

Lessons Learned from 40 Years of Local Option Transportation Sales Taxes in California

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Abstract

Jurisdictions across the United States have increasingly turned to local option sales taxes, or LOSTs, to fund transportation projects and programs. California is an enthusiastic adopter of these measures; since 1976, residents in over half of the state's 58 counties have voted on 76 LOST measures. As of 2017, 24 counties, home to 88% of the state's population, have LOST measures in place. Many counties have enacted multiple measures, with passage rates especially high among renewal and follow-on measures. This research is the first comprehensive analysis of LOST measures; drawing on measure expenditure plans to determine the range and frequency of transportation projects and services funded. This detailed review of expenditure plans across dozens of urban, suburban, and rural California counties offers insight on these measures and the projects and programs they fund. Overall, this study finds that LOSTs are heterogeneous, often including something for nearly every interest group. Almost all of the measures studied dedicate funding to a mix of transportation modes, including highways, public transit, local road maintenance, and active transportation. Expenditures on particular modes vary, reflecting transportation geography across counties. On average, 60% of LOST expenditures in California fund road projects and over 30% are allocated to public transit. Measures often dedicate a substantially larger share of revenue to transit relative to transit's mode share. Finally, LOSTs typically appeal to diverse local interests by returning a portion of revenues to local jurisdictions to address local priority projects.

Inflation-adjusted federal funding of transportation projects per vehicle mile of travel has been decreasing for decades. In response, states and regions around the United States have scrambled to make up the shortfalls. In the nation's most populous state, California, the 18-cent per gallon motor fuel excise tax remained unchanged between 1993 and 2016, despite the fact that inflation and increased vehicle fuel efficiency together eroded the fuel tax's buying power (1). Since the 1980s, the growing gap between transportation program needs and revenues has been increasingly backfilled in California (and several other states) by county sales tax measures for transportation.

Since 1976, California residents have voted on 76 local option sales taxes (LOSTs) to fund transportation in 30 of the most populous of the state's 58 counties. As of 2017, 24 counties, home to 88% of the state's population (2), have active LOST measures. The most recent measures in these so-called Self Help Counties have been approved by at least two-thirds voter majorities as required by California law. Transportation sales tax measures can produce substantial revenue for the maintenance, operation, and expansion of transportation facilities and services; sales tax revenues dedicated to transportation today produce over US\$4 billion per

year for transportation construction and maintenance in California (3). Voters in some counties have approved LOST measures as many as five separate times (4).

LOSTs for transportation have proven politically popular; voters tend to like them because they fund popular projects via taxes automatically levied in very small increments (often a ½- or 1-cent per dollar) over a very large number of transactions. Because these small levies apply to nearly all consumer purchases, LOSTs generate substantial revenue for transportation. On the other hand, LOSTs are less related to travel than are fuel taxes or tolls, which means that light users of transportation systems tend to pay more per mile in transportation sales than do heavy users (5).

Despite LOST's increasing role in transportation finance, there is no comprehensive, up-to-date data source on transportation sales tax measures. Given the labor intensiveness of gathering comparable data on LOST measures, and in particular on what they fund, this research focuses on the most

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populous state with the most LOST measures – California. Although both the Center for Transportation Excellence and the Eno Center for Transportation compile basic data on LOSTs and other local transportation funding measures nationwide, no previous research has assessed the categorical distribution of revenues based on expenditure plans, or placed measure success in the context of previous LOST measures put before voters in the same county (6, 7). The data assembled for this research were used to conduct a thorough analysis of all 76 California LOST measures to produce the first comprehensive assessment of the breadth, diversity, and trends among LOST transportation measures within a single state. Because they focus solely on California sales taxes, results may not be representative of transportation sales taxes in other states, or non-sales-tax local transportation funding mechanisms, such as property taxes. Nevertheless, California's sheer size (12% of the US population) and nearly four decades of LOST experience offer important insights into this important and expanding form of transportation finance.

Policy-makers at all levels of government are continually seeking ways to provide adequate, stable funding for transportation programs. Whether by increasing per gallon excise taxes—as California did in 2017 for the first time in nearly a quarter of a century—introducing tolls or high-occupancy/toll lanes, initiating new road use charges, or relying more heavily upon general revenues, including LOSTs, policy-makers consider a broad spectrum of factors in deciding how to collect and expend revenues for transportation. The aim of this article, therefore, is to help transportation decision makers determine the outcomes of perhaps the most popular local transportation funding mechanisms—the sales tax.

Literature Review

The Political Appeal of LOSTs

Most studies of LOSTs focus on the factors influencing their success or failure at the ballot box. Previous work has found that many factors influence a measure's passage, including the development of expenditure plans (8, 9), public marketing campaigns (10), and contextual and socioeconomic factors (11, 12).

Public finance research has compared the revenue-raising potential of LOSTs in different types of jurisdictions. Multiple studies have found that LOSTs have the highest revenue potential where non-residents are likely to "import" money to the jurisdiction, including at retail centers (13) and where tourism is common (14). Findings are mixed with respect to their revenue generating capacity, and therefore attractiveness, in suburban and rural areas. Afonso finds that suburban counties in North Carolina (which are small and numerous) have relatively low revenue generating capacity, while Rogers finds that suburban municipalities in Oklahoma have high revenue potential compared with either cities or small towns in rural areas (14, 15).

The Politics of Taxation

What Motivates People to Tax Themselves? Motivations to vote for tax increases have been explored extensively in political science literature. The influences and motivations for self-taxation generally fall into two categories relating to whether voters are affected by the specific tax measures' content (endogenous influence) or other factors (exogenous influence).

Exogenous influences on choices of self-taxation include the current economic climate, the manner by which services are currently paid (i.e., the status quo), the composition of current taxes, and the partisanship of the constituency. The importance of economic climate is reflected in findings that initiatives are less likely to pass during recessions than in expanding economies (16). Voters also appear to strongly consider their local jurisdiction's status quo in taxation: one study found people preferred taxes to user fees where similar goods or services were already paid for through taxes, and that they preferred fees to taxes where no related taxes were in place (17). Similarly, the composition of existing taxes matters: people "seem willing to consider higher total tax burdens if there are more smaller taxes" (18).

Endogenous influences on voters' willingness to tax themselves include the content of the initiative, spending by both the supporters and opponents of the tax, how tax impacts are perceived, how taxes are named or labeled, what the perceived benefits from the tax-funded spending are, and whether existing government services are viewed favorably. The amount of campaign money spent opposing a measure also increases the likelihood of failure, whereas spending in favor of a measure is less effective (16, 19). For transportation sales taxes specifically, Manville and Cummins found that supporters are more likely to be motivated by collective benefits than private ones (20). For example, voters support transit-funding measures out of concern for public ills like congestion and pollution rather than a personal desire to use transit themselves; the authors note that a 2013 American Public Transportation Association study showed that 70% of Americans support increased transit spending even though relatively few people use transit, which accounts for fewer than 3% of all trips (20).

Literature that bridges political science and cognitive psychology finds that voters' willingness to approve taxes depends in part upon their perceptions of such taxes' impacts as well as the names given to the taxes. Perceptions of tax impacts tend to change when taxes are presented in percentage rather than dollar terms, and people support "both higher and more steeply progressive taxes" when they are stated as percentages (18). Finally, the perception of existing transportation service matters. A study of transportation tax measures in two southern California counties found that "respondents in both counties are approximately 7% more likely to support the extension of the transportation sales tax measures when [existing] transit options are viewed favorably." However, an

unfavorable view of existing transit does not cause significant opposition (21).

Equity Issues in LOSTs

Goldman and Wachs note that sales taxes are inherently regressive (13). Despite this prevailing view of sales taxes in general, transportation sales taxes are often perceived as “fair” for several reasons. First, sales taxes encourage horizontal equity to the extent that groups with similar incomes have similar expenditure patterns. Second, sales taxes cannot be easily evaded and are paid both by residents and by non-residents, who contribute to transportation infrastructure wear and tear. Third, some argue that LOSTs are a more equitable source of transportation funding than the gasoline tax, as users of non-automobile modes also pay to directly fund transportation under the sales tax (13).

Studies that evaluate the equity implications of transportation LOSTs often focus on geographic equity as a crucial element of successful measures. In a case study of multiple measures in Sonoma County, Hannay and Wachs found that proximity to enumerated projects correlated with the percentage of “yes” votes on proposed measures, which supports the notion that geographic equity—ensuring that all areas in the county directly benefit from the listed projects—may contribute to measure passage (12). Haas et al. noted that evidence of geographic equity principles built into LOST measures can be seen in the increasing local revenue return provisions that seek to return revenues to localities in proportion to the revenue raised (10). However, the authors were unable to conclude whether or to what degree geographic equity affects the passage of LOSTs.

Finally, LOST equity may be evaluated on the basis of the modal mix of projects funded in a measure. After multiple failures, Hannay and Wachs partially attributed the eventual passage of Sonoma County’s Measure M (2004) to its incorporation of a multi-modal funding plan (12). Haas et al. found limited evidence that a balance among highway and transit projects increased the likelihood of voter approval, which they attributed to the influence of interest groups, such as environmentalists, who prefer specific modal outcomes (10).

While informative, the studies cited above typically analyze one or just a few LOST measures, and often through qualitative case study approaches, which limit their generalizability. This research seeks to address this limitation and tests several of the hypotheses proffered in previous research through more comprehensive analysis of LOST measures.

Research Design and Methods

This study presents an overview and analysis of all 76 LOST measures put before California voters between 1976 and 2016. For each measure, the official text, published expenditure plans, county websites, and official Statements of Vote

from county voter registrars were used to gather 21 unique variables spanning five general categories: administration, temporal factors (such as the period specified for the life of the tax), financial characteristics, voter support, and modal funding splits. The data gathered for all 76 California LOST transportation measures are available for download at www.its.ucla.edu/LOSTdata. The analysis presented here includes all measures for which data were available for a given variable.

Complete records were obtained for most measures and variables, but modal funding split data are limited to the 53 measures with available expenditure plans. In general, measures excluded from the modal split analysis are older and more likely to have failed compared with those included. Of the measures with expenditure plans, over two-thirds passed (68%), compared with just over half (52%) of measures without expenditure plans. Thus, the modal funding analyses offer an unavoidably incomplete picture of LOST expenditure plans. Nonetheless, the data presented here represent the most comprehensive analysis of California LOSTs to date.

For each of the 53 measures for which expenditure plans were available, expenditures were divided into six categories: public transit, bike/pedestrian facilities, seniors/disabled services, safe routes to school, local roads, and highways. Classification of expenditures by mode relied only on project lists and funding categories outlined in the measures’ expenditure plans, which are published when a measure is put before voters. Transit funding reflects spending on all types of public transit, including rail and bus rapid transit capital investments as well as funding for transit operations and fare subsidies. Bike and pedestrian funding included a range of projects such as sidewalk repairs and new bike lanes. Seniors/disabled and safe routes to school refer to specific allocations to these categories in expenditure plans. Specific highway projects, as well as funding for “regional” road projects, are categorized as “highways.” In cases in which the expenditure plan modal funding breakdown differed from a measure’s list of projects, data from project lists were used because project lists provided more detailed enumeration of expenditures that are likely to be a more accurate representation of modal expenditures.

Local road funding was calculated from two sources. Local road funding figures are primarily based on the amount of funding specifically allocated to local roads in a measure’s expenditure plan. If measures did not specify the percentage of funding allocated to local roads, local road funding was calculated as part or all of the funding dedicated to local return. For example, a measure may require that a minimum or specified percentage of the revenues be dedicated to specific uses (for example, local transit services, bike paths, and complete streets programs). However, in many other measures, local return funding is flexible, allowing local jurisdictions to decide which transportation projects to prioritize over the life of the measure. In these cases, any flexible local return funding not dedicated to a specific modal use was assumed to

be local road funding, which evidence (detailed below) suggests is by far the most common use for local return funds. Though not ideal, this assumption reveals the dilemma in accounting for these funds. These funds are not specifically designated until the time of expenditure, which over time can be many years after the passage of the measure; even then, the local roads projects receiving LOST funding are often not publicly designated as LOST-funded projects, making the modal accounting very difficult. The choice was thus to either make some reasonable assumption about the expenditure of these funds, or exclude them from the analysis entirely, which would clearly distort the portrait of LOST funding. Given this, it was assumed that local return funds went to streets and roads expenditures for three reasons. First, local roads are the single most common expenditure category for local return funds when the modal splits are known (see, for example, Imperial County Measure D [22]; Riverside County Measure A2 [23]). Second, measure expenditure plans typically describe flexible funding as local road funding unless there is a portion dedicated to a specific mode (for example Ventura County Measure AA, 2016). Third, ballot arguments overwhelmingly tout the benefits of local return funding for local road repair and maintenance (24).

Many measures include projects or expenditures that either do not fit into any of these modal classifications, or span multiple modes. For example, measures often earmark funds for regional planning or environmental mitigation. Some funds may also be double-counted across categories for legitimate reasons. For example, if a percentage of revenues is dedicated to fare subsidies for seniors and disabled riders, it was counted as both “transit” and “seniors/disabled.” Additionally, local return funding is flexible and in many cases can be used for alternative transportation or other planning exercises (for example, complete streets planning). Thus, the modal breakdown likely underestimates the actual share of measure revenues spent on non-automobile modes. Lastly, a number of measures dedicate funding to competitive grant programs that are not limited to a particular mode. This funding cannot be categorized at the time of the election and is therefore not considered in the modal breakdown. For these reasons, modal funding categories may not sum to 100%.

Modal breakdowns of expenditures were used to calculate how closely a measure’s expenditure plan reflects the current commute travel modes of county residents. Commute mode share was used for comparison rather than share of all trips because work trip data are typically included in regional transportation plans and frequently cited by measure proponents and opponents. Using countywide commute share from the 2015 5-year American Community Survey and previously calculated modal expenditure breakdowns, modal balance was calculated for mode m using the following formula for each county:

$$\text{balance}(m) = \text{percentage share of expenditure plan}(m) - \text{countywide commute share}(m)$$

Modal balance was calculated for only two modes: highways/local roads and transit. Walking and biking infrastructure was omitted because, though they are an important and growing part of mobility, the commute mode share data are classified with “other” modes in American Community Survey data, making determination of commute share by the combined category of walking and biking impossible. Positive balances indicate that a measure dedicated a greater share of funding to a mode relative to the share of commuters taking that mode. A negative balance indicates that a measure dedicated a lower share of revenues relative to the share of commuters taking that mode. “Overall” balance is then calculated as the sum of the absolute values of the transit and car balances. Higher numbers indicate *less* overall measure balance.

Findings

The first California LOST was enacted in Santa Clara County in 1976; since then, LOST measures have become increasingly popular means for counties to finance their transportation systems (See Figure 1). More popular than ever, over half (39) of all LOST measures were proposed in the last decade (2006–2016), despite the Great Recession’s depressing effects on ballot measures between 2008 and 2014.

Figure 1 shows the number of measures proposed each year, distinguishing between “newcomer” counties (those proposing their first LOST measure), and “veteran” counties that had previously put a LOST measure on the ballot. Before 2000, 15 California counties had proposed LOST measures. Between 2000 and 2016, an additional 17 counties proposed LOST measures, with four new counties doing so in 2016 alone.

Measure Passage Rates over Time

In 1995, the California Supreme Court ruled in *Santa Clara County Local Transportation Authority v. Guardino* that, since LOST revenue was required to be spent on transportation, LOSTs are considered a “special” tax for a specific purpose (as opposed to a “general” tax). Under California’s Proposition 62, such special taxes require approval by a two-thirds supermajority of voters (25). Prior to this decision, only a simple majority was required to approve a LOST, but since 1995 each “no” vote on a LOST measure effectively counts twice as much as a “yes” vote. Following *Guardino*, some feared that the era of sales tax transportation finance would be short-lived. Indeed, six of the nine measures (67%) placed on the ballot between 1996 and 2002 following the *Guardino* ruling received a majority of the votes cast in favor of passage, but failed to clear the new two-thirds supermajority hurdle. Since those few tumultuous post-*Guardino* years, however, the average share of “yes” votes for these measures has climbed, as has the rate of passage under the supermajority requirement. Between 2003 and 2016, no fewer than 50 LOST measures were put on the ballot:

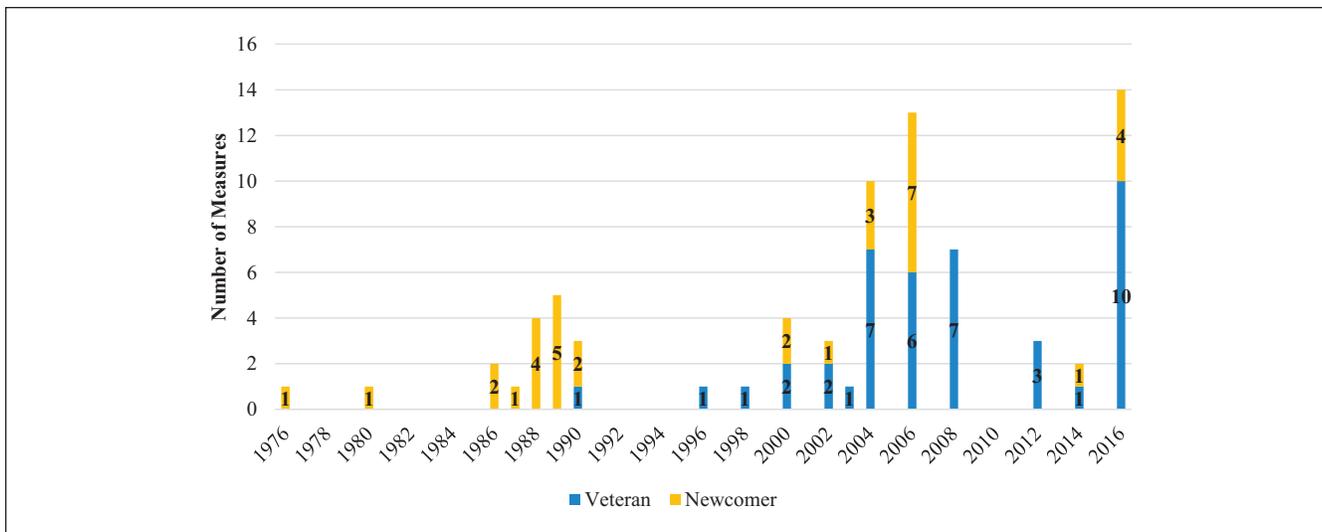


Figure 1. Veteran and newcomer county measures by year.

- 8 of the 50 (16%) failed even to garner a simple majority of the votes cast;
- 15 of the 50 (30%) received a simple majority of votes in favor, but not the required supermajority; and
- 27 of the 50 (54%) received supermajority support and were enacted.

Figure 2 shows the percentage of voter approval for every measure in the sample, as well as the passage thresholds needed under the earlier simple majority and later supermajority rule; Overall, 48 of the 76 measures (63%) passed, whereas 28 of the 76 (37%) were rejected—eight in 2016 alone. Figure 2 clearly demonstrates the significant implications the majority rule change had on passage rates. All 17 measures proposed before the supermajority rule were approved, whereas about half of measures (53%) proposed following the supermajority requirement passed. Of the 28 failed measures, all but eight would have been enacted under a simple majority requirement. The divergence between what would have been approved under the two different majority requirements underscores the importance of the supermajority ruling on LOST outcomes in California.

Measure Characteristics

Measure Type and Tenure. More than half of the 76 (57%) LOST measures appeared on ballots in counties that had not previously enacted a transportation sales tax. An additional 21 measures (28%) extended or renewed LOST measures already in place. Only five (7%) measures are permanent; four of these passed (three in Los Angeles County and one in Santa Clara County). The clear majority (71 of 76, or 93%) of California LOSTs are termed measures, meaning the increased sales tax levy is in place for a fixed period, after

which it expires. It is therefore unsurprising that renewals and extensions have become increasingly common as original sales tax measures reach their sunset dates.

The durations of termed measures range from 8 to 40 years, with an average of 24 years; more than three-quarters of LOSTs are slated to last at least 20 years. The shortest proposed LOST period was Sonoma County’s unsuccessful 2000 Measure B, which proposed a 0.5% sales tax for 8 years.

Renewal and extension measures were more likely to pass (58%) than were original sales tax measures (53%), even though all extensions and renewals were subject to the supermajority requirement whereas only two-thirds (69%) of original measures were required to pass with a supermajority. Among measures subject to the supermajority requirement, passage rates differ between original measures and renewals/extensions. Only 30% of original measures following 1995 were approved, while 72% of additional measures in counties that had previously passed measures were successful in the same period.

This suggests that as counties demonstrate their ability to deliver projects from past measures, voters are more willing to vote for subsequent measures. A second possible explanation is that the temporal distribution of original measures—those proposed by counties without previously passed LOSTs—represents a political, geographical, or cultural divide between urban and more rural counties. For example, since the supermajority requirement, many rural or conservative counties have placed a LOST on the ballot for the first time (22). Residents of mostly urban counties may simply be more supportive of LOST measures, transportation spending, or taxation more broadly, compared with residents of more rural counties. Future research is needed to better understand factors influencing measure support across geography and populations.

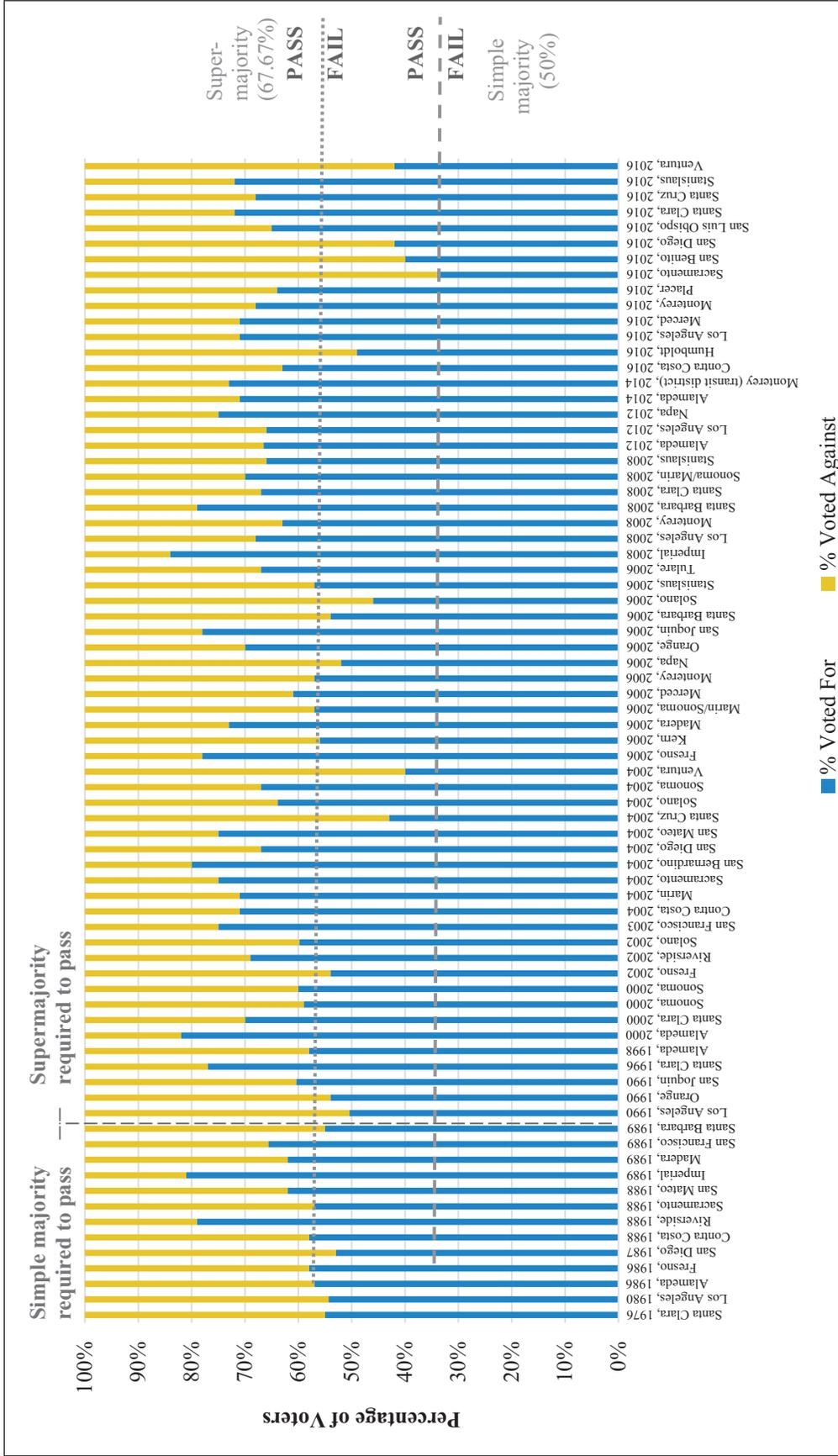


Figure 2. Measure of support over time.

Tax Rates and Expected Revenues. The proposed sales tax increases range from 0.125% (Monterey, 2014; Santa Clara, 2008) to 1% (Alameda Measure B, 2012; Alameda Measure BB, 2014), although a substantial majority (86%) of LOSTs impose a half-percent (alternatively referred to as a half-cent) sales tax. The small rates levied in the 2014 Monterey measure (Measure Q) and 2008 Santa Clara measure (Measure B) fund specific public transit improvements, narrowly defined projects, or projects that are both public transit improvements and narrowly defined. The half-cent sales tax rate has remained popular over time; a half-cent is the median sales tax increase amount in every election year, except for 2014.

LOST expenditure plans forecast a wide range of annual revenues from the tax increases, reflecting counties that vary widely in both population and economic composition. Expected annual revenues ranged from a low of US\$2.5 million (Monterey Measure A, 2006) to US\$1.3 billion (Los Angeles Measure R, 2008), with an average of US\$183 million per year. As one might expect, county population is strongly and positively correlated (0.44) with expected annual revenue from these measures.

Expenditure Plan Characteristics

Modal Funding Split. Table 1 shows the large range in funding of various transportation modes across the measures, drawn from the 53 measure expenditure plans. Although most measures split funding among modes, a few proposed to dedicate all tax revenues to a single recipient. For example, Monterey's 2008 Measure Q and Santa Clara's 2000 Measure A and 2008 Measure B dedicated 100% of revenue to public transit projects, whereas Humboldt County's 2016 Measure U proposed to return all funding to local jurisdictions.

Each funding category developed for this analysis includes a wide variety of investment types. Qualitative analyses of the expenditure plans reveal that most itemized projects are capital investments rather than operating or maintenance expenditures.

Most measures contained at least some funding for transit (91% of measures), local roads (87%), and highways (83%). Although most counties allocated some funding for transit and other non-automobile modes, the combined funding for local roads and highways accounted for an average of 61% (and a median of 69%) of funding across all measures. This

is far higher than spending for public transit, which received an average of 31% (and a median of 26%) of dedicated funding across the measures. Over half (55%) of the measures allotted at least some funding to bike or pedestrian projects, or to both bike and pedestrian projects.

Modal Funding Balance. The programs detailed in these measures reflect both the diversity of counties across California, and each county's unique dynamic of achieving of local political consensus. Counties exhibit different approaches to balancing current transportation needs on one hand against aspirations for shifting future travel behavior and transportation modes on the other. One way to cast light on this "needs" versus "aspirations" dichotomy is to compare the expenditures proposed in the plan with current travel patterns. No LOST expenditure plan precisely mirrors the commute mode share in a county. In general, the plans tend to fund public transit at much higher levels than the share of people who ride transit to work, the trip purpose that enjoys the highest transit mode share. Figure 3 shows measures ranked from most to least balanced between expenditures and commute mode. Each measure's overall balance is listed in parentheses next to the measure name.

Figure 3 shows that, among the 53 measures that included expenditure plans, all but seven (87%) allocated a higher share of measure expenditures to public transit than the public transit commuting mode share in that county. Two county measures (Alameda 1986, Santa Cruz 2004) proposed public transit expenditures at levels roughly equivalent to the transit commute mode share. The remaining five counties dedicated either most (Imperial 1989, 95%; Napa 2012, 92%; Stanislaus 2008, 98%) or all (Humboldt 2016; San Benito 2016) funding to streets and highways, proportionally higher than motor vehicle travel share.

Although the majority of expenditures across all of the county measures (61%) is allocated to streets and highways, more than four out of five (83%) commuters travel by car in the California counties with LOST expenditure plans (2). Collectively, these data suggest three possibilities. First, the authors and supporters of county expenditure plans may aspire to support higher levels of public transit use and less dependence on driving. Second, proportionately higher public transit funding in the LOST measures might reflect the current structure of transportation funding in California,

Table 1. Modal Funding Split

Mode	Mean	Median	Range	25 th –75 th percentile
Highways	27.0%	26.0%	0–66%	9–44%
Public transit	31.0%	26.0%	0–100%	10–43%
Local roads	34.0%	30.0%	0–100%	20–40%
Bike/pedestrian	2.4%	0.7%	0–17%	1–4%
Safe routes to school	1.8%	0.0%	0–11%	0–0%
Seniors/disabled	4.4%	1.0%	0–100%	0–4%

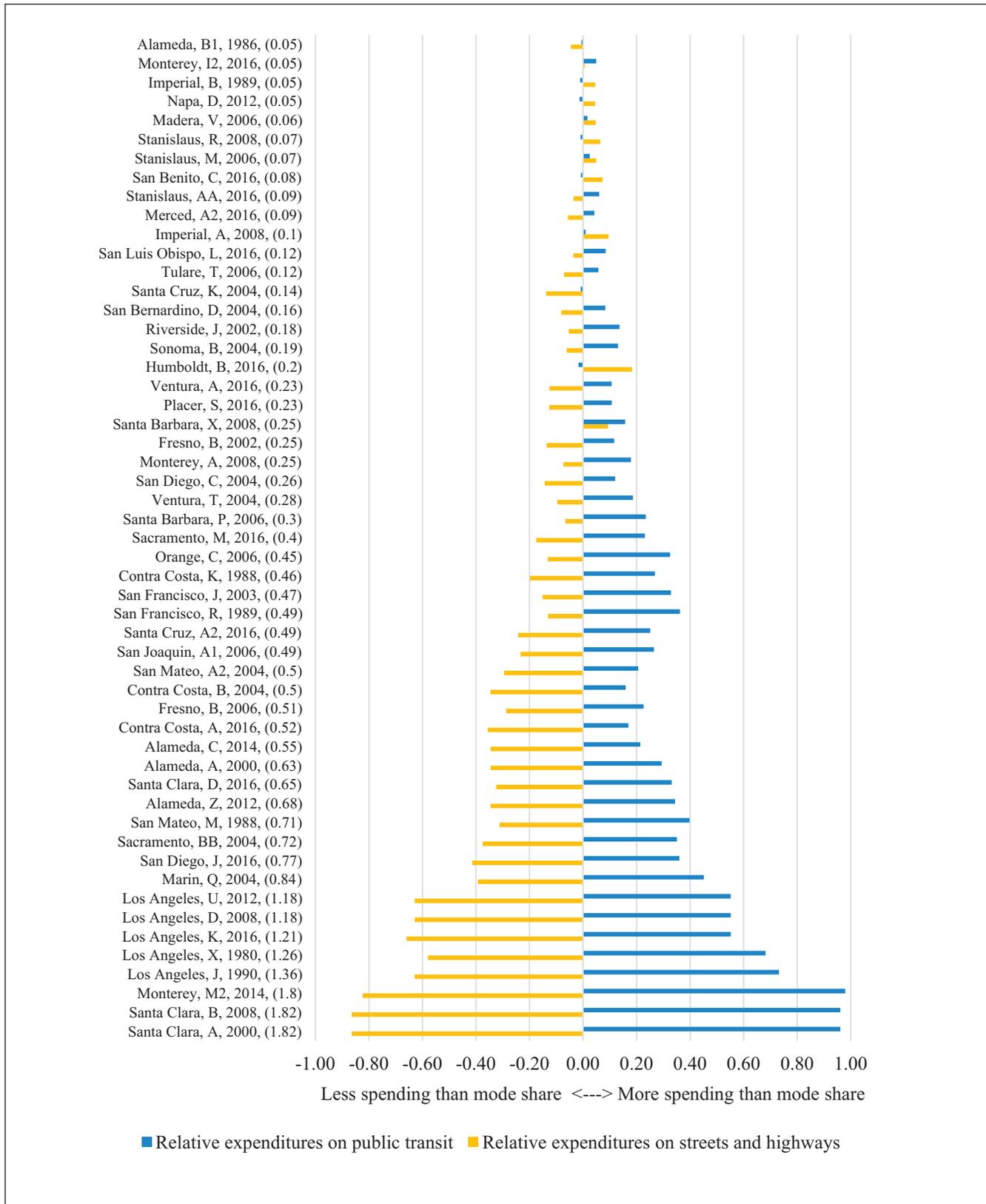


Figure 3. LOST measure balance and proportional funding.

whereby streets and highways receive more funding from traditional revenue sources such as the fuel and property taxes than does transit (26). Or third, transit funding may be a political calculus whereby the measures' authors may perceive transit to be relatively popular with voters and conclude that LOST transit expenditures will buoy the odds of passage even if many voters do not personally intend to ride transit. Hannay and Wachs and Haas et al. report that measures are more likely to pass if they dedicate funding to a mix of highway and transit projects (10, 12). However, although the majority (85%) of measures *do* include both highway and transit funding, the simple inclusion of both was not enough to increase a measure's chances of passing; in fact, it did not meaningfully explain whether a measure passed or failed.

Addressing Geographic Equity Concerns. Historically, parts of counties slated to receive fewer transportation benefits than they contribute in sales tax revenue are less likely to vote for a LOST transportation measure. This could easily lead to defeat in California given the supermajority requirement (10, 12). Measure authors appear to pay careful attention to addressing geographic equity in two ways. First, measure proponents typically assemble project lists to fund major capital projects in all parts of the county. Second, almost all measures dedicate a portion of revenue for return directly to cities (and the county for unincorporated land) as flexible funding for local priority projects. In most cases, the clear majority of local return is spent on local road projects (as discussed above). Some measures stipulate that a certain portion of local return be dedicated to specific modes (often bike and pedestrian infrastructure), although jurisdictions are free to select specific projects.

Local return was first featured in Los Angeles County Measure A in 1980, and average local return percentages have increased over time. For the 49 measures that included local return funding in expenditure plans, an average of 35% of measure revenues were dedicated to local return.

Figure 4 shows the distribution of local return expenditures among the studied measures. On average, measures returned about one-third (34%) of revenue to local jurisdictions. Each county has unique transportation geography, which LOST measures tend to reflect. Several measures have local return values that appear to be outliers, but which logically reflect local geography. For example, revenues from Santa Clara Measure A (2000) and Measure B (2008), and Monterey County Measure Q (2014), were entirely dedicated to specific transit projects, and thus have zero percent local return funding. At the other extreme, four measures (in relatively low population counties where big projects are rare) dedicated over 90% of measure revenues to local return: Imperial County Measure D (1989) and Measure D (2008), Napa County Measure T (2012), and Humboldt's Measure U (2016).

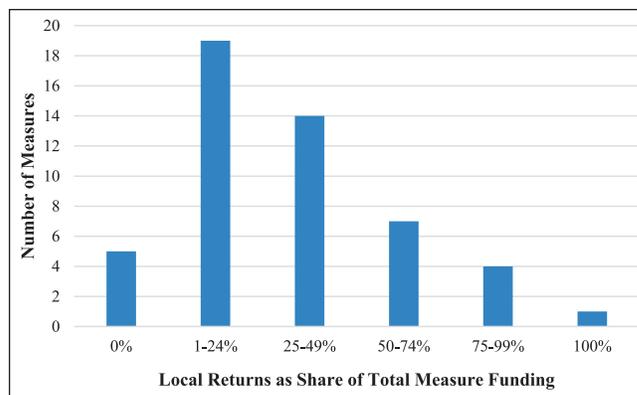


Figure 4. Distribution of local return as share of measure revenues among measures studied.

Conclusion

Although conventional wisdom holds that voters do not like to tax themselves, LOST measures have proven to be remarkably popular with voters over the years. In California, nearly two-thirds of LOST measures put before voters have been approved—most by a supermajority—and their popularity as a transportation finance tool appears to be waxing. Fourteen measures were on the 2016 ballot alone, four in counties that had never before considered such measures. In addition, the rate of LOST measures' passage has increased over time, making LOSTs politically effective mechanisms for garnering popular support to raise taxes for transportation.

Each of the LOST expenditure plans examined here was distinct in some way, reflecting each county's unique urban geography and transportation needs. Most measures dedicate the largest portion of expenditures to road projects, followed by public transit projects – with suburban and rural counties earmarking a higher share of revenue for roads, and urban counties devoting larger shares to public transit. On average, about three-fifths of all LOST expenditures go to road projects (34% for local roads, and 27% for highways, on average), 31% is allocated to public transit projects, and about 8% is dedicated to benefiting specific groups such as projects for the elderly and disabled, bicycle and pedestrian facilities, and safe routes to school programs. Most measures also include a share of funds slated for “local return,” which spreads non-mode-specific funding around the jurisdiction by reserving a portion of the funds to be used at local discretion.

Although modal funding expenditures vary widely among counties, they rarely reflect local mode shares. Most often, LOST measures allocate a percentage of funds to public transit that is proportionately greater than transit usage. This may reflect policy aspirations for transit as an alternative to auto dependence; it may reflect that public transit has fewer revenue sources to draw on than streets and highways (26); or it may reflect a multi-modal political strategy to secure a broad base of popular support (10, 12), or a combination of these

factors. Manville and Cummins found that people often support transit spending based on a belief in its collective benefits—such as improved air quality and reduced congestion—rather than a personal intention to ride transit and derive a private benefit from doing so (20).

The LOST measures examined here have detailed expenditure plans, are mostly multi-modal, often provide substantial public transit funding together with flexible local return funding, and most have fixed-terms requiring voter-approved renewal. Together, these characteristics have combined to create a winning transportation finance formula resulting in enactment of many measures in California, and around the United States, despite (in the California case) a supermajority voter approval requirement.

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Author Contributions

The authors confirm contribution to the paper as follows: study conception and design: JL, AB, BT, MW; data collection: JL, AB; analysis and interpretation of results: JL, AB; draft manuscript preparation: JL, AB, BT, MW. All authors reviewed the results and approved the final version of the manuscript.

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