

LOST and Found: The Fall and Rise of Local Option Sales Taxes for Transportation in California Amidst the Pandemic



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Abstract The COVID-19 pandemic dramatically affected the ability of localities to pay for their transportation systems. We explore the effects of the pandemic on local option sales taxes (LOSTs), an increasingly common revenue source for transportation in California and across the U.S. LOSTs have many advantages over alternative finance instruments, including that they can raise prodigious amounts of revenue. However, LOSTs rely on consumer spending, which lags during times of economic weakness. This is precisely what we observed in California counties during the initial months of the pandemic. LOST revenues did recover after the initial economic shock of COVID-19, albeit to a lower level than they would likely have otherwise. LOST revenue trends during the pandemic were affected by national and regional economic conditions and government policy as well. This public health crisis illustrates both the pitfalls and resilience of LOSTs during economic downturns and recoveries. The lessons from the pandemic's effects on LOSTs will be useful for policymakers and analysts in preparing for inevitable future crises and associated economic turbulence.

1 Introduction

Over the past five decades, financial responsibility for highways and public transit systems has gradually devolved from the federal government to states and lower levels of government. To fill the revenue vacuums left by this fiscal devolution, voters in

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many counties and localities across the United States have agreed to tax themselves to fund transportation. In California, 25 counties, home to a substantial majority of the state's population, currently finance major portions of their transportation systems and services—roads, streets, public transit, bikeways, and specialized services for elderly and disabled people—using revenue produced by voter-approved sales taxes [33, 35]. Local option sales taxes (LOSTs) are most common in California [22], the most populous U.S. state, and a quite diverse state that is often emblematic of transportation trends nationwide or at the forefront of them.

This emerging means of transportation finance was thrown into considerable uncertainty by the spread of COVID-19 and the pandemic-induced economic downturn of 2020. Accordingly, this chapter explores LOSTs in California amidst the COVID-19 pandemic. We begin by describing the prevalence of LOSTs for transportation in California and the types of transportation programs they support. We then investigate the effect of the pandemic and the resulting economic turbulence on sales tax revenues and, consequently, on transportation program budgets. We show that the pandemic and associated federal fiscal relief legislation affected counties' LOST revenue streams in variable ways, with noticeable differences in direction, degree, geography, and timing across counties. We conclude by examining the factors associated with this variance across counties and their implications for transportation finance and policy post-pandemic.

2 LOSTs: An Overview

Local option sales taxes have emerged over the past several decades in part as a response to a relative decline in federal transportation revenues. Federal funding for surface transportation (largely funded by national taxes on motor fuels) has been falling in inflation-adjusted terms per capita and per vehicle mile of travel. Most of this federal funding comes from taxes on motor fuels, supplemented by state fuel taxes, that are easy to administer and create a rough correspondence between amount paid and usage of the road network [21, 30].

This system of surface transportation financing worked well throughout much of the twentieth century, as vehicle ownership and driving both dramatically increased and tax rates were frequently adjusted upward to account for the effects of inflation. However, the ability of fuel taxes to fully pay for transportation projects began eroding over the last several decades as inflation, increasing vehicle fuel efficiency, increasing maintenance costs for an aging road system, and a waxing reluctance among elected officials to raise per gallon fuel tax levies combined to weaken fuel taxes as the centerpiece of transportation finance [19, 30, 37].

Relative declines in federal surface transportation funding have led states and local governments to seek alternative revenue sources. Transportation LOSTs—which are typically incremental increases to the sale of all goods and services subject to sales taxes and not just on fuel—are perhaps the most prominent of these local funding mechanisms. This is particularly true in light of the extreme reluctance of many local

officials to raise property taxes since the “tax revolts” of the late 1970s and early 1980s [19, 37]. Currently, roughly 19% of California’s transportation expenditures at the local level are funded using LOST revenues [10].¹

LOSTs, both nationwide and in California, are typically approved by voters. They are most commonly levied by counties, though states can authorize other units of government to have them as well. As mentioned, LOSTs are levied on the price of all goods and services subject to sales taxes, which vary from state to state. Incremental rates typically vary from ¼ cent per dollar to 1 cent per dollar [17]. LOST ballot measures generally outline an estimate of forecasted revenues and specific projects to be funded by measure revenues and/or lay out funding criteria, such as percentages of revenues to be allocated toward projects for specific modes [18].² The project lists approved by voters are often longer and more costly than the generated LOST revenues can fund in the specified time horizon. Projects may be delayed or cancelled in response to revenue shortfalls. Unfunded projects often form the basis of new efforts to extend or renew LOSTs after their scheduled expiration. More rarely, revenues exceed forecasts, allowing priority projects to be delivered sooner than scheduled [4].

Often, a percentage of LOST revenues is dedicated to so-called “local return,” namely to local governments within a county that may spend it on transportation projects (often local roads) of their choosing.³ Thus, transportation LOSTs provide an alternative source of funding for transportation needs, with a different structure and method of enactment than fuel taxes. LOST funding is locally generated and therefore frees local governments from the constraints (and oversight) of federal and state funding. This allows cities and counties more discretion over which projects to prioritize [23]. Most LOST-funded projects are highway improvements and public transit, though the mix of projects varies substantially from place to place. LOSTs are usually authorized for a set period of time, often ranging from 10 to 20 years [12]. Measures are, however, often renewed, typically accompanied by a revision of project priorities and timelines. LOSTs with no expiration date, like Los Angeles County’s 2016 Measure M, are occasionally approved by voters as well [23].

LOSTs inherently come with a degree of uncertainty tied to supply of and demand for taxable goods and services, thus linking transportation funding to much larger macroeconomic trends. For instance, the supply of taxable goods is influenced by

¹ This estimate includes expenditures from transportation planning agencies, city streets, county roads, transit operators, and special districts for transit and roads [10].

² In New York, Ohio, and Tennessee, local governments are allowed to use LOSTs as a source of general revenues (i.e., for non-transportation purposes). Other states that allow LOSTs are divided between those that specifically require an enumerated project list (e.g., Arizona, California, South Carolina, and Wyoming) and those that allow funds to be dedicated to broad project categories like “road improvements” (e.g., Florida, Iowa, Louisiana, New Mexico, Oklahoma, and Texas) [18].

³ Spending rules are laid out in the LOST ballot proposition approved by voters. Local return funds may come with categorical spending requirements, but localities retain some level of autonomy regarding spending decisions. For example, Alameda County’s Measure B allocates both local return funds and formula-based Americans with Disability Act funding to localities within the county [23].

the ability of supply chains to ensure that goods are available where and when they are demanded. During the COVID-19 pandemic, sales of many consumer goods were heavily affected, at least temporarily, by the disruptions to supply chains [20]. Likewise, consumers' level of disposable income influences demand, with lower-income and unemployed workers as well as those outside of the workforce less able and willing to spend. During economic downturns, such as during a pandemic, consumer demand declines as employment decreases and wages stagnate. Federal stimulus payments designed to counteract this—the Coronavirus Aid, Relief, and Economic Security (CARES) Act in March 2020 [15], the Coronavirus Response and Relief Supplemental Appropriations (CRRSA) Act in December 2020 [16], and the American Rescue Plan (ARP) Act in March 2021 [14]—also affected tax revenues. These laws included both direct payments (in each bill, respectively: \$1,200, \$600, and \$1,400 per person earning \$75,000 or less annually [28]) and support for public and private employers that helped sustain employment and wages [36].

The COVID-19 pandemic in California provided a vivid and timely example of how sales tax revenues are linked to the strength and structure of their regional economies. In the next section, we examine how the LOST revenues raised in each county relate to different characteristics of each county's economy. Our primary goal in this analysis is to identify factors that have an empirical relationship with LOST revenue generation during the pandemic. Our analysis in this chapter is largely descriptive; given the relatively small number of counties examined, we do not present a multivariate analysis nor make formal claims about causality or statistical significance. Rather, we illustrate commonalities and differences across California counties in relation to LOST trends, at a period when (at the time of this writing) every relevant variable has yet to be determined as the halting economic recovery proceeds.

Overall, we find that the strength of the local economy and the specific employment structure across industries in different counties are correlated with variations in transportation LOST revenues. Revenues in the initial stages of the pandemic in all counties fell below budgeted levels. LOST revenues did, however, hold up better as the pandemic wore on than many analysts predicted during the pandemic's early months. Revenues mostly increased after the pandemic's initial months, albeit with significant variation across counties. Perhaps counterintuitively, LOSTs generally fared worse in higher-income counties. Counties with heavy employment in certain sectors, particularly in information, professional services, and arts/recreation, also tended to lose more revenues.

3 The COVID-19 Pandemic and LOST Revenues

During the initial stages of the pandemic, uncertainty about both public health and the economy was at its highest, and many analysts produced dire near-term predictions of revenues falling far below previous forecasts [13]. Despite this initial fret and fluctuations within the pandemic, LOSTs proved unexpectedly resilient.

In March 2020, when California’s shelter-in-place orders began, counties across the state braced themselves for drastic losses, layoffs, and budget cuts. The Los Angeles County Metropolitan Transportation Authority, for example, began prioritizing which services and projects could continue and which would not, in response to the dramatic declines in anticipated fare and tax revenue [24]. These worst-case revenue projections largely failed to manifest.

To determine how LOST revenues responded to the pandemic, we analyzed data from the California Department of Tax and Fee Administration (CDTFA) [5]. CDTFA collects sales taxes across the state, including LOSTs, and then returns the appropriate amount to each governmental recipient. The amounts generated by the sales tax are returned to counties a few months after they are collected.

Figure 1 shows that sales tax receipts began a steady decline as the state-level shelter-in-place order was announced on March 19, 2020. Receipts fell by \$276 million between February and March. They continued to decline into May but rebounded in June and July, as businesses attempted to reopen, and more people began moving about and spending. Even so, the number of COVID-19 cases continued rising [11], and sales tax receipts fell. The number of new daily cases in California declined starting in July and reached a low point in September and October. After that, the number of cases grew dramatically again starting in November amidst a second major wave of winter infections. Sales tax receipts during this fall period began recovering when the number of new daily cases stagnated in September and October but quickly declined with the rise of infections afterward. Revenues also increased yet again after November with the advent of the holiday season. By the end of 2020, revenues had returned to levels seen during the previous year. LOST

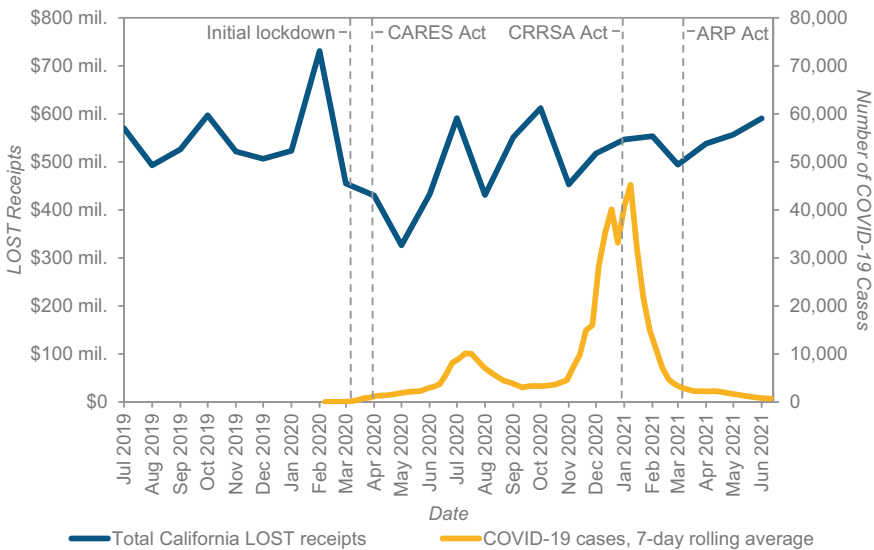


Fig. 1 LOST receipts and COVID-19 cases in California. Data sources [9, 5]

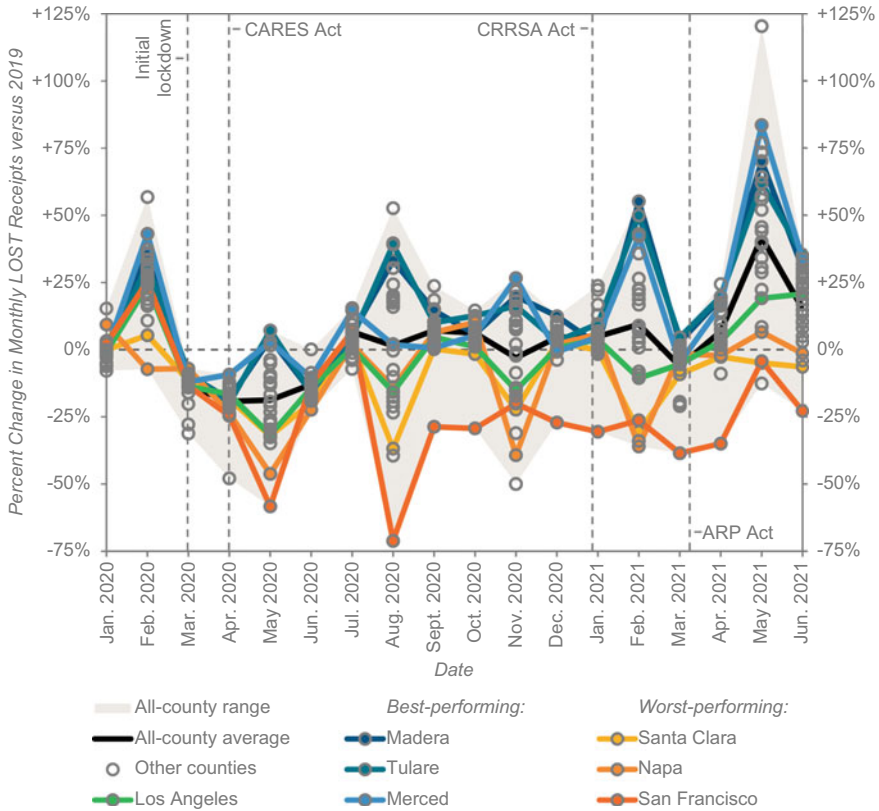


Fig. 2 Changes in LOST receipts compared to the same month in 2019. *Data source [5]*

revenues thus recovered but did not exceed the high of early 2020 and were volatile throughout. At the state level, then, the primary effects of the COVID-19 pandemic on LOST receipts were to decrease them in the short run and make them more volatile and unpredictable in the medium run. COVID-19 also likely dampened any potential growth in LOST receipts that may otherwise have occurred.

Statewide trends in LOST receipts mask considerable variability across counties. Figure 2 presents the percent change in LOST receipts by month against the same month in 2019, capturing the large variation observed during 2020 and 2021.⁴ The counties with the best- and worst-performing LOSTs are highlighted. Starting in March 2020, each county reported steady declines in LOST revenues. After California’s mid-summer peak in COVID-19 cases, however, LOST revenues in agricultural counties like Tulare in California’s San Joaquin Valley began to improve, with receipts actually 30%–40% *higher* than the same months the year before. While

⁴ When a county has multiple LOSTs, Fig. 2 plots their average.

some counties across the state thus experienced growth in LOST revenues—agricultural Imperial County along the Mexican border, for instance, saw 53% *more* LOST revenue in August 2020 than August 2019—others, like the urban San Francisco County, reported revenues far lower than for the same months in 2019. Despite these differences, sales tax receipt trends across counties moved in similar ways at a few key points in the pandemic, such as in March 2020 when lockdowns began, and all counties reported LOST totals from 5% to 35% less than the previous year. Similarly, revenue growth compared with 2019 was approximately flat in all counties in December 2020, as cases began rising to record levels. Going into 2021, most counties reported increases in LOST receipts, with the highest all-county average since the onset of the pandemic occurring in May 2021.

4 Factors Affecting LOST Revenues During COVID-19

To explore these substantial differences across California counties, we examined the relationship between the change in LOST receipts and a number of policy, economic, and job market factors. We first examined the relationship between county-level lockdown restrictions and LOST receipts. After the initial lockdowns of March 2020, the state-imposed restrictions were based on a more systematic county-level system of tiers from late August 2020 to June 2021. Counties moved between tiers based on case rate thresholds and other public health metrics, with higher tiers having stricter restrictions on gathering and business operations [7, 11]. Though the initial enactment of the state-level lockdown order in March 2020 coincided with a dip in LOST receipts statewide (see Fig. 1), we do not find a consistent relationship between these subsequent county-level lockdown restrictions and county-level LOST receipts (or rate of change of LOST receipts). We observe much more volatility in COVID-19 cases than in LOST receipts, and contrary to our expectations, county-level LOST revenues and COVID-19 case rates (and the restrictions tied to them) largely moved separately. If anything, peak county-level case rates weakly coincide with slight *increases* in county-level LOST receipts, the latter possibly driven by holiday shopping. The lack of an obvious relationship between case rates and receipts is perhaps because the tier-based public-health-driven activity restriction system did not begin until five months into the pandemic. By September 2020 and after, the economic activities that underlie patterns in LOST receipts had had time to adjust to lockdown restrictions, as well as the pandemic itself. County-level restrictions imposed well into the pandemic may have not influenced LOST receipts much atop the existing public health restrictions in place across the state throughout the pandemic. In addition, the degree to which individuals and businesses abided by the restrictions and the strictness with which governments enforced them likely varied geographically as well. However, lacking data on compliance with these frequently-changing regulations, we observe little relationship between them and county LOST revenues.

Next, to better understand how national economic trends affected local revenues, we examined the relationship between unemployment and LOST revenues. We use

unemployment as a proxy for the state of the economy. Though federal and state support for individuals during the pandemic has made the unemployment rate a less perfect metric for economic health, unemployment data have the virtue of being available across our entire study period and for all of our study counties. In theory, higher unemployment should lead to reduced incomes and, therefore, reduced spending on goods and services subject to sales taxes; so, we expected unemployment and LOST revenues to be inversely related.

Figure 3 plots the average unemployment rate for all counties with LOSTs and LOST revenues collected. For California as a whole, when unemployment rose, LOST receipts fell; when unemployment declined, LOST receipts increased. This relationship was particularly evident from January through July 2020, when the large spike in unemployment from the initial lockdown coincided with a drop in LOST revenues. During the second half of the year, however, the relationship between these two variables was somewhat more ambiguous.

Figure 3 also shows that unemployment was less volatile than sales tax revenues. While LOST revenues recovered after the initial drop, they did so unevenly, with revenues varying by hundreds of millions of dollars from month to month. By contrast, unemployment slowly and relatively consistently recovered over the succeeding seven months. Only in December 2020, amidst rapidly rising COVID-19 cases, did unemployment rise again.

However, the relationship between unemployment and sales tax receipts is not as straightforward at the county level. For example, counties that experienced a greater loss in sales tax revenue had lower pre-pandemic unemployment rates than those that gained or only slightly lost sales tax revenue. This pattern continued during the

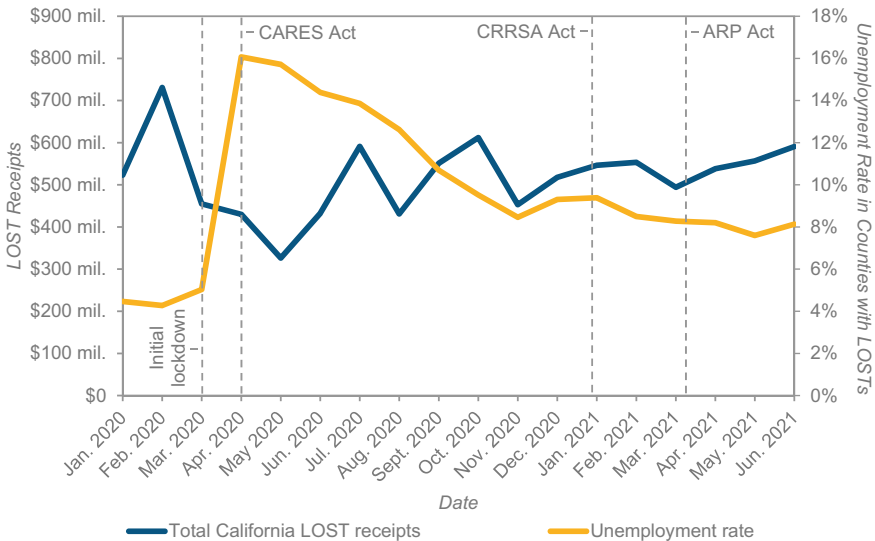


Fig. 3 LOST receipts and unemployment in California. Data sources [8, 5]

pandemic: unemployment levels tended to be lower in counties with larger LOST revenue declines. At the same time, unemployment trends were broadly similar across most LOST counties: unemployment spiked sharply in March and April 2020 during the initial stages of lockdown orders in California and gradually declined thereafter, although by the end of 2020, the state-level unemployment rate (9%) still greatly exceeded levels seen a year before (around 5%).

Across all LOST counties, then, unemployment appears to be related to LOST revenue generation, particularly during the early months of the pandemic. On the whole, LOST receipts during the pandemic increased when unemployment fell, and vice versa. LOST revenues depend on consumer spending, so revenues drop when consumer demand does. That all counties followed this basic pattern shows that state- and national-level economic trends affected different counties in similar ways. This does not, however, explain variation in LOST revenue patterns across counties. To better understand county-level variation in LOST revenues, we examined additional, local socioeconomic factors.

One of those factors is income. Counties that maintained or increased LOST revenues during the pandemic had lower pre-pandemic median incomes than those that saw declines in tax receipts (See Fig. 4, top left). Although not all high-income counties had poorly performing LOSTs, all counties with the worst-performing LOSTs were high-income. Conversely, the counties with best-performing LOSTs were relatively lower-income. This pattern likely reflects the influence of income on consumer demand for taxable goods. Both absolute and relative spending on discretionary taxable goods and services tends to be higher for higher-income workers, who also make larger cuts to their spending during times of economic weakness. Lower-income individuals have more stable consumption patterns, as a smaller share of their spending is discretionary [3, 27, 31]. Therefore, counties with higher amounts of disposable income experienced more volatility in LOST revenues than lower-income counties.

Additional characteristics of counties' economies may also have contributed to patterns of LOST revenue collection during COVID-19. The pandemic affected various sectors of the economy differently, as government public health mandates, employer policies, consumer attitudes, and the toll of the disease itself unevenly affected the state's industries. For example, many office workers were able to maintain full-time employment by working from home rather than commuting into the office, while many service and retail workers, by contrast, faced lay-offs or furloughs because their place of business was forbidden from operating or allowed to operate only under reduced capacity. LOST revenue was likely depressed more in counties that rely heavily on industries that were heavily affected by COVID-19.

To explore the effect of industry composition on LOST revenue generation, we investigated whether counties with employment concentrated in particular economic sectors saw larger declines in LOST revenues. We compared employment across industry sectors to changes in LOST revenues in each county between 2019 and 2020. For most industries, we did not find an obvious relationship between industry-specific employment and LOST revenues changes. Two sectors where we did see such a relationship are the information sector (See Fig. 4, top right) (for example,

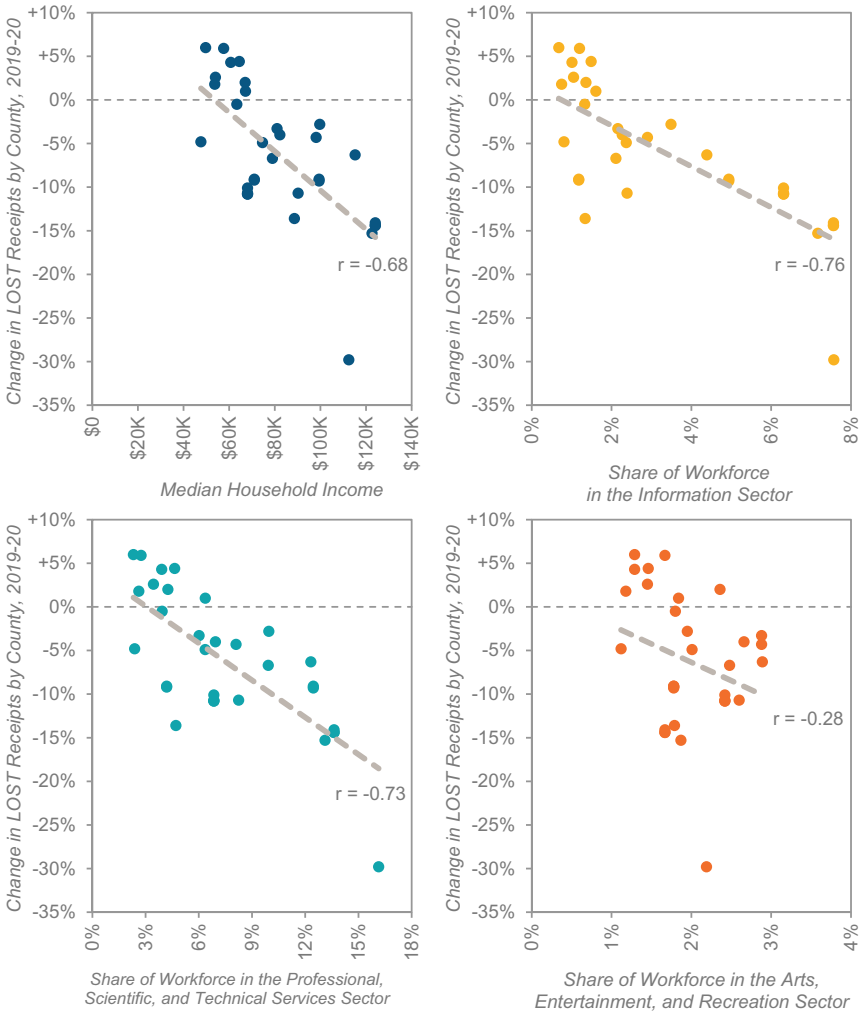


Fig. 4 Changes in LOST receipts in relation to various characteristics of county economies. *Data sources* [8, 5, 34, 35]. *Note* As new measures in 2019, San Benito Measure G and San Mateo Measure W are excluded.

software companies) and professional, scientific, and technical services (See Fig. 4, bottom left) (for example, consulting and office work). Overall, counties with higher levels of employment in these industries tended to see larger LOST revenue declines during the COVID-19 pandemic. Employment in the professional, scientific, and technical services sector was up to four times higher in the counties with the largest revenue losses than in the best-performing LOST counties and up to eight times higher in the information sector. Workers in these sectors were much more likely to

work from home during the pandemic and, we suspect, eschew discretionary out-of-home activities like dining out, discretionary shopping, travel, and entertainment, compared with workers in lower-income counties, who were more likely to work in other industrial sectors. These findings suggest that residents of these lower-income counties with relatively small shares of local employment in information technology and professional services tended to spend relatively less on out-of-home activities subject to sales taxes prior to the pandemic and thus had fewer taxable purchases to forego amidst the pandemic.

Similarly, we observe differences, albeit more modest ones, with respect to employment in arts, entertainment, and recreation (See Fig. 4, bottom right). During the pandemic, amusement parks, theaters, museums, concert venues, sporting arenas, and other types of destinations closed or were strictly limited in their operations. Counties that lost the most LOST revenues during the pandemic tended to have a higher percentage of employment concentrated in this sector.

5 Discussion

We find that transportation revenues in the 25 California counties with LOSTs collapsed at the start of the COVID-19 pandemic but recovered to a remarkable degree thereafter. Variation in LOST revenues across counties correlates with key differences in labor markets and consumer demand. For instance, LOST revenues in lower-income counties generally proved less vulnerable to the pandemic-induced economic downturn than revenues in higher-income jurisdictions whose residents have more disposable income, on average. Unemployment—a symptom of a weak economy and lagging consumer demand—was also associated with lower revenues. Similarly, counties with higher levels of employment in sectors whose operation was significantly curtailed under government public health restrictions experienced larger percentage declines in LOST revenues. Surprisingly, we find no substantive relationship between county-level LOST revenues and county-level lockdown restrictions. LOST revenues did fall after state-level lockdown restrictions were imposed close to the start of the pandemic, but later county-level restrictions did not noticeably coincide with patterns in LOST receipts.

The ability of LOSTs to generate revenue for transportation is therefore a function of both larger economic trends and local socioeconomic context. In some ways, this parallels the reasons jurisdictions adopt LOSTs in the first place: counties gravitated towards LOSTs amid a national trend toward the devolution of transportation finance and enacted them in response to local socioeconomic contexts. As our analysis illustrates, the resiliency of transportation LOSTs as a revenue instrument similarly relies on the interactions of national economic forces and local socioeconomic and policy contexts.

While LOST revenues declined due to the effects of COVID-19 on public health and economic activity, revenue decreases were not as large as some analysts first predicted. In part, this may be because many expected the economic impacts of the

pandemic to resemble the Great Recession and its very slow, protracted recovery. However, these two economic downturns had fundamentally different causes. The Great Recession stemmed from weaknesses internal to the economic system (such as the rise of subprime loans and credit default swaps in housing finance markets), while the economic disruption of 2020 was spurred by a public health crisis that quickly, albeit temporarily, put an otherwise booming economy into an induced coma, with enormous effects on particular sectors, such travel and leisure. Moreover, as the number of COVID-19 cases and deaths decreased in large part as a response to rising vaccination rates, governments gradually relaxed public health restrictions limiting social and economic activities. As a result, the economic disruption caused by the COVID-19 pandemic started receding, allowing for a quick, though bumpy, recovery. By contrast, it took housing markets many years to recover from the effects of the mortgage finance collapse in the Great Recession. In addition, the three major federal COVID-19 relief bills provided funding to businesses, governments, and especially individuals and households to a far greater and faster extent than similar legislation in the Great Recession [26]. The Great Recession and what came after thus serves as a rather imperfect guide for the fiscal effects of COVID-19.

Federal relief and the relatively rapid economic bounce-back are good news for local government and transportation agency budgets in the wake of COVID-19. However, our findings highlight the need to better incorporate uncertainty into revenue projections. Sources of uncertainty include the strength of the economy and major public health events, among others [1]. Projections that do not account for uncertainty are less likely to consider rare, but plausible, futures—like a global public health crisis.

Incorporating uncertainty into financial planning may mean more flexible project priority lists to account for potential revenue shortfalls (or windfalls) in the ballot proposals placed before voters. For example, Fresno County’s Measure C divided projects into higher-priority Tier 1 projects and lower-priority Tier 2 projects [23]. By approving prioritized project lists, voters, therefore, sign off on what should happen if revenues fall short of projections or project costs greatly exceed them. Issuing bonds from LOSTs can be another strategy to maintain steady revenue streams, if the measure includes bonding provisions. However, measures that do so still must account for the same uncertainties in sales tax revenues available for debt service on the bonds (which have first call on the revenues). Analysts might also consider a wider variety of revenue scenarios or explicitly implement scenario planning strategies or sensitivity analyses to account for multiple plausible futures.

Many transportation budgets overall fared better during the pandemic than LOSTs, due to emergency federal support. Despite losses in revenues from sources like fares and tolls, federal stimulus spending boosted many transportation budgets. For instance, public transit operators in California’s counties with LOSTs received \$9.5 billion in federal stimulus funds from the three federal COVID-19 relief bills [13–16]. These transit operators used federal stimulus funding to fill gaps in revenues from both dramatically lower ridership [32] and reduced LOST revenues.

Regardless of their performance during the pandemic, LOSTs are likely to continue to proliferate in the long run as a way to fund local transportation needs.

Voters tend to perceive LOSTs as a way to ensure locally generated tax revenues are expended locally, and LOSTs allow voters to export their tax burden, at least partially, onto non-resident visitors. LOSTs provide an alternative to motor fuel taxes, whose buying power will continue to decline over time as average vehicle mileage rises and as a greater share of the vehicle fleet is composed of electric and hydrogen fuel-cell cars and trucks. LOSTs also allow transportation system costs to be spread-out over all community members, some of whom benefit from transportation system improvements while paying no property taxes or taxes related to vehicle use. For example, carless renters may benefit from robust trucking delivery networks that ensure a continual supply of consumer goods.

Nevertheless, the pandemic has also laid bare and did not fundamentally change the disadvantages of LOSTs. As we have shown, LOST revenues are sensitive to the strength and structure of the economy. In addition, LOSTs are regressive with respect to income, in that lower-income people tend to dedicate a greater share of their income to purchases subject to sales taxes than higher-income people [2].⁵ Likewise, LOSTs decouple transportation system use from transportation tax payments. As a result, heavy users of the transportation system may not pay enough in LOSTs to compensate for the costs they generate, and the reverse is often true for those who travel little. Unlike vehicle-miles-traveled fees and congestion pricing, LOSTs do not vary according to the different costs imposed by particular trips. And unlike motor fuel taxes, LOSTs do not implicitly tax travel-related pollution. All told, LOSTs may reliably provide revenues, but unlike road use charges (including motor fuel taxes), they do not send price signals to travelers about the social costs of travel that can encourage less socially costly and more sustainable travel.⁶ LOSTs, in other words, are not a tool for managing transportation systems, merely one for funding them. This is not necessarily a fatal flaw—the primary purpose of revenue instruments is, after all, to generate revenues, and LOSTs are certainly successful at that, even amidst the worst global pandemic in more than a century. But a choice to rely on a mechanism like LOSTs is a choice to depend on an income-regressive tax instrument that offers little opportunity to optimize access or the welfare benefits of improving

⁵ Any finance mechanism that does not account for the ability to pay when charging contributors is likely to be regressive with respect to income (except perhaps consumption taxes on luxury goods). For example, motor fuel taxes are also regressive with respect to income, although they may be less regressive than sales taxes [2]. In California, the regressivity of sales taxes is somewhat mitigated by the fact that food and transit fares (paid disproportionately by low-income travelers [29]) are exempt from sales taxes [2, 6].

⁶ An ideal surface transportation funding mechanism might account for variation in the marginal social costs of travel by location, time of day, axle weight of vehicle, and vehicle emission profile. Ideally, more socially expensive trips should cost travelers more than less socially expensive trips, which should encourage more socially optimal travel overall.

system performance.⁷ In this way, the choice of a revenue instrument can be quite costly.

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⁷ Vehicle miles traveled fees and congestion pricing generate revenues that could be used to directly address the disproportionate harms to low-income residents and people of color (such as using congestion fees on a specific roadway to fund transit improvements along that roadway). Sales taxes lack this ability, as the place and time of their collection has almost no direct relationship to where and on what types of projects the revenues are spent [25].

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