

PRIME NUMBERS: AMAZON AND AMERICAN COMMUNITIES



EMPTY SHOPS



LOST JOBS



UNPAID TAXES

APRIL 2018



To learn more about this study and the organizations behind it, visit www.CivicEconomics.com/primenumbers.html or contact:

For the American Booksellers Association

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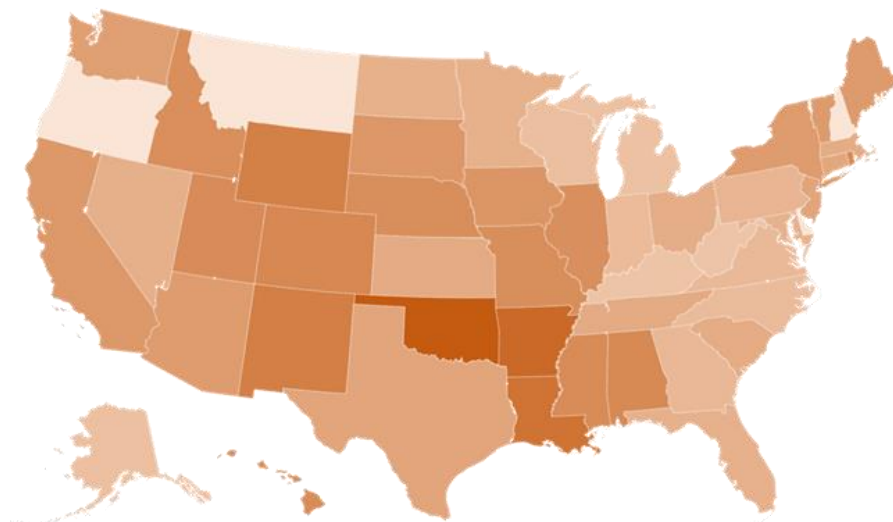
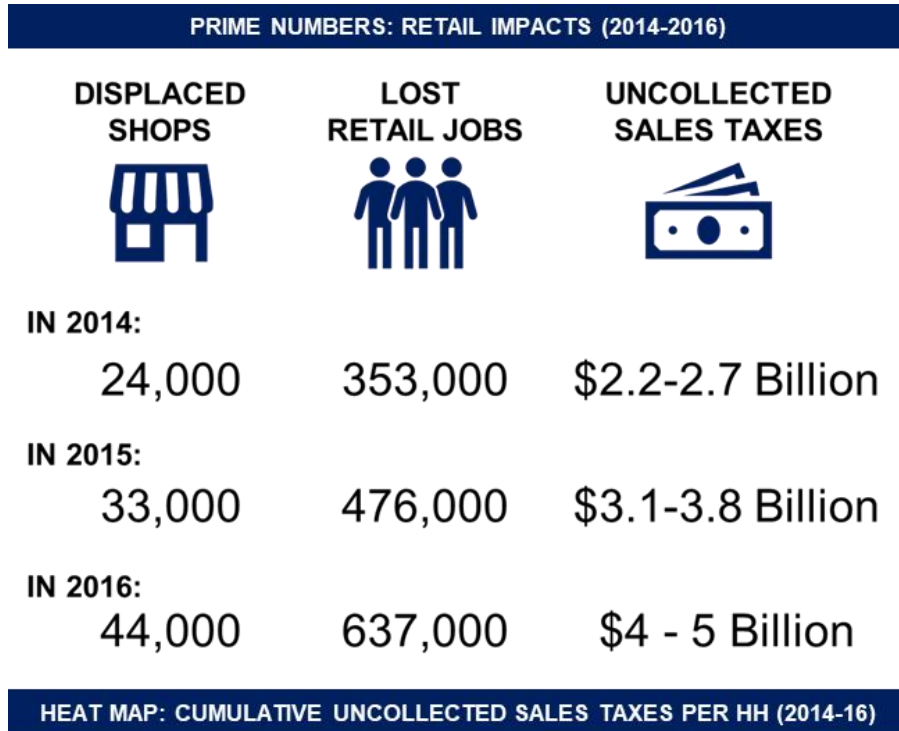
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PRIME NUMBERS: Amazon and American Communities

Civic Economics and the American Booksellers Association (ABA) are pleased to share *Prime Numbers*, a study of the economic impact of Amazon's retail operations in the United States.

In this report, we estimate Amazon's retail sales in the United States, both those sales made by Amazon and those by third-parties, quantify the retail space and employment displaced by those sales, and estimate collected and uncollected sales taxes for both Amazon and third-party sellers. Amazon does create some retail replacement jobs in distribution, approximately 137,000 in 2016.

KEY FINDINGS AT A GLANCE



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SOURCE: *Prime Numbers: Amazon and American Communities, 2018*; Produced by Civic Economics for the American Booksellers Association

BACKGROUND TO THE STUDY

Empty Storefronts Studies (2014-2015)

Civic Economics has previously analyzed the economic and fiscal impacts of Amazon in reports entitled Empty Storefronts. The first iteration, based on the 2014 Amazon Annual Report, and the second, based on the 2015 Annual Report, estimated Amazon's annual sales of retail goods, allocated those sales across states based on disposable income, and estimated the impact of those sales on the following:

- Retail storefronts and square footage displaced
- Retail jobs displaced, including Amazon distribution employment
- State and local sales taxes uncollected on Amazon sales
- Local property taxes lost to displaced storefronts

Prime Numbers (2018)

This study was initially conceived as a simple update to the most recent Empty Storefronts study to reflect data from the 2016 Annual Report. That annual report, released in the spring of 2017, is the first to provide enough information to develop a credible analysis of sales through Amazon's Marketplace for third-party sellers, providing that key data back through 2014.

In light of this newly available information, Civic Economics and ABA elected to conduct a re-analysis for 2014 and 2015, continuing into 2016, based on an estimate not just of Amazon's own retail sales, as before, but adding in the sales it facilitates through Marketplace.

A more thorough discussion of our Marketplace sales estimates is provided below.

How Marketplace Works

Amazon's Marketplace provides an opportunity for third-party sellers to reach the company's vast customer base. Initially understood as a low-cost way for Amazon to broaden its product mix, it has evolved into the core retail growth strategy at the company.

With Marketplace, third-party sellers in possession of a product can offer it for sale alongside Amazon and other sellers, creating an internal competition around price and delivery time. That competition is particularly fierce for placement in the "Buy Box," by which customers can make a default selection; sellers and their consultants have developed sophisticated tools aimed at capturing the Buy Box. Losing that direct link to customers can mean unsold inventory and unanticipated storage charges.

For most goods, Amazon's commission is in the range of 15%, with reductions for many pricier items. In addition, in order to be competitive with other sellers, many opt to place their items into Amazon's distribution network. Sellers pay storage and shipping fees that vary widely, deducted from the seller's compensation in addition to sales commissions.



We estimate that Amazon retains an average of 20% of the sales price of Marketplace items including commissions and fees for storage and shipping. That, in turn, allows an estimate of total Marketplace retail sales in the United States.

Estimating Marketplace Retail Sales

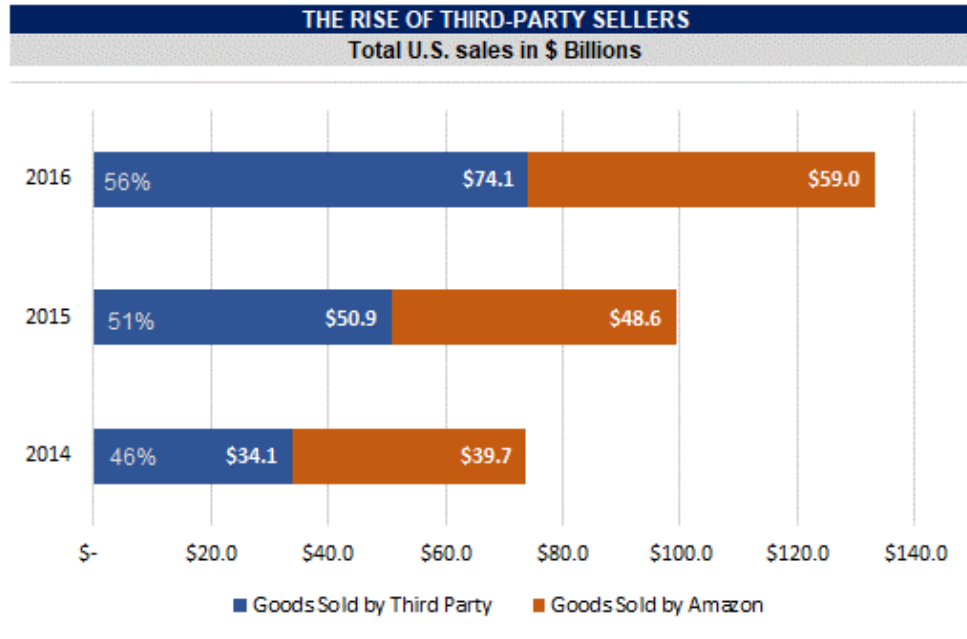
Beginning with Amazon’s 2016 Annual Report, new reported revenue and expense items appeared. The key line item, called Retail Third-Party Seller Services, was the first real glimpse at identifying how large Marketplace sales were in relation to those being conducted directly through Amazon. Even though this was the first time this item appeared, it was also provided for the previous two years, which allowed the trends to emerge. Amazon’s third-party service revenue had grown from \$11.7 billion in 2014 to \$16.1 billion in 2015 and increased even more in 2016 to reach \$23.0 billion. So, the revenue Amazon was receiving from third party sellers increased 96% from 2014-16 as Amazon’s direct sales increased 35% in the same time frame.

While the numbers listed above provide a glimpse into the Marketplace sales, they represented global sales and only showed the revenue that Amazon received from the Marketplace transaction and not the actual sales figure that the merchant received, and a consumer paid. To get the results, a few more calculations would be needed.

We followed the same basic methodology as that employed in previous studies for estimating Marketplace sales in the United States. We assumed the same shares of sales went to Marketplace and Amazon’s direct sales. We then separated out sales in both Canada and Mexico to get estimates for the United States.

In order to turn Amazon’s entry for Retail Third-Party Seller Services into actual sales volume we assumed that Amazon was retaining 20% of the total sales price in commissions and fees. This would translate into Marketplace sales being five times higher than the reported revenue.

The Rise and Impact of Marketplace



Source: Amazon Annual Report 2016; Civic Economics

As shown above, we estimate that Marketplace sales in the U.S. have grown by 118% over this three-year period while sales of goods sold by Amazon have grown by 48%. Civic Economics would anticipate that Amazon’s direct sales have continued to decline as a share of total sales.

Marketplace provides Amazon with substantial business advantages. Inventory, rather than costing money, generates fees, a situation other retailers would envy. By bringing sellers into “Fulfillment by Amazon,” which allows Prime shipping and rewards the most competitive sellers with prominent positioning and “Buy Now” placement, the company transforms the costly overhead of distribution infrastructure into another service business and revenue stream. In addition, with its dominant position in online retail, third-party sellers may feel compelled to sell through Marketplace and to use Fulfillment by Amazon even where they might prefer other arrangements and other service providers.

It should be acknowledged, of course, that Amazon Marketplace provides a new retailing opportunity for those entrepreneurs who have the ability to secure competitively priced inventory, and that many of those entrepreneurs are located in American communities. Many are even existing retail businesses leveraging the Amazon platform to facilitate online expansion that might otherwise seem impossible. That reality, though, does not impact the findings below, as the study methodology treats online sales as fundamentally in competition with storefront sales and allocates sales tax collections as if Amazon third party vendors were distributed across the states like other online merchants.

It is worth noting that sixteen Amazon Books brick-and-mortar “bookstores” are open or in the works across the country. Those openings had barely begun during the study period for *Prime Numbers*, but Civic Economics will monitor and incorporate this development in future studies.

STUDY APPROACH

We began the study by using data from the Amazon Annual Report for 2016 to estimate sales by Amazon and its third-party sellers and allocating those sales across the states. We then quantified sales taxes collected and un-collected in each state based on the laws in place in each year. Finally, we estimated the displacement of retail shops and employment in each state.

Amazon and Marketplace Sales by State

The first step in the analysis was to quantify and allocate Amazon’s retail sales across the states. All statistics cited in this report are based upon calendar year 2016, which is the last full year for which Amazon has reported revenue.

Amazon zealously protects details about its operations. Sales are reported on a quarterly basis but only in very general terms. Total revenue is reported, and broken down into only three categories: Media, Electronics and Other General Merchandise, and Other. For an opening cut at the data, Civic Economics seeks to exclude one category of Amazon sales that are not likely in competition with bricks-and-mortar stores: digital media. From Media sales, then, Civic Economics assigns half to books and printed material and half to music and digital materials, removing 60% of the latter from our calculations.

To allocate that revenue among the states and the District of Columbia, we focused on disposable income as a strong predictor of retail sales. For each state, we calculated its share of total disposable income in the states and allocated Amazon sales on that basis.

The table at right shows estimated Amazon direct and Marketplace sales for each state in 2016. Additional estimates for 2014 and 2015 are contained in the sales tax tables below.

AMAZON SALES ESTIMATE BY STATE
2016 (\$ Billions)

	Amazon Direct	Third-Party	Total
Alabama	0.7	0.9	1.6
Alaska	0.2	0.2	0.3
Arizona	1.0	1.3	2.3
Arkansas	0.4	0.5	1.0
California	8.1	10.2	18.3
Colorado	1.1	1.3	2.4
Connecticut	0.9	1.2	2.1
Delaware	0.2	0.2	0.4
Florida	3.5	4.4	7.8
Georgia	1.6	2.0	3.6
Hawaii	0.3	0.3	0.6
Idaho	0.2	0.3	0.5
Illinois	2.5	3.1	5.5
Indiana	1.1	1.3	2.4
Iowa	0.5	0.7	1.2
Kansas	0.5	0.7	1.2
Kentucky	0.6	0.8	1.5
Louisiana	0.7	0.9	1.7
Maine	0.2	0.3	0.5
Maryland	1.3	1.6	2.9
Massachusetts	1.6	2.1	3.7
Michigan	1.6	2.0	3.7
Minnesota	1.1	1.3	2.4
Mississippi	0.4	0.5	0.9
Missouri	1.0	1.2	2.2
Montana	0.2	0.2	0.4
Nebraska	0.3	0.4	0.8
Nevada	0.5	0.6	1.1
New Hampshire	0.3	0.4	0.6
New Jersey	2.0	2.6	4.6
New Mexico	0.3	0.4	0.7
New York	4.4	5.5	9.9
North Carolina	1.6	2.0	3.5
North Dakota	0.2	0.2	0.3
Ohio	1.9	2.4	4.3
Oklahoma	0.7	0.8	1.5
Oregon	0.7	0.9	1.5
Pennsylvania	2.4	3.0	5.4
Rhode Island	0.2	0.3	0.5
South Carolina	0.7	0.9	1.6
South Dakota	0.2	0.2	0.3
Tennessee	1.1	1.3	2.4
Texas	4.9	6.1	11.0
Utah	0.5	0.6	1.0
Vermont	0.1	0.1	0.3
Virginia	1.7	2.1	3.8
Washington	1.4	1.8	3.2
West Virginia	0.3	0.3	0.6
Wisconsin	1.0	1.3	2.3
Wyoming	0.1	0.1	0.3
DC	0.2	0.2	0.4
Total	\$ 59.0	\$ 74.1	\$ 133.1

Source: Amazon Annual Report 2016; Civic Economics

STATE AND LOCAL SALES TAXES

Marketplace and Sales Tax

Amazon began, in 2017, collecting required sales taxes on its own direct sales in all states, but has not imposed this policy shift on Marketplace sellers.

Amazon's Marketplace has been referred to as "the wild west of retail," and with good reason. As the company works to streamline the offerings of competing sellers, a parallel industry of consultants has sprung up to track prices and logistical considerations along with the peculiarities of Amazon's fee structure (storage fees rise in October, for example, in preparation for holiday inventory). In addition, Amazon has left sales tax collection decisions entirely up to the sellers, who must affirmatively choose to ask Amazon to collect sales tax on their behalf from purchasers in states where they recognize a nexus.

As one might imagine, the potential for sales tax avoidance is built into the system, particularly with regard to small sellers. Estimating the proportion of sales taxes actually due and collected by independent sellers would require a substantial additional study well beyond the scope of this report.

Fortunately for us, in late December the General Accounting Office released a report with the pithy title: *SALES TAXES: States Could Gain Revenue from Expanded Authority, but Businesses Are Likely to Experience Compliance Costs*¹. There, GAO analysts reviewed available data for three online third-party marketplaces (which we believe to be eBay, Etsy, and Amazon Marketplace) to develop a meaningful estimate of sales tax compliance and potential.

Building from the assumption that third-party sellers consistently collect and remit sales taxes for the states in which they are based, the GAO arrives at the following estimate:

"Third-party sellers in three marketplaces studied (including Amazon) likely collect and remit between 14% and 33% of potential sales taxes to state and local authorities."

Though we suspect this may overstate the sales tax compliance practices of Amazon's third-party sellers, we have applied these numbers as the range of sales taxes likely collected at the state and local levels.

For participants in Fulfillment by Amazon, though, business location doesn't answer the nexus question fully. Once merchants turn goods over to Amazon, they will be moved among distribution facilities to be positioned for quick delivery to customers. In theory, sellers should track their goods and recognize nexus in any state in which their items have been warehoused. Industry sources indicate that this form of nexus is rarely recognized among Marketplace sellers as it is both difficult to track and potentially costly to sellers. Amazon has recently announced an initiative to enforce sales tax collection among Marketplace sellers to Washington State customers, requiring at least this obvious nexus be recognized.

However, for this analysis of 2014-16, we have identified the states in which Amazon was and was not collecting state and/or local taxes in each year.

¹ <https://www.gao.gov/assets/690/688437.pdf>

During the course of this study period, 2014-16, state sales tax collection policies were evolving with regard to Amazon. Some states force Amazon to collect the full sales tax rate including state and any applicable local levies, while a few others have agreed to only collect the state portion of the sales tax. Some continued collecting no sales taxes on any Amazon transactions until 2017. And a few, of course, have no state or local sales taxes.

Here, we sought to quantify the real value of sales taxes foregone by both state and local governments, reporting those totals by state. Calculating the sales tax revenue lost for a state that has no method for collecting sales taxes on online retail involved simply looking at the sales per state and multiplying it by the average combined sales tax rate. For 2015, we allocated these tax losses between state and local governments according to statewide averages according to shares estimated by the Tax Foundation.

The tables that follow account for all of these factors and include estimated sales for Amazon, including Marketplace transactions.

PRIME NUMBERS: Amazon and American Communities

POTENTIAL SALES TAX COLLECTED AND UNCOLLECTED						
2014 (\$ Millions)						
	Sales by Seller		Collected		Uncollected	
	Amazon Direct	Third-Party	At 14% Rate	At 33% Rate	At 14% Rate	At 33% Rate
Alabama	506.2	433.9	5.4	12.8	78.5	71.2
Alaska	108.7	93.1	0.2	0.5	3.4	3.0
Arizona	705.4	604.8	46.4	55.8	60.7	51.3
Arkansas	310.6	266.3	3.5	8.1	50.0	45.3
California	5,143.1	4,409.1	488.5	559.5	321.5	250.5
Colorado	700.5	600.5	6.3	14.7	90.5	82.0
Connecticut	575.8	493.6	41.0	46.9	27.0	21.0
Delaware	116.8	100.1	0.0	0.0	0.0	0.0
Florida	2,331.5	1,998.8	158.5	183.8	129.5	104.2
Georgia	1,080.4	926.2	84.9	97.2	55.5	43.2
Hawaii	181.9	156.0	0.9	2.2	13.7	12.5
Idaho	170.4	146.0	1.2	2.9	17.8	16.1
Illinois	1,653.2	1,417.3	119.1	140.6	125.6	104.1
Indiana	713.1	611.4	55.9	64.0	36.8	28.7
Iowa	383.2	328.5	3.1	7.4	45.2	41.0
Kansas	361.4	309.8	34.8	39.8	22.9	17.8
Kentucky	458.8	393.3	30.8	35.3	20.3	15.8
Louisiana	544.4	466.7	5.9	13.9	85.2	77.2
Maine	154.2	132.2	1.0	2.4	14.7	13.4
Maryland	880.5	754.8	59.2	67.8	38.9	30.3
Massachusetts	1,041.6	892.9	72.9	83.5	48.0	37.4
Michigan	1,091.3	935.6	73.3	84.0	48.3	37.6
Minnesota	706.0	605.2	57.1	65.4	37.6	29.3
Mississippi	289.3	248.0	2.5	5.8	35.5	32.2
Missouri	692.4	593.6	6.5	15.4	94.3	85.5
Montana	113.4	97.2	0.0	0.0	0.0	0.0
Nebraska	242.2	207.7	2.0	4.7	28.7	26.0
Nevada	312.7	268.1	27.8	31.9	18.3	14.3
New Hampshire	194.7	166.9	0.0	0.0	0.0	0.0
New Jersey	1,349.3	1,156.7	105.8	121.2	69.6	54.3
New Mexico	219.6	188.2	2.0	4.7	28.6	25.9
New York	2,875.3	2,464.9	273.1	312.8	179.8	140.0
North Carolina	1,079.7	925.6	83.4	95.6	54.9	42.8
North Dakota	107.9	92.5	8.2	9.4	5.4	4.2
Ohio	1,342.9	1,151.2	88.7	104.3	89.4	73.7
Oklahoma	461.8	395.9	4.9	11.5	70.4	63.8
Oregon	445.9	382.2	0.0	0.0	0.0	0.0
Pennsylvania	1,655.5	1,419.2	111.9	129.0	83.0	65.9
Rhode Island	140.8	120.7	1.2	2.8	17.1	15.5
South Carolina	495.1	424.5	4.3	10.1	62.1	56.3
South Dakota	110.1	94.4	0.8	1.8	11.2	10.1
Tennessee	750.5	643.4	79.5	91.1	52.3	40.8
Texas	3,369.8	2,888.9	308.4	353.2	203.0	158.1
Utah	304.0	260.7	2.4	5.8	35.3	32.0
Vermont	81.8	70.1	0.6	1.4	8.7	7.9
Virginia	1,112.5	953.7	70.1	80.4	46.2	36.0
Washington	962.9	825.5	96.0	110.0	63.5	49.5
West Virginia	188.4	161.5	12.7	14.6	8.7	6.8
Wisconsin	697.6	598.0	39.4	45.6	30.9	24.8
Wyoming	85.2	73.0	0.6	1.3	8.0	7.3
DC	134.4	115.2	0.9	2.2	13.4	12.2
Total	39,734.9	34,064.0	2,683.7	3,155.0	2,690.3	2,219.0

PRIME NUMBERS: Amazon and American Communities

POTENTIAL SALES TAX COLLECTED AND UNCOLLECTED						
2015 (\$ Millions)						
	Sales in State		Collected		Uncollected	
	Amazon Direct	Third-Party	At 14% Rate	At 33% Rate	At 14% Rate	At 33% Rate
Alabama	580.9	607.8	7.6	18.0	99.0	88.6
Alaska	130.3	136.4	0.3	0.8	4.4	3.9
Arizona	840.4	879.4	57.2	71.0	84.7	70.9
Arkansas	358.1	374.7	4.9	11.5	63.3	56.7
California	6612.8	6919.7	642.9	754.4	504.6	393.1
Colorado	873.0	913.6	34.9	47.9	99.1	86.1
Connecticut	775.5	811.5	56.5	66.3	44.3	34.5
Delaware	141.6	148.2	0.0	0.0	0.0	0.0
Florida	2831.1	2962.5	197.5	235.0	188.4	150.9
Georgia	1294.2	1354.3	104.1	122.1	81.3	63.3
Hawaii	217.3	227.4	1.4	3.3	18.0	16.1
Idaho	199.7	209.0	1.8	4.2	22.9	20.5
Illinois	2033.1	2127.5	152.8	187.8	207.1	172.1
Indiana	872.7	913.2	70.0	82.2	55.0	42.8
Iowa	450.8	471.7	4.5	10.6	58.2	52.1
Kansas	431.6	451.7	42.5	49.9	33.5	26.1
Kentucky	536.8	561.7	36.9	43.3	29.0	22.6
Louisiana	630.6	659.8	9.2	21.7	119.6	107.0
Maine	178.8	187.1	1.4	3.4	18.7	16.7
Maryland	1056.8	1105.8	72.7	85.3	57.1	44.5
Massachusetts	1337.1	1399.1	95.8	112.4	75.2	58.6
Michigan	1335.4	1397.3	91.9	107.8	72.1	56.2
Minnesota	877.8	918.6	72.8	85.5	58.5	45.8
Mississippi	327.1	342.2	3.4	8.0	43.9	39.3
Missouri	808.9	846.5	9.3	22.0	121.0	108.3
Montana	135.8	142.1	0.0	0.0	0.0	0.0
Nebraska	289.3	302.8	2.9	6.9	37.8	33.8
Nevada	380.7	398.3	34.7	40.7	27.5	21.4
New Hampshire	233.8	244.7	0.0	0.0	0.0	0.0
New Jersey	1688.1	1766.5	135.5	159.0	106.3	82.8
New Mexico	248.7	260.2	2.8	6.5	35.7	31.9
New York	3650.8	3820.3	355.0	416.6	279.3	217.7
North Carolina	1286.7	1346.4	101.8	119.4	79.9	62.2
North Dakota	133.1	139.3	10.3	12.1	8.1	6.3
Ohio	1590.4	1664.2	108.1	130.7	124.3	101.7
Oklahoma	560.3	586.3	7.3	17.1	94.2	84.4
Oregon	554.5	580.2	0.0	0.0	0.0	0.0
Pennsylvania	2001.9	2094.8	138.7	163.9	121.0	95.8
Rhode Island	166.1	173.8	1.7	4.0	22.1	19.8
South Carolina	589.5	616.9	48.8	57.3	38.4	29.9
South Dakota	129.2	135.2	1.2	2.8	15.6	13.9
Tennessee	873.4	913.9	94.7	111.1	74.2	57.8
Texas	4053.8	4241.9	379.7	445.6	298.0	232.2
Utah	370.2	387.4	3.7	8.6	47.5	42.6
Vermont	95.6	100.1	0.9	2.0	11.2	10.0
Virginia	1371.6	1435.3	88.5	103.9	69.5	54.1
Washington	1169.8	1224.0	119.4	140.1	94.1	73.4
West Virginia	213.1	223.0	14.7	17.4	12.7	10.0
Wisconsin	833.0	871.6	48.3	57.2	44.0	35.0
Wyoming	103.3	108.1	0.8	1.9	10.6	9.5
DC	154.9	162.1	1.3	3.1	16.9	15.2
Total	48,610.2	50,866.1	3,473.2	4,182.5	3,827.7	3,118.4

PRIME NUMBERS: Amazon and American Communities

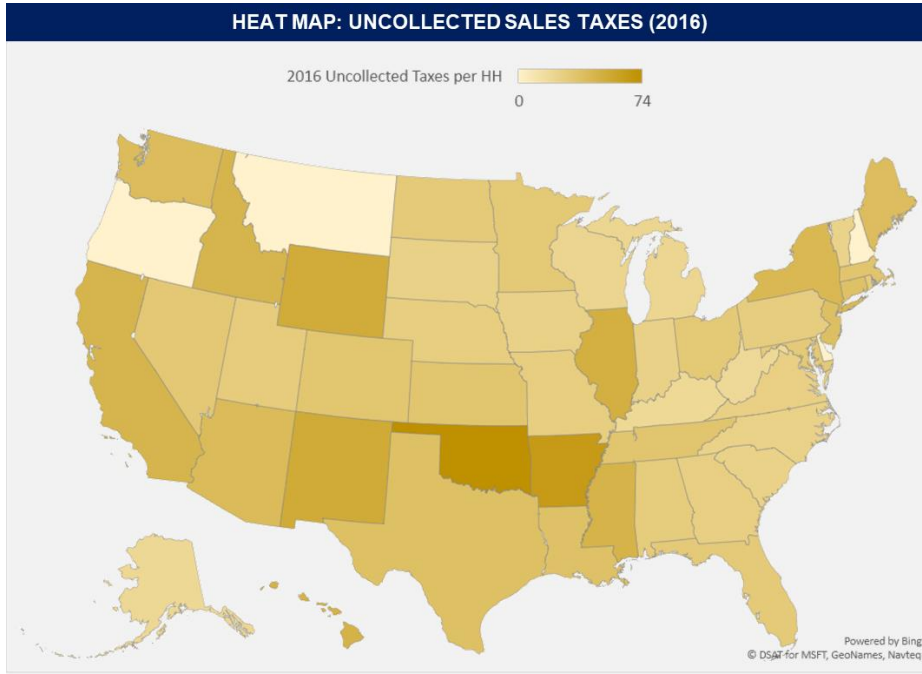
POTENTIAL SALES TAX COLLECTED AND UNCOLLECTED						
2016 (\$ Millions)						
	Sales in State		Collected		Uncollected	
	Amazon Direct	Third-Party	At 14% Rate	At 33% Rate	At 14% Rate	At 33% Rate
Alabama	702.3	883.1	74.1	89.1	68.1	53.1
Alaska	151.0	189.9	0.5	1.1	5.6	5.0
Arizona	1026.7	1291.0	72.4	92.6	118.8	98.6
Arkansas	432.8	544.2	7.1	16.7	83.8	74.2
California	8089.0	10171.1	806.7	970.6	741.8	577.9
Colorado	1061.7	1335.0	93.6	112.7	86.1	67.1
Connecticut	935.2	1175.9	69.8	84.0	64.2	50.0
Delaware	170.7	214.6	0.0	0.0	0.0	0.0
Florida	3476.5	4371.3	249.3	304.7	273.3	218.0
Georgia	1587.7	1996.4	130.7	157.3	120.2	93.6
Hawaii	265.8	334.2	2.0	4.8	24.1	21.3
Idaho	242.3	304.7	2.6	6.1	30.4	26.9
Illinois	2455.0	3086.9	190.8	241.6	288.6	237.8
Indiana	1061.9	1335.3	87.4	105.2	80.4	62.6
Iowa	539.9	678.9	43.2	52.0	39.7	30.9
Kansas	519.4	653.1	52.6	63.3	48.4	37.7
Kentucky	645.1	811.2	45.5	54.8	41.9	32.6
Louisiana	749.4	942.3	88.0	105.8	80.9	63.0
Maine	217.2	273.1	2.1	5.0	24.9	22.0
Maryland	1283.1	1613.4	90.5	108.9	83.2	64.9
Massachusetts	1633.3	2053.7	120.0	144.4	110.4	86.0
Michigan	1620.7	2037.9	114.4	137.6	105.2	81.9
Minnesota	1059.0	1331.5	91.0	109.5	83.7	65.2
Mississippi	395.4	497.1	4.9	11.6	58.2	51.5
Missouri	980.6	1233.1	90.8	109.2	83.5	65.0
Montana	162.7	204.5	0.0	0.0	0.0	0.0
Nebraska	348.5	438.1	28.2	33.9	25.9	20.2
Nevada	472.3	593.8	44.3	53.3	40.8	31.7
New Hampshire	286.6	360.3	0.0	0.0	0.0	0.0
New Jersey	2040.3	2565.4	168.0	202.1	154.4	120.3
New Mexico	297.3	373.8	4.0	9.3	46.7	41.4
New York	4399.8	5532.3	438.9	528.1	404.4	315.1
North Carolina	1568.8	1972.6	127.3	153.2	117.1	91.2
North Dakota	153.6	193.1	12.2	14.7	11.3	8.8
Ohio	1918.6	2412.4	134.4	167.2	174.8	142.1
Oklahoma	659.8	829.6	10.3	24.2	121.5	107.6
Oregon	678.8	853.5	0.0	0.0	0.0	0.0
Pennsylvania	2412.9	3034.0	171.7	208.3	173.6	137.1
Rhode Island	200.6	252.2	16.5	19.9	15.2	11.8
South Carolina	720.7	906.2	61.2	73.7	56.4	44.0
South Dakota	153.1	192.5	11.4	13.7	10.5	8.2
Tennessee	1062.1	1335.5	118.1	142.1	108.4	84.4
Texas	4885.7	6143.2	469.4	564.8	431.6	336.3
Utah	457.6	575.4	36.4	43.8	33.5	26.1
Vermont	115.7	145.5	8.4	10.1	7.7	6.0
Virginia	1663.5	2091.7	110.1	132.5	101.3	78.9
Washington	1435.1	1804.5	150.3	180.8	138.7	108.1
West Virginia	252.0	316.9	17.9	21.7	17.9	14.1
Wisconsin	1005.6	1264.5	59.9	72.9	63.0	50.0
Wyoming	119.0	149.6	1.1	2.7	13.4	11.9
DC	189.5	238.3	12.8	15.4	11.8	9.2
Total	58,961.6	74,138.1	4,743.0	5,776.7	5,024.9	3,991.1

PRIME NUMBERS: Amazon and American Communities

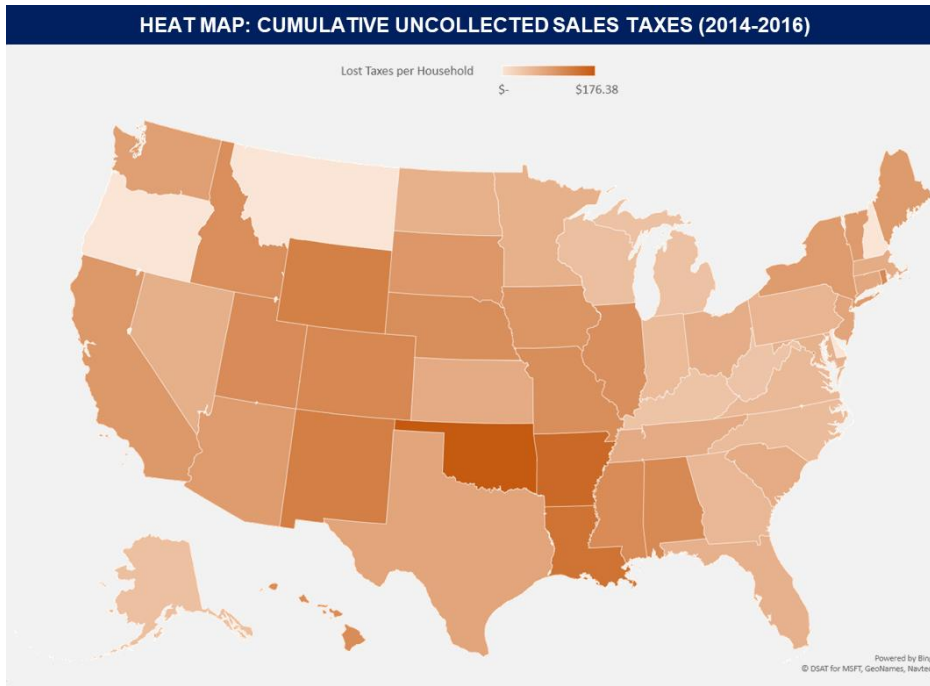
CUMULATIVE SALES TAX COLLECTION				
2014-16 (\$ Millions)				
	At 14% Rate		At 33% Rate	
	Collected	Un- Collected	Collected	Un- Collected
Alabama	87.1	245.6	119.9	212.9
Alaska	1.0	13.4	2.5	11.9
Arizona	176.1	264.2	219.5	220.8
Arkansas	15.4	197.1	36.3	176.1
California	1938.1	1567.9	2284.5	1221.5
Colorado	134.8	275.7	175.3	235.2
Connecticut	167.2	135.5	197.2	105.6
Delaware	0.0	0.0	0.0	0.0
Florida	605.3	591.1	723.4	473.1
Georgia	319.8	257.0	376.6	200.1
Hawaii	4.4	55.8	10.3	49.8
Idaho	5.6	71.1	13.1	63.5
Illinois	462.8	621.2	570.0	514.0
Indiana	213.4	172.2	251.4	134.1
Iowa	50.8	143.1	69.9	124.0
Kansas	129.9	104.8	153.0	81.6
Kentucky	113.3	91.1	133.4	71.0
Louisiana	103.1	285.7	141.4	247.3
Maine	4.6	58.3	10.8	52.1
Maryland	222.4	179.3	262.0	139.7
Massachusetts	288.8	233.6	340.4	182.0
Michigan	279.6	225.5	329.4	175.7
Minnesota	220.9	179.8	260.5	140.3
Mississippi	10.8	137.6	25.4	123.0
Missouri	106.6	298.7	146.5	258.8
Montana	0.0	0.0	0.0	0.0
Nebraska	33.1	92.4	45.4	80.0
Nevada	106.8	86.5	125.9	67.5
New Hampshire	0.0	0.0	0.0	0.0
New Jersey	409.2	330.4	482.2	257.4
New Mexico	8.7	111.0	20.4	99.2
New York	1066.9	863.4	1257.5	672.9
North Carolina	312.5	251.9	368.2	196.2
North Dakota	30.8	24.8	36.2	19.3
Ohio	331.2	388.5	402.2	317.5
Oklahoma	22.4	286.2	52.8	255.8
Oregon	0.0	0.0	0.0	0.0
Pennsylvania	422.3	377.7	501.2	298.8
Rhode Island	19.4	54.4	26.7	47.1
South Carolina	114.3	156.9	141.0	130.2
South Dakota	13.4	37.2	18.4	32.2
Tennessee	292.4	235.0	344.3	183.0
Texas	1157.5	932.7	1363.6	726.6
Utah	42.5	116.3	58.2	100.7
Vermont	9.9	27.7	13.6	24.0
Virginia	268.8	216.9	316.8	169.0
Washington	365.7	296.4	431.0	231.0
West Virginia	45.3	39.2	53.7	30.9
Wisconsin	147.5	137.8	175.7	109.7
Wyoming	2.5	32.1	5.9	28.7
DC	15.0	42.1	20.7	36.5
	10,899.8	11,542.8	13,114.2	9,328.5

PRIME NUMBERS: Amazon and American Communities

The heat maps below depict the per household concentration of uncollected sales taxes in the states, first in 2016 and then cumulatively from 2014 through 2016. The lightest colored states do not collect state or local sales taxes; the deepest colored states have lost the most from Amazon and Marketplace sales tax collection practices.



SOURCE: Prime Numbers: Amazon and American Communities, 2018; Produced by Civic Economics for the American Booksellers Association



SOURCE: Prime Numbers: Amazon and American Communities, 2018; Produced by Civic Economics for the American Booksellers Association

DISPLACEMENT OF RETAIL SHOPS AND EMPLOYMENT

As retail activity moves from commercial centers to warehouses, communities and developers are only beginning to deal with the accompanying shift in demand for space. As described above, this study treats most Amazon and Marketplace sales as being in competition with physical space, excluding only the portion of media sales that are now largely digital.

Civic Economics analyzed three measures on the ongoing shift in sales from bricks-and-mortar retailers to the Internet:

- Retail Storefronts
- Retail Square Footage
- Retail Store Employees

For storefronts, we applied average sales per American retail establishment from the Economic Census and calculated the number of stores Amazon sales equate to in each state. For 2016, that figure was \$3 million.

For square footage, we used national average sales per square foot across all retail and allocated those “lost” square feet across the states according to their proportion of Amazon sales. For 2016, that figure is \$350.

Finally, we calculated the loss of jobs associated with these stores, using Economic Census data for sales per American retail employee to calculate the total sales force that might have been supported in bricks-and-mortar stores. For 2016, that figure is \$209,000.

In addition, we evaluated the current and developing state of Amazon’s distribution network. Though all retail goods pass through similar facilities, Amazon’s are somewhat more labor intensive. To provide conservative estimates, we credited the company for all estimated distribution employment in each state.

We estimate total Amazon distribution employment in 2016 was approximately 137,000, of which 90,000 were full time. This estimate is based on the Amazon warehousing information meticulously maintained by logistics consulting firm MWPVL International² of Montreal. Civic Economics previously developed state-level employment estimates for Amazon’s distribution network in 2014 and 2015 for the *Empty Storefronts* studies. However, with the substantially larger sales estimates associated with new Marketplace data, we did not attempt to reconstruct a detailed employment estimate of the Amazon distribution network for those years.

Finally, we allocated displaced retail space and jobs across the states according to the same disposable income measure used to estimate total sales. We offset those job losses with estimated Amazon distribution jobs in each state, as well, based on an estimate of one employee per 575 square feet of distribution space.

Even in a relatively small state like Alabama, at the top of the alphabetical lists below, Amazon and Marketplace displace enough retail activity to more than fill a southern equivalent retail square footage in the Mall of America.

² http://www.mwpvl.com/html/amazon_com.html

PRIME NUMBERS: Amazon and American Communities

AMAZON TOTAL SALES AND IMPACTS BY STATE (2014 AND 2015)

	2014				2015			
	Amazon Sales \$ Millions	Retail Displacement			Amazon Sales \$ Millions	Retail Displacement		
		Displaced Shops	Displaced Space Million Sq.Ft.	Displaced Jobs		Displaced Shops	Displaced Space Million Sq.Ft.	Displaced Jobs
Alabama	940.1	310	2.7	4,496	1188.7	393	3.4	5,685
Alaska	201.8	67	0.6	965	266.7	88	0.8	1,276
Arizona	1310.2	433	3.7	6,267	1719.9	568	4.9	8,226
Arkansas	576.9	191	1.6	2,759	732.8	242	2.1	3,505
California	9552.2	3,154	27.3	45,688	13532.4	4,469	38.7	64,725
Colorado	1301.0	430	3.7	6,223	1786.6	590	5.1	8,545
Connecticut	1069.5	353	3.1	5,115	1587.0	524	4.5	7,591
Delaware	217.0	72	0.6	1,038	289.8	96	0.8	1,386
Florida	4330.3	1,430	12.4	20,712	5793.6	1,913	16.6	27,711
Georgia	2006.7	663	5.7	9,598	2648.5	875	7.6	12,668
Hawaii	337.9	112	1.0	1,616	444.7	147	1.3	2,127
Idaho	316.4	104	0.9	1,513	408.7	135	1.2	1,955
Illinois	3070.5	1,014	8.8	14,686	4160.7	1,374	11.9	19,900
Indiana	1324.5	437	3.8	6,335	1785.9	590	5.1	8,542
Iowa	711.7	235	2.0	3,404	922.4	305	2.6	4,412
Kansas	671.2	222	1.9	3,210	883.3	292	2.5	4,225
Kentucky	852.1	281	2.4	4,075	1098.4	363	3.1	5,254
Louisiana	1011.1	334	2.9	4,836	1290.4	426	3.7	6,172
Maine	286.5	95	0.8	1,370	366.0	121	1.0	1,751
Maryland	1635.3	540	4.7	7,822	2162.6	714	6.2	10,344
Massachusetts	1934.5	639	5.5	9,253	2736.2	904	7.8	13,087
Michigan	2026.9	669	5.8	9,695	2732.7	902	7.8	13,070
Minnesota	1311.2	433	3.7	6,272	1796.4	593	5.1	8,592
Mississippi	537.2	177	1.5	2,570	669.3	221	1.9	3,201
Missouri	1286.0	425	3.7	6,151	1655.4	547	4.7	7,918
Montana	210.6	70	0.6	1,007	277.8	92	0.8	1,329
Nebraska	449.9	149	1.3	2,152	592.1	196	1.7	2,832
Nevada	580.8	192	1.7	2,778	779.0	257	2.2	3,726
New Hampshire	361.6	119	1.0	1,730	478.5	158	1.4	2,289
New Jersey	2506.0	828	7.2	11,986	3454.6	1,141	9.9	16,523
New Mexico	407.8	135	1.2	1,951	508.9	168	1.5	2,434
New York	5340.2	1,764	15.3	25,542	7471.1	2,467	21.3	35,734
North Carolina	2005.4	662	5.7	9,592	2633.2	870	7.5	12,594
North Dakota	200.4	66	0.6	959	272.4	90	0.8	1,303
Ohio	2494.1	824	7.1	11,929	3254.7	1,075	9.3	15,567
Oklahoma	857.7	283	2.5	4,102	1146.6	379	3.3	5,484
Oregon	828.1	273	2.4	3,961	1134.7	375	3.2	5,427
Pennsylvania	3074.8	1,015	8.8	14,707	4096.8	1,353	11.7	19,595
Rhode Island	261.4	86	0.7	1,250	339.9	112	1.0	1,626
South Carolina	919.6	304	2.6	4,399	1206.4	398	3.4	5,770
South Dakota	204.6	68	0.6	978	264.4	87	0.8	1,265
Tennessee	1393.9	460	4.0	6,667	1787.2	590	5.1	8,548
Texas	6258.8	2,067	17.9	29,936	8295.7	2,740	23.7	39,678
Utah	564.7	186	1.6	2,701	757.5	250	2.2	3,623
Vermont	151.9	50	0.4	727	195.7	65	0.6	936
Virginia	2066.2	682	5.9	9,882	2806.9	927	8.0	13,426
Washington	1788.4	591	5.1	8,554	2393.8	791	6.8	11,449
West Virginia	350.0	116	1.0	1,674	436.1	144	1.2	2,086
Wisconsin	1295.6	428	3.7	6,197	1704.6	563	4.9	8,153
Wyoming	158.2	52	0.5	757	211.4	70	0.6	1,011
DC	249.6	82	0.7	1,194	317.0	105	0.9	1,516
Total	73,798.86	24,371	210.9	352,979	99,476.37	32,850	284.2	475,794

PRIME NUMBERS: Amazon and American Communities

AMAZON TOTAL SALES AND IMPACTS BY STATE (2016) WITH OFFSETS FOR AMAZON DISTRIBUTION FACILITIES AND EMPLOYMENT								
2016								
	Amazon Sales \$ Millions	Space Displacement				Job Displacement		
		Displaced Shops	Displaced Space Million Square Feet	Amazon Space	Net Space Displaced	Jobs Displaced	Amazon Jobs	Net Jobs Displaced
Alabama	1585.4	524	4.5	0.0	4.5	7,583	-	7,583
Alaska	341.0	113	1.0	0.0	1.0	1,631	-	1,631
Arizona	2317.7	765	6.6	3.5	3.1	11,086	6,068	5,017
Arkansas	977.0	323	2.8	0.0	2.8	4,673	-	4,673
California	18260.1	6,030	52.2	11.2	40.9	87,338	22,768	64,569
Colorado	2396.7	791	6.8	0.0	6.8	11,464	787	10,677
Connecticut	2111.0	697	6.0	1.0	5.0	10,097	2,090	8,007
Delaware	385.2	127	1.1	0.2	0.9	1,843	351	1,491
Florida	7847.8	2,592	22.4	2.2	20.2	37,536	4,875	32,661
Georgia	3584.1	1,184	10.2	2.2	8.1	17,143	3,919	13,224
Hawaii	600.1	198	1.7	0.0	1.7	2,870	-	2,870
Idaho	547.0	181	1.6	0.0	1.6	2,616	-	2,616
Illinois	5541.9	1,830	15.8	3.0	12.9	26,507	6,106	20,401
Indiana	2397.2	792	6.8	5.3	1.6	11,466	9,209	2,256
Iowa	1218.9	403	3.5	0.0	3.5	5,830	-	5,830
Kansas	1172.6	387	3.4	0.8	2.5	5,608	2,660	2,949
Kentucky	1456.3	481	4.2	5.0	-0.8	6,965	10,968	(4,003)
Louisiana	1691.7	559	4.8	0.0	4.8	8,092	-	8,092
Maine	490.3	162	1.4	0.0	1.4	2,345	-	2,345
Maryland	2896.4	957	8.3	0.6	7.7	13,854	1,594	12,259
Massachusetts	3686.9	1,218	10.5	1.0	9.5	17,635	2,406	15,228
Michigan	3658.6	1,208	10.5	0.0	10.5	17,499	365	17,134
Minnesota	2390.5	789	6.8	0.8	6.0	11,434	1,708	9,726
Mississippi	892.5	295	2.5	0.0	2.5	4,269	-	4,269
Missouri	2213.7	731	6.3	0.0	6.3	10,588	-	10,588
Montana	367.2	121	1.0	0.0	1.0	1,756	-	1,756
Nebraska	786.6	260	2.2	0.0	2.2	3,762	-	3,762
Nevada	1066.1	352	3.0	1.5	1.6	5,099	2,582	2,517
New Hampshire	646.9	214	1.8	0.1	1.8	3,094	111	2,983
New Jersey	4605.7	1,521	13.2	1.2	12.0	22,029	5,530	16,499
New Mexico	671.1	222	1.9	0.0	1.9	3,210	-	3,210
New York	9932.0	3,280	28.4	0.0	28.4	47,505	-	47,505
North Carolina	3541.4	1,169	10.1	0.0	10.1	16,939	1,643	15,295
North Dakota	346.6	114	1.0	0.0	1.0	1,658	-	1,658
Ohio	4331.0	1,430	12.4	1.9	10.5	20,715	3,657	17,058
Oklahoma	1489.4	492	4.3	0.0	4.3	7,124	-	7,124
Oregon	1532.3	506	4.4	0.0	4.4	7,329	527	6,802
Pennsylvania	5446.9	1,799	15.6	6.3	9.3	26,053	12,836	13,217
Rhode Island	452.8	150	1.3	0.0	1.3	2,166	-	2,166
South Carolina	1626.9	537	4.6	2.4	2.3	7,782	4,150	3,632
South Dakota	345.5	114	1.0	0.0	1.0	1,653	-	1,653
Tennessee	2397.5	792	6.9	3.7	3.2	11,467	6,409	5,059
Texas	11028.9	3,642	31.5	3.8	27.7	52,751	9,315	43,436
Utah	1033.0	341	3.0	0.0	3.0	4,941	-	4,941
Vermont	261.2	86	0.7	0.0	0.7	1,249	-	1,249
Virginia	3755.2	1,240	10.7	2.3	8.4	17,961	4,341	13,620
Washington	3239.5	1,070	9.3	3.4	5.9	15,495	7,296	8,199
West Virginia	568.8	188	1.6	0.0	1.6	2,721	-	2,721
Wisconsin	2270.1	750	6.5	1.0	5.5	10,858	1,739	9,119
Wyoming	268.6	89	0.8	0.0	0.8	1,285	-	1,285
DC	427.9	141	1.2	0.0	1.2	2,047	-	2,047
Total	133,099.8	43,954	380.3	64.2	316.1	636,614	136,586	500,028

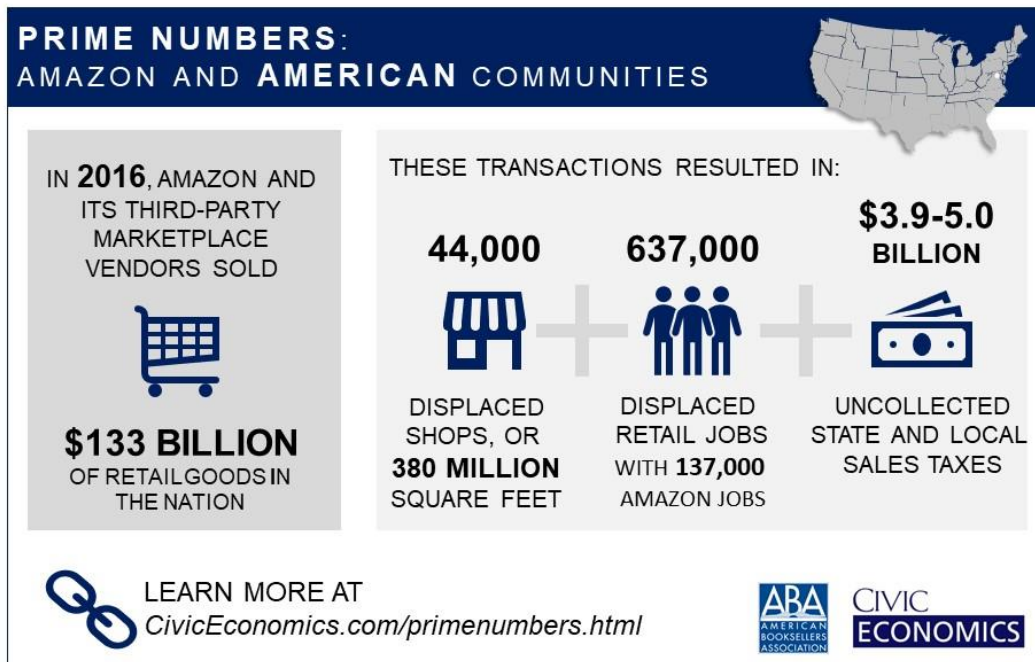
CONCLUSION

The independent business owners of the American Booksellers Association have seen it all when it comes to American retail. The first time Civic Economics worked with a bookseller to analyze the economic impact of the industry, in 2002, the battle of the day was between Austin's BookPeople and Waterloo Records on one side and then-emergent behemoth Borders Books and Music on the other side – literally – of the street, where it sought a public subsidy. BookPeople and Waterloo still thrive, playing an important role in Austin's unique culture and thriving economy; Borders is no more.

In recent years, however, a new retail behemoth has emerged to challenge more than the livelihood of independent retailers. Amazon is qualitatively different because it doesn't just move retail activity from independents to chains down the street. Amazon moves retail activity from commercial centers to industrial parks, often in far flung locations across state lines.

As Amazon and other online retailers grow, this shift is catching state and local governments by surprise. Sales tax collections coming up short of expectations as products move into the community and are delivered to consumers undetected by revenue agencies. Commercial districts and shopping centers struggle to fill long-established spaces while far flung distribution hubs rise from green fields.

This study, like the *Empty Storefronts* series that preceded it, seeks to alert consumers and policy makers to the new realities. As we have suggested in retail studies over the last 15 years, this study should not be read as tilting at the vast windmill that is Amazon. As with the big box stores that preceded it, individuals and communities are likely prepared to accept tradeoffs for the



SOURCE: Prime Numbers: Amazon and American Communities, 2018; Produced by Civic Economics for the American Booksellers Association. "Amazon Jobs" are those in Amazon distribution facilities, estimated at 1 per 575 square feet.

PRIME NUMBERS: Amazon and American Communities

convenience that Amazon offers. We do not believe, though, that Americans yet comprehend the nature of the tradeoffs to come.

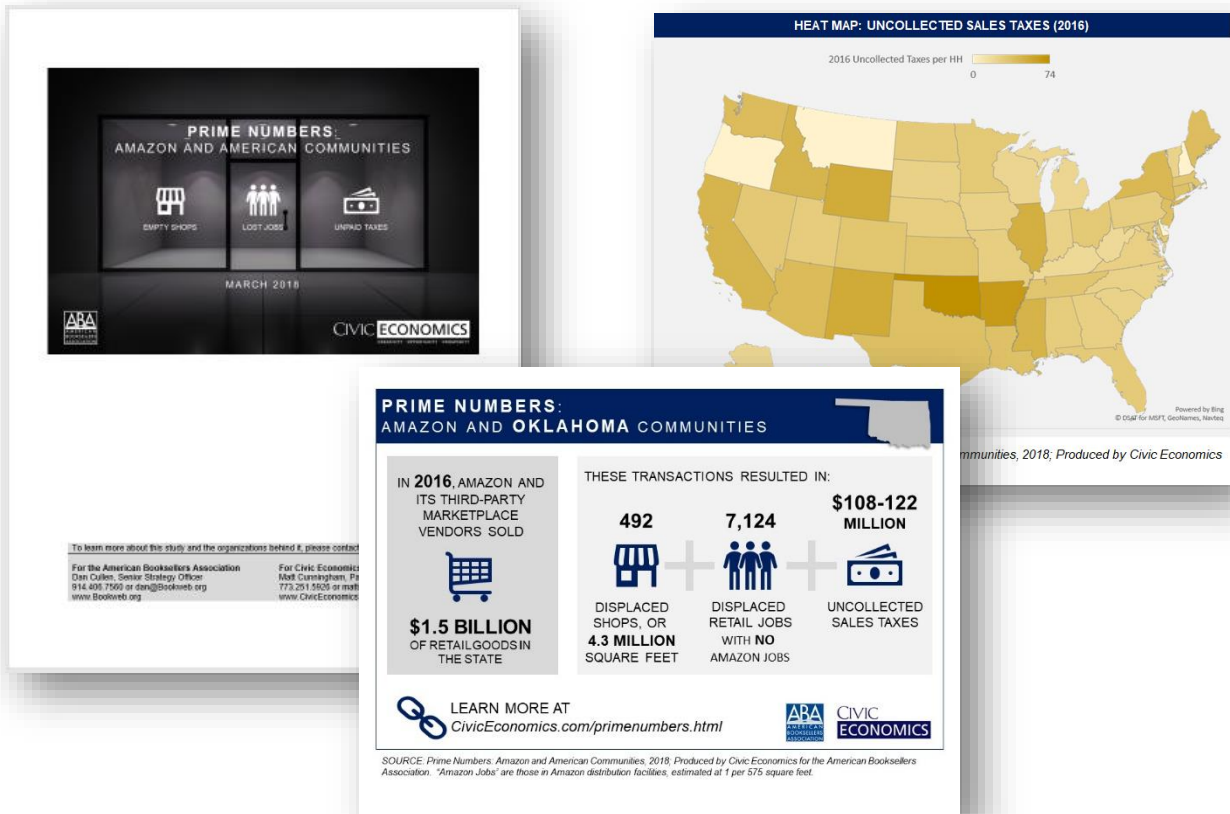
Sales taxes provide a strong example of this disconnect. When Amazon conceded to the collection of sales taxes in all states that collect them in 2017, too many officials believed their problems were solved. However, as we demonstrate in this study, the rise of Marketplace has opened an entirely new and fast-growing sales tax gap even as Amazon pretends the problem has been solved.

We hope Prime Numbers will provide policy makers with a clearer understanding of these changes and aid the development of policy responses to shore up state and local revenues and preserve essential commercial districts and the jobs they provide.

PRIME NUMBERS ONLINE

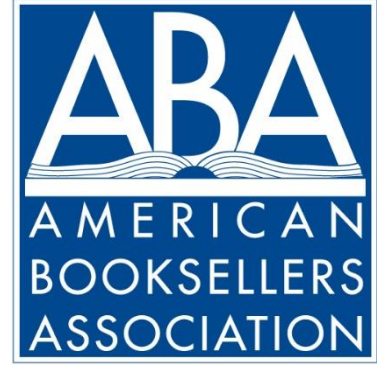
Download this report and summary sheets for individual states, plus maps and news updates by visiting the project site at:

<http://www.civiceconomics.com/primenumbers.html>



ABOUT THE AMERICAN BOOKSELLERS ASSOCIATION

Founded in 1900, the American Booksellers Association is a national not-for-profit trade organization that works to help independently owned bookstores grow and succeed. ABA's core members are key participants in their communities' local economy and culture, and to assist them, ABA provides education, information, business products, and services; creates relevant programs; and engages in public policy and industry advocacy. The Association actively supports and defends free speech and the First Amendment rights of all Americans. A volunteer board of 11 booksellers governs the Association. ABA is headquartered in White Plains, NY.



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ABOUT CIVIC ECONOMICS

Civic Economics, established by Matt Cunningham and Dan Houston in 2002, provides a data-driven approach to business and community initiatives with a wide range of goals. We are noted for the innovative application of industry-standard tools and the development of proprietary methodologies that provide credible guidance and evidence to our clients, often addressing novel situations.



2	partners
15	years
30	states
6	nations

Our practice is thematically and geographically broad, but we have developed substantial depth in economic impact analysis, as well as the economics of local and regional retail, land use planning, and gaming.

From offices in Chicago and Tulsa, Civic Economics serves all North America, from Florida to Alaska and California to Maine, with occasional forays across the border and overseas. We have served some of the wealthiest enclaves in America and some of the poorest, and our clients run from small nonprofits to large corporations and state governments.

Civic Economics provides our clients with credible analyses of current issues, expressed in a clear and concise fashion, to provide relevant information to the public and policymakers. For further information about the firm, its people, and its practice, we invite you to visit CivicEconomics.com.

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