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Current Private Indicators on the Wisconsin Economy: Small Business Employment and Consumer Spending

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I use two private data sources to analyze the labor market and consumer spending in the state of Wisconsin. I first analyze labor market data from a sample of mostly small businesses. With the onset of the COVID-19 pandemic, by mid-April 2020 48% of these businesses were closed, with employment down 59%. A sharp recovery followed, which flattened out in the summer, and tailed off in the fall of 2020 with the spike in virus activity. After months of relative stability from November 2020-April 2021, employment has grown sharply over the past three months. Employment has largely returned to pre-pandemic levels, after increasing 18 percentage points since mid-April. While employment has grown, open locations have leveled off, with roughly 1 in 6 small businesses closing permanently since March 2020.

The food and drink sector had a larger 72% employment drop in April 2020, as locations remaining open had minimal staffing. As these establishments reopened, they brought back more workers. However this sector's recovery stalled earlier and employment suffered a larger decline during fall 2020, which stabilized into 2021. This sector also saw strong growth over the last three months, but employment still remains 13% below pre-pandemic levels. There were also more permanent closures: roughly 1 in 4 food and drink businesses in Wisconsin closed permanently since March 2020.

I also analyze transactions data on consumer spending, which had a sharper and more sustained recovery than the labor market. After plummeting in April 2020, spending in Wisconsin recovered rapidly, with year-over-year gains from May throughout the rest of the year. Consumption was supported by income growth, and changes in consumption patterns cushioned the impact of the pandemic. Consumption has seen strong growth during the spring of 2021, fueled both by recovery from the pandemic and usual cyclical factors. Relative to mid-July 2019, the two-year cumulative growth is 8.2% in Wisconsin and 5.6% nationally.

During the pandemic, consumers shifted away from social spending toward spending at home, but in recent months many of these trends have reversed. Spending on groceries soared while restaurants plummeted during the pandemic. But restaurants have seen strong growth in 2021, with spending now up 30.1% from pre-pandemic levels while grocery spending has cooled but is still up 9.6%. During the pandemic, consumers spent less on events and travel, and more on home goods. But events and travel have seen strong growth in 2021, now surpassing pre-pandemic levels. After spiking early, online spending has remained high (up 28.9%), while in-store have surpassed pre-pandemic levels (up 21.9% and 8.7% above 2019 levels) after a sharp fall in the pandemic. Recent weeks have seen a return of in-store sales and a cooling of online activity as virus activity in the state abated and remaining health restrictions have eased.

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Introduction

The COVID-19 pandemic has led to unprecedented social and economic disruptions around the globe. During the early stages of the pandemic economic activity was changing so rapidly that economists and other analysts sought out new data sources. Official government statistics, which are typically compiled at monthly frequency and released with a significant lag, were of less guidance when the economy was changing rapidly from day-to-day as the virus spread and governments imposed public health restrictions on economic activity. Thus new private sources of high-frequency economic data showed their usefulness. While the initial upheavals of the pandemic and associated lockdowns and reopening have long since passed, the economy remains in largely uncharted territory as the pandemic persists. Moreover, the timeliness and granularity of these new private data sources allow for novel and timely insights on economic activity, even though they are not as comprehensive as the official government statistics. In this brief I use two private data sources to analyze the labor market and consumer spending in the state of Wisconsin. This provides insight on how the state economy has fared since the start of 2020, through the pandemic, to the present.

Data Sources

For the labor market, I use data from Homebase, a company that provides scheduling software to tens of thousands of small businesses across the US. As described by [Bartik et al. \(2020\)](#), “This scheduling software generates granular data on exact hours worked every day for all hourly employees at customer firms, providing a much higher-frequency and more detailed picture of employment and hours than traditional labor market datasets. This greater detail and higher frequency come at some costs; Homebase’s customer base is disproportionately composed of small firms in food service, retail, and other sectors that employ many hourly workers.” This data is available daily, with individual and establishment-level observations on locations in operation, employment, and hours worked. In this brief I use data through July 18, 2021.

For consumer spending, I use weekly transactions data from Earnest Research. This dataset provides a broad sample of aggregated consumption/transaction data, from a sample of roughly 6 million households (with 25-30 million credit and debit cards) nationwide. The data is weekly, and is released with a 1 week delay, with the latest data for the week ending July 14, 2021. The data set tags individual transactions at recognized brands and merchants, a collection of roughly 2,000 merchants, and then aggregates them into categories and sub-categories. Thus the Earnest data misses local retailers, non-chain restaurants, and others, as well as cash transactions. Nonetheless, in other work I have shown that aggregate Earnest sales match national retail sales data quite well, particularly for certain categories, where the Earnest data captures 80-90% of the variation in official statistics.

Furthermore, the Earnest data has multiple levels of disaggregation, and thus allows for more granular information than official data. The data allow for geographic

decomposition (by region, state, CBSA, and city), although with varying degrees of coverage, and so varying accuracy. The data also has decompositions by category (apparel, grocers, department stores, etc.) and sub-category (i.e. grocers divided into: discount grocers, meal kits, online grocers, specialty grocers, and supermarkets). Finally, the data has separate metrics (sales, transactions, and sales per transaction), as well as separate purchasing channels (in-store, online, or store card). The Earnest data thus provides interesting insights which were unavailable elsewhere.

Labor Market Data

As discussed above, the Homebase data provides an interesting and timely point of comparison with official data from the Bureau of Labor Statistics. Homebase is less comprehensive, focusing on smaller businesses with particular concentration in the food service industry, which has been one of the hardest hit sectors during the pandemic. Moreover, Homebase data is timely and granular: we have daily data through July 18, 2021 (while the BLS state-level monthly releases are typically delayed six weeks), and the data allows us to separately track business closings, employment, and hours worked.

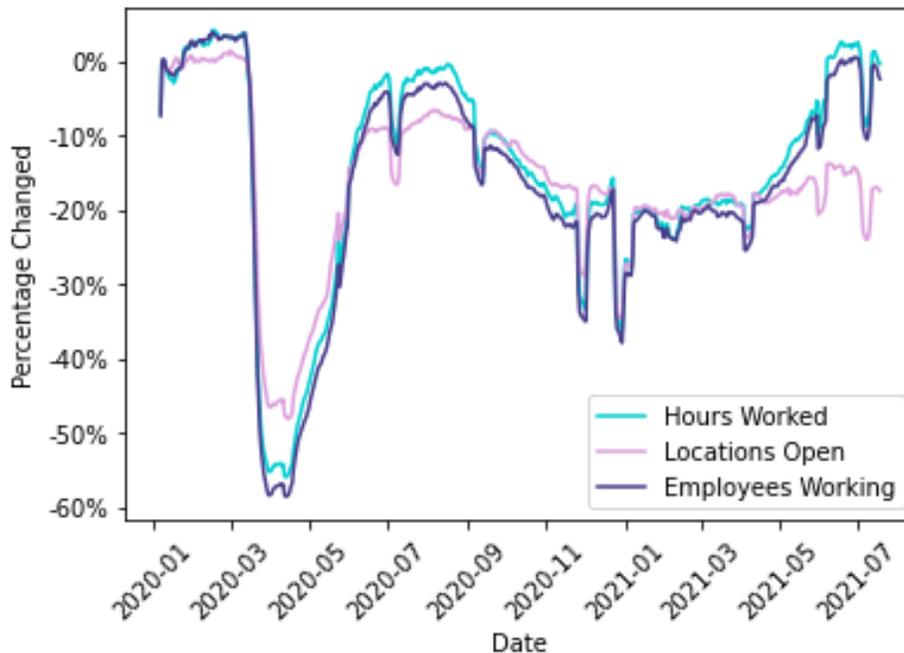


Figure 1: Changes in employees working, locations open, and hours worked at small businesses in Wisconsin. 7-day averages of daily data.

In particular, Figure 1 shows summary data for all locations in Wisconsin, showing the same-location changes in the number of employees working, the number of locations open, and the total hours worked. That is, I look at locations which were active between March and June in 2019 and also were active on March 1, 2020. Each data series is indexed to the median value for that day of the week during the month of January, with the percentage changes shown. There are very strong day-of-week effects throughout the

pandemic, with more locations closing and fewer employees working on the weekends. To ease interpretation, I show 7-day averages. Since hours and employment generally track each other, I mostly focus on openings and employment in the following discussion.

The data shows relative stability during early March 2020, followed by a rapid decline in all measures with the onset of the pandemic, bottoming out on April 12, 2020. At the low points through April, on weekdays roughly 40% of locations were closed, and roughly 50% of employees were working. On weekends, these numbers dipped down to roughly 67% declines in openings and larger declines in employment. The figure shows the averages of these daily effects, which resulted in as many as 48% of locations closed and a 59% reduction in employment during April.

There was a sharp recovery which began in May 2020, with substantial reopening and hiring, which leveled off around mid-June. From that point through September, there was around a 7% reduction since March in locations open, which may reflect permanent closures. However employment continued to grow until early July, leveling off down around 3%. The stronger employment growth suggests a reallocation of workers across companies, with growth in employment-per-location at surviving businesses.

Then from September through November, employment began to fall once again and more locations closed. This was precisely the period during which the COVID-19 activity in Wisconsin spiked. From early September through mid-November the seven-day average of new cases in the state increased by a factor of ten, from around 700 to a peak of over 7,000. From the peak in mid-November, COVID cases have fallen again (with a brief spike after the holidays), and have been back below 700 in early March 2021. This period of declining virus activity coincides with a stabilization, but not an improvement, in the economic conditions reflected in the data. Apart from notable dips for the holidays of Thanksgiving and Christmas/New Year's, the Homebase data series were all relatively stable from November 2020 through April 2021.

Over the last three months, starting in mid-April, there has been a strong recovery in employment and hours worked. Prior to the Fourth of July holiday, employment had recovered to even with pre-pandemic levels (even increasing 0.5% on some days), while hours worked were about 2% above pre-pandemic levels. Activity has tailed off just slightly in the weeks since, with employment down about 1% and hours unchanged from pre-pandemic levels. This is an improvement of about 18 percentage points in each series since mid-April. Locations open changed much less, ending around 17% down from pre-pandemic levels, which suggests these closures are permanent. That is, roughly one in six of the small businesses that were open and in March 2020 have closed permanently.

Figure 2 shows the same data but now for what Homebase calls the “food and drink” industry, essentially restaurants and bars. The overall patterns are similar to Figure 1, with a few important differences. This sector saw a sharper drop and less of a recovery than the broader labor market. Hours and employees working track each other very closely, but there is larger difference with locations open. That is, at the depths of the

crisis roughly 58% of food and drink locations closed, but employment fell by over 72%. This reflects significantly reduced staffing, as restaurants moved toward takeout and delivery during the lockdown.

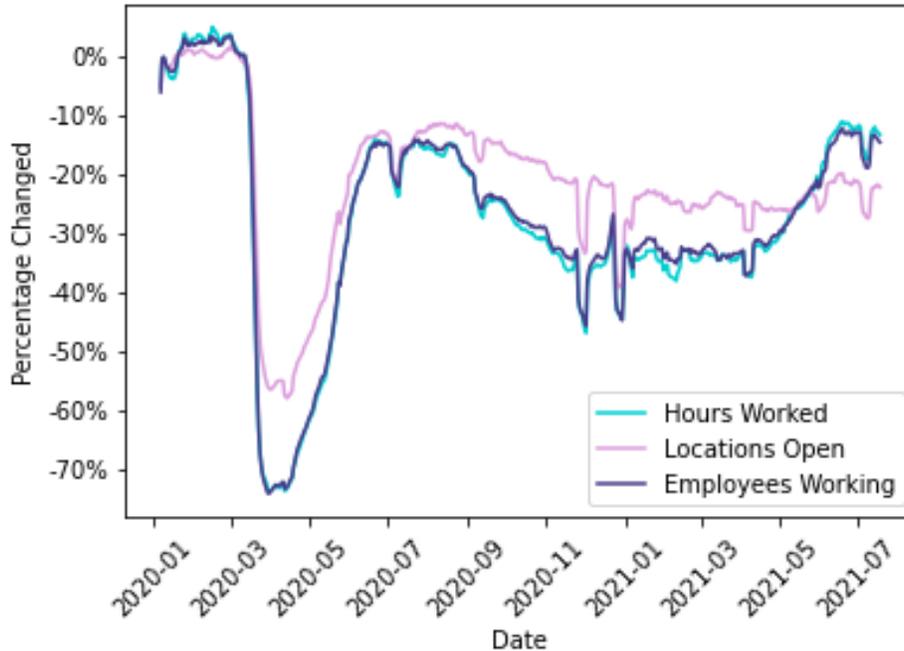


Figure 2: Changes in employees working, locations open, and hours worked at small businesses in the food and drink industry in Wisconsin. 7-day averages of daily data.

There was also a strong recovery in this sector starting in mid-April 2020, but it leveled off by mid-June. Over the recovery, the gap between locations open and employment narrowed. That is, not only were food and drink establishments open, but they expanded their services relative to the lockdown period, and were able to bring back more workers. As with all locations in Figure 1, the recovery stalled in mid-June 2020 but at a lower level in this sector. Rather than recovering to near baseline levels, employment remained down around 12% before tailing off again. This suggests a higher rate of permanent closures and employment loss in the food and drink industry, which has faced lower demand as well as continued capacity restrictions in many locations.

As with all industries, closures increased and employment fell from September through November 2020, with growth of virus activity in the state. But while at all locations these measures moved together, in the food and drink sector fell by more than openings, as in the initial lockdown period. Again, this suggests a move toward reduced staffing at those locations remaining open. As with all industries, the food and drink sector was relatively stable from November 2020 through April 2021, but has seen strong growth in employment and hours worked over the past three months, but much less change in open locations.

Prior to the Fourth of July holiday, employment was down 13% and hours worked were down about 12% from pre-pandemic levels, improvements of about 20 percentage points in each series since mid-April. Activity has tailed off just slightly in the weeks since, with employment down about 14% and hours down 13% from pre-pandemic levels. Thus the food and drink sector has bounced back, but still lags the broader economy. In the most recent data 22% of locations remained closed, down just slightly from levels around 26% in April, again suggesting permanent closures. That is, roughly one in four of the small food and drink businesses in Wisconsin that were open and in March 2020 have closed permanently.

Consumer Spending

Turning to consumer spending, the Earnest Research data shows a similar picture during the initial crash with the onset of the COVID-19 pandemic, but a much more rapid and sustained recovery. That is, while consumption dropped as economic activity dropped during the initial lockdown phase, consumers were able to smooth the declines and shift their spending habits. This meant shifts in the channel of spending, with an increasing share of sales online, as well as in the makeup of their consumption bundles, as spending away from home fell while spending at home increased. Moreover, even though employment fell over the course of 2020, incomes grew during the year, in large part due to the federal fiscal transfers which provided direct relief payments and enhanced unemployment benefits. Thus income growth supported overall spending growth, even as there were important changes in the makeup and manner of spending.

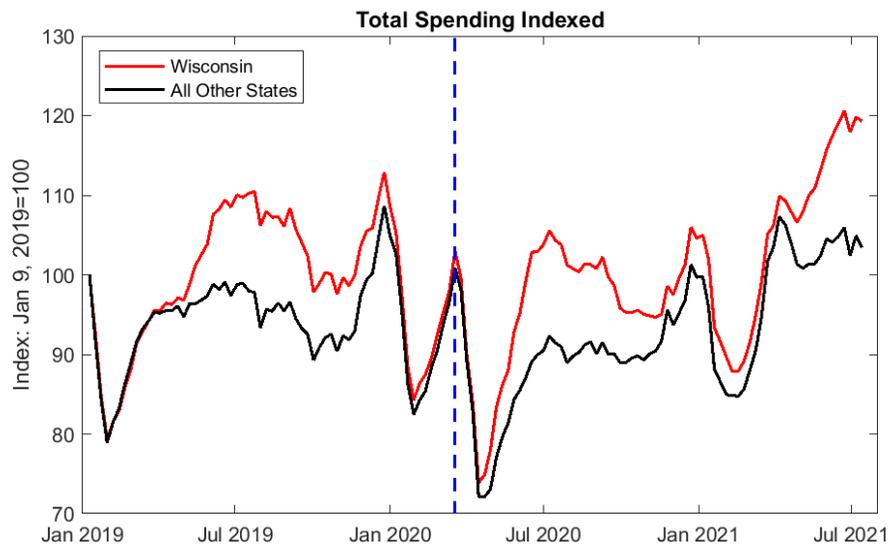


Figure 3: Total spending in Wisconsin and the rest of the United States, indexed levels.

Figure 3 shows how consumption has changed, both nationally and in Wisconsin, through the COVID-19 pandemic. Because of the strong seasonal patterns, particularly the large spending growth around the end-of-year holidays, I show a longer sample going

back to 2019. Moreover, since the recent data in 2021 would be relative to a much smaller base from the early phase of the pandemic, I plot indexed levels rather than growth rates.

Overall, the trends were very similar nationally and in Wisconsin, with slightly larger declines during the pandemic nationwide than in the state. In particular, starting in early 2020 there was a usual post-holiday decline and recovery just as in 2019. With the onset of the pandemic, shown with the blue dashed line, there was a rapid decline in consumption spending. Relative to the Homebase labor market data, there was a more rapid and sustained recovery. After hitting bottom in mid-April there was sharp growth in consumption, which recovered to positive year-over-year growth by May. During this reopening and recovery period, spending growth was stronger in Wisconsin than the rest of country.

Later in the fall spending growth in Wisconsin slowed and dropped below the national average, again corresponding to the growth in virus activity. However this slowing was less dramatic in consumption, as year-over-year growth remained positive throughout the year. Spending nationally and in the state surged during the holidays into January 2021, before falling off in a typical post-holiday pattern before recovering in the spring.

Spending in Wisconsin has a stronger cyclical pattern than nationwide. For example, the figure shows substantially higher spending in the state each July, including the most recent data. To strip out growth due to seasonal factors, we can look at year-over-year changes at the same date. Relative to mid-July 2019, the two-year cumulative growth is 8.2% in Wisconsin and 5.6% nationally.

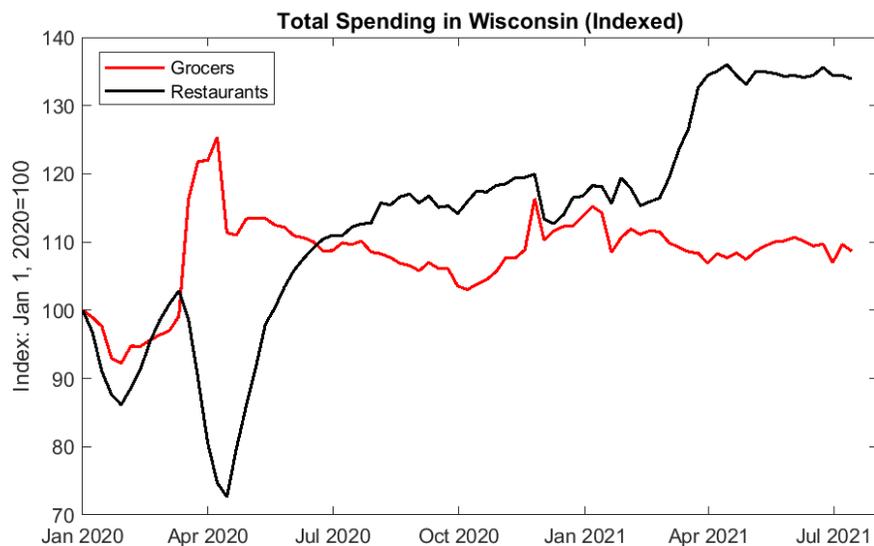


Figure 4: Total spending at grocers (red line) and at restaurants (black line) in Wisconsin, indexed levels.

Figures 4 and 5 illustrate some of the shifts in consumption patterns since the pandemic, as consumers have decreased spending on goods require social contact or travel while increasing spending on activities at home. Again these figures show indexed levels, but now to focus on the dynamics during the pandemic, they are indexed to January 1, 2020.

Figure 4 shows spending at grocery stores and restaurants. Grocery store spending spiked in March and April 2020 as consumers stocked up for the uncertain lockdown period, while spending at restaurants plummeted during this period. Spending at restaurants recovered rapidly and spending at grocers remained elevated, and they converged in July of 2020. Throughout the rest of 2020 and into early 20201, they largely moved in tandem, apart from the notable growth in grocery store spending for Thanksgiving. Not shown here is the substantial reallocation which has occurred within the restaurant industry, away from full service restaurants and indoor dining toward quick service restaurants and takeout. Even as overall restaurant spending has recovered, these shifts have remained. Over the last few months the levels have diverged, with growth in restaurant spending accompanying the removal of more public health restrictions, while grocery spending has fallen. Relative to pre-pandemic levels of March 11, 2020, restaurant spending is up 30.1% while grocery spending is up 9.6%.

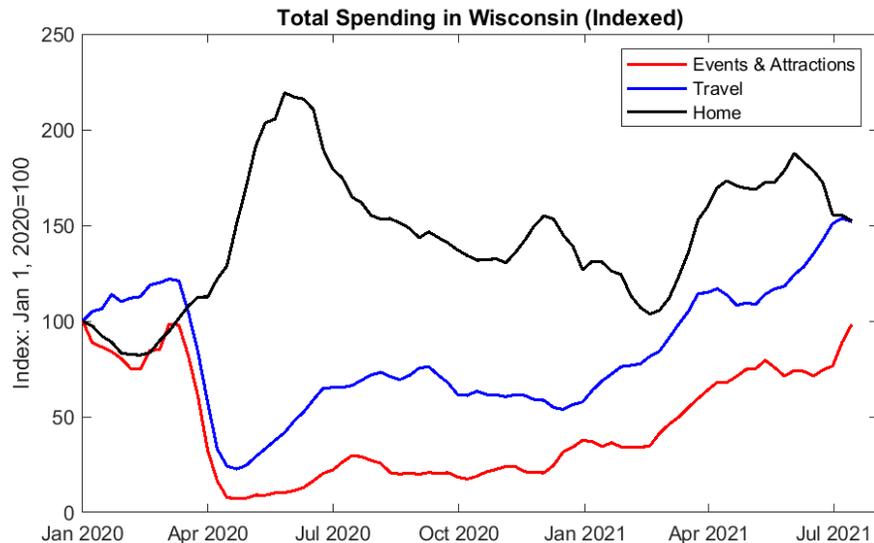


Figure 5: Total spending on events & attractions (red line), travel & transportation (blue line), and home goods (black line) in Wisconsin, indexed levels.

Figure 5 shows how consumers shifted away from spending outside the home toward in-home spending during the pandemic, and how those trends have reversed in recent months. The two major spending categories that have been most affected since the pandemic have been on events & attractions (including movies, concerts, and sporting events), which bottomed out at over 90% down, and travel & transportation which had an 82% drop. Although there were movie theater reopenings, events largely remained

dark throughout 2020. Through the spring of 2021, more events have reopened to spectators (often with limits initially, which were then relaxed), and movie spending has increased. Thus spending in the sector has recovered rapidly in recent months, and is now 0.5% above pre-pandemic levels (of March 11, 2020) in the most recent data.

After some growth during reopening, travel spending remained flat through late 2020, but has seen sustained growth in 2021, flattening in the spring, and surging in recent months. After this relatively strong recovery, travel spending is up 25.5% from pre-pandemic levels in the latest month. Some of this reflects cyclical factors with strong summer travel. Relative to July 2019, travel spending is up 7.2%. With limited travel and outings for entertainment, along with the transition of many to working from home, sales on home goods and home improvement soared in 2020. At the peak in May, sales were more than double levels in March. Although spending in the sector has cooled from these boom levels, it remains high, up 50.0% from pre-pandemic levels in the most recent data.

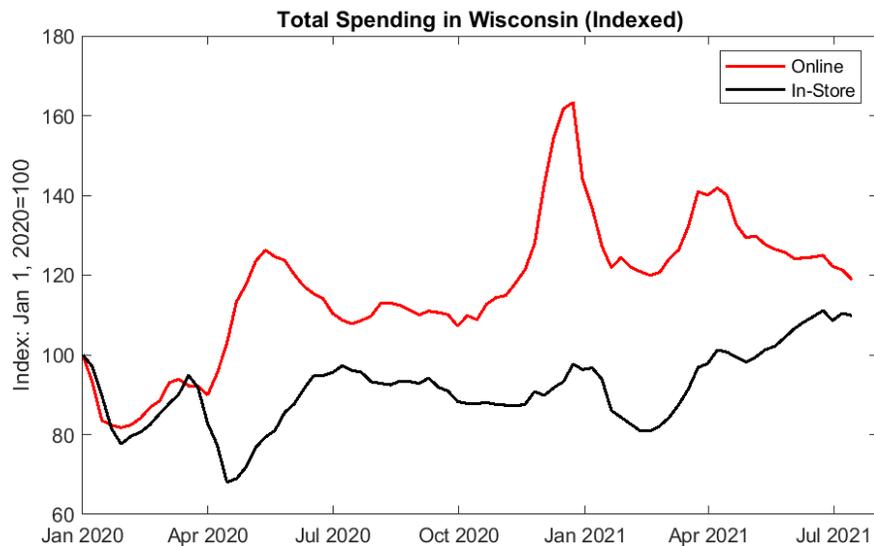


Figure 6: Total spending online (red line) and in-store (black line) in Wisconsin, indexed levels.

Figure 6 shows how the buying patterns of Wisconsin consumers shifted from in-store toward online activity during the pandemic. As the virus spread, and particularly after the statewide “Safer at Home” order on March 25, 2020 closing non-essential businesses and limiting travel, in-store sales fell sharply. Total sales (whose averages were shown in Figure 3) were down 15% at the end of March 2020, but in-store sales were down 30% at that point, while online sales ramped up over that period. Thus the ability to move transactions online provided cushion and limited the drop in overall spending.

During the reopening and recovery period, online sales growth slowed but remained high, while in-store sales growth improved but remained low. From July through the end of 2020, in-store sales were down around 6-8% while online sales were up 18-20%. The

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holiday season led to growth in both channels of spending, with a particularly notable spike in online sales, and in-store sales breaking into positive ground in early January. With the subsiding of the holiday spike, online and in-store sales have largely moved in tandem during 2021, but online sales have cooled in recent weeks as vaccination rates have increased and service capacity has returned. The spending growth from mid-February onward has pushed in-store sales levels up to 21.9% over pre-pandemic levels of March 11, 2020, while online sales are up a very strong 26.6% from that point. Some of the in-store sales recovery reflects cyclical factors, as in-store sales are up 8.7% from July 2019. By contrast, the on-line sales also reflect long-run trends, as online sales are up 54.4% from July 2019.

While online sales played an important role in allowing consumers to cushion the impact of the pandemic shock, they have also diverted sales from local businesses. That is, while statewide businesses have increased their online presence during the crisis, much of the online transactions were through national retailers like Amazon.