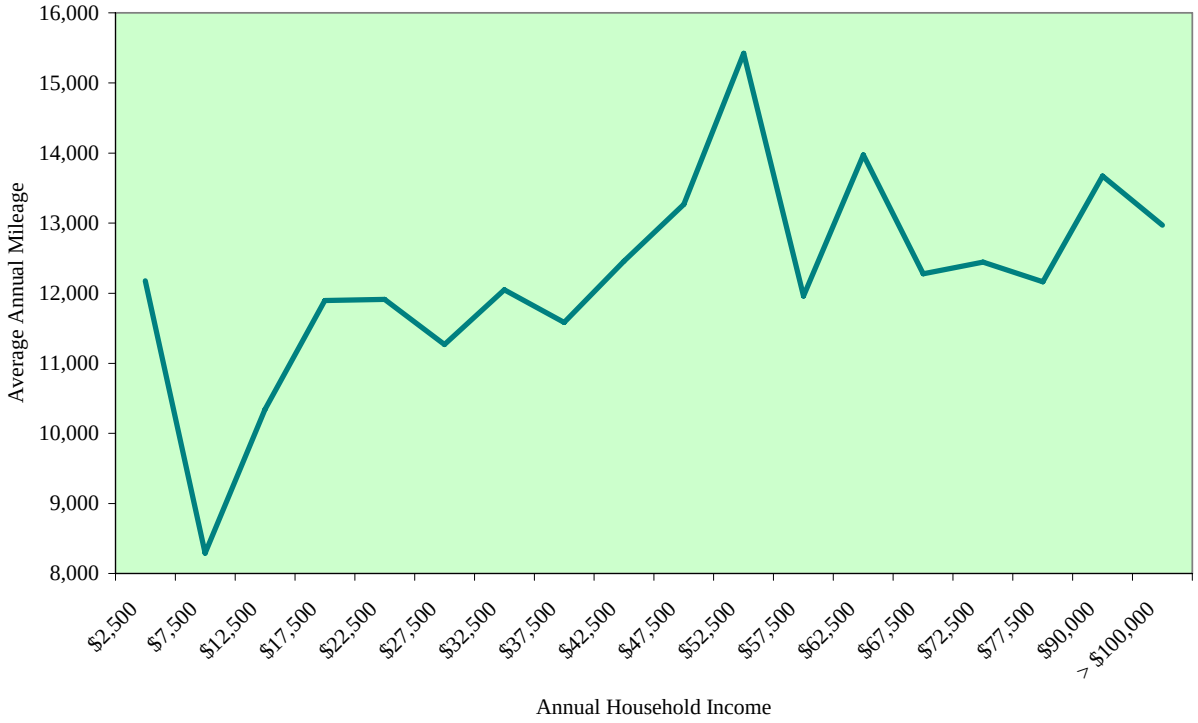
Source: Authors' calculations based on data in the 2001 National Household Transportation Survey.

Some have argued that PAYD might have disproportionate impacts on households of different races, but we find that for every ethnicity, a similar proportion of households would save money with PAYD (Figure 5).

Similarly, some worry that PAYD would disadvantage drivers in rural communities who drive more miles on average. But since geography is a key rating factor in setting premiums, rural drivers will still save if they drive fewer miles than the average driver in their area in their same risk category. As a result, we find similar proportions of urban and rural households would save money with PAYD (Table 7).

FIGURE 2

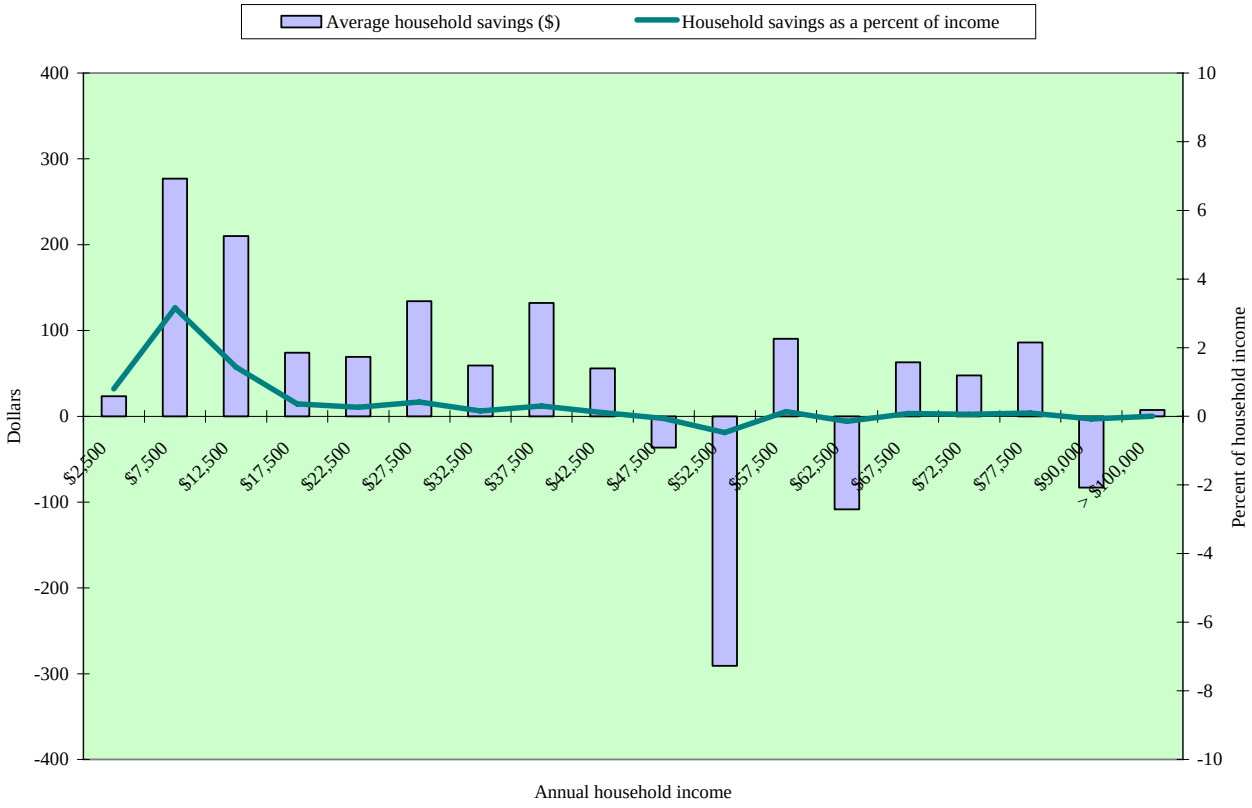
Average Mileage per Vehicle in California by Household Income Level



Source: Authors' calculations based on data from the 2001 National Household Transportation Survey.

FIGURE 3

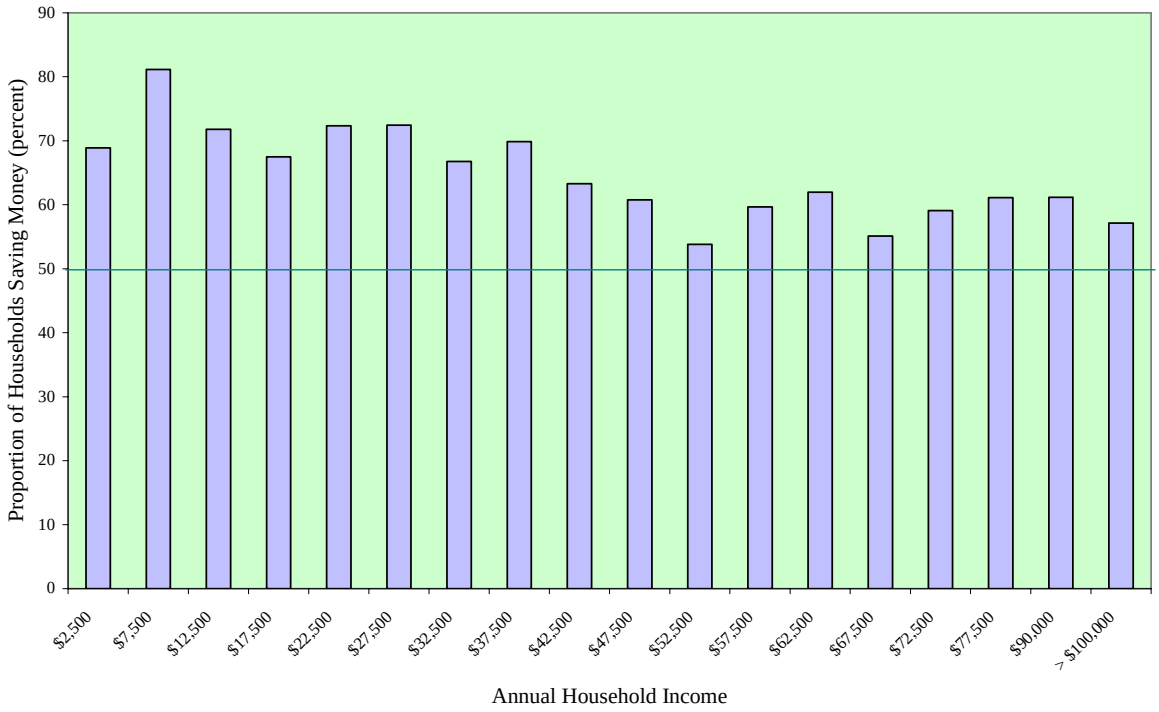
Estimated Household Savings from PAYD in California, by Annual Household Income



Source: Authors' calculations.
Note: Savings in 2007 dollars but household income groups in 2001 dollars. Savings are deflated to 2001 dollars to calculate percentage of 2001 income levels.

FIGURE 4

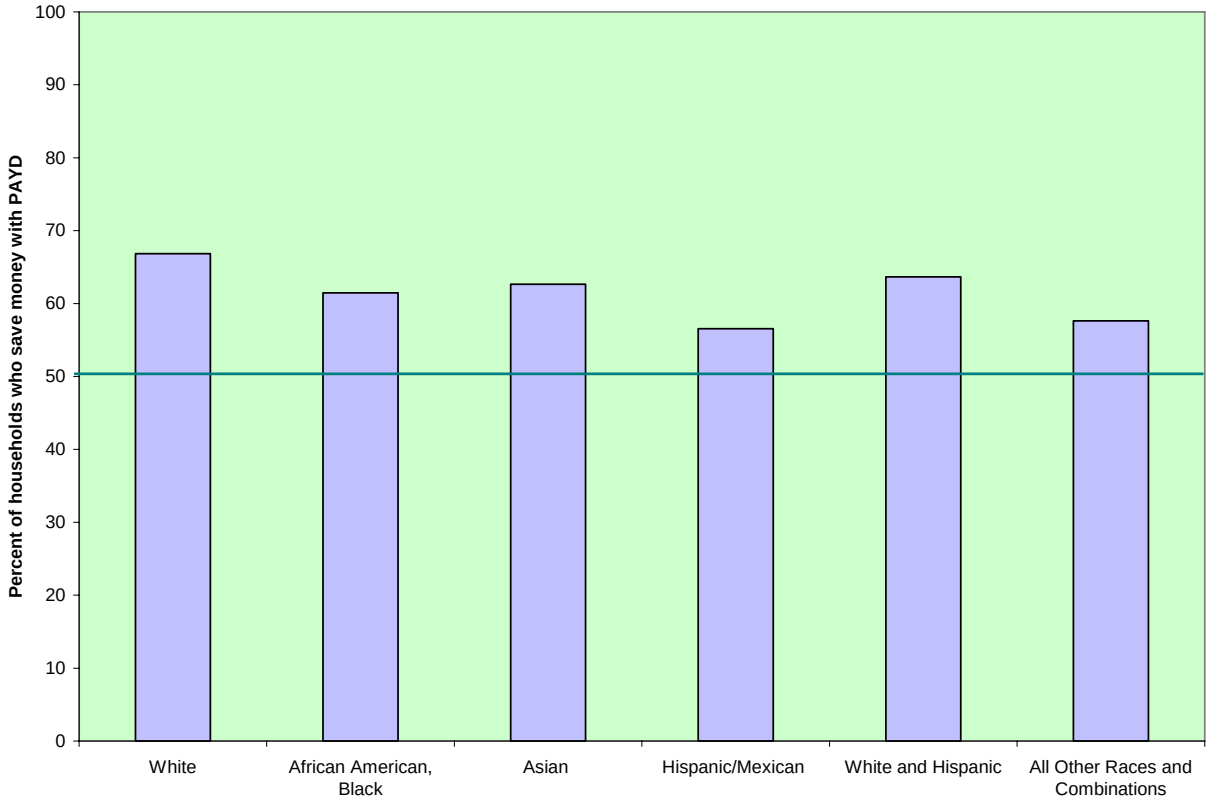
Proportion of Households in California Saving Money with PAYD, by Annual Household Income



Source: Authors' calculations.

FIGURE 5

Impact of PAYD in California by Race



Source: Authors' calculations. Race is self-identified by the household respondent in the 2001 National Household Transportation Survey.

TABLE 7

Households with Light-Duty Vehicles in California Saving Money with PAYD, by Urban and Rural Area

	Percent who save
Urban households	64.2%
Rural households	62.4%

Source: Authors' calculations.

5. Conclusion

As record-high gas prices squeeze Californians, PAYD could offset some of that pain by reducing the costs of driving for two-thirds of households. It is also more equitable because low-mileage drivers would stop subsidizing the accident costs of high-mileage drivers, and low-income families drive fewer miles on average. At the same time, as California struggles to combat climate change, congestion and related problems, PAYD would create an incentive to reduce driving, making significant progress in addressing these and other driving-related harms. In short, PAYD represents a win-win policy. What is good for drivers, in this case, is also good for society.

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