

The Impact of COVID-19 on U.S. Employment and Hours: Real-Time Estimates With Homebase Data*

André Kurmann
Drexel University

Etienne Lalé
Université du Québec
à Montréal

Lien Ta
Drexel University

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Abstract

We use worker-firm matched daily data from Homebase, a scheduling and time clock software provider, to come up with new real-time estimates of the impact of the COVID-19 crisis on U.S. employment and hours worked. Focusing on Leisure & Hospitality and Retail Trade, two of the hardest-hit sectors by the crisis, we find four key results: (1) Employment in the two sectors contracted by an estimated 19.8 million between mid-February and the end of April – a staggering 60% decline; (2) one third of this decline is due to businesses reducing employment to zero; (3) average weekly hours of workers still employed declined by about 10%; (4) there are first signs of a recovery with 15% of previously inactive establishments having returned to activity and average hours worked of employees increasing. The results imply that the official estimates from the BLS March employment report show only the tip of the iceberg, and that the April report due to be released on May 8 will show much worse numbers. The extent of the contraction shown in this report will depend importantly on how the BLS adjusts its birth/death model to take into account of business inactivity.

*First version: April 28, 2020. Kurmann: Drexel University, LeBow College of Business, School of Economics, 3220 Market Street, Philadelphia, PA 19104 (email: kurmann.andre@drexel.edu); Lalé: Université du Québec à Montréal, Department of Economics, C.P. 8888, Succ. centre ville, Montréal (QC), H3C 3P8 Canada (email: lale.etienne@uqam.ca); Ta: Drexel University, LeBow College of Business, School of Economics, 3220 Market Street, Philadelphia, PA 19104 (email: lien.t.ta@drexel.edu). We thank Homebase and especially Ray Sanza for generously making their data available and for amazing support. Visit <https://joinhomebase.com/data> for further information. All errors are our own.

1 Introduction

The COVID-19 crisis has unfolded with tremendous speed and is affecting labor markets in unprecedented ways. This makes it all the more important to have timely and accurate measures of the actual impact. Unfortunately, most official indicators are released only with considerable delay. For the U.S., the latest estimates from the Bureau of Labor Statistics (BLS) employment report pertain to mid-March – before most of the effects of the crisis were felt – and the next estimates for mid-April are only due to be released on May 8. Moreover, the estimates for mid-March paint starkly different pictures. While employment according to the establishment survey (CES) declined by 0.7 million between mid-February and mid-March, employment according to the household survey (CPS) declined by almost 3 million.

In this report we use worker-firm matched daily data on employment and hours worked from Homebase, a scheduling and time clock software provider used by more than 60,000 businesses in the U.S., to come up with new real-time indicators of the labor market impact of the COVID-19 crisis. We benchmark the information from Homebase against administrative data from the Quarterly Census of Employment and Wages (QCEW) to assess its representativeness and construct industry-specific estimates of employment and hours worked. Our empirical approach is similar to the construction of the CES estimates but differs in crucial aspects that are important to capture the speed and extent of the crisis.

In this version of the report, we focus on Leisure & Hospitality and Retail Trade, two sectors that appear to be among the most exposed to the business disruptions and stay-at-home orders caused by the COVID-19 crisis. We find four key results:

- (1) Employment in Leisure & Hospitality and Retail Trade contracted by an estimated 19.8 million – from 32.3 million in mid-February to 12.5 million by the end of April – a staggering 60% decline. Most of this decline occurred in the second half of March as stay-at-home orders came into effect.
- (2) One third of the employment decline is due to businesses reducing employment to zero.
- (3) Average weekly hours of employees still working declined from about 28 hours in mid-February to about 25.5 hours by mid-April, a reduction of 10%.
- (4) There are first signs of a recovery, with 15% of previously inactive businesses having returned to activity and average hours worked of employees increasing.

The results imply that the employment losses reported by the BLS in its March employment report, though large by historical standards, show only the tip of the iceberg and that we should expect much worse estimates in the April employment report. This assessment is broadly consistent with the over 30

million of initial unemployment claims filed since the beginning of the crisis, taking into account that a substantial fraction of workers who lost their job may still not have been able to file because of processing delays or may not file at all. Our results also imply that the CES underestimates the severity of the employment contraction because the CES does not directly account for job losses from establishment inactivity but instead adjusts its estimate with a net establishment birth/death model based on past data. The BLS has recently announced that it will modify its birth/death model with the release of the April report, but no details have been given. Our report provides a direct estimate of the importance of establishment inactivity and, going forward, the extent to which the labor market is starting to recover as restrictions are lifted and the economy opens up again.

While the HB data offers a remarkable amount of real-time information, it also comes with limitations that may lead us to overestimate the extent of the contraction. In particular, the majority of workers tracked in the HB data are hourly-paid employees; and the HB client base consists mostly of small businesses that, although representative of small businesses in Leisure & Hospitality and Retail Trade, may not capture the response of larger businesses to the crisis. To assess this issue, we perform various robustness checks and find that even with conservative assumptions about the employment decline among larger businesses, the estimated employment loss for Leisure & Hospitality and Retail Trade amounts to 16.5 million – still a staggering number.

Our report complements a number of concurrent efforts to measure the impact of the COVID-19 crisis on U.S. labor markets. Homebase on its [website](#) as well as [Bartik et al. \(2020\)](#) report percent changes in total hours worked, employed workers, and active establishments in the HB data. We contribute to this analysis by benchmarking the HB data to administrative population counts and estimating the effects of the crisis on employment *levels*, establishment *counts*, and *number* of hours worked. This allows us to directly compare our results to other estimates and in particular the official BLS estimates. In terms of empirical methodology, our report is related to [Cajner et al. \(2020\)](#) who use micro-data from ADP, the biggest payroll processing company in the U.S., to provide real-time estimates of the employment impact of the crisis. While they also estimate an unprecedented employment decline on the order of 18 million for the U.S. private-sector as a whole, their estimate for Leisure & Hospitality and Retail Trade is markedly smaller than ours. A substantial part of this difference comes from the fact that like the CES, they only consider continuing establishments in their estimation and therefore do not capture job loss from establishment inactivity. Another paper that estimates the employment losses from the crisis is [Coibon et al. \(2020\)](#). Even though their empirical methodology is different from ours, they also estimate a dramatic contraction in U.S. employment.

2 The Homebase Data

The Homebase (HB) data consists of daily records of individual hours worked and wages of employees, linked longitudinally to the establishment where they work and the firm that controls the establishment. Each establishments comes with zip-code level location and an industry classification. The data is recorded in real-time through HB’s proprietary software and is used by many of the businesses for payroll processing. HB provides free access to the data to researchers and updates the data regularly with the latest observations. The data used for this report extends from January 1, 2018 to April 25, 2020 and is stripped of all confidential information about individuals and businesses.¹

As detailed in the online [Appendix](#), as of early 2020 the available data covered about 500,000 active employees and about 60,000 active establishments for the U.S. The employees are primarily hourly-paid. Most establishments are small and operate in customer-oriented services and retail. In this first version of the report, we consider establishments in the industry categories “retail”, “leisure & entertainment”, and “food & drink”, which correspond to the Retail Trade (NAICS 44-45) and Leisure & Hospitality (NAICS 71 and 72) sectors in official labor market statistics. We focus on these two sector of the U.S. labor market because they appear to be particularly vulnerable to the disruptions and stay-at-home orders caused by the COVID-19 crisis, and because the HB data offers good coverage for these sectors. In future versions of this report, we will try to expand our analysis to other service industries.

To benchmark the HB data, we use information from the QCEW, which also serves as the sample frame for the CES. The QCEW is derived from state unemployment insurance records and the publicly available data contains population counts of establishments and employment as well as wages by establishment size category, industry, and geography. This information becomes available about 6 months after the end of the quarter.² As shown in the online [Appendix](#), the HB data looks broadly representative in terms of average employment for establishment sizes up to 50 employees. But the HB data under-represents average size for larger establishments and contains only few establishments with 50 employees or more. We discuss this issue in detail below and provide robustness checks on our estimations.

3 Empirical Methodology

One of our main goals is to compute employment and hours estimates that can be compared to the official statistics published by the BLS in their monthly [Employment Situation Report](#). For employment, we

¹We update our analysis with the last available week of data by the middle of the following week.

²Currently, the last available QCEW data is for the third quarter of 2019. Tabulations by establishment size category are available only for the first quarter of the year; i.e currently the first quarter of 2019.

start with the headline number from the CES for February 2020 and then use the HB data to estimate weekly employment as

$$\widehat{E}_t = \widehat{E}_{t-1} \times \frac{\sum_i \omega_i e_{it}}{\sum_i \omega_i e_{it-1}}, \quad (1)$$

where ω_i is the sampling weight associated with HB establishments i ; and e_{it} is establishment employment in week t . The sampling weights are constructed as the inverse of HB to QCEW establishment counts per establishment size \times industry allocation cells.

This estimation is conceptually similar to the “weighted link-relative technique” that the BLS uses to estimate monthly employment from the CES, but there are some important differences.³ First, our measure is a real-time estimator that offers a weekly update of the speed and extent to which the COVID-19 crisis is affecting the labor market. Second, we include employment of all establishments present in the HB data. In contrast, the CES estimation has so far included only the establishments that report positive employment in *both* month $t - 1$ and t , and then adjusted separately for establishment birth/death with an econometric model based on past data.⁴ Third, we measure establishment employment e_{it} as the number of workers with positive hours in week t , whereas the CES defines employment as the number of workers on payrolls who received pay for any part of the pay period that includes the 12th day of the month, independent of whether they actually worked or not in that week. As we show below, these differences are crucial in a situation such as the current crisis where the number of active establishments and the number of employees actually working changes greatly within just a few days.

For average weekly hours (AWH), we proceed similarly as for employment. We start with the headline number from the February 2020 CES and then use our HB data to estimate

$$\widehat{AWH}_t = \widehat{AWH}_{t-1} \times \frac{(\sum_i \omega_i wh_{it}) / (\sum_i \omega_i e_{it})}{(\sum_i \omega_i wh_{it-1}) / (\sum_i \omega_i e_{it-1})}, \quad (2)$$

where wh_{it} is total weekly hours worked of HB establishments i . So as to reduce the effects of compositional change, we only include HB establishments that are active in both weeks $t - 1$ and t in this calculation. The estimation is different from the “link and taper technique” used to construct AWH in the CES, which adjusts the current estimate towards the previous estimate so as to keep it close to the

³See <https://www.bls.gov/web/empisit/cestn.htm> for details on the CES and estimation.

⁴The CES birth/death adjustment model is based on QCEW data over the preceding five years. See <https://www.bls.gov/web/empisit/cesbd.htm> for details and <https://www.bls.gov/ces/notices/2020/birth-death-notice.htm> for a recent announcement that this birth/death model will be modified with the April release of the CES. As a result of including employment of all establishments present in the HB data, we directly take into account employment losses due to establishment inactivity. We do not make any birth adjustment to our estimation since entry of new establishments in the HB data was relatively small between mid-February and mid-March and then came to an almost complete stop. Including any portion of this decline in entry would make the estimated employment decline even larger.

overall sample average over time. The CES estimate may therefore not capture large changes in actual AWH that occur in times of economic disruptions such as the COVID-19 crisis, whereas our estimate does because it is based on current information only.⁵

Finally, we estimate total weekly hours as

$$\widehat{H}_t = \widehat{H}_{t-1} \times \frac{\sum_i \omega_i wh_{it}}{\sum_i \omega_i wh_{it-1}}, \quad (3)$$

where, as for employment and AWH, we start with the February 2020 CES and then use the HB data to estimate forward. Total weekly hours is not directly reported as part of the CES, but we consider it as an important measure of overall labor input. Furthermore, we decompose the evolution of total weekly hours over the crisis into (i) changes due to establishment inactivity, (ii) changes in weekly hours of job stayers at continuing establishments; (iii) changes due to layoffs, furloughs and quits at continuing establishments; and (iv) changes due to new hires and recalls at continuing establishments.

4 Results

4.1 Employment

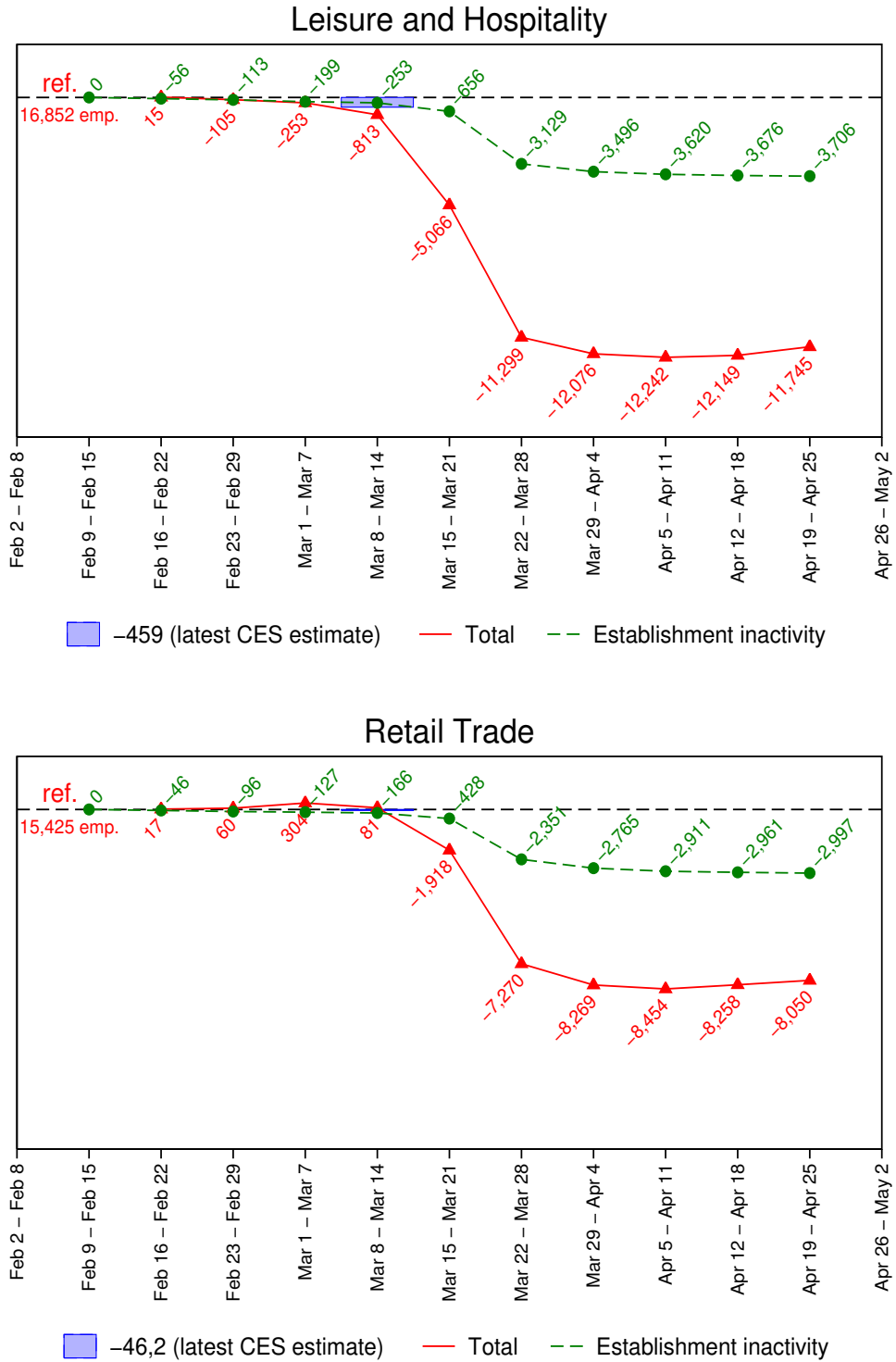
Figure 1 shows our weekly employment estimates and contrasts them with the latest CES estimates for mid-March.⁶ For Leisure & Hospitality, the estimate implies that between mid-February and mid-March, employment had already declined by 0.81 million, almost twice the -0.46 million reported for this sector by the CES March estimate. Employment then dropped dramatically between mid-March and mid-April by an estimated 11.4 million, most of it occurring during the second half of March as states imposed business closures and stay-at-home orders. Since then, employment has recovered about 0.5 million and is currently estimated at 5.1 million – 70% lower than the 16.9 million just two and half months earlier.

For Retail Trade, the situation is similar although somewhat less severe. Employment held essentially steady between mid-February and mid-March, consistent with the CES March estimate, and then declined by about 8.5 million between mid-March and mid-April. Since then, employment has recovered by about 0.4 million to a level of 7.4 million – more than 50% lower than the 15.4 million in mid-February.

⁵The link-and-taper estimate used in the CES can be expressed as $\widehat{AWH}_t = 0.9(\widehat{AWH}_{t-1} - \widehat{awh}_{t-1}) + \widehat{awh}_t$, where \widehat{AWH}_t is the official estimate and $\widehat{awh}_t = (\sum_i \omega_i wh_{it}) / (\sum_i \omega_i e_{it})$. If $\widehat{AWH}_{t-1} > \widehat{awh}_{t-1}$ in the previous month, then the current month official estimate will be raised relative to actual data, and vice versa if $\widehat{AWH}_{t-1} < \widehat{awh}_{t-1}$.

⁶Here and below, we compare our estimates to CES March estimates that are seasonally adjusted (the headline estimates usually reported) even though we do not seasonally adjust our estimates. If instead we used unadjusted CES estimates, the difference to our estimates would be even larger. See Table ?? in the Appendix for details.

Figure 1: Employment in Leisure and Hospitality (top) and Retail Trade (bottom)



Notes: Estimated employment (in thousands) in Leisure and Hospitality sector (top panel) and Retail Trade (bottom panel), constructed based on February 2020 CES estimate (week of Feb 9 – Feb 15). The solid red line shows the total change in employment. The dashed green line shows the change in employment due to establishments becoming inactive.

The estimated employment decline of almost 20 million for Leisure & Hospital and Retail Trade combined is staggering but broadly consistent with available data on initial unemployment claims. Since the beginning of March, over 30 million worker have filed new claims – an unprecedented number – and the associated employment decline for the economy as a whole is likely to be substantially larger because many workers who lost their job may still not have been able to file due to processing constraints or they may not file at all.⁷ Furthermore, even though Leisure & Hospital and Retail Trade accounted for only about 20% of total private employment before the crisis, the two sectors are among the hardest hit by the crisis and account for a disproportionate share of new claims.⁸

Interestingly, our estimates also line up closely with household-based estimates from the CPS. As shown in the online [Appendix](#), according to the CPS, employment for the economy as a whole declined by 3 million between mid-February and mid-March, with 1 million of the decline coming from Leisure & Hospitality.⁹ This is much larger than the CES estimate but similar to our estimate of 0.81 million for that sector. For Retail Trade, in turn, the CPS estimated an increase of 187,000 for the same period while we estimate an increase of 81,000, again surprisingly close given the difference in data source.

Why is the CES March estimate for Leisure & Hospitality so much smaller than our estimate as well as the CPS estimate? As described above, the CES so far has not directly taken into account job losses from establishment inactivity; and the CES counts employees receiving pay for any part of the pay period that includes the 12th of the month as opposed to employees actually working in week t (i.e. putting in positive hours). Both of these differences are important during a sharp and severe contraction such as the one brought about by the COVID-19 crisis.

The importance of taking into account establishment inactivity is shown by the dashed green lines in [Figure 1](#). Job losses associated with these business closings – whether temporary or not – contribute about 25% or 3.2 million of the total employment decline in Leisure & Hospitality and almost 40% or 3 million of the total employment decline in Retail Trade. The birth/death adjustment based on past data that the CES estimates does not capture this negative effect.¹⁰ Given that a large part of job losses from establishment inactivity in our data occurs in the second half of March, taking this effect into account

⁷See [Coibon et al. \(2020\)](#) who find based on a large-scale household survey that many of those who lost their jobs are not actively looking to find new ones and therefore may not file for unemployment.

⁸Only a few states release jobless claims by industry. See [Kandra et al. \(2020\)](#) for details.

⁹There are a number of reasons why employment estimates from the CES and the CPS differ. See <https://www.bls.gov/web/empsit/ces.cps-trends.htm>. The discrepancy in estimated employment change for March 2020 is much larger than what we usually see.

¹⁰Indeed, according to numbers provided on the [CES website](#), the estimated adjustment from net birth/death of establishments implies a *positive* effect on employment of 32,000 for Leisure & Hospitality and 6,000 for Retail Trade from mid-February to mid-March, whereas our estimates in [Figure 1](#) shows a negative effect from establishment inactivity of -219,000 and -166,000 for the two sectors, respectively.

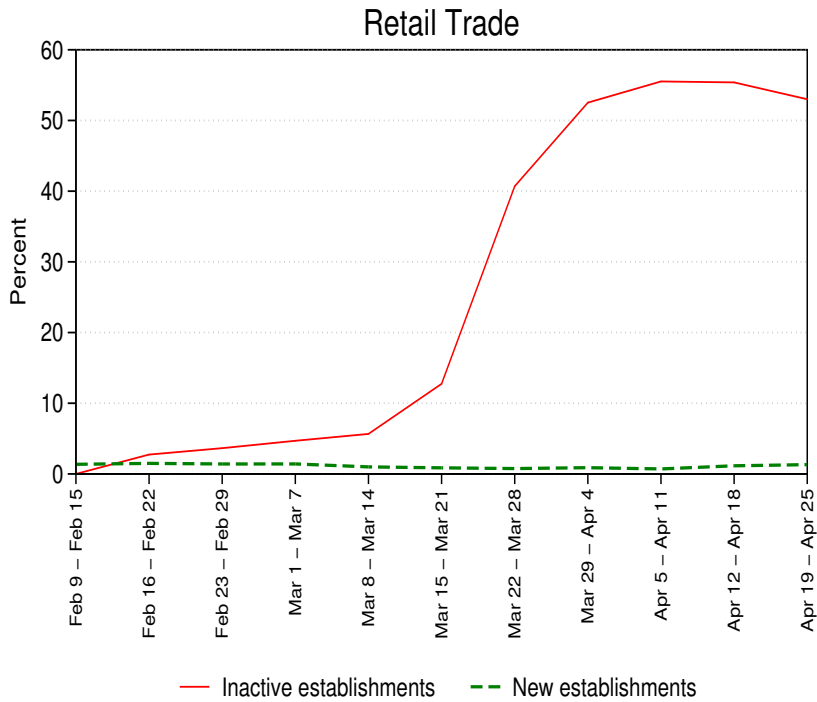
becomes even more important going forward. The [BLS has recently announced](#) that it will modify its birth/death model with the release of the April report, but no details have been provided as of this writing and so, we do not know how this will affect future CES estimates.

As for the importance of counting employees actually working, the HB data does not allow us to directly quantify this difference to the CES. However, estimates from [Cajner et al. \(2020\)](#) with ADP data provide some intriguing information. First, like the CES, these authors only consider continuing establishments in their estimation. Given the large number of job losses due to establishment inactivity documented above, this should account for a substantial part of the difference between their estimated employment decline in Leisure & Hospitality and Retail Trade of about 6 million by early April and our estimate of almost 20 million. Second, and more relevant for the question at hand, the ADP contains two measures of employment: employees in the payroll system (but not necessarily paid) and employees issued a paycheck in a given pay period. This latter measure should closely correspond to CES employment. Yet, their estimates for mid-March show that employees on payroll is essentially the same as the CES employment estimate, and paid employment has declined by substantially more than employment on payroll since the crisis began (for Leisure & Hospitality alone, this gap amounts to 3.5 million employees by early April). This suggests that many of the establishments surveyed in the CES report employees on payroll as opposed to employees working and getting paid, which would provide another explanation for the stark difference between the CES estimates and our estimates. As the labor market stabilizes and hopefully returns to job growth, this difference between employees on payroll and employees working should mostly vanish, but the evidence by [Cajner et al. \(2020\)](#) suggest that it may play a major role at least for the April CES estimates.

Since establishment inactivity plays such an important role, we analyze it further and contrast it to new establishment entry. As shown by the solid red line in [Figure 2](#), about 5% of establishments that were active in mid-February became inactive by mid-March. From there, this rate increased steeply, peaking at almost 50% for Leisure & Hospitality and about 55% for Retail Trade in mid-April.¹¹ About 15% of these inactive establishments have returned to activity, and the inactivity rate has declined slightly as the number of new establishments becoming inactive has fallen somewhat. It will be interesting to see how this inactivity rate evolves over the coming weeks as different states start to lift restrictions on businesses and stay-at-home orders.

¹¹The fact that the inactivity rate is larger than the share of the employment decline from establishment inactivity implies that establishments that become inactive have on average fewer employees.

Figure 2: Establishment Inactivity and New Establishments in HB Data



Notes: Inactive establishments and new establishments relative to count of active establishments in HB data in Leisure and Hospitality (top panel) and Retail Trade (bottom panel) sector as of week of Feb 9 – Feb 15.

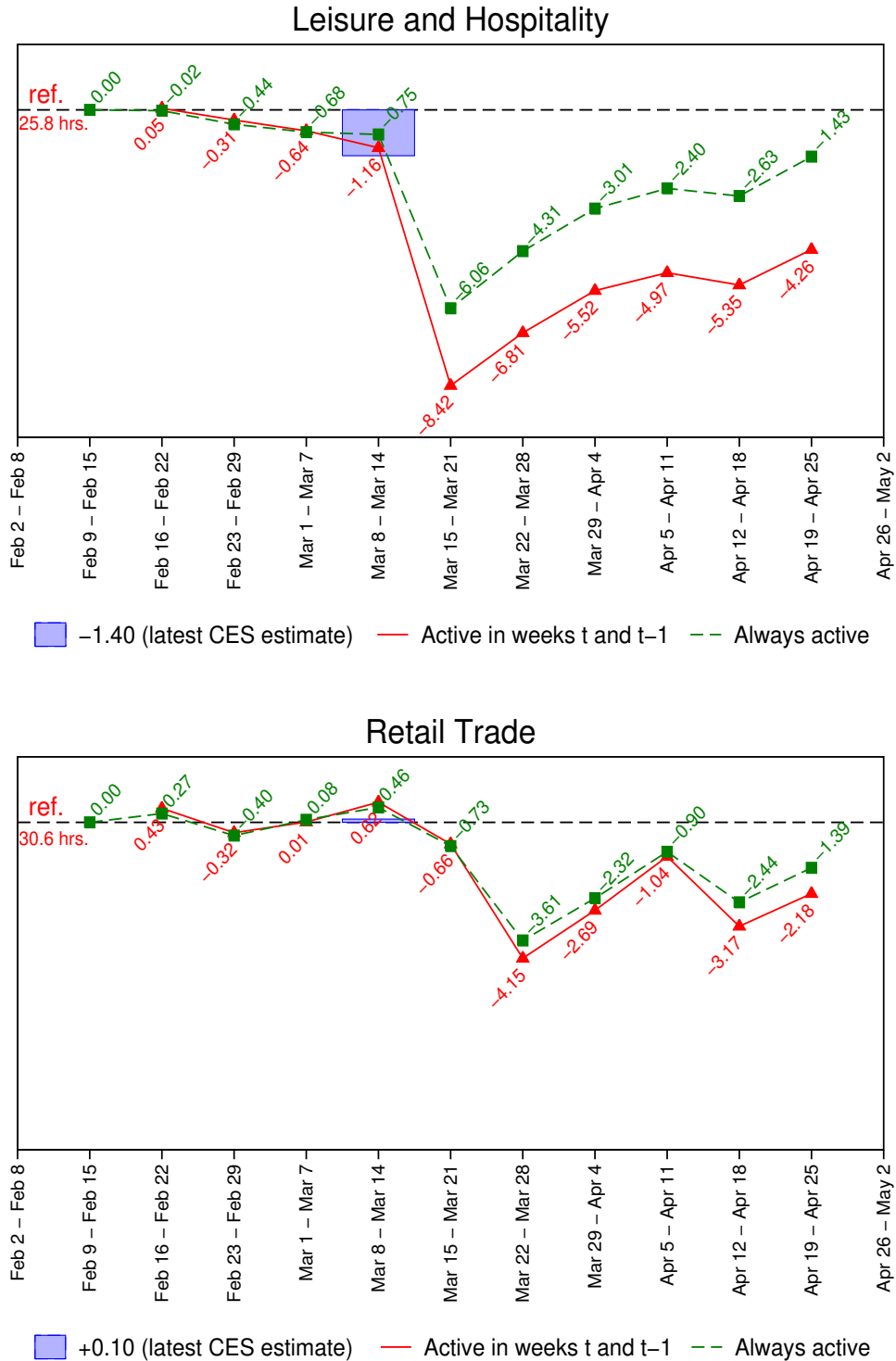
The dashed green line in Figure 2, in turn, shows the entry rate of new establishments in the HB data. This rate held steady at about 1% until early March and then dropped to almost zero by the end of March, consistent with the sharp contraction in new business formations reported by the U.S. Census Bureau (see [Haltiwanger \(2020\)](#)). We do not take any of this decline in entry into account in our estimates. Doing so would imply an even worse employment decline.

Of course, the HB data we use also comes with a number of limitations that may lead us to overestimate the extent of the employment decline. We see two principal reasons for why this might be the case. First, the HB data consists mostly of hourly paid workers who may be more exposed to downturns than salaried workers. While CPS household data suggests that this was not the case during the last recession, we do see a somewhat larger percentage decline in employment of hourly workers than for salaried workers between mid-February and mid-March (see the online [Appendix](#)). Second, the HB data is not representative of establishments with 50 employees or more, which account for almost half of employment in Leisure & Hospitality and Retail Trade prior to the crisis. In general, there is no clear evidence that employment of large firms is less sensitive than employment of small firms – quite to the contrary (see [Moscarini and Postel-Vinay \(2012\)](#) and [Haltiwanger et al. \(2018\)](#)). Furthermore, as shown in the online [Appendix](#), when looking at the New Orleans metropolitan area in the aftermath of Hurricane Katrina – a natural disaster that also led to many business closings and a large decline in demand in Leisure & Hospitality and Retail Trade – we find that with the exception of very large firms in Retail Trade, firms with 50 employees or more did not experience a smaller employment decline than firms with less than 50 employees. At the same time, the COVID-19 crisis is different from anything the U.S. has ever seen and larger businesses may have been less exposed than smaller businesses, perhaps because they entered the crisis in better financial health, have had easier access to emergency funding and government loan programs, or operate a business model that is more adaptable to the new economic environment (e.g. chain-operated fast food restaurants that can more easily switch to take-out / delivery only than small high-end dining restaurants). As a robustness check, we therefore assume that employment growth of establishments with 50 employees or more declined by only half as much as employment growth of smaller establishments. We find that the estimated employment decline in Leisure & Hospitality and Retail Trade amounts to 16.5 million. This is smaller than the almost 20 million of our baseline estimate but still remains a staggering number.

4.2 Average weekly hours

Figure 3 shows our estimates of average weekly hours (AWH) together with the CES March estimates.

Figure 3: Average Weekly Hours in Leisure and Hospitality (top) and Retail Trade (bottom)



Notes: Estimated average weekly hours in Leisure and Hospitality sector (top panel) and Retail Trade (bottom panel), constructed based on February 2020 CES estimate (week of Feb 9 – Feb 15). The solid red line shows the change in average weekly hours based on establishments that remain active in two consecutive weeks. The dashed green line shows the change among establishments that remain active throughout the sample period.

For Leisure & Hospitality, our main estimate shown by the solid red line indicates that AWH declined by 1.2 hours from mid-February to mid-March, close to the CES estimate of -1.4 hours. Then in the third week of March, AWH dropped dramatically before recovering gradually by the end of April to a level that is 4.5 to 5 hours or about 20% lower than AWH in mid-February. Presumably, some part of the steep drop in AWH in the third week of March is due to establishments being caught off guard by the extent of the crisis and first lowering hours worked before laying off additional workers and continuing only with a core group of employees at a somewhat higher but still substantially reduced number of hours.

For Retail Trade, the decline in AWH is less pronounced and occurs a week later. By the end of April, AWH recovers partially and appears to have leveled out between 1 and 3 hours lower than AWH in mid-February.

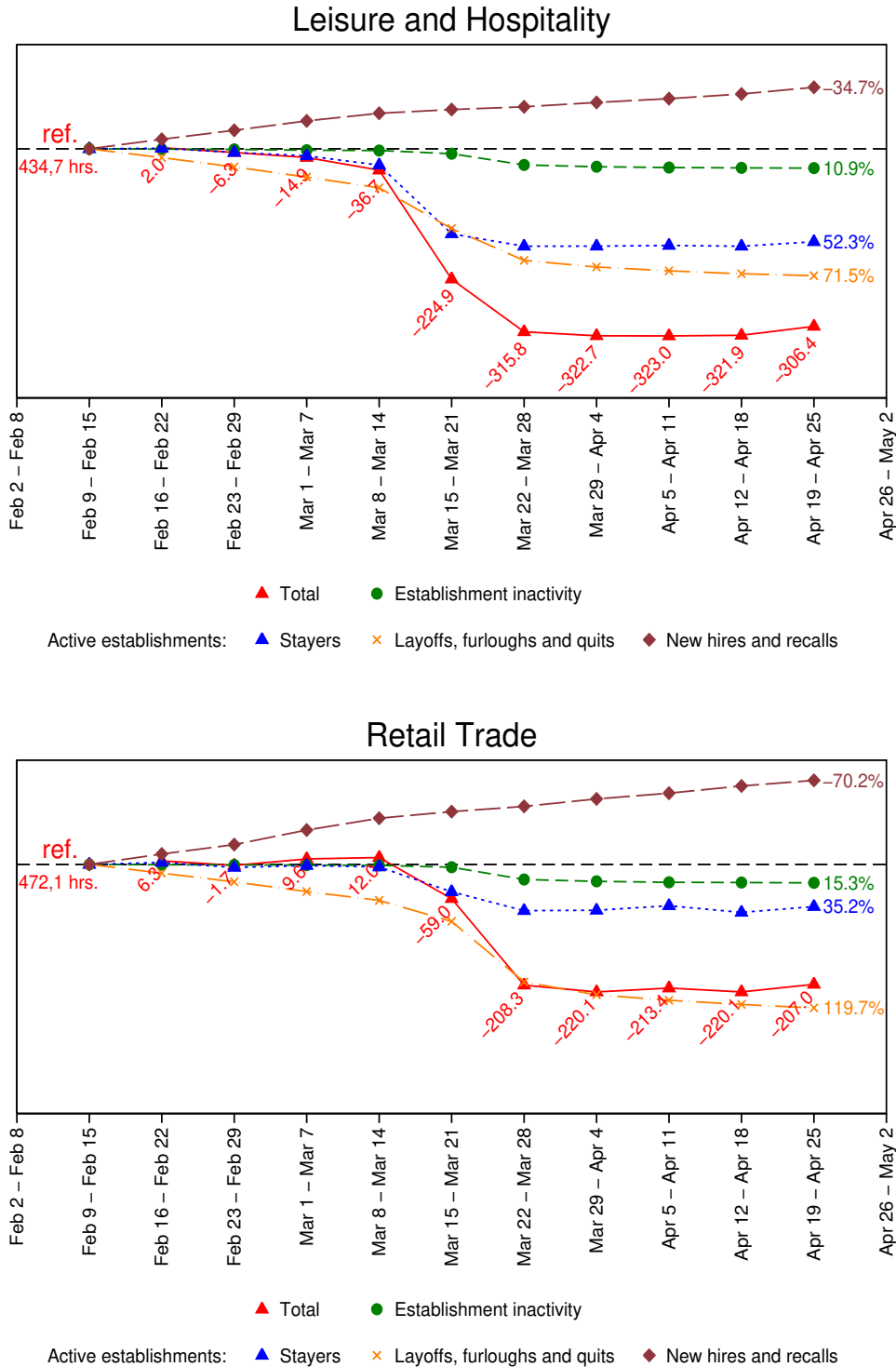
The dashed green line in Figure 3 illustrates what our estimate of AWH would look like if we had included only establishments that continued to be active in every week between mid-February and the end of April (as opposed to our main estimate, which includes all establishments that are active between weeks $t - 1$ and t). For Retail Trade, the difference to the main estimate is negligible. For Leisure & Hospitality, in contrast, the decline in AWH in the third week of March is smaller and the recovery stronger. This implies that establishments active throughout reduced hours of their workers by less on average than establishments that eventually became inactive (or that returned to activity after a while). While interesting and worthwhile of further investigation, we prefer our main estimate because it shows AWH across all workers currently employed.

4.3 Total weekly hours

Figure 4 shows our estimate for total weekly hours in Leisure and Hospitality and decomposes this estimate into the contributions from different margins.¹² Total weekly hours are estimated to decline by 8% in Leisure & Hospitality, respectively 12.5% in Retail Trade between mid-February and mid-March. Thereafter, total weekly hours in both sectors fall precipitously during the third and fourth week of March before stabilizing at a new level that is 70% lower in Leisure & Hospitality, and almost 60% lower in Retail Trade. These numbers are broadly consistent with numbers reported by Homebase on its [webpage](#) and by [Bartik et al. \(2020\)](#).

¹²Total weekly hours is not reported in the CES. We compute February 2020 total hours implied by the CES as CES AWH times CES employment.

Figure 4: Total Weekly Hours in Leisure and Hospitality (top) and Retail Trade (bottom)



Notes: Estimated total weekly hours (in millions) in Leisure and Hospitality sector (top panel) and Retail Trade (bottom panel), constructed based on February 2020 CES estimate (week of Feb 9 – Feb 15). The solid red line shows the total change in weekly hours. The dashed green line shows the change in weekly hours due to establishment inactivity. The dotted blue line shows the change in weekly hours of stayers in active establishments. The dashed-dotted orange line shows the change in weekly hours due to layoffs, furloughs and quits in active establishments. The dashed brown line shows the change in weekly hours due to new hires and recalls in active establishments.

We decompose the evolution of total weekly hours into (i) changes due to establishment inactivity, (ii) changes in weekly hours of job stayers at continuing establishments; (iii) changes due to layoffs, furloughs and quits at continuing establishments; and (iv) changes due to new hires and recalls at continuing establishments. See the Appendix for details on this decomposition. In both sectors, establishment inactivity accounts for a smaller share of the decline in total hours than the decline in employment because continuing establishment also reduce average hours of their workers. The change in weekly hours from stayers contributes 52% of the total hours decline in Leisure & Hospitality, respectively 35% in Retail Trade. The large and opposing contributions from layoffs, furloughs and quits versus new hires and recalls indicate that, perhaps somewhat surprisingly, there remains a large amount of turnover in both industries; i.e. all along the crisis, establishments that remain active replaced some workers with others. On net, the two channels combined account for about 35% of the decline in total hours in Leisure & Hospitality, and for almost 50% of the decline in total hours in Retail Trade. This net contribution is the result of a large increase in layoffs, furloughs and quits in the second half of March while new hires and recalls continued to grow at a steady pace. The big question going forward is to what extent hours of stayers return to their previous level and, more importantly, to what extent new hiring and recalls increase as restrictions are lifted and the economy opens up again.

5 Future Work

We will continuously update our estimates with the latest data from HB and assess the extent to which the Leisure & Hospitality and Retail Trade sectors recover from the crisis. It will be particularly interesting to see the extent to which currently inactive establishments return to activity and laid off and furloughed workers return to their previous jobs. We will also try to expand our analysis to other service sectors of the economy although coverage of these sectors in the HB data is a potential issue; and we will produce estimates for different regions of the U.S.

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