

The Pandemic Economy: Exploring the change in new business license activity in Chicago, USA from March – September, 2020

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Summary

This paper makes use of the novel point-level Chicago Business License dataset, which is updated on a weekly basis, to examine the impact of the COVID-19 pandemic on new business activity in the City of Chicago. The results indicate that on average, from March to September 2020, total monthly new business starts have declined by 33.4% compared to the monthly average of new starts in the City from January 2016 to December 2019. Food service and retail businesses have been hardest hit during this period. These patterns also demonstrate interesting intra-urban spatial heterogeneity.

KEYWORDS: COVID-19, new business activity, open spatial data, 15-minute city, walkable built environments

1. Introduction and Background

Since the emergence of the novel SARS-CoV-2 (COVID-19) virus in late 2019, its global spread has led to a variety of negative economic consequences, from restrictions on business operations and government lockdowns to reduced consumer confidence, discretionary mobility, and stock market fluctuations (McKinsey & Company, 2020). According to some estimates, real global Gross Domestic Product (GDP) dropped by 10% between Quarter 4 of 2019 and Quarter 2 of 2020 (McKinsey & Company, 2020), while US GDP experienced its largest quarterly drop in history (9.1% in Quarter 2 of 2020), far outstripping the impact of any previous recessions (measured since data collection began in 1947) (Bauer et al., 2020; Routley, 2020). Concurrently, the US unemployment rate reached its highest-ever recorded value in April 2020 at 14.7% (FRED, 2020), while the S&P 500 lost $\frac{1}{3}$ of its value in just one month (Capelle-Blancard and Desroziers, 2020).

In terms of restrictions on individual business activities, according to the Oxford COVID-19 Government Response Tracker, through August 5, some 69% of states enacted policies at some point that “require[d] closing (or work from home) for all-but-essential workplaces (e.g., grocery stores, doctors)” and these restrictions lasted for an average of 43 days (Hale et al., 2020). Less comprehensive restrictions on businesses requiring closing for some sectors - often including restrictions on indoor dining, drinking establishments, and retail activities - were put in place by every state and had lasted on average for 129 days (Hale et al., 2020). Obviously, these kinds of restrictions are fundamentally unlike the economic shocks that occur in typical economic recessions in terms of their direct impact to businesses of particular types, especially small, independently owned businesses that are less likely to maintain extensive cash reserves or be able to rely on less-impacted business operations to supplement pandemic-affected operations.

Further understanding the specific effects of the pandemic on entrepreneurial activity is particularly important because new business creation is the primary engine for diversity, economic growth, and innovation in the economy as a whole (Frenken et al., 2007; Neumark et al., 2006; Wennekers and Thurik, 1999), and declines in startup activity can have substantial negative long-term economic

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consequences (Sedláček, 2020; Guorio et al., 2016). There is also significant spatial heterogeneity in startup activity that plays an important role in cluster formation, regional economic development, and even the development trajectory of individual neighborhoods within regions (Mack and Credit, 2016; Malmberg and Maskell, 2002; Florida, 2002; Klepper, 2009; Porter, 2000; Rutten and Boekema, 2007). Understanding the fine-grained spatial and industrial effects of the pandemic on new businesses in more detail can help researchers and local governments to understand how to develop more economically-resilient regions, which can provide insulation from future economic shocks.

However, while data on new business applications are available on a weekly basis at the state level from the US Census Bureau's Business Formation Statistics (2020), other datasets (both public and private) typically used to evaluate new business activity at finer spatial scales - including the ZIP Code Business Patterns, InfoUSA, and the National Establishment Time Series (NETS) - are not updated quickly enough to allow researchers to examine the fine-grained spatial and industrial effects of the pandemic on new business activity.

1.1. Research Questions

To overcome this problem, this paper utilizes a novel large dataset of business establishments (at the point level) derived from the open source Chicago Business License dataset, which is updated weekly and contains a comprehensive set of information on all new business license applications in the City of Chicago (2020) to assess two primary questions: first, to what extent has there been a decline in new business establishment starts during the pandemic (March - September, 2020) when compared to recent trends (2016 - 2019)? Specifically, we are interested in whether there are distinct temporal trends by business type (e.g., retail, food service, personal care and fitness, etc.) or between multi-establishment (or "chain") businesses and "independent" (≥ 4 establishment) businesses.

Second, given the temporal analysis, what is the spatial expression of these trends? Are there particular areas of the city that have been "hardest hit" by declines in new business startups, and, if so, what are the characteristics of these areas? To analyze this formally, we aggregate kernel density estimates (KDE) of pandemic-related business activity to the ZIP code level in order to draw statistical inferences about the relationship between pandemic-related decline and characteristics of social vulnerability, the built environment, and baseline business activity. In addition, given previous research on the impact of COVID-19 deaths on new business applications at the state level (Sedláček and Sterk, 2020) we are interested in observing the relationship between the neighborhoods with the highest observed COVID-19 rates and those hardest hit by the pandemic-related decline in new business activity to see if the pandemic's economic impacts follow a similar pattern to its health impacts.

2. Results

The results of the analysis indicate that, on average, from March to September 2020 (through which complete data was available at the time of writing), total monthly new business starts have declined by 33.4% compared to the monthly average of new starts in the City from January 2016 to December 2019. In general, food service and retail businesses have been hardest hit during this period (although all categories have experienced declines), while – as shown in **Figure 1** – chains of all types have seen larger average declines in new startup activity (an average monthly drop of 61.9% from March to September compared to pre-pandemic averages) than independent businesses (a 29.2% drop), shown in **Figure 2**. However, it also appears that new business starts in particular industries, such as chain retail and personal care + fitness, as well as independent arts, have come close to matching or exceeding pre-pandemic levels by September. This finding is supported by national data showing a significant rebound in new businesses "with planned wages" in Quarter 3 of 2020, amounting to a higher net number of applications in the first three quarters of 2020 compared to the 2016-2019 average (US Census, 2020), and perhaps reflects business planning in anticipation of an easing of lockdown restrictions sometime in 2021.

As shown in **Figure 3**, these patterns demonstrate interesting intra-urban spatial heterogeneity, and

suggests that the ZIP codes with the largest pandemic-related declines in new business activity tend to have higher average rates of new business creation to begin with and also have less dense, diverse, and walkable built environments, higher rates of auto commuting, and higher levels of social vulnerability.

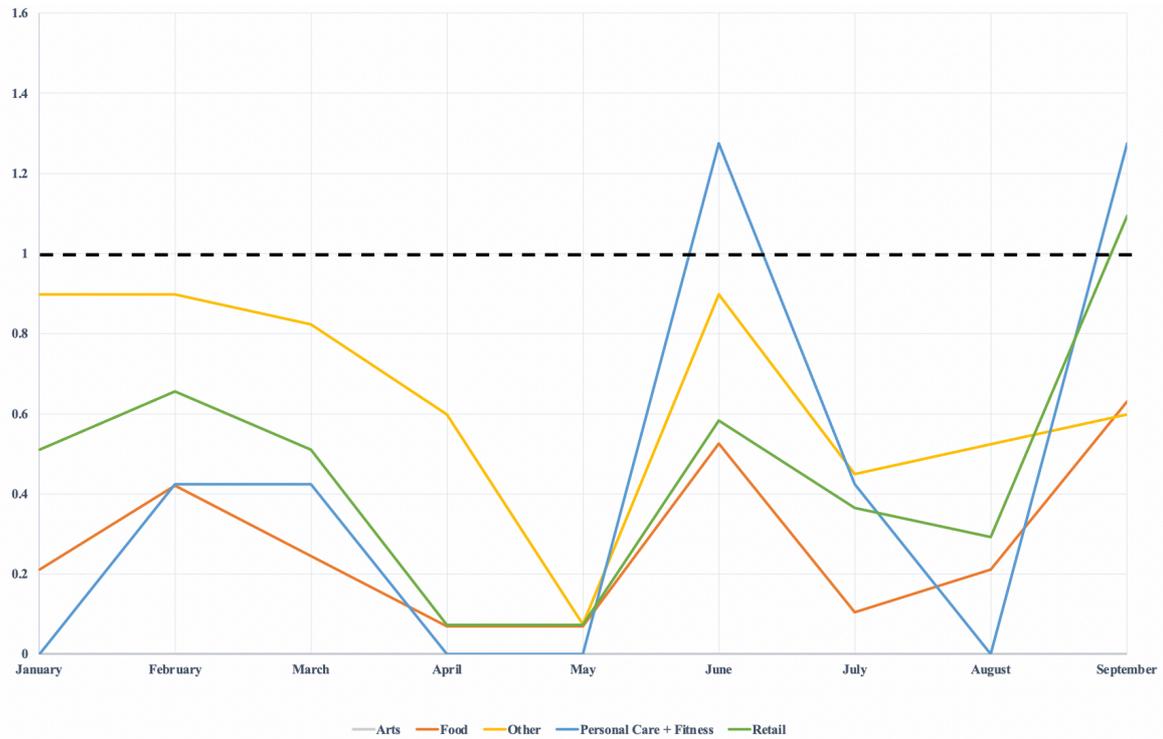


Figure 1 Percent difference in new starts between each month in 2020 and the average number of monthly new starts from January 2016 - December 2019 for chain establishments.

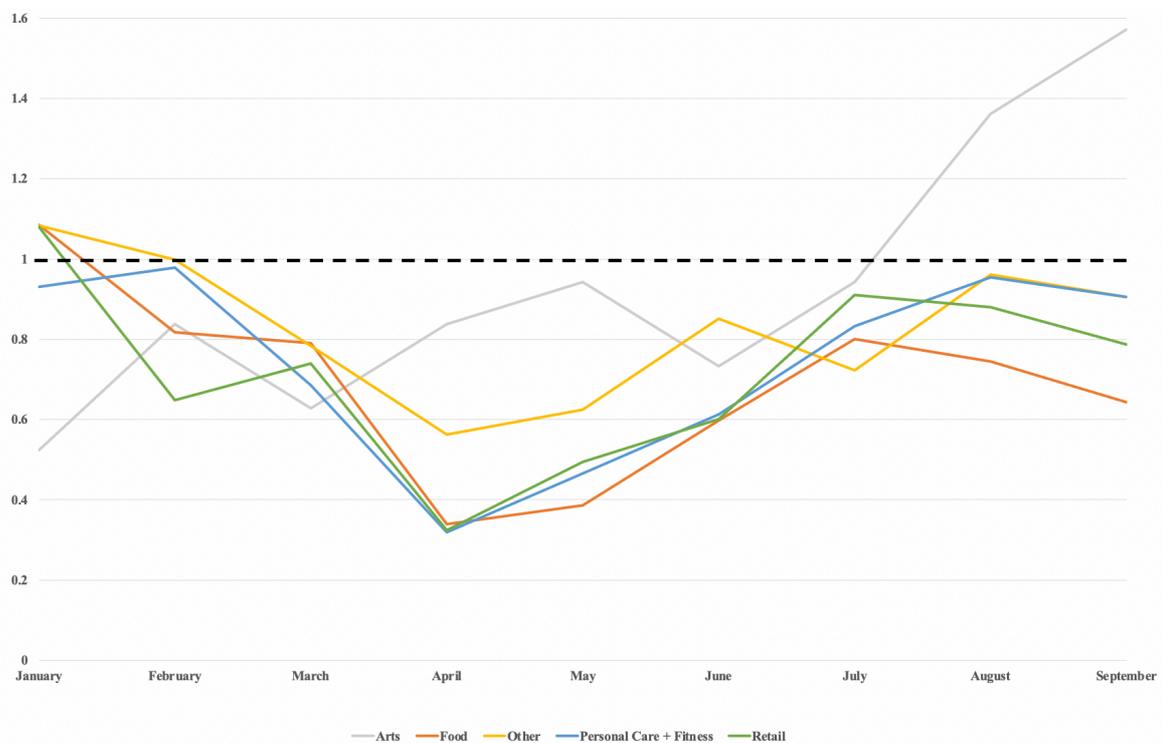


Figure 2 Percent difference in new starts between each month in 2020 and the average number of monthly new starts from January 2016 - December 2019 for independent establishments.

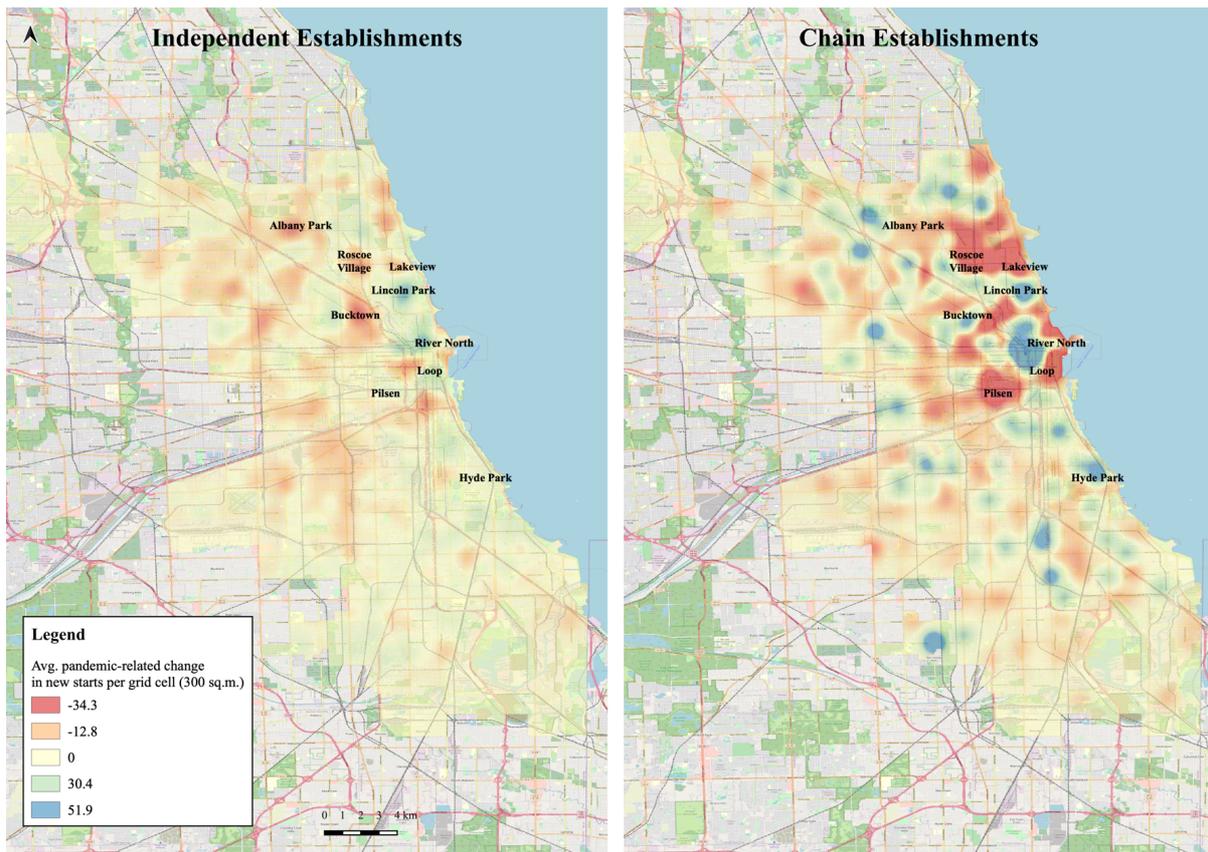


Figure 3 Difference in new start density between 2020 (March - Sept.) and average new start density from 2016 - 2019 (March - Sept.) for independent and chain establishments.

3. Discussion and Conclusion

Beyond confirming the national evidence on widespread economic hardship caused by the pandemic, these results are important because they lend some insight into the neighborhood-level characteristics that foster economic resilience in the face of large scale economic shocks. Given the widespread restrictions on mobility caused by the pandemic, the vision of the “15-minute city” - an urban planning concept that focuses on providing basic needs and services (often through small, independent businesses) within walking distance of every resident that corresponds with existing work on the importance of walkability, mixed use development, and density to resilient urban systems - has gained prominence in the pandemic era as the centerpiece of the “C40 Mayors’ Agenda for a Green and Just Recovery,” whose Statement of Principles has been signed by the mayors of over 40 prominent world cities, including Los Angeles, Chicago, New York, Boston, London, Paris, Mexico City, and others (C40, 2020; O’Sullivan and Bliss, 2020; Jacobs, 1961; Talen, 2006; Desouza and Flanery, 2013; Talen and Jeong, 2019; Abastante et al., 2020). This analysis provides some evidence that the walkable, dense built environments that underlie the “15-minute city” may provide some resilience from the economic shocks caused by the pandemic.

These results also have important implications for the ongoing discussion of the future of post-pandemic city planning and trends in urban development. As Richard Florida writes in a recent article on the future of cities for Foreign Policy, while “great cities will survive the coronavirus...some aspects of our cities and metropolitan areas will be reshaped, depending on how long the current pandemic lasts. Fear of density, and of subways and trains in particular, plus a desire for safer, more private surroundings may pull some toward the suburbs and rural areas. Families with children and the vulnerable, in particular, may trade their city apartments for a house with a backyard” (2020). Increased rates (and acceptance) of remote working may also reduce some of the of the intense agglomeration

benefits that large, expensive cities currently enjoy, as well as demand for the full range of diverse amenities and business types currently provided in those cities (Wolff-Mann, 2020; Lister, 2020). Indeed, recent research shows that through Quarter 3 of 2020, rental vacancy rates have increased and rents have declined, particularly at the most expensive end of the market (JCHS, 2020). However, if this paper's results - that dense, walkable neighborhoods in fact offer "protective" benefits to new businesses in the face of the shifting pandemic behavior - hold as the pandemic continues, they provide some evidence in favor of the view that these urban built environments will be resilient to the changing economic circumstances caused by the pandemic.

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Biographies

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