

AMAZON AND EMPTY STOREFRONTS

The Fiscal
and Land Use
Impacts
of Online Retail

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CIVIC
ECONOMICS

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INTRODUCTION

Civic Economics is pleased to present this analysis of the fiscal and land use implications of the growth of online retail as exemplified by Amazon. As with Civic Economics' previous studies of chain retail, this study is not a critique of Amazon and its customers; indeed, the primary authors are both subscribers to Amazon's Prime service as well as devotees of small business. Rather, the goal is to provide policymakers and consumers with a better understanding of the impact at the state and local level of the growth of online retail as a substitute for storefront purchases.

Scope and Purpose of This Report

The American Booksellers Association and Civic Economics have long collaborated to study and describe the state of independent retail in America, but until now those efforts have focused on various classes of bricks and mortar stores. This report takes that research into a new era.

As Internet sales have risen unabated in recent years, little attention has been paid to the effects of that growth on American communities. Focusing on the industry leader, Amazon, this report looks at two broad classes of impact: Fiscal (relating to public revenue) and Land Use (relating to development patterns at the local level). This report looks at calendar year 2014, the last year for which good data is available. Online sales have, of course, only grown since then. In addition, we focus exclusively on Amazon, which likely accounts for only 1/3 or less of total online retail. Given those limitations, these findings should be seen as a sign of far bigger impacts to come.

To determine impacts, Civic Economics quantified Amazon sales at the state level to determine (a) how much sales tax went unpaid at the state and local level and (b) how the shift from bricks and mortar stores impacts property tax revenues. Nearly half of all states still collect no sales tax revenue from Amazon sales and others collect only partial sales taxes, producing a nationwide sales tax gap of \$625 million. In addition, we estimate that the shift to online sales has resulted in a national reduction in demand for retail space totaling over 100 million square feet, the equivalent of over 30,000 traditional storefronts. These land use changes result in uncollected property taxes of \$420 million dollars.

Together, this billion-dollar revenue gap falls on state and local governments across the nation, and thus on the other sources of revenue that will be required to make up the large and growing shortfall. And the reality of constrained demand for retail space will affect every business district and shopping center in America.

Amazon and the Evolution of Online Retail

This study looks exclusively at Amazon, which is currently the dominant online retailer across a wide range of goods (and services, of course, which are beyond the scope of the study). Amazon began as a bookseller, "earth's biggest bookstore" was the tagline and aspiration. As it built out the necessary electronic and distribution infrastructure to catalog, sell, and deliver books, the company leveraged that network to broaden its offerings. As it has done so, the company has developed specialized software and distribution facilities for specific lines of goods.

As this report was being produced, online retail continued its robust growth. Internet sales increased 20% between Black Friday and December 24; in contrast, total retail sales rose just 7.9%, according to MasterCard Advisors.

Amazon, more than its peers, continued to make news, as well. Without revealing much about its business practices, the company announced that Amazon Prime had drawn three million new member households in the third week of December. The company has also leased trucks and airplanes, purchased a package delivery company in Europe, and opened a Prime Now distribution facility in the heart of Manhattan.

Retail strategies have always evolved, and, now more than ever, changes are influenced by technological innovation. From the introduction of shopping catalogs in the 1880s, to the national expansion of superstores and category killers in the 1990s, to the explosive growth of online shopping, consumers have adopted new shopping habits. But the implications and ultimate effects of these changes are often initially unclear.

As consumers became more aware that for every \$100 dollars spent in locally owned businesses, 47 percent is recirculated in the local economy, versus just over 13 percent for chain businesses, they have made buying decisions that have helped fuel the recent boom in localism. In a similar fashion, as an understanding of the major impact that this seismic shift of retail business from physical to online will have on local job opportunities, operating revenues from taxes, and quality of community life, Americans will be faced with a defining challenge of the 21st century.

Study Approach

This study followed a rigorous approach to develop the fiscal and land use impact findings.

- Estimate total retail sales for Amazon with as much detail as possible, and allocate those sales to the states.
- Analyze the match between state sales tax rates and those collected by Amazon to quantify any sales tax gap at the state level.
- Estimate the square footage, establishments, and employment those sales would have produced had they occurred in bricks and mortar shops.
- Estimate the property tax that retail space would have generated.
- Quantify square footage and employment associated with Amazon distribution facilities in each state.

Nationwide: Essential Findings

- In 2014, Amazon sold **\$44.1 billion** worth of retail goods nationwide, all while avoiding **\$625 million** in state and local sales taxes.
- These sales are the equivalent of **31,000** retail storefronts or **107 million** square feet of commercial space, which might have paid **\$420 million** in property taxes.
- A total of more than **\$1 billion** in revenue is lost to state and local governments, **\$8.48** for every household in America.
- Amazon also operated **65 million** square feet of distribution space, employing roughly **30,000** full-time workers and **104,000** part-time and seasonal workers.
- Even counting all the jobs in Amazon distribution centers, Amazon sales produced a net loss of **135,973** retail jobs nationwide.

ESTIMATING AMAZON SALES

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 2014, 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 the purposes of this study we only need the Media (which includes books, music, and movies) and Electronic and Other General Merchandise because those are the two categories that related to retail sales. The Other category primarily covers the rapidly growing Amazon Web Services and other non-retail sources of revenue.

United States Retail Revenue

First, we needed to isolate Amazon revenue associated with retail sales in the United States.

Revenue reporting regions are limited to North America and the rest of the world. Since our goal was only to look at sales in the United States it was necessary to isolate Canadian sales (Mexican operations began in 2015).ⁱ Accepting a widely-cited estimate of Amazon's sales in Canada of \$1.5 billion it was assumed the remaining \$48.6 billion came from the United States.ⁱⁱ

Revenue in Each State

Second, we needed to allocate that revenue among the states.

Without any disclosure of Amazon retail revenue by state, we developed a proxy for allocating sales. Population alone tells little about market potential, so we focused on a more relevant measure. For each state and the District of Columbia, we calculated its share of total disposable income in the states and allocated Amazon sales on that basis. For example, California has 12.9% of the nation's disposable income and was therefore assigned 12.9% of Amazon's revenue which was \$6.5 billion in sales.

These results are presented in Chart 1 on page 7 and generally track with the size of the state, with California and Texas logging the most sales with Vermont and Wyoming the least.

Revenue by Retail Segment

Finally, we worked to estimate sales by retail segment, which was later used in a number of calculations.

To generate sales by category we started with Amazon's "media" sales. We separated out book sales using a 2013 sales estimate and carrying the same rate into 2014ⁱⁱⁱ. The remainder was categorized as music and video sales. Of that amount, we estimate that 20% of those sales might have otherwise occurred in a storefront retail situation, as music and video distribution is increasingly electronic.

In estimating the remaining sales, we separated revenue into as many segments as possible given the limited data available and the often wide divergence in segment estimates from other sources. We did, however, accept a source for Apparel and Accessories sales in 2015, then back

it out for a 2014 estimate. Additionally, using a consumer electronics estimate as a base, we developed an estimate for computers and consumer electronics^{iv}. Without reliable information with which to further segment sales, we aggregated remaining revenues in an “other” category, which includes such goods as auto parts, furniture and home furnishings, health and personal care, toys and hobby, office equipment and supplies, and food and beverage.

Table 2 on the following page lists the estimated sales by category which include all music and video sales before the reduction discussed previously.

Having developed these state revenue estimates, we moved on to discern the impact of those sales at the state and local level.

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TABLE 1: AMAZON SALES BY STATE

| | Amazon Sales (Millions) |
|----------------|------------------------------------|
| Alabama | \$ 618.7 |
| Alaska | \$ 132.8 |
| Arizona | \$ 862.3 |
| Arkansas | \$ 379.7 |
| California | \$ 6,287.0 |
| Colorado | \$ 856.3 |
| Connecticut | \$ 703.9 |
| Delaware | \$ 142.8 |
| Florida | \$ 2,850.1 |
| Georgia | \$ 1,320.7 |
| Hawaii | \$ 222.4 |
| Idaho | \$ 208.2 |
| Illinois | \$ 2,020.9 |
| Indiana | \$ 871.8 |
| Iowa | \$ 468.4 |
| Kansas | \$ 441.8 |
| Kentucky | \$ 560.8 |
| Louisiana | \$ 665.5 |
| Maine | \$ 188.5 |
| Maryland | \$ 1,076.3 |
| Massachusetts | \$ 1,273.2 |
| Michigan | \$ 1,334.1 |
| Minnesota | \$ 863.0 |
| Mississippi | \$ 353.6 |
| Missouri | \$ 846.4 |
| Montana | \$ 138.6 |
| Nebraska | \$ 296.1 |
| Nevada | \$ 382.2 |
| New Hampshire | \$ 238.0 |
| New Jersey | \$ 1,649.4 |
| New Mexico | \$ 268.4 |
| New York | \$ 3,514.7 |
| North Carolina | \$ 1,319.9 |
| North Dakota | \$ 131.9 |
| Ohio | \$ 1,641.5 |
| Oklahoma | \$ 564.5 |
| Oregon | \$ 545.0 |
| Pennsylvania | \$ 2,023.7 |
| Rhode Island | \$ 172.1 |
| South Carolina | \$ 605.3 |
| South Dakota | \$ 134.6 |
| Tennessee | \$ 917.4 |
| Texas | \$ 4,119.3 |
| Utah | \$ 371.7 |
| Vermont | \$ 100.0 |
| Virginia | \$ 1,359.9 |
| Washington | \$ 1,177.1 |
| West Virginia | \$ 230.3 |
| Wisconsin | \$ 852.8 |
| Wyoming | \$ 104.1 |
| DC | \$ 164.3 |
| Total | \$ 48,572.0 |

Source: Civic Economics

TABLE 2: TOTAL AMAZON RETAIL SALES, 2014

| Retail Segment | Millions | % |
|-----------------------------------|-----------------|---------------|
| Computer and Consumer Electronics | \$14,932 | 30.7% |
| Apparel and Accessories | \$11,628 | 23.9% |
| Books | \$5,618 | 11.6% |
| Music /Video | \$5,600 | 11.5% |
| Other | \$10,794 | 22.2% |
| Total | \$48,572 | 100.0% |

Source: Civic Economics, Amazon Annual Report 2014

FISCAL IMPACTS AND IMPLICATIONS

As retail sales migrate from storefronts to the Internet, the fiscal impact on state and local governments has come from two sources: sales tax and property tax. The former is well understood, and many states have moved to close the sales tax advantage of online merchants. The latter, however, will only grow even as few local governments recognize the challenge.

Sales Taxes

In the early years, Amazon did not collect state and local sales taxes, nor did most other Internet retailers. In cases where the business tangibly operated in the state in question, of course, the legal concept of nexus often triggered sales taxes on in-state purchases. During this era, Amazon preferred to site distribution centers in across state lines from major markets or in states that provided tax incentives for location. Thus, for example, California customers have long been served by Amazon warehouses in Arizona and Nevada. In some cases, where states claimed sufficient nexus to require sales tax collection, the company severed all ties to that state – other than selling, of course.

This sales tax avoidance strategy provided Amazon and other online merchants with a substantial price advantage over competing storefronts.

However, Amazon has begun to relax its once firm opposition to collecting sales taxes, and has begun collecting sales tax in various states as it has moved its distribution centers closer to its customers. In Texas, for example, the company negotiated an orderly initiation of sales tax collections and reopened distribution facilities in the state in 2014.

As of January 1, 2016 there are 28 states that charge sales tax on Amazon purchases. 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.

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 does not collect any sales tax involved simply looking at the sales per state and multiplying it by the average combined sales tax rate as calculated by the Tax Foundation^v. For those that collect only the state portion we used the average local sales tax rate for each state to calculate the gap in sales tax revenue.

These calculations of the sales tax gap are for calendar year 2014. One variation we introduced is that three states (Illinois, Michigan, and Ohio) started collecting sales tax from Amazon during the 2015 calendar year. Since these states have remedied the problem, we decided to present the sales tax gaps as if those states had collected sales tax in 2014, providing a more realistic picture of the gap as it stands today. In addition, South Carolina and Colorado began collecting sales taxes on Amazon sales in 2016, and are grouped with the states that do not collect the tax.

Table 3 on page 11 details the sales tax gap by state. Missouri leads all states in this dubious ranking at \$62 million, followed by Colorado, Louisiana, and Alabama which all have gaps over \$50 million. The total nationwide sales tax gap for Amazon in 2014 is estimated at \$625 million.

Property Tax Impacts

In the following section, Land Use Impacts, this report discusses the very real displacement of retail space from communities to the Internet. This displacement has contributed to a slowdown in the occupancy and development of commercial space. This, in turn, has an invisible but certain impact on an essential source of revenue for most states, cities, and schools: property taxes.

The displacement of retail square footage has a very real cost when calculating the effect that Amazon has upon tax revenue. The retail square footage that is being lost is generally valued at much higher rates than distribution centers that are located on the periphery of cities. Additionally, the brick and mortar retailers are supported by their own distribution networks, so Amazon is essentially replacing retail square footage without really adding much to the real estate market.

To calculate the lost property tax revenue, we developed a broad estimate of the property value associated with displaced retail sales. This was done by using a common assessment rule of thumb for valuing revenue producing properties. The formula divides the total net income (assumed to be 5% of revenues) by the capitalization rate (assumed to be 7%) which gave a corresponding property value. This average will obviously underestimate property values in dense urban areas and overestimate property values in rural areas but it provides a reasonable estimate when looking at the larger picture at the national and even state level.

Average statewide property tax rates were then applied using estimates from the Tax Foundation.^{vi} A modification was then applied as most states tax commercial property at a higher rate than residential properties.^{vii}

Displaced retail space imposes hefty (and growing) cost of approximately \$420 million annually, as shown in Table 4 on page 12. Looking at the breakdowns by state, Texas is estimated to have the highest amount of lost revenue, with almost \$54 million being lost annually due the reduction of retail space associated with sales lost due to Amazon. However, all 50 states are losing money for the same reason.

We have been unable to come to a credible estimate of the property taxes associated with distribution facilities due to the complexities of state industrial property assessment and taxation. We are not troubled by the matter for two reasons:

1. Virtually all goods sold at retail have passed through one, two, or more distribution centers on the way to the end user. This is true of goods sold by Amazon and Wal-Mart and it is true of goods sold by the smallest retailers.
2. Distribution centers are located in relatively low-value locations compared to commercial storefronts. Moreover, recognizing that distribution centers create jobs and are highly mobile, state and local authorities have often crafted generous taxation practices to attract and retain them. Amazon, of course, is often cited as a major recipient of tax abatements; but the same is true of other distribution center operators.

Fiscal Implications

The total estimate of lost revenue is \$1.05 billion broken out in Table 5 on page 13. Missouri, due mainly to its lack of an internet sales tax, has the largest loss in total tax revenue at nearly \$68 million. This lost revenue costs each household in Missouri nearly \$29 that must be made up in

some other way. Table 6 on page 14 breaks down these lists further to track the top states for lost revenue for each category as well as on a per household basis.

Finally, we've compiled heat maps of the relative tax burden by household in each state. These appear on page 15.

Across America, states and localities are awakening to the challenge of lost sales tax revenue. While "tax fairness" is primarily directed to the artificial competitive disadvantages faced by bricks and mortar retailers, the interest of public officials is driven by revenue. Now, with 28 states (out of 51, counting DC), collecting at least partial sales taxes from online sales, the gap faced in the remaining states is more noteworthy.

Unfortunately, public officials have been far slower to recognize the property tax implications of online retail. Stores not expanded and shopping centers not built are invisible, but their absence poses a real and growing challenge. By our calculations, the sales tax gap is closing but the property tax gap will only continue to grow.

Without storefronts, Amazon and other online retailers will never present opportunities for replacement property taxes, so officials must begin adapting today to avert a crisis tomorrow. Many property tax regimes determine the rate on individual properties by working backward from a revenue target; just as declining downtown and industrial property values shift the burden to residential property, so will the steady loss of previously expected retail space.

Most jurisdictions strive for a balanced portfolio of revenue sources in order to mitigate budget shocks, but all incline one way or another in the emphasis on sales versus property taxes, with income taxes another substantial source to many. This study demonstrates that, even as the sales tax gap is closing in most places, communities most dependent on commercial property taxes will face serious consequences as that core source is increasingly impacted.

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TABLE 3: AMAZON SALES TAX GAP, 2014

| | Full Sales Tax (Millions) | Amazon Sales Tax (Millions) | Sales Tax Gap (Millions) |
|----------------|--------------------------------------|--|-------------------------------------|
| Alabama | \$ 50.2 | \$ - | \$ 50.2 |
| Alaska | \$ 2.1 | \$ - | \$ 2.1 |
| Arizona | \$ 64.0 | \$ 43.8 | \$ 20.2 |
| Arkansas | \$ 32.0 | \$ - | \$ 32.0 |
| California | \$ 484.0 | \$ 484.0 | \$ - |
| Colorado | \$ 57.8 | \$ - | \$ 57.8 |
| Connecticut | \$ 40.6 | \$ 40.6 | \$ - |
| Delaware | \$ - | \$ - | \$ - |
| Florida | \$ 172.0 | \$ 155.2 | \$ 16.8 |
| Georgia | \$ 84.2 | \$ 84.2 | \$ - |
| Hawaii | \$ 8.8 | \$ - | \$ 8.8 |
| Idaho | \$ 11.4 | \$ - | \$ 11.4 |
| Illinois | \$ 150.8 | \$ 114.7 | \$ 36.1 |
| Indiana | \$ 55.4 | \$ 55.4 | \$ - |
| Iowa | \$ 28.9 | \$ - | \$ 28.9 |
| Kansas | \$ 34.4 | \$ 34.4 | \$ - |
| Kentucky | \$ 30.5 | \$ 30.5 | \$ - |
| Louisiana | \$ 54.4 | \$ - | \$ 54.4 |
| Maine | \$ 9.4 | \$ - | \$ 9.4 |
| Maryland | \$ 58.6 | \$ 58.6 | \$ - |
| Massachusetts | \$ 72.2 | \$ 72.2 | \$ - |
| Michigan | \$ 72.7 | \$ 72.7 | \$ - |
| Minnesota | \$ 56.6 | \$ 53.9 | \$ 2.7 |
| Mississippi | \$ 22.7 | \$ - | \$ 22.7 |
| Missouri | \$ 60.2 | \$ - | \$ 60.2 |
| Montana | \$ - | \$ - | \$ - |
| Nebraska | \$ 18.4 | \$ - | \$ 18.4 |
| Nevada | \$ 27.6 | \$ 27.6 | \$ - |
| New Hampshire | \$ - | \$ - | \$ - |
| New Jersey | \$ 104.4 | \$ 104.4 | \$ - |
| New Mexico | \$ 18.2 | \$ - | \$ 18.2 |
| New York | \$ 270.6 | \$ 270.6 | \$ - |
| North Carolina | \$ 82.7 | \$ 82.7 | \$ - |
| North Dakota | \$ 8.1 | \$ 8.1 | \$ - |
| Ohio | \$ 106.4 | \$ 85.7 | \$ 20.7 |
| Oklahoma | \$ 45.0 | \$ - | \$ 45.0 |
| Oregon | \$ - | \$ - | \$ - |
| Pennsylvania | \$ 116.5 | \$ 110.2 | \$ 6.2 |
| Rhode Island | \$ 10.9 | \$ - | \$ 10.9 |
| South Carolina | \$ 39.7 | \$ - | \$ 39.7 |
| South Dakota | \$ 7.1 | \$ - | \$ 7.1 |
| Tennessee | \$ 78.8 | \$ 78.8 | \$ - |
| Texas | \$ 305.5 | \$ 305.5 | \$ - |
| Utah | \$ 22.6 | \$ - | \$ 22.6 |
| Vermont | \$ 5.6 | \$ - | \$ 5.6 |
| Virginia | \$ 69.5 | \$ 69.5 | \$ - |
| Washington | \$ 95.1 | \$ 95.1 | \$ - |
| West Virginia | \$ 12.8 | \$ 12.5 | \$ 0.2 |
| Wisconsin | \$ 42.0 | \$ 38.7 | \$ 3.3 |
| Wyoming | \$ 5.1 | \$ - | \$ 5.1 |
| DC | \$ 8.6 | \$ - | \$ 8.6 |
| Total | \$ 3,214.9 | \$ 2,589.5 | \$ 625.4 |

Source: Civic Economics, Tax Foundation, Census

AMAZON AND EMPTY STOREFRONTS

TABLE 4: AMAZON PROPERTY TAX GAP

| | Displaced Retail Space (Sq.Ft.) | Lost Retail Property Tax (Millions) |
|----------------|--|--|
| Alabama | 1,367,242 | \$ 2.1 |
| Alaska | 293,499 | \$ 0.9 |
| Arizona | 1,905,575 | \$ 7.3 |
| Arkansas | 839,019 | \$ 1.5 |
| California | 13,892,802 | \$ 30.5 |
| Colorado | 1,892,163 | \$ 7.6 |
| Connecticut | 1,555,433 | \$ 7.4 |
| Delaware | 315,549 | \$ 0.4 |
| Florida | 6,297,989 | \$ 21.8 |
| Georgia | 2,918,485 | \$ 8.4 |
| Hawaii | 491,445 | \$ 0.9 |
| Idaho | 460,174 | \$ 1.4 |
| Illinois | 4,465,798 | \$ 23.6 |
| Indiana | 1,926,378 | \$ 9.4 |
| Iowa | 1,035,166 | \$ 6.4 |
| Kansas | 976,177 | \$ 6.1 |
| Kentucky | 1,239,260 | \$ 2.6 |
| Louisiana | 1,470,610 | \$ 1.4 |
| Maine | 416,643 | \$ 1.4 |
| Maryland | 2,378,458 | \$ 6.0 |
| Massachusetts | 2,813,525 | \$ 19.5 |
| Michigan | 2,947,964 | \$ 15.8 |
| Minnesota | 1,907,041 | \$ 10.6 |
| Mississippi | 781,335 | \$ 1.7 |
| Missouri | 1,870,329 | \$ 7.6 |
| Montana | 306,245 | \$ 0.9 |
| Nebraska | 654,356 | \$ 3.4 |
| Nevada | 844,685 | \$ 2.1 |
| New Hampshire | 525,962 | \$ 2.9 |
| New Jersey | 3,644,758 | \$ 20.2 |
| New Mexico | 593,119 | \$ 1.0 |
| New York | 7,766,807 | \$ 39.0 |
| North Carolina | 2,916,622 | \$ 6.7 |
| North Dakota | 291,467 | \$ 1.3 |
| Ohio | 3,627,395 | \$ 16.6 |
| Oklahoma | 1,247,422 | \$ 2.8 |
| Oregon | 1,204,420 | \$ 3.1 |
| Pennsylvania | 4,471,951 | \$ 22.7 |
| Rhode Island | 380,203 | \$ 2.4 |
| South Carolina | 1,337,520 | \$ 3.9 |
| South Dakota | 297,526 | \$ 1.3 |
| Tennessee | 2,027,264 | \$ 5.3 |
| Texas | 9,102,768 | \$ 53.7 |
| Utah | 821,299 | \$ 2.0 |
| Vermont | 220,968 | \$ 1.1 |
| Virginia | 3,005,048 | \$ 5.9 |
| Washington | 2,601,127 | \$ 7.0 |
| West Virginia | 509,019 | \$ 1.2 |
| Wisconsin | 1,884,396 | \$ 9.9 |
| Wyoming | 230,119 | \$ 0.4 |
| DC | 362,982 | \$ 0.8 |
| Total | 107,333,509 | \$ 419.8 |

Source: Civic Economics, Tax Foundation

AMAZON AND EMPTY STOREFRONTS

TABLE 5: COMBINED TAX GAP

| | Lost Property and Sales Tax (millions) | Per Household |
|----------------|--|------------------|
| Alabama | \$ 52.21 | \$ 28.34 |
| Alaska | \$ 3.07 | \$ 12.21 |
| Arizona | \$ 27.52 | \$ 11.53 |
| Arkansas | \$ 33.40 | \$ 29.50 |
| California | \$ 30.47 | \$ 2.41 |
| Colorado | \$ 65.41 | \$ 32.73 |
| Connecticut | \$ 7.44 | \$ 5.49 |
| Delaware | \$ 0.37 | \$ 1.09 |
| Florida | \$ 38.60 | \$ 5.35 |
| Georgia | \$ 8.39 | \$ 2.37 |
| Hawaii | \$ 9.67 | \$ 21.47 |
| Idaho | \$ 12.72 | \$ 21.74 |
| Illinois | \$ 59.77 | \$ 12.51 |
| Indiana | \$ 9.39 | \$ 3.77 |
| Iowa | \$ 35.24 | \$ 28.60 |
| Kansas | \$ 6.13 | \$ 5.51 |
| Kentucky | \$ 2.64 | \$ 1.55 |
| Louisiana | \$ 55.83 | \$ 32.48 |
| Maine | \$ 10.78 | \$ 19.49 |
| Maryland | \$ 6.04 | \$ 2.80 |
| Massachusetts | \$ 19.53 | \$ 7.69 |
| Michigan | \$ 15.83 | \$ 4.14 |
| Minnesota | \$ 13.30 | \$ 6.29 |
| Mississippi | \$ 24.35 | \$ 22.29 |
| Missouri | \$ 67.80 | \$ 28.71 |
| Montana | \$ 0.89 | \$ 2.19 |
| Nebraska | \$ 21.76 | \$ 29.74 |
| Nevada | \$ 2.07 | \$ 2.06 |
| New Hampshire | \$ 2.87 | \$ 5.52 |
| New Jersey | \$ 20.21 | \$ 6.34 |
| New Mexico | \$ 19.30 | \$ 25.24 |
| New York | \$ 39.02 | \$ 5.38 |
| North Carolina | \$ 6.68 | \$ 1.78 |
| North Dakota | \$ 1.28 | \$ 4.36 |
| Ohio | \$ 37.29 | \$ 8.16 |
| Oklahoma | \$ 47.78 | \$ 32.95 |
| Oregon | \$ 3.07 | \$ 2.02 |
| Pennsylvania | \$ 28.92 | \$ 5.83 |
| Rhode Island | \$ 13.33 | \$ 32.54 |
| South Carolina | \$ 43.61 | \$ 24.29 |
| South Dakota | \$ 8.43 | \$ 25.77 |
| Tennessee | \$ 5.26 | \$ 2.11 |
| Texas | \$ 53.66 | \$ 5.95 |
| Utah | \$ 24.62 | \$ 27.47 |
| Vermont | \$ 6.70 | \$ 26.05 |
| Virginia | \$ 5.91 | \$ 1.94 |
| Washington | \$ 7.02 | \$ 2.65 |
| West Virginia | \$ 1.39 | \$ 1.87 |
| Wisconsin | \$ 13.21 | \$ 5.76 |
| Wyoming | \$ 5.52 | \$ 24.50 |
| DC | \$ 9.42 | \$ 35.22 |
| | \$ 1,045.14 | \$ 8.68 |

Source: Civic Economics, American Community Survey

AMAZON AND EMPTY STOREFRONTS

FISCAL IMPACTS - THE BOTTOM TEN LISTS

Total Sales Tax Loss

| | Millions |
|------------------|----------|
| 1 Missouri | \$ 60.2 |
| 2 Colorado | \$ 57.8 |
| 3 Louisiana | \$ 54.4 |
| 4 Alabama | \$ 50.2 |
| 5 Oklahoma | \$ 45.0 |
| 6 South Carolina | \$ 39.7 |
| 7 Illinois | \$ 36.1 |
| 8 Arkansas | \$ 32.0 |
| 9 Iowa | \$ 28.9 |
| 10 Mississippi | \$ 22.7 |

Total Property Tax Loss

| | Millions |
|-----------------|----------|
| 1 Texas | \$ 53.66 |
| 2 New York | \$ 39.02 |
| 3 California | \$ 30.47 |
| 4 Illinois | \$ 23.63 |
| 5 Pennsylvania | \$ 22.67 |
| 6 Florida | \$ 21.78 |
| 7 New Jersey | \$ 20.21 |
| 8 Massachusetts | \$ 19.53 |
| 9 Ohio | \$ 16.57 |
| 10 Michigan | \$ 15.83 |

Total Tax Loss

| | Millions |
|------------------|----------|
| 1 Missouri | \$ 67.80 |
| 2 Colorado | \$ 65.41 |
| 3 Illinois | \$ 59.77 |
| 4 Louisiana | \$ 55.83 |
| 5 Texas | \$ 53.66 |
| 6 Alabama | \$ 52.21 |
| 7 Oklahoma | \$ 47.78 |
| 8 South Carolina | \$ 43.61 |
| 9 New York | \$ 39.02 |
| 10 Florida | \$ 38.60 |

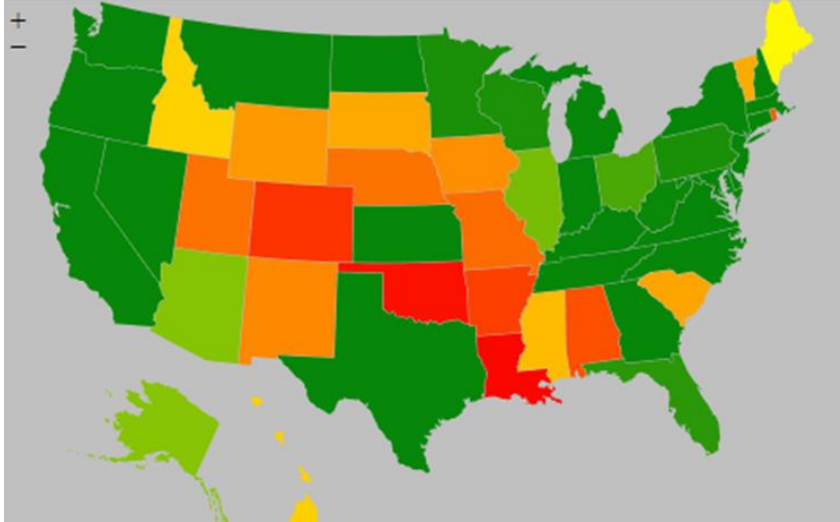
Per Household Tax Loss

| | |
|----------------|----------|
| 1 DC | \$ 35.22 |
| 2 Oklahoma | \$ 32.95 |
| 3 Colorado | \$ 32.73 |
| 4 Rhode Island | \$ 32.54 |
| 5 Louisiana | \$ 32.48 |
| 6 Nebraska | \$ 29.74 |
| 7 Arkansas | \$ 29.50 |
| 8 Missouri | \$ 28.71 |
| 9 Iowa | \$ 28.60 |
| 10 Alabama | \$ 28.34 |

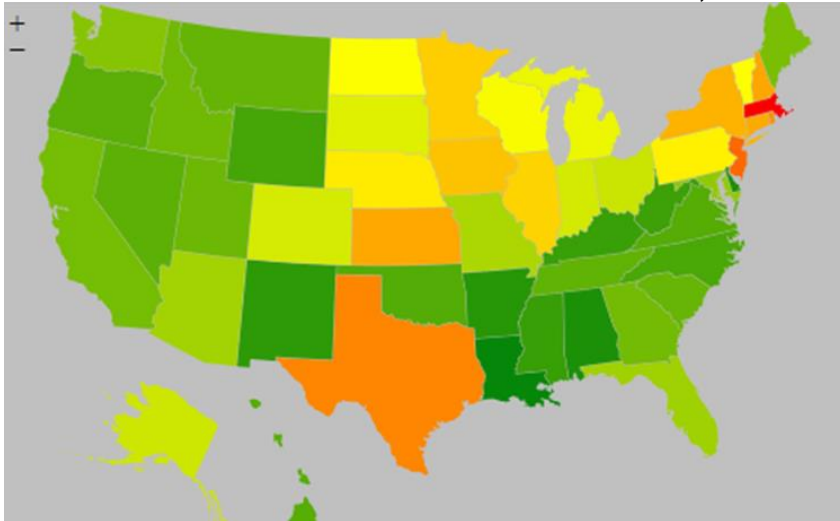
Source: Civic Economics

AMAZON AND EMPTY STOREFRONTS

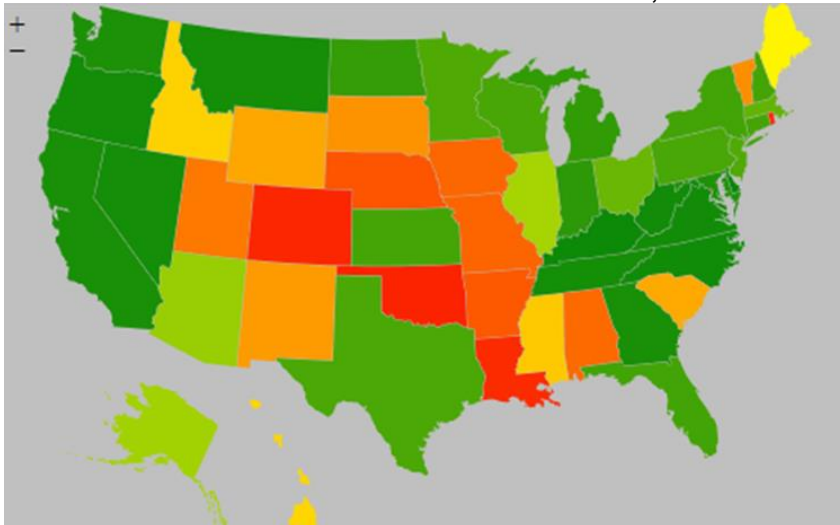
HEAT MAP 1: AMAZON SALES TAX GAP PER HOUSEHOLD, 2014



HEAT MAP 2: AMAZON PROPERTY TAX GAP PER HOUSEHOLD, 2014



HEAT MAP 3: TOTAL AMAZON TAX GAP PER HOUSEHOLD, 2014



Smallest tax gaps

Largest tax gaps

Source: Civic Economics

LAND USE IMPACTS AND IMPLICATIONS

Amazon does not operate brick and mortar retail space other than one brand new bookshop in Seattle. It does, however, maintain a vast and expanding distribution network throughout the nation.

Distribution Network

Amazon conducts virtually all retail sales through an extensive, and growing, distribution system that operates, historically, at some remove from population centers. Amazon distribution centers operate at high levels of efficiency, rapidly adopting advances in technology. Amazon does occupy more distribution space per dollar of sales than Wal-Mart and Target (roughly 1/3 more than the average of those two). The major space difference between Amazon facilities and those of its storefront rivals is that Amazon warehouses must break shipments down to individual pieces in order to ship individual orders directly. Traditional retail warehouses reduce shipment size only to the amount that must be delivered to individual stores.

As of January 2016, Amazon operates approximately 66 million square feet of distribution facilities with at least another 7 million square feet under development, according to tracking maintained by MWPVL International^{viii}. Traditional distribution centers range from 500,000 square feet to well over 1 million; recent additions include smaller facilities closer to customer population bases, even into the heart of Manhattan (not Manhattan, Kansas, but New York City).

In considering the impacts of these facilities, Civic Economics included a high-side estimate of employment associated with the distribution network, which we allocated to the states according to the facilities in each. Amazon does not provide sufficient information to determine the total employment in the distribution system, or even in individual facilities as a general rule. Moreover, these employees hold a mix of full-time, part-time, and seasonal jobs. In order to grant Amazon the benefit of any doubt, we assumed that all company employees in 2014 outside of headquarters worked in the distribution system.

Retail Storefront Impacts

For tangible goods not easily digitized, it is fair to assume that retail sales that occur online would largely have otherwise taken place in a storefront setting. Catalog sales were, of course, an important retail channel in the pre-Internet age, but the proliferation of big box and major brand retail across the nation had a tremendous competitive impact on the one-time catalog giants. Brands like Montgomery-Ward, JCPenney, and Sears struggled in the transition. Specialty catalog retailers often adapted to the change by moving to bricks and mortar, as well. That transition period, though, more recently ran headlong into a new and turbocharged form of catalog shopping on the Internet.

The online retail model pioneered and exemplified by Amazon has had a tremendous and under-recognized effect on retail space throughout the United States. Retail activity is no longer moving just between jurisdictions as stores move to new territory; the Internet effectively takes sales beyond jurisdiction. This transition does impact the use of space on the ground. While retailers do not methodically close portions of stores to accommodate reduced sales, the portfolio of retail space and stores in any given market area most surely does contract proportionately as sales move online.

For this study, Civic Economics analyzed three measures on this shift in activity: storefronts, square footage, and employment.

For the first and broadest measure, we calculated sales per square foot for the mix of segments in the study and allocated those “lost” square feet across the states according to their proportion of Amazon sales.

For the second measure, we collected the average sales per establishment in each segment from the Economic Census and calculated the number of stores Amazon sales equate to in each state. While it may be too simple to represent that number as displaced storefronts, it provides a useful gauge of the number of business establishments that might otherwise exist.

Finally, we calculated the loss of jobs associated with this shift. For each segment, we collected Economic Census data for sales per employee to calculate the total sales force that would be associated with Amazon’s retail sales in bricks and mortar stores.

In recognition that Amazon effectively shifts some jobs that would otherwise take place in storefronts into its warehouses, we provided an offset in each state for the total number of employees associated with Amazon distribution space. That assumes that those distribution jobs would not otherwise be in the state in other retailers’ facilities, which suggests we have likely overstated the number of jobs created by Amazon facilities.

It should be noted that, while all states lost storefronts and square footage, eight states with extensive Amazon distribution facilities are estimated to have gained jobs in the transition.

Table 7 on the following page highlights these results in a single chart. Over 107 million square feet of retail space has been lost due to displacement from Amazon, which is the equivalent of 31,000 separate establishments. This is accompanied by the loss of nearly 136,000 jobs even when accounting for the employment opportunities created by Amazon, mainly in their distribution centers. Table 8 on page 19 lists the states that have lost the most storefronts, square footage, and employees while also listing the eight states that have potentially gained employment due to the location of Amazon’s distribution network in their state.

Land Use Implications

These findings show a significant change in the works, with more monumental shifts in land use on the horizon. Particularly at the local level, communities must begin to evaluate their exposure to these trends and adjust expectations accordingly. The emergence of big box retailing in the 1990’s caught communities and developers unprepared, leaving widespread vacancies even as total retail square footage increased, online shopping promises greater shifts in the scale and location of retail space.

AMAZON AND EMPTY STOREFRONTS

TABLE 7: SPACE, SHOP, AND JOB DISPLACEMENT

| | Square Feet Equivalent (Millions) | Equivalent Shops | Jobs, Including Amazon Dist. |
|----------------|--------------------------------------|---------------------|---------------------------------|
| Alabama | 1.4 | 395 | (3,439) |
| Alaska | 0.3 | 85 | (738) |
| Arizona | 1.9 | 550 | 4,632 |
| Arkansas | 0.8 | 242 | (2,110) |
| California | 13.9 | 4,010 | (21,251) |
| Colorado | 1.9 | 546 | (4,759) |
| Connecticut | 1.6 | 449 | (1,488) |
| Delaware | 0.3 | 91 | 2,074 |
| Florida | 6.3 | 1,818 | (10,306) |
| Georgia | 2.9 | 842 | (5,678) |
| Hawaii | 0.5 | 142 | (1,236) |
| Idaho | 0.5 | 133 | (1,157) |
| Illinois | 4.5 | 1,289 | (7,802) |
| Indiana | 1.9 | 556 | 6,611 |
| Iowa | 1.0 | 299 | (2,604) |
| Kansas | 1.0 | 282 | (1,922) |
| Kentucky | 1.2 | 358 | 9,203 |
| Louisiana | 1.5 | 425 | (3,699) |
| Maine | 0.4 | 120 | (1,048) |
| Maryland | 2.4 | 687 | (5,982) |
| Massachusetts | 2.8 | 812 | (5,683) |
| Michigan | 2.9 | 851 | (6,985) |
| Minnesota | 1.9 | 550 | (2,788) |
| Mississippi | 0.8 | 226 | (1,965) |
| Missouri | 1.9 | 540 | (4,704) |
| Montana | 0.3 | 88 | (770) |
| Nebraska | 0.7 | 189 | (1,646) |
| Nevada | 0.8 | 244 | 1,050 |
| New Hampshire | 0.5 | 152 | (1,193) |
| New Jersey | 3.6 | 1,052 | (2,810) |
| New Mexico | 0.6 | 171 | (1,492) |
| New York | 7.8 | 2,242 | (19,536) |
| North Carolina | 2.9 | 842 | (6,881) |
| North Dakota | 0.3 | 84 | (733) |
| Ohio | 3.6 | 1,047 | (9,124) |
| Oklahoma | 1.2 | 360 | (3,138) |
| Oregon | 1.2 | 348 | (3,029) |
| Pennsylvania | 4.5 | 1,291 | 5,091 |
| Rhode Island | 0.4 | 110 | (956) |
| South Carolina | 1.3 | 386 | 1,272 |
| South Dakota | 0.3 | 86 | (748) |
| Tennessee | 2.0 | 585 | 4,849 |
| Texas | 9.1 | 2,628 | (11,486) |
| Utah | 0.8 | 237 | (2,066) |
| Vermont | 0.2 | 64 | (556) |
| Virginia | 3.0 | 867 | (2,853) |
| Washington | 2.6 | 751 | (153) |
| West Virginia | 0.5 | 147 | (1,280) |
| Wisconsin | 1.9 | 544 | (1,467) |
| Wyoming | 0.2 | 66 | (579) |
| DC | 0.4 | 105 | (913) |
| Total | 107.3 | 30,983 | (135,973) |

Source: Civic Economics

TABLE 8: LAND USE IMPACTS - THE BOTTOM TENS

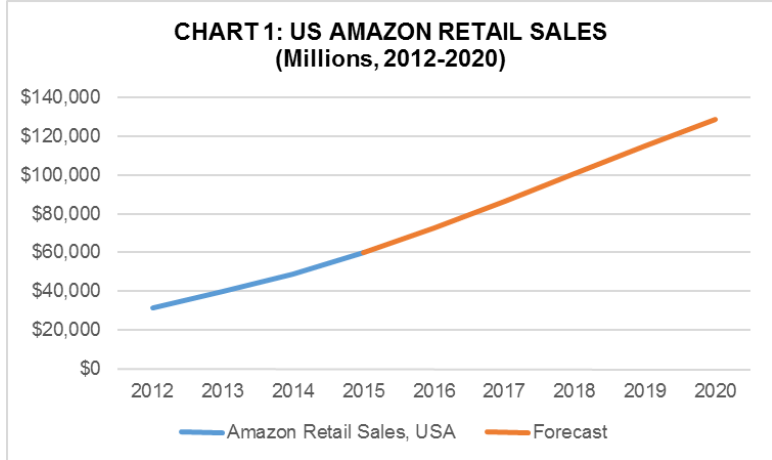
| Displaced Retail Square Footage | | Equivalent Shops | | |
|--|--------------|-------------------------|----------------|-------|
| | Millions | | | |
| 1 | California | 13.9 | 1 California | 4,010 |
| 2 | Texas | 9.1 | 2 Texas | 2,628 |
| 3 | New York | 7.8 | 3 New York | 2,242 |
| 4 | Florida | 6.3 | 4 Florida | 1,818 |
| 5 | Pennsylvania | 4.5 | 5 Pennsylvania | 1,291 |
| 6 | Illinois | 4.5 | 6 Illinois | 1,289 |
| 7 | New Jersey | 3.6 | 7 New Jersey | 1,052 |
| 8 | Ohio | 3.6 | 8 Ohio | 1,047 |
| 9 | Virginia | 3.0 | 9 Virginia | 867 |
| 10 | Michigan | 2.9 | 10 Michigan | 851 |

| Displaced Jobs | | States with Job Gains | | |
|-----------------------|----------------|------------------------------|------------------|-------|
| 1 | California | 21,251 | 1 Kentucky | 9,203 |
| 2 | New York | 19,536 | 2 Indiana | 6,611 |
| 3 | Texas | 11,486 | 3 Pennsylvania | 5,091 |
| 4 | Florida | 10,306 | 4 Tennessee | 4,849 |
| 5 | Ohio | 9,124 | 5 Arizona | 4,632 |
| 6 | Illinois | 7,802 | 6 Delaware | 2,074 |
| 7 | Michigan | 6,985 | 7 South Carolina | 1,272 |
| 8 | North Carolina | 6,881 | 8 Nevada | 1,050 |
| 9 | Maryland | 5,982 | | |
| 10 | Massachusetts | 5,683 | | |

Source: Civic Economics

FORECASTING

While over \$1 billion in tax revenues, 135,000 retail jobs, and 107 million square feet of commercial space are tremendous losses at the state and local level, we must admit that this study substantially undersells the magnitude of the impact. Those numbers represent what we calculate occurred in 2014, when Amazon achieved roughly \$48 billion in United States retail sales.



Our analysis suggests Amazon grew domestic retail sales by nearly 25% to \$60 billion in 2015. Although that number is large, it would only place it as the eighth largest retailer trailing Wal-Mart, Target, Walgreens, and Costco among others.^{ix}

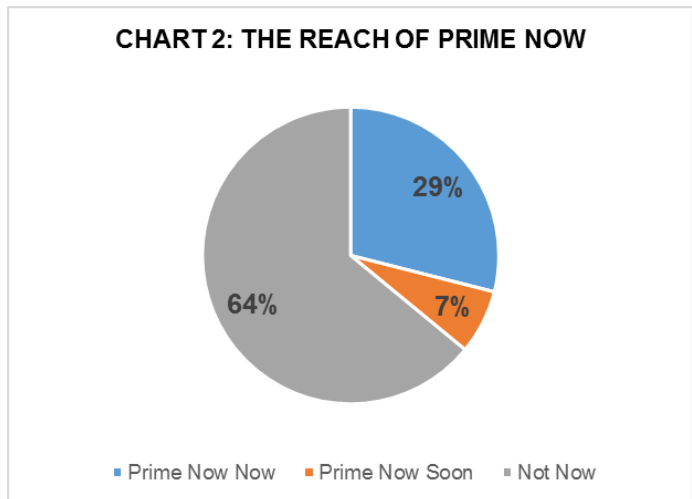
Even assuming that Amazon’s domestic retail growth slows in the coming years, that number could reach \$128 billion in 2020. Should even that conservative growth estimate come to pass, these impacts would grow more than two and a half times.

How would Texas, for example, fill a \$143 million budget hole in property tax collections, resulting from the loss of more than 24 million square feet of formerly viable commercial space, not to mention 30,000 fewer retail jobs? Even a small state like Oklahoma, if it doesn’t close the sales tax gap in the coming years, will face nearly as big a budget hole as Texas.

Prime Now as a Growth Driver

In 2005, Amazon began testing a subscription service called Prime; for a flat annual fee, members would receive free shipping on goods warehoused by the company. Most recently, in December 2014, Amazon rolled out its Prime Now service in parts of Manhattan, promising to deliver a narrower range of products to Amazon Prime subscribers within two hours at no cost (or within an hour for \$7.99). Just over a year later, Prime Now is available in 23 metro areas reaching a potential population of 92.3 million people, 29% of the United States population, with another 7% in line for the service very soon.

This concept, almost instant delivery of “tens of thousands” of items with more to be added has been part of a major shift in many of Amazon’s practices from their growing acceptance of sales taxes to bringing more distribution centers closer to the population bases of cities. The further expansion and adoption of Prime Now will affect brick and mortar retailers even more as one their major advantages of immediate receipt of goods is rendered moot. If Prime Now can replace an



occasional dash to the supermarket or drug store, consumer habits may change rapidly.

Future Implications

Particularly at the local level, communities must begin to evaluate their exposure to these trends and adjust expectations accordingly. Recovery in the American economy, particularly in wealthier communities, raised expectations everywhere. The trends depicted in this report suggest that officials should not plan for retail to return to the levels seen a decade ago, that land use plans should design for a smaller share of storefront retail, and that they must most importantly develop a new approach to allocating the property tax burden fairly.

CONCLUSION

As we stated at the outset, 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 convenience that Amazon offers.

Amazon provides a valuable convenience, one that tens of millions of households (ours included) are willing to pay \$99 a year to maximize. We do not believe, though, that Americans yet comprehend the nature of the tradeoffs to come. They may be asked to accept an increase of hundreds of dollars in annual household tax burden to pick up the slack from the stores they visit less often. They may be required to fund redevelopment efforts around struggling commercial districts and failed shopping centers, or to live with the boarded up storefronts. The already constrained job market for entry level workers will soon shrink further.

As tax fairness initiatives have gained the upper hand to begin closing the sales tax gap in many states, those that remain will face an ever-widening sales tax gap and budget shortfall. We also hope this study will contribute to a reasoned consideration of the potentially more impactful land use challenges presented.

American communities have adapted to monumental changes in the retail sector before, from the arrival of chain stores at the beginning of the 20th Century to the proliferation of big box stores at the end, but our adaptations have not always been successful. This wave of change, though, will go beyond who owns the store and how it is managed, it will see the store relocate to remote industrial parks and delivery vans. Managing these changes will be a defining challenge for 21st Century American communities.

ⁱ <http://www.bloomberg.com/news/articles/2015-06-30/amazon-mexico-says-hola-with-debut-of-new-online-storefront>

ⁱⁱ <http://business.financialpost.com/news/retail-marketing/amazon-ca-sells-four-times-as-much-as-its-biggest-online-rivals-in-canada>

ⁱⁱⁱ <http://www.forbes.com/sites/jeffbercovici/2014/02/10/amazon-vs-book-publishers-by-the-numbers/>

^{iv} <http://www.dealerscope.com/common/items/biz/ds/pdf/2014/03/top1012014.pdf>

^v <http://taxfoundation.org/article/state-and-local-sales-tax-rates-midyear-2015>

^{vi} <http://taxfoundation.org/blog/how-high-are-property-taxes-your-state>

^{vii} <http://taxfoundation.org/article/state-and-local-property-taxes-target-commercial-and-industrial-property>

^{viii} http://www.mwpvl.com/html/amazon_com.html

^{ix} <https://nrf.com/2015/top100-table>