How Does Changing the Statutory Incidence of Sales Tax Affect Reporting and Tax Collection? The Wayfair Decision and AB 147

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- Economic theory holds that the statutory incidence of a tax should not affect how much revenue is collected; however, if compliance and enforcement costs differ based on who is required to pay, the statutory incidence may affect revenue collection.
- The 2018 South Dakota v. Wayfair, Inc. Supreme Court decision affords an opportunity to both test this theory and to answer a policy question of interest to local governments that rely on the revenue generated from sales tax. The ruling expanded states' ability to require online retailers to collect and remit sales tax, which shifted the statutory incidence from buyers to sellers for many online sales.
- Sellers may face lower costs than buyers to comply with collection and remittance laws, and enforcing collection and remittance by sellers may be less costly to the state than enforcing for buyers. As such, there was speculation that changes in sales tax collection laws spurred by the Wayfair ruling would increase sales tax collection.
- This report studies the law that California passed in response to the Wayfair decision, AB 147, by looking at trends in taxable sales that are reported to the state.
- Total reported taxable sales increased at the same time as the provisions of AB 147 came into effect.
- Econometric analysis of the effect of AB 147 suggests a level increase of $1.47 billion in reported taxable sales from online retailers.

Introduction

Think back to an online purchase you made a few years ago. There is a good chance that the seller did not charge you sales tax. This is most likely because the seller was not required to collect and remit the sales tax to the state of California. In such a case, remitting the sales tax to the state was your responsibility as the buyer.[1] If you made the same purchase again now, the seller is much more likely to charge you sales tax. In both cases, if you bought a book for $8.70 and the sales tax rate were 10%, the state would get $0.87, with you paying the state in the first case and the online seller paying in the second. This change is not due to a change in what is subject to sales tax, but rather to a change in who is required to collect and remit the tax to the state.

This scenario is closely related to a core concept in economic theory: the statutory incidence of a tax (who is responsible for collecting and remitting the tax to the government) should

1. *Technically, a buyer pays "use tax," but this report will use "sales tax" to mean both sales tax and use tax.*

not affect the market equilibrium, and hence should not affect tax revenue. The models that yield this result make a number of assumptions including that there is perfect tax compliance.

The world is more complicated than the model, and compliance is not perfect for a number of reasons, such as time and effort costs. The party responsible for collecting and remitting the tax must take the time to determine whether the product is subject to sales tax, determine the correct sales tax rate (not a trivial task given the vast number of districts that impose additional sales tax above the statewide rate of 7.25%), and then send the payment to the state. These costs are likely to be higher for buyers than they are for sellers because sellers probably have the business infrastructure in place to collect and remit sales tax and have many more transactions over which to spread the cost of compliance. Enforcing compliance is also costly for the state. These costs include the cost of outreach to make buyers and sellers aware of the obligation to remit sales tax and the cost of identifying and remedying instances of non-payment. As with compliance, enforcing remittances from individual buyers is likely to be less cost effective for the state than is enforcing remittances from sellers because the volume of transactions is likely much higher for any given seller than for any given buyer. Rather than trying to collect unpaid taxes from one thousand residents who each purchased a product from company A, collecting those taxes from company A directly is going to be more cost effective and efficient for the state.

A recent Supreme Court decision that spurred changes to laws in various states provides an opportunity to study how changes in the statutory incidence of a tax affect sales tax revenue. The South Dakota v. Wayfair, Inc. case is about whether states are allowed to require the seller to collect and remit sales tax when the seller's business is not based in the state where the buyer lives. This ruling (made in June 2018) says that states can require out-of-state sellers to collect and remit sales tax, reversing an earlier precedent. After this ruling, many states changed their sales tax collection laws. In California, this took the form of AB 147. This law does not change sales tax rates or what goods are subject to sales tax, rather the law changes the statutory incidence from the buyer to the seller in cases where the buyer was previously responsible for sending the sales tax to the state. If, as conjectured above, compliance and enforcement costs are lower when sellers bear the responsibility to pay than when buyers do, switching the statutory incidence from buyers to sellers may increase sales tax revenue.[2]

The extent to which this prediction is true is an important question to answer because sales tax generates a nontrivial amount of revenue for California. Sales tax generated about $65.5 billion in the fiscal year 2020-2021 and about $59.1 billion in the fiscal year 2019-2020.[3] That revenue goes to a number of places, including to the general fund and to local governments. For some perspective, personal income taxes and corporation taxes generated $99.6 billion and $14 billion for the state's general fund in fiscal year 2019-2020.[4]

How Have Reported Taxable Sales Changed Over Time?

This report focuses on "taxable sales" data from the California Department of Tax and Fee Administration. The taxable sales data capture only sales that are subject to sales tax and that are reported to the state (i.e. sales for which the state collected sales tax revenue), so these data can be used to test whether AB 147 affected sales tax revenue. Figure 1 shows total reported taxable sales in the state over time. The two vertical lines mark the second quarter and the fourth quarter of 2019. These are two key dates in the implementation of AB 147. Starting April 1 2019, remote sellers (businesses located outside of the state) were required to collect and remit sales tax. On October 1, 2019, marketplace facilitators (companies that create an online marketplace for other sellers, such as Etsy) were required to collect and remit sales tax on behalf of all sellers on their platform.[5] The second line also marks the last quarter of data before the pandemic and recession hit.

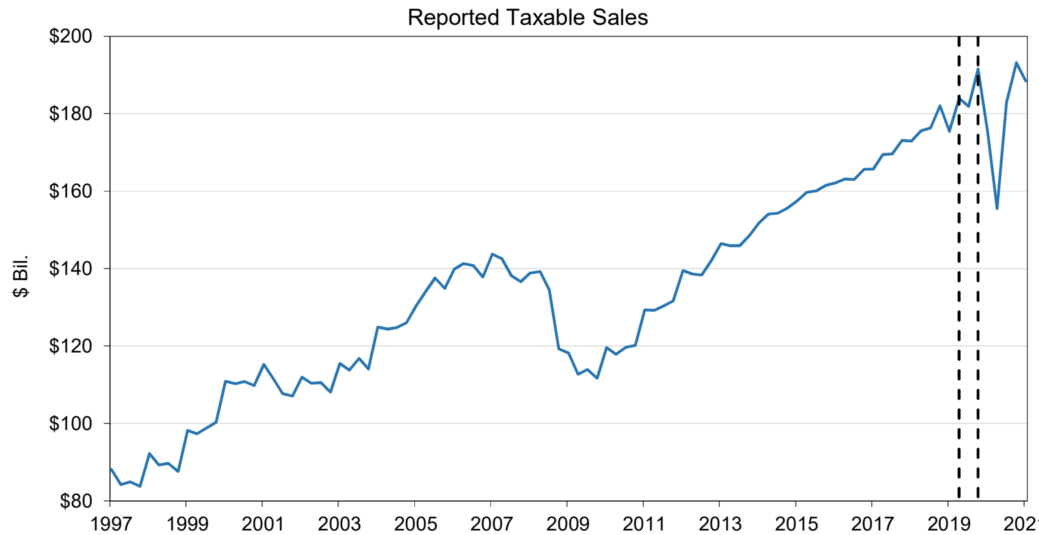
2. This is an oversimplification of AB 147. Details are provided by the California Department of Tax and Fee Administration. To start, see https://www.cdtfa.ca.gov/industry/wayfair.htm and https://www.cdtfa.ca.gov/industry/MPFAct.htm. The state has been aware that the statutory incidence may affect sales tax collection and has made estimates of revenue lost. See https://arev.assembly.ca.gov/sites/arev.assembly.ca.gov/files/E-Commerce%20Revenue%20Loss%20CDTFA.pdf. Two factors could dampen the effect of AB 147 on sales tax revenue. Buyers may figure out which online stores are not charging sales tax and substitute towards those sellers. In addition, paying sales tax on more purchases lowers buyers' disposable income, and as a result, buyers could reduce consumption across the board.

3. See https://www.cdtfa.ca.gov/dataportal/visual.htm.

4. Sales and use tax contributed $25.5 billion to the general fund. A substantial portion of all sales and use tax collections go to places other than the general fund, such as to cities, counties, and transportation. See https://lao.ca.gov/LAOEconTax/Article/Detail/654.

5. Not all remote sellers and marketplace facilitators are subject to the collection and remittance requirement. Generally entities with less than $500,000 in annual sales to California-based customers are not required to collect and remit sales tax. In these cases, remittance remains the buyer's responsibility.

Figure 1. Reported Taxable Sales in California



Note: Seasonally adjusted by the UCLA Anderson Forecast. Vertical lines are 2019q2 and 2019q4.
Source: California Department of Tax and Fee Administration and UCLA Anderson Forecast.

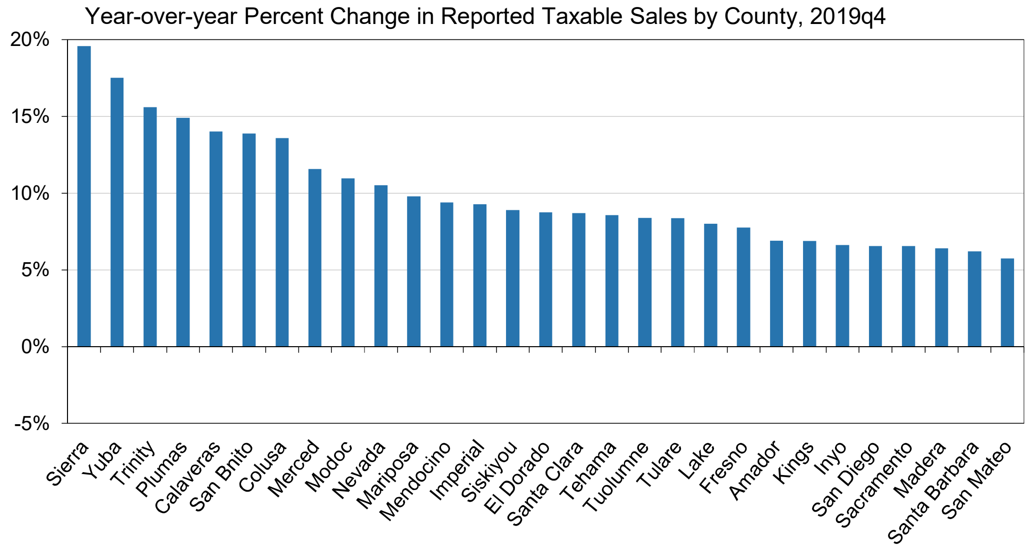
To put aside the effects of the pandemic, focus first on the data through the end of 2019. In both the second and fourth quarters of 2019, reported taxable sales increased relative to the prior quarter, particularly in the fourth quarter of 2019. This pattern is consistent with the hypothesis that AB 147 increased reported taxable sales.

The time series hides regional variation. Figure 2 shows growth in reported taxable sales in the fourth quarter of 2019 relative to one year prior by county. The counties with the highest year-over-year growth in reported taxable sales by the end of 2019 tended to be the counties with a smaller average volume of reported taxable sales, i.e. smaller and more remote counties.[6] AB 147 provides one possible explanation. Since AB 147 changed remittance rules for "remote sellers" (online retailers), reported taxable sales in counties where residents make relatively more online purchases would be expected to show the largest growth. Such counties may likely be smaller, rural counties that have fewer brick and mortar options, requiring residents to turn to online stores to find exactly what they want. Online sales in these counties were taking place even before California's law changed, but remote sellers were not required to report the sales, collect the tax, or remit the payment to the state. With the new law, the seller has the obligation to report, collect, and remit, and the data should reflect this increased "capture" of online transactions. Note that smaller counties did not tend to have larger year-over-year growth in reported taxable sales in the second quarter of 2019, before marketplace facilitators were required to collect and remit sales tax. This suggests that requiring marketplace facilitators to collect and remit sales tax on behalf of all sellers on the platform was a critical component of the new law.

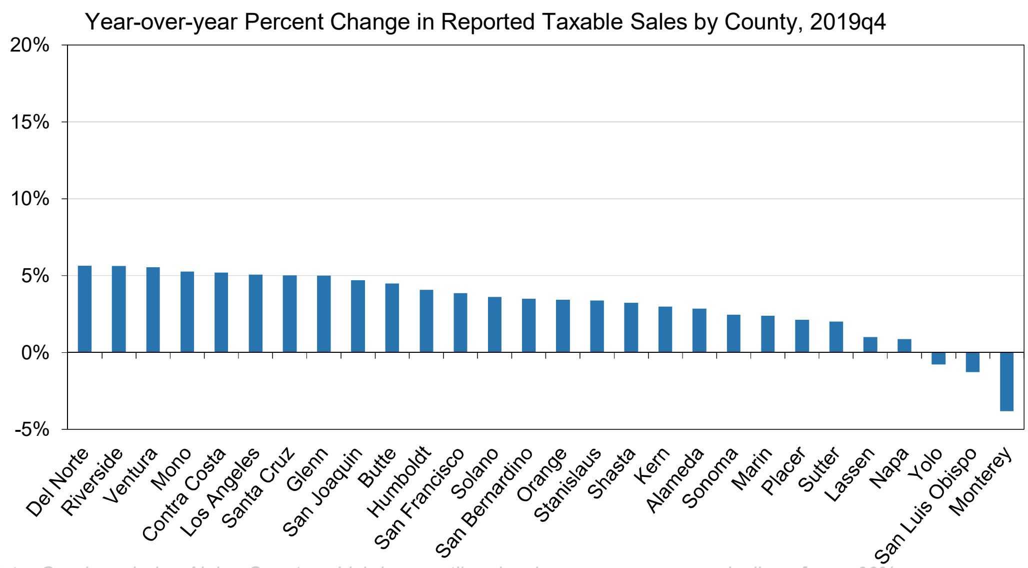
Though the aggregate data are consistent with the story that AB 147 affected reported taxable sales, other factors that have nothing to do with AB 147, such as time variation in consumer tastes and the overall strength of the economy, could drive the patterns as well.

6. Alpine County, one of the smallest counties measured by average taxable sales, is a notable outlier. Year-over-year growth fell by more than 60% in the fourth quarter of 2019.

Figure 2. Reported Taxable Sales Growth by County



Note: Graph excludes Alpine County, which is an outlier showing a year-over-year decline of over 60%.
Source: California Department of Tax and Fee Administration.



Note: Graph excludes Alpine County, which is an outlier showing a year-over-year decline of over 60%.
Source: California Department of Tax and Fee Administration.

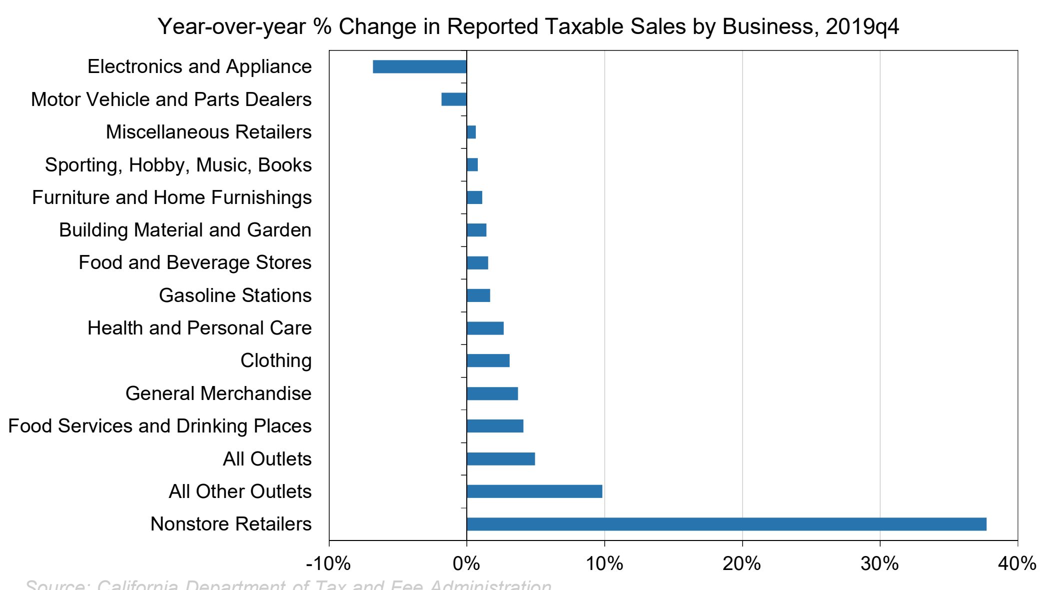
How Did AB 147 Affect Reported Taxable Sales?

Estimating the effect of AB 147 requires comparing what actually happened to an estimate of what would have happened to reported taxable sales in a world in which there were no AB 147 (the 'counterfactual'). To accomplish this, the counterfactual is shaped by reported taxable sales from a type of business that had arguably little exposure to AB 147, businesses in food and beverage services. This counterfactual is compared to taxable sales from a type of business that had substantial exposure to AB 147, online or "nonstore" retailers. If AB 147 were to affect reported taxable sales, reported taxable sales from online retailers are expected to show a relatively larger increase than from businesses in food and beverage services. The reason is that AB 147 changed collection and remittance rules for online retailers but not for sales at brick and mortar locations. The majority of purchases at businesses in food and beverage services are likely at brick and mortar locations, and thus not much affected by AB 147.[7]

Figure 3 is consistent with this prediction. Across various business types, online retailers by far saw the largest growth in reported taxable sales from the fourth quarter of 2018 to the fourth quarter of 2019, when both provisions of AB 147 were in effect. (The pattern is similar for the second quarter of 2019 when collection and remittance requirements had started for online retailers but had not yet started for marketplace facilitators.)

The analysis that follows uses the time series pattern of reported taxable sales from businesses in food and beverage services ("food and beverage stores" and "food services and drinking places" in the graph) to estimate what would have happened to reported taxable sales for online retailers absent AB 147, and thus to estimate the effect of AB 147 on reported taxable sales from online stores. The analysis uses a method called difference in differences. The key assumption is that any changes in other economic forces that happened to coincide with AB 147's implementation, such as fluctuations in consumer tastes, disposable income, and overall economic strength, affected reported taxable sales at online retailers and at businesses in food and beverage services similarly. This way, even if one or more of these forces caused a change in reported taxable sales, that change would show up both in businesses in food and beverage services and in online retailers, giving a way to difference out this effect.

Figure 3. Growth of Reported Taxable Sales by Type of Business

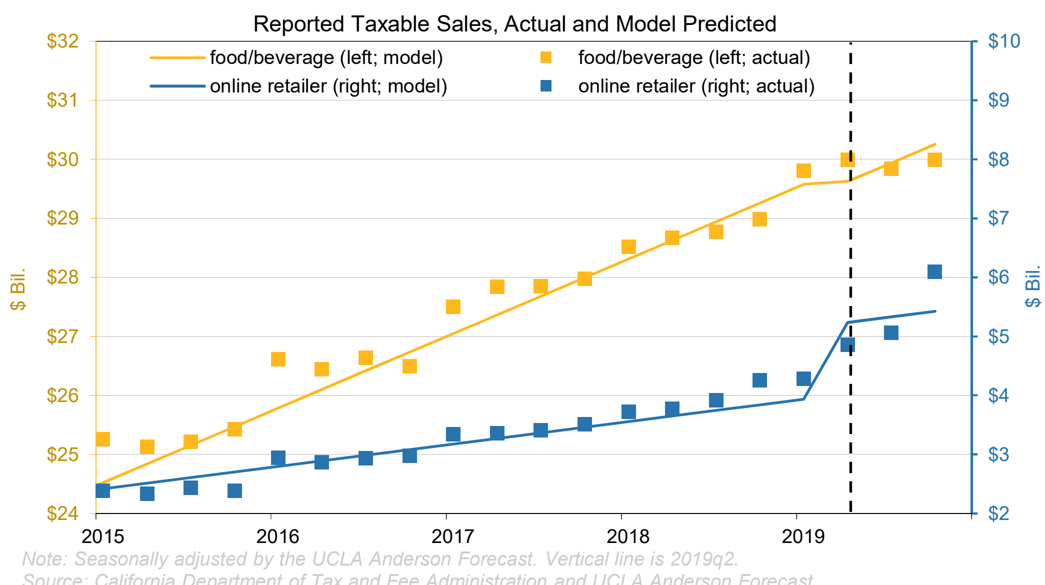


7. Consumers may have substituted towards brick and mortar since AB 147 removed the tax advantage of buying online, so the law may have had some effect on reported taxable sales at businesses other than those in the nonstore retail category.

Focus first on the dots in Figure 4. These dots show the actual amount of reported taxable sales by business category. The vertical line marks the second quarter of 2019, when enforcement of AB 147 began. There is a slight increase in reported taxable sales from online retailers but less so from businesses in food and beverage services. The econometric analysis corroborates this story. The solid lines in the Figure show the amount of reported taxable sales predicted by the model. Note that the analysis uses the second quarter of 2019 as the implementation date to allow the model to capture both the change in policy for online retailers and marketplace facilitators. The analysis only uses data through the end of 2019 to avoid the influence of the pandemic. The level jump in the online retail series between the pre- and post-AB 147 periods reflects the estimated effect of AB 147 on reported taxable sales. This estimated effect is $1.47 billion (statistically significant at the 1% level), an increase of about 34% over the level of reported taxable sales for online retailers in the first quarter of 2019, right before AB 147 was officially implemented. This suggests that sales tax revenue increased as well, though translating the change in reported taxable sales to a change in sales tax revenue is not straightforward due to the variation in sales tax rates across the state.

Since the Wayfair ruling is applicable to all states, other researchers have studied the effects across the U.S. and found some positive effects on sales tax collection. Mikesell and Ross (2019) study Indiana's law and find a small positive effect on sales tax revenue, though the magnitude does not always reach standard levels of statistical significance. Fox, Hargaden, and Luna (2021) look across U.S. states and find that new online retailer and marketplace facilitator laws increased sales tax revenue by 5.4% on average.

Figure 4. Reported Taxable Sales for Two Business Categories, Actual and Model Predicted



8. The effect is technically measured by the difference between the level shift for businesses in food and beverage services and the level shift for online retailers. The model uses data from the first quarter of 2009 until the fourth quarter of 2019: $reportedTaxableSales_{bt} = B_0 + B_1 * onlineRetailer_b + B_2 * postAB147_t + B_3 * datet + B_4 * onlineRetailerb*date_t + B_5 * onlineRetailer_b*postAB147_t$ *where b is business type (online retailer or businesses in food and beverage services), t is time in quarters,* $onlineRetailer_b$ *is an indicator variable that is one if the business category is online retail and zero otherwise, and* $postAB147_t$ *is an indicator variable that is one if the date is on or after the second quarter of 2019 and zero otherwise. Note that this model allows the linear time trend in reported taxable sales for businesses in food and beverage services to differ from the linear time trend in reported taxable sales for online retailers. The coefficient of interest is* B_5.

9. One limitation of this analysis is the use of aggregated publicly available data. Having access to disaggregated data that record the precise source of reported taxable sales will generate more precise estimates.

Conclusion

Though this targeted analysis only technically tells us how reported taxable sales for online retailers changed in response to AB 147, the analysis does answer the question, 'does statutory incidence affect tax revenue,' and the answer seems to be yes. One explanation is that placing the statutory incidence on sellers lowered the cost of compliance and enforcement, resulting in more reported taxable sales. More reported taxable sales mean more sales tax revenue.

What are the implications for the forecast? Taxable sales forecasts are key to many local government agencies. Based on the analysis in this report, one effect of AB 147 is a level shift up in reported taxable sales. An additional possibility is that the law could cause reported taxable sales to grow at a faster rate than they previously had. This could result from compliance with or enforcement of AB 147 improving over time. If e-commerce sales in general continue to grow faster than brick and mortar sales, that could also result in a higher growth rate of reported taxable sales because with AB 147, more of those (high growth) online sales will be reported and thus taxed. Detecting such a change in the growth rate, at least at present, is a challenge because of the small number of post-AB 147 observations and the fact that the pandemic had a large effect on those few existing observations. Another possibility is that AB 147 may not end up having a substantial impact on our forecast. The reason is that many online retailers were already collecting and remitting sales tax to the state, either through individual arrangements with the state or because they had some kind of physical presence in the state (such as a brick and mortar store). This physical presence allowed the state, even before AB 147, to require the retailer to collect and remit sales tax. In line with this, the U.S. Government Accountability Office estimates that with laws existing as of 2017, states could feasibly collect sales tax on 78% - 86% of sales from internet retailers to consumers. This percent is lower, though still nontrivial, for sales made through online marketplaces at 14% - 33%. [10]

10. See https://www.gao.gov/products/gao-18-114.

References

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Mikesell, John L., and Justin M. Ross. "After Wayfair: What are state use taxes worth?" National Tax Journal 72, no. 4 (2019): 801-820.