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Discussion Paper Series

No. **180**
CSIS Discussion Paper

2023 年 4 月

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New Spaces and New Places: The Growth and Spatial Expansion of Flexible Offices in the Tokyo Metropolitan Area^{*}

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ABSTRACT

During the first two decades of the 21st century, advances in information technology provided a growing number of workers with more freedom and more choice in their work locations. At the same time, a new type of office environment—often called “flexible offices” or “co-working spaces”—started to spread, in part to meet the needs of a workforce increasingly equipped to work remotely. With the onset of the COVID-19 pandemic, remote work quickly shifted from being an exception to being commonplace. Against this background, it is important to understand the evolution of the flexible office market, particularly trends in the spatial location of these spaces. This analysis examines flexible offices in the Tokyo metropolitan area. Results show moderate growth and modest evidence of spatial diffusion prior to the onset of the pandemic, followed by rapid expansion and diffusion into suburban areas during the COVID era.

Key Words: flexible offices, COVID-19 pandemic, remote work, Geographic Information System (GIS), Tokyo Office Market.

JEL Classification Numbers: C31, R31

^{*} We would also like to thank Xymax Real Estate Institute for their helpful comments. This paper is based in part on the research results of Grant-in-Aid for Scientific Research (A): 20H00082, Japan Society for the Promotion of Science.

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1. INTRODUCTION

Of the many aspects of day-to-day life that have been affected by the spread of COVID-19, the impact of the pandemic on how and where people work has been particularly dramatic. Telework, work-from-home, and other remote working arrangements had been increasing slowly for the first two decades of the 20th century, growing in parallel with advances in information technology that made alternative styles of work more feasible. The onset of the pandemic functioned as a massive accelerant for these trends. Recommendations and regulations regarding in-person contact and social distancing initiated an intense and almost immediate shift—particularly among white-collar professions—away from the typical commute and towards remote work.

Despite the resumption of many, if not most in-person activities, several of the work-related pandemic-era changes have proven durable. Rates of remote work remain well above their pre-pandemic levels, and many professionals have come to expect their employers to accommodate a hybrid approach to commuting (Alexander et al., 2021; Dahik et al., 2020).

Amidst the spread of these non-traditional working arrangements, the role of non-traditional office environments such as co-working spaces or flexible offices is of particular interest. In the decade prior to the outbreak of COVID-19, flexible offices increasingly catered to a relatively small population of workers who faced few geographical restrictions in their work locations. Given the vast expansion of workers who now fit this definition, the way in which flexible office locations adapt to these needs provides insight into how and where people want to live and work in the post-COVID era.

In this analysis, we aim to assess the impact of the COVID-19 pandemic on the spatial distribution of flexible office spaces in the Tokyo metropolitan area. After an overview of the literature regarding flexible offices, we provide an outline of our study area, and then discuss spatial and temporal trends in flexible office openings both before and during the pandemic. Results show a strong tendency toward the suburbanization of flexible office spaces during the COVID era, with newly established flexible offices being far more likely to locate outside the central business district from 2020 onward. While evidence points to a positive correlation between rates of remote work and the spatial diffusion of flexible offices, the unsettled nature of remote work in Japan makes it difficult to speculate about future trends in the demand for flexible office spaces.

2. FLEXIBLE OFFICE SPACES: CHARACTERISTICS AND TRENDS

The growth of flexible office spaces, also known as shared offices or co-working spaces, has largely coincided with the expansion of internet-based technologies that reduce the need for workers to be fixed to one location (Mariotti, Akhavan, & Rossi, 2021; Moriset, 2014). Starting in the early 2000s, freelancers, entrepreneurs, consultants, and small business owners aimed to recreate the social and collaborative aspects of office work without the rigidity and hierarchies associated with corporate life (Mariotti et al., 2017). Initially cafes, and to a lesser extent, libraries and public spaces in hotels, offered a combination of atmosphere and infrastructure (particularly free wireless internet) that attracted those interested in alternative working environments (Berbegal-Mirabent, 2021; Bilandzic, 2016; Bilandzic & Foth, 2013; Bizzarri, 2014; Di Marino et al., 2018; Mariotti et al., 2017).

As the demand for co-working arrangements grew, however, so too did the need for spaces specifically outfitted for remote workers. Coffee shops, hotels, and libraries were often unable and/or unwilling to fully support the needs of a diverse and growing remote workforce. Consequently, the market for dedicated flexible, shared office space quickly matured. Although the world's first "official," full-time flexible office was not established until 2005 (Botsman & Rogers, 2010), by the eve of the COVID-19 pandemic, over 2 million people were working in flexible offices in roughly 22,000 places worldwide (Deskmag, 2023).

While flexible office tenants tend to enjoy a high degree of locational freedom, their motivations for seeking out flexible spaces vary. Many occupants express substantial dissatisfaction with working from home. Excessive distractions, inadequate space, an inability to separate private life and work demands, and difficulty with self-motivation are prominent reasons for renting flexible office spaces (Spinuzzi, 2012). Feelings of social isolation while working at home are also a common reason for renting a flexible office (Gabrielli & Fiorentino, 2022). Not surprisingly then, opportunities for collaboration and social interactions are key components of flexible offices (Bilandzic, 2016; Capdevila, 2015; Clifton et al., 2014; Spinuzzi, 2012). Occupants often mention the social atmosphere of a shared workspace as an explicit advantage, and many tenants specifically seek out flexible spaces with a strong sense of community and collegiality (Waters-Lynch & Potts, 2017).

Beyond these social aspects, flexible offices offer concrete professional advantages. For many tenants, the chance to make business connections, develop partnerships, get feedback on ideas, and meet and learn from others in the same field are important qualities (Capdevila, 2015; Mariotti et al., 2017; Moriset, 2014). Some occupants also note the significance of physical amenities in flexible offices. These features range from relatively simple luxuries like comfortable desks and chairs to the

availability of conference rooms to meet with clients and high-end technical infrastructure (Spinuzzi, 2012).

Spatial location is also a key factor for tenants. Flexible offices are overwhelmingly located in central-city neighborhoods of large urban areas, specifically the types of vibrant communities that are most likely to attract young, creative workers (Florida, 2002; Mariotti, Akhavan, & Rossi, 2021; Stam & van de Vrande, 2017; Waters-Lynch & Potts, 2017). These areas, with high levels of activity density, generally contain substantial agglomeration economies, clusters of innovation, business opportunities, and chances for knowledge spillovers and knowledge exchange (Mariotti, Akhavan, & Rossi, 2021). Flexible offices tend to be established in neighborhoods that promote information sharing, collaboration, and both formal and informal interactions—activities that may be less likely to take place in more peripheral locales (Engel et al., 2018). Urban core neighborhoods are also advantageous from a social perspective: an array of attractive urban amenities like community events, restaurants, bars, and entertainment facilities are often located within easy walking distance of flexible offices (Akhavan et al., 2019; Hölzel et al., 2022), helping to promote intra-office comradery and supplement their sense of community.

Perhaps the most important reason for flexible offices' centralized locations are the accessibility advantages that they provide (Appel-Meulenbroek et al., 2021; Rådman et al., 2022). Transportation infrastructure—particularly public transit—is generally designed to funnel users toward a densely-populated urban core (Coulombel, 2018; Kilani et al., 2010). Centralized locations near transit infrastructure allow office operators to accommodate a spatially diverse population of renters (and potential renters) with a relatively high degree of efficiency (Stam & van de Vrande, 2017). In addition to maximizing access for occupants, center-city locations also expand the pool of potential flexible office collaborators. Easy access via public transit helps to ensure that renters' clients and colleagues can easily reach flexible spaces for meetings and consultations. The centralized geography of flexible offices can not only facilitate connections at the metropolitan-area level, but also promote exchanges at the regional and international scale. Locations with direct rail access to airports or other major cities provide a foothold for non-local and foreign workers who might otherwise struggle to obtain office space via the traditional real estate market (Capdevila, 2015).

Despite the clear advantages that flexible offices and their occupants draw from being located in dense urban neighborhoods, there are benefits to spatial diffusion. Tenants regularly cite “close to home” as one of their primary reasons for choosing a given flexible office space (Clifton & Reuschke, 2022; Spinuzzi, 2012). Furthermore, while urban amenities such as bars, restaurants, and entertainment options are clearly draws for occupants of shared offices, the access to more mundane destinations

such as supermarkets, day care, schools, and medical facilities—destinations which are less likely to be concentrated in city centers—are also important for renters (Spinuzzi, 2012).

The changes in working style brought about by the COVID-19 pandemic have important implications for both owners and tenants of flexible offices. Occupancy of flexible offices dropped dramatically during early 2020, and concerns about open plans, sanitization, and the difficulties of social distancing in flexible spaces led to fears about the future of the industry (Berbegal-Mirabent, 2021; Cabral & van Winden, 2022; Mariotti, Akhavan, & Di Matteo, 2021). As time passed, however, the potential of flexible spaces to serve a “new normal” style of work became apparent. Co-working industry reports suggest that, given the rapid shift to remote work and the acceptance of more flexible working styles, both the number flexible offices and the number of tenants using these spaces could double their pre-COVID levels by 2024 (Cabral & van Winden, 2022; Coworking Resources, 2020).

The ways in which the COVID-19 pandemic has affected (and will affect) the spatial demand for flexible office space is of particular significance. On one hand, the rapid normalization of remote and hybrid work may accelerate demand for less centralized flexible offices. While growing in popularity during the first two decades of the 21st century, remote work and telecommuting was hardly a widespread phenomenon at the onset of the pandemic (Bloom et al., 2015; Mateyka et al., 2012; Oettinger, 2011). COVID-19 protocols hastened the exposure of the labor force—particularly white-collar workers—to working outside of a traditional office setting for the first time (Okubo, 2022; Ozimek, 2020). Because many of these workers live in peripheral, suburban locations, decentralized flexible offices may be an attractive option for those who hope to minimize their commute but also prefer not to work from home (Hölzel et al., 2022; Mariotti, Akhavan, & Rossi, 2021). In this vein, evidence from the U.S. suggests that commercial real estate demand shifted away from central business districts toward suburban areas during the pandemic, with the most dramatic shifts in demand occurring in large metropolitan areas (Ramani & Bloom, 2021).

Somewhat counterintuitively, however, the weakening demand for urban real estate may actually promote further centralization of flexible office spaces (Delventhal et al., 2022). Companies with large footprints in central business districts have been saddled with excess office space as work-from-home and hybrid work has become the norm (Fiorentino et al., 2022; Hensher et al., 2023; Naor et al., 2021). In this context, flexible offices could provide a physical space not only for freelancers and other typical occupants of flexible spaces, but also for more traditional employers seeking cheaper and shorter-term leases (Fiorentino et al., 2022; Fiorentino & Livingstone, 2021). Furthermore, while hybrid work policies are generally popular among employees (Beck & Hensher, 2021; Hensher & Beck, 2023), a lack of dedicated workspace is a strong determinant of dissatisfaction with at-home work (de Klerk et

al., 2021). Consequently, demand for flexible offices may be strongest in dense urban areas—places where the cost of housing, and thus the cost of an at-home workspace, is most prohibitive (Gabrielli & Fiorentino, 2022). Other research suggests that, while hybrid styles of work are likely to become increasingly common, the need for in-person contact and interaction has not diminished (Florida et al., 2021). In this context, centrally located, geographically efficient meeting places will likely continue to play an important role for a range of business enterprises.

3. STUDY AREA, DATA, AND METHODOLOGY

Our research focuses on the spatial changes in flexible office spaces in the Tokyo metropolitan area. To do so, we first provide an overview of the spatial layout of the region. Unlike “traditional” monocentric cities, it is somewhat difficult to pinpoint a single dominant center of economic activity in the Tokyo metropolitan area. The 34.5km Yamanote Line forms a loop around what might be roughly considered the metropolitan area’s urban core. The most intense areas of economic concentration are centered around several terminal train stations at intervals along the line. Figure 1 shows the location of six primary termini—Shinjuku, Shibuya, Shinagawa, Tokyo, Ueno, and Ikebukuro—and Figure 2 provides an overview of daily ridership for each station for 2019 and 2020 (the most recent data available at the time of analysis). Intense land use around these hubs has created large, mixed-land-use zones that, if located smaller urban agglomerations, could easily qualify as stand-alone central business districts.

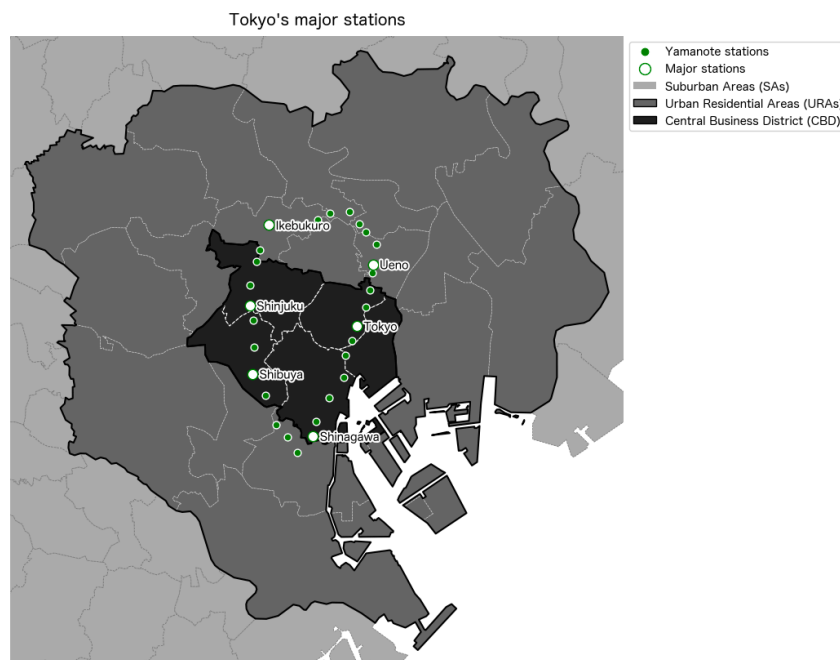


Figure 1: Tokyo’s major terminal stations

Tokyo area train station ridership per day: Pre-COVID (2019) and During COVID (2020)

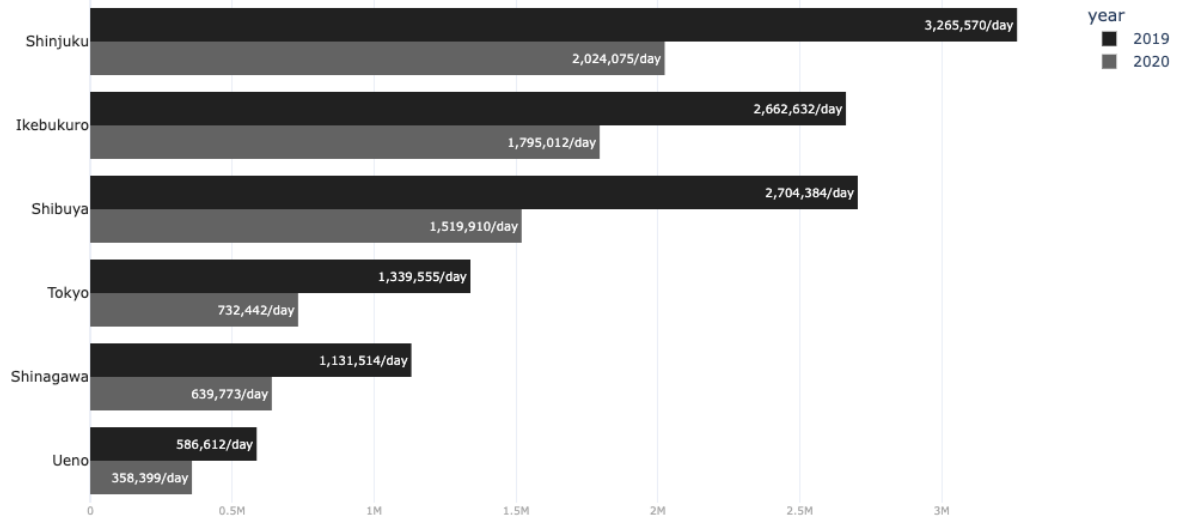


Figure 2: Daily ridership at Tokyo's major terminal stations

Despite not being monocentric in a traditional sense, Tokyo is a highly centralized city. An overwhelming proportion of economic activity in the metropolitan area occurs both in and around the major stations mentioned above, as well as within the areas bounded by the Yamanote Line. The ratio of daytime and nighttime population from the 2020 national census provides an overview concentration. Figure 3 shows a high degree of daily inflows into Tokyo Prefecture and heavy daily outflows from Kanagawa, Chiba, and Saitama, the three prefectures closest to Tokyo's urban core.

Average daytime to nighttime population ratio by prefecture

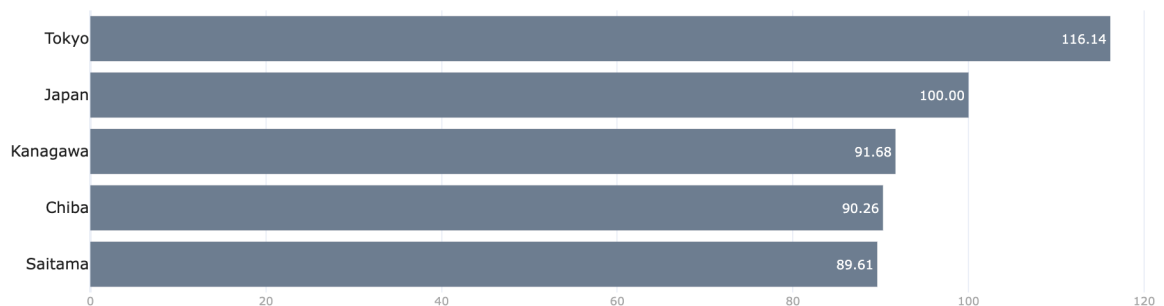


Figure 3: Day/night population ratios, by Prefecture

Because our primary research focus is on the spatial evolution of flexible offices in the Tokyo metropolitan area, we must establish a metric by which geographical change can be evaluated. To this

end, we create a simple and straightforward three-level classification system for the over 300 city-level jurisdictions in the metropolitan area. We define Tokyo's Central Business District (CBD) as the five wards with the highest concentration of businesses and the highest inflow of commuters in the area: Minato, Shinjuku, Shibuya, Chuo, and Chiyoda Wards. The remaining 18 city-level wards of Tokyo Prefecture are then defined as Urban Residential Areas (URAs). Surrounding jurisdictions—those in Tokyo Prefecture but not inside the 23-ward area, and jurisdictions in the adjacent prefectures of Chiba, Kanagawa, and Saitama—are defined as Suburban Areas (SAs). Figure 4 shows the geographical location of the three categories.

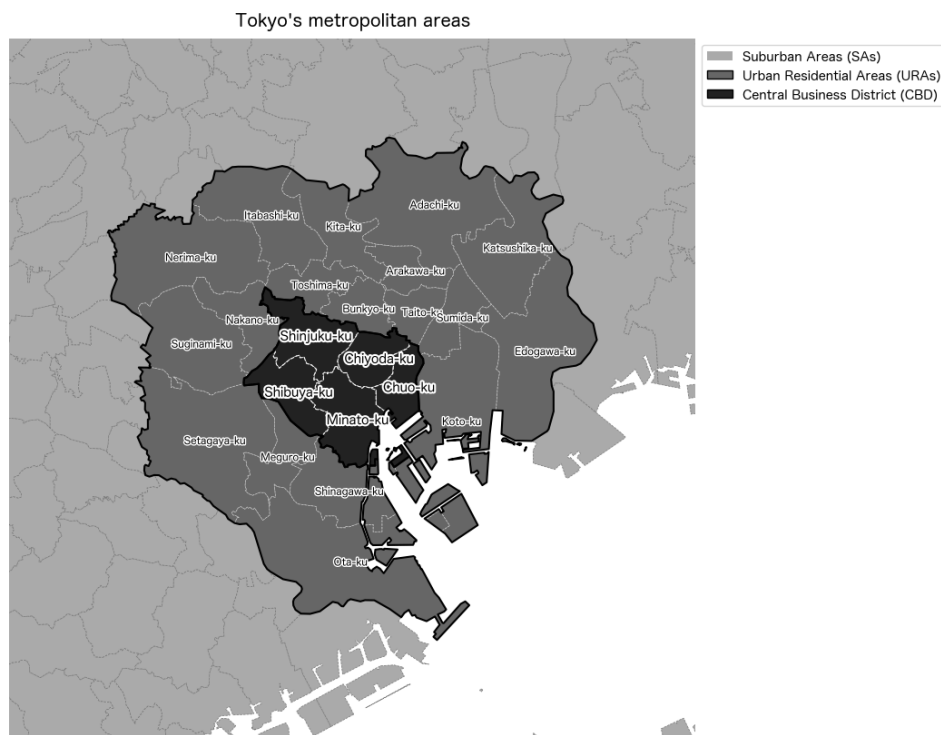


Figure 4: Geographical classifications in the Tokyo metropolitan area

While this classification system is to some degree based on both convenience and simple jurisdictional geography, a more refined look at the day/night population ratios presented above confirm the validity of these categories. As Figure 5 shows, the CBD is marked by heavy commute flows, with the population swelling by over a factor of five during the daytime. SAs, by contrast, have by far the lowest day/night population ratio, suggesting relatively low levels of employment concentration and large outflows of commuters. Finally, the average day/night population ratio of URAs is slightly over one, highlighting a relatively balanced mix of employment density and residential concentration.

Average daytime to nighttime population by location classification

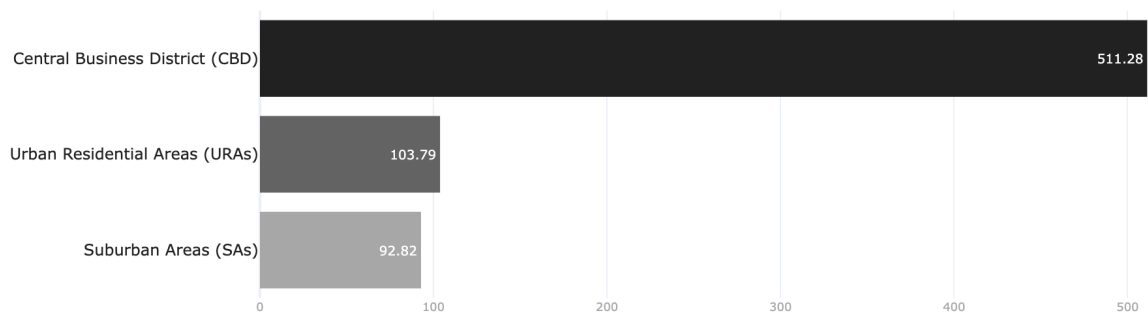


Figure 5: Day/night population ratios, by location classification

Figures 6a and 6b provide a closer look at population flows by classification level. The five wards that comprise the CBD are by far the largest receivers of population, with all of the CBD wards at least doubling in population during the day. URAs are also well represented as population receivers, with five URA wards growing in population by at least 20% during the day. Some suburban jurisdictions—particularly those in major urban sub-centers like Yokohama, Kawasaki, Chiba City, and Saitama City—also receive an inflow of population. Finally, jurisdictions with the highest outflow of population are almost exclusively SA areas (with the exception of Nerima Ward, a URA).

Areas with the highest daytime to nighttime population ratio

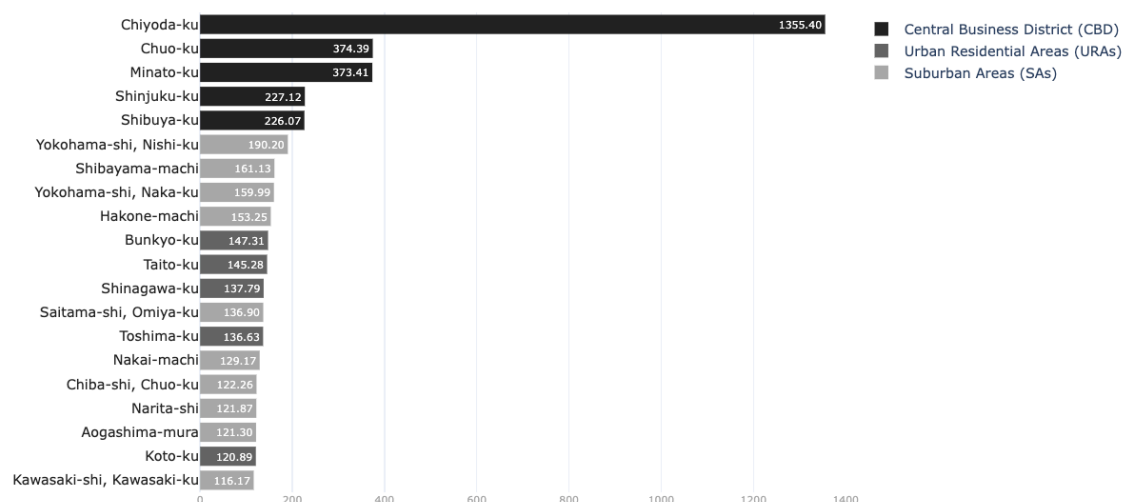


Figure 6a: Inflows and outflows by jurisdiction (heaviest inflow jurisdictions)

Areas with the lowest daytime to nighttime population ratio

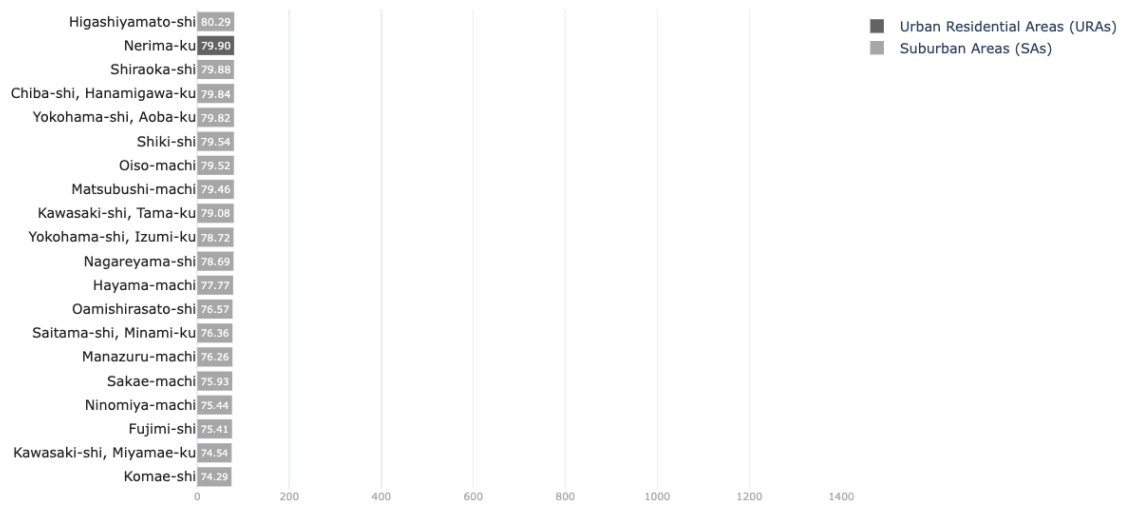


Figure 6b: Inflows and outflows by jurisdiction (heaviest outflow jurisdictions)

To evaluate changes in the spatial location of flexible offices, we measure office openings by year in each of the three geographical classifications. Data on office openings come from the Xymax corporation, a real estate and property management company headquartered in Tokyo. Xymax compiles a yearly census of flexible offices in Japan, detailing the location, size, opening date, and maximum occupancy of each establishment. The most recent census was conducted from October to December of 2022.

Given the fluid nature of the real estate market and possibility of incomplete listings by flexible office operators, our data, while wide-ranging, fall somewhat short of being comprehensive. Additionally, the exact opening date for several flexible office spaces in the database could not be obtained. In these cases, we define the opening date for a given space as the first year in which the space is included in the flexible office census. While the incomplete nature of the data is undoubtedly a limitation, there is no indication that there is a geographical component associated with unlisted locations or locations with missing opening dates. Thus, while our data may be incomplete, our conclusions with regard to spatial changes in flexible offices should be largely unbiased.

4. FINDINGS

Early growth in flexible spaces reflects Tokyo's heavy centralized employment distribution as well as the tendency for flexible offices to cluster in city centers. Prior to 2015, growth in flexible offices was

relatively modest, with no more than 8 flexible office locations opening per year until 2013, when 18 locations were established, followed by 32 locations in 2014 and 28 in 2015. Like most major cities around the world, the vast majority of these flexible offices were located in Tokyo's urban core: 62.4% were established in the CBD, with 26.1% in URAs and just 11.5% in SAs. Figure 7 shows the percentage of flexible office spaces opening in each year by their spatial location.

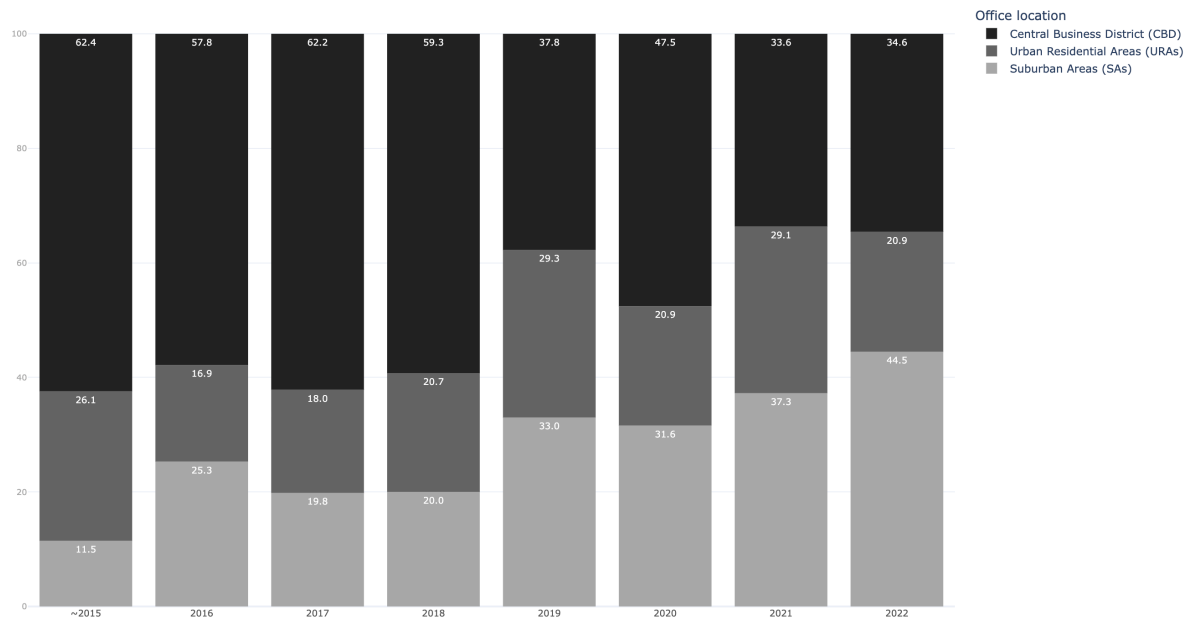
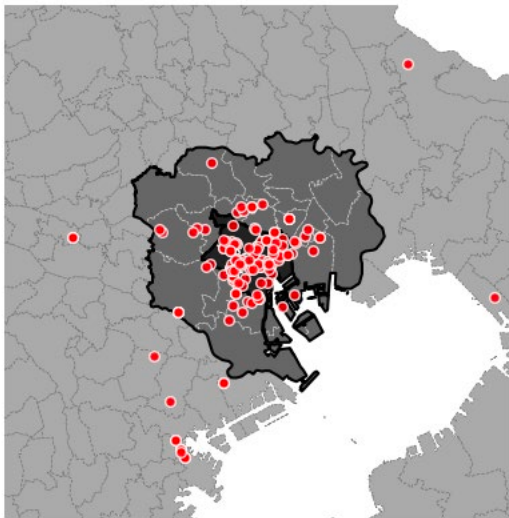


Figure 7: Percent of flexible offices opening by location

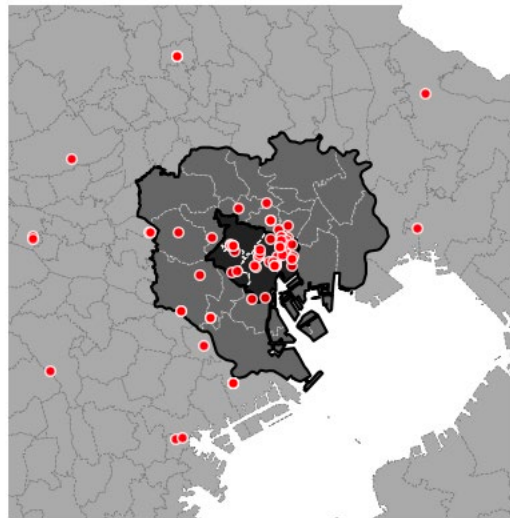
In the years leading up to the COVID-19 pandemic, there was an acceleration in the number of flexible spaces opening. Eighty-three locations opened in 2016, 111 in 2017, 135 in 2018, and 294 in 2019. This growth in the flexible office market was also marked by a modest spatial expansion: between 2016 and 2019, approximately 20% or more of newly opened spaces were in SAs.

In contrast to the steady but moderate growth prior to 2020, flexible office space openings spiked during the COVID-19 era. In 2020, 326 flexible offices opened, followed by 553 in 2021, and 960 in 2022. In addition to this notable growth in the volume of flexible offices, there was also a marked expansion of flexible spaces into URAs and SAs following the onset of COVID-19. In both 2021 and 2022, nearly two-thirds of new flexible offices opened outside of the CBD. Figure 8 represents this expansion visually.

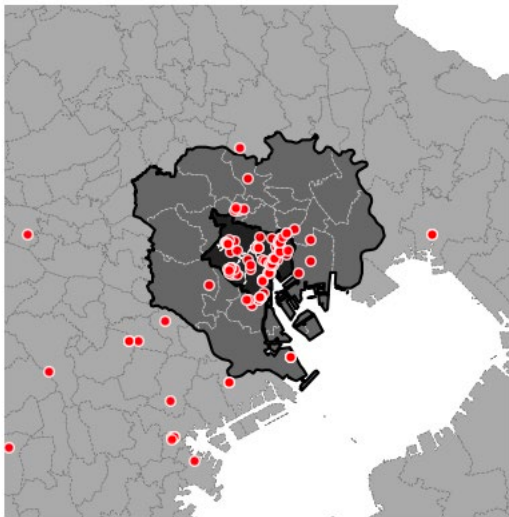
Flexible offices opened in ~2015 (157)



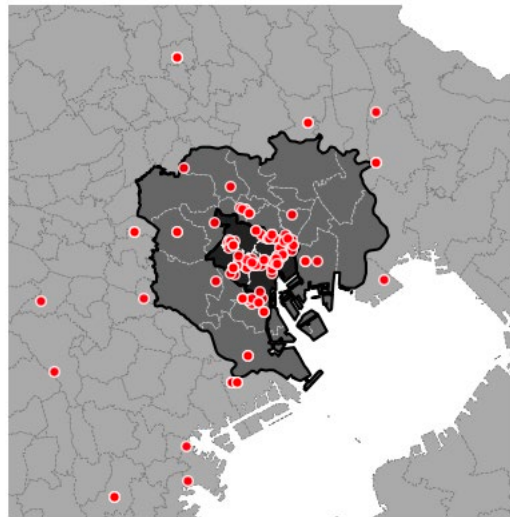
Flexible offices opened in 2016 (83)



Flexible offices opened in 2017 (111)



Flexible offices opened in 2018 (135)



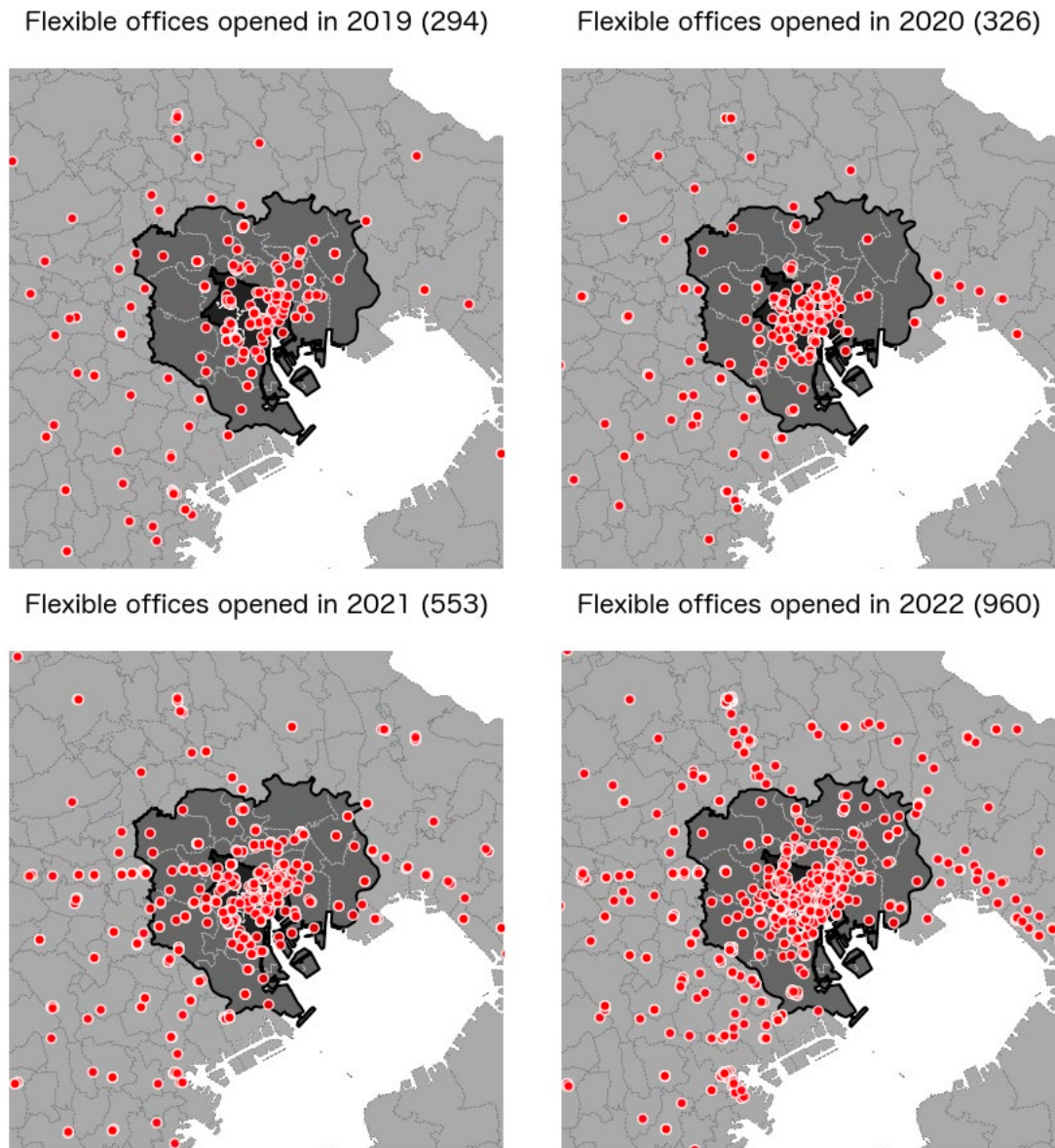


Figure 8: Flexible office openings by year

Simple logistic regressions confirm a statistically significant association between the onset of the COVID-19 pandemic and the likelihood of a given flexible office space being opened outside of the city center. Table 1 shows the results of four models: the dependent variable for models 1 and 2 is a dummy variable indicating whether a flexible office was opened in an SA (“1”) versus being opened in a URA or the CBD (“0”); the dependent variables for models 3 and 4 indicate whether a flexible office was opened outside of the CBD (either in an SA or a URA) (“1”) or inside the CBD (“0”). A continuous year variable and a “post COVID” dummy variable are the sole independent variables in all of the models. Models 1 and 3 represent the naïve condition, where the COVID-era association with the spatial location of newly established flexible offices is assumed to function independently of

the year-to-year trend. Models 2 and 4 interact the continuous year variable with the “post COVID” dummy variable to capture the combined association between yearly-to-year trends and trends specific to the COVID-19 era.

Table 1: Logistic regressions

	<i>Dependent variable:</i>			
	Likelihood in Suburb (1)	Likelihood in Suburb (2)	Likelihood outside CBD (3)	Likelihood outside CBD (4)
year	0.143*** (0.030)	0.074** (0.028)	0.521*** (0.060)	0.122* (0.058)
post COVID	0.259 (0.174)	-726.954*** (139.589)	-0.470 (0.260)	-1,407.905*** (195.122)
year * post COVID		0.360*** (0.069)		0.697*** (0.097)
Constant	-289.569*** (60.945)	-148.726** (56.290)	-1,053.850*** (121.956)	-248.012* (117.077)
Observations	2,628	2,628	2,628	2,628
Log Likelihood	-1,731.537	-1,718.201	-1,545.293	-1,523.730
Akaike Inf. Crit.	3,469.074	3,444.402	3,096.586	3,055.459
<i>Note:</i>	* p < 0.05; ** p < 0.01; *** p < 0.001			

Positive, statistically significant coefficients on the “year * post COVID” variables in both models 2 and 4 highlight the diffusion of flexible office spaces in SAs and non-CBD jurisdictions. Put simply, the increase in the likelihood of a flexible office being established in an SA or a URA accelerated during the COVID era. Figures 9 and 10 below illustrate this diffusion using predicted values derived from the models above. Simple year-to-year trends suggest a 0.19 probability that a given flexible office would be located in an SA in 2022; by contrast, with COVID-era trends are also considered in combination with yearly trends, the probability of a SA location rises to 0.47. Similarly, assuming a continuation of pre-COVID patterns suggests a 0.48 probability that a given flexible office opening in 2022 would occur outside of the CBD; when incorporating pandemic-era trends, however, the probability rises to 0.67.

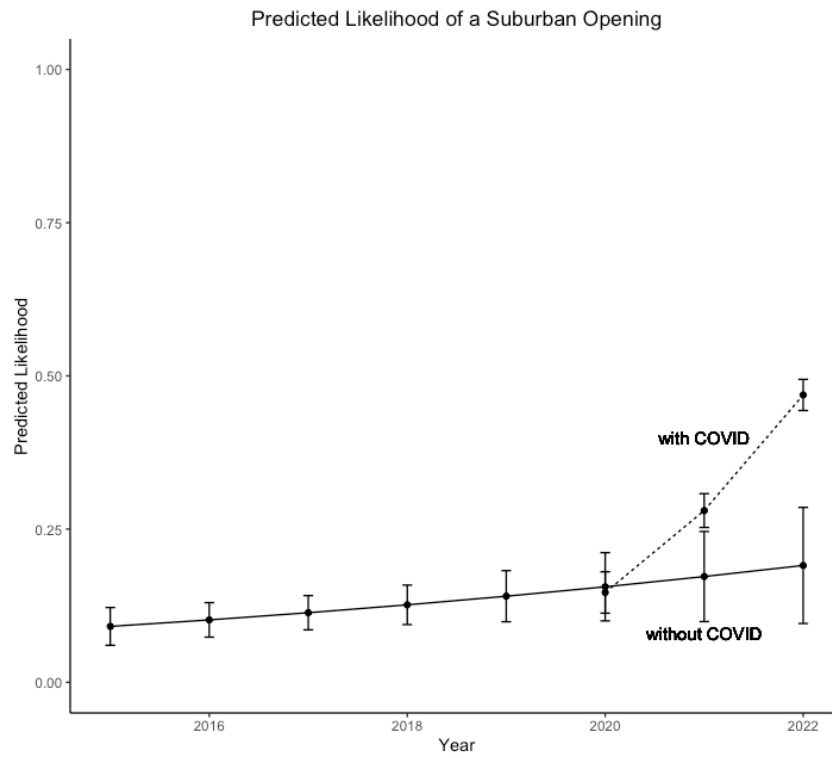


Figure 9: Predicted likelihood a suburban opening (Model 2)

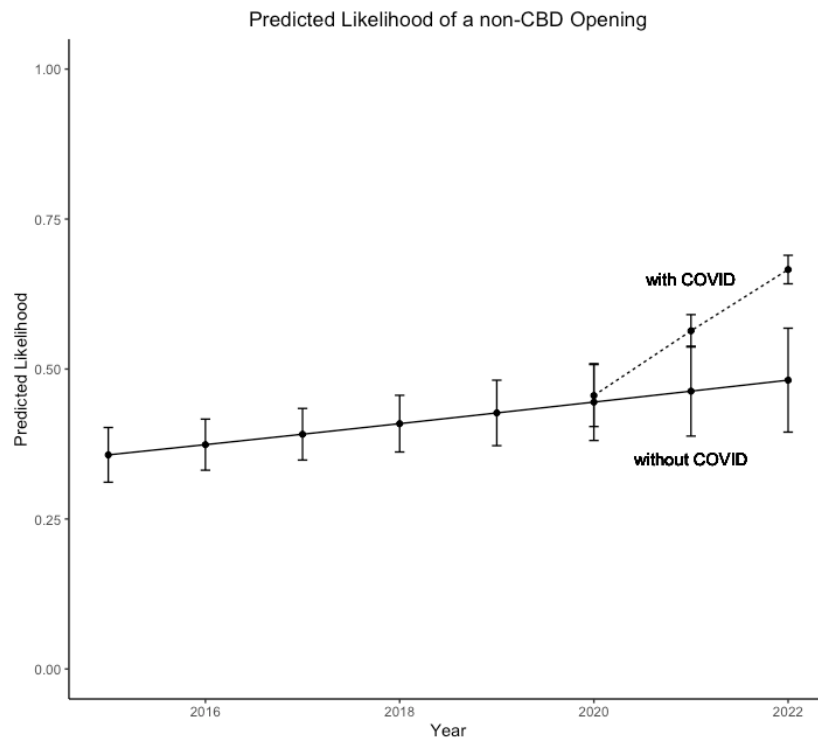


Figure 10: Predicted likelihood of a non-CBD opening (Model 4)

5. DISCUSSION AND CONCLUSION

The conceptual relationship between a rise in remote work and the spatial diffusion in demand for flexible offices is rather clear: as workers have more freedom in where they work, many may choose to work in suburban areas close to their homes. Flexible office spaces can be well situated to meet these needs by being located in residential neighborhoods outside of the city center. Against this background, it may be tempting to attribute the spatial diffusion of flexible office spaces in Tokyo during the COVID-19 era to the growth in remote work during the pandemic.

Before drawing this conclusion, however, it can be instructive to examine spatial trends in flexible offices prior to the pandemic. Data from Figure 7 above shows slow but steady growth in flexible office spaces in SAs and URAs during the four years prior to the COVID-19 outbreak (2016-2019). It is not clear, however, that this suburban growth was a response due to increased demand due to remote work. While data from the Ministry of Health, Labor, and Welfare note growth in the proportion of companies that had instituted a system of remote work from 13.3% in 2016 to 20.2% in 2019, a survey by the Ministry of Land, Infrastructure, Transportation, and Tourism (MLIT) found that the proportion of workers in the Tokyo region who worked remotely remained relatively steady during the same period (MLIT, 2022). Thus, before the onset of the pandemic, some degree of spatial diffusion occurred in flexible offices without a substantial shift in the proportion of the population that worked remotely.

The pandemic, of course, was a catalyst for a large proportion of the population to work remotely for the first time. MLIT data show that in 2021, 27% of non-self-employed workers engaged in remote work, compared to 23% in 2020 and just 14.8% in 2019. In the Tokyo metropolitan region, rates of remote work were higher, reaching 42% of non-self-employed workers in 2021 (MLIT, 2022). Other research notes lower overall levels of remote work, but similar post-pandemic increases. Okubo (2020), for example, found only 6% of workers participated in remote work on the eve of the pandemic (January 2020), compared to 11% in March 2020, and 17 percent in July of the same year. The Japan Productivity Center (2023) noted remote work rates as high as 31.5% in May 2020.

While we are unable to establish any sort of causality regarding this relationship, circumstantial evidence does suggest that, unlike the pre-pandemic period, a rise in remote work—particularly the challenges associated with performing remote work at home—was a strong driver of suburban demand for flexible offices. As remote work surged in 2020, satisfaction with working conditions was low in Japan: in May 2020, two-thirds of workers stated that their productivity had declined due to remote work, and only 18.8% of workers were “very satisfied” with working remotely (Japan Productivity Center, 2023). To be sure, the causes for these productivity declines and low levels of satisfaction were

myriad. However, surveys suggest that, in particular, dissatisfaction with the home working environment was widespread. A lack of adequate facilities and equipment, social isolation, and communication difficulties were common complaints among remote workers (Goto & Hamano, 2020; Japan Productivity Center, 2023; Kitagawa et al., 2021; Umishio et al., 2022). Since their inception, flexible offices have served as an outlet for workers dissatisfied with their work-from-home environment, and thus were well positioned to respond to this expanded customer base when the pandemic hit.

However, a willingness to expand the spatial footprint of flexible office locations was essential to growth. Despite the aforementioned frustration with many aspects of work-from-home, many remote workers expressed a high degree of satisfaction regarding their reduced commute burden (Goto & Hamano, 2020). Given the centralized nature of the Tokyo area and the heavy concentration of flexible offices in the CBD during the pre-COVID era, new remote workers in suburban regions were likely underserved in terms of flexible office options at the onset of the pandemic. This suggests the spatial expansion of flexible offices following the onset of the pandemic was, at least in part, a response to a rapidly expanding customer base in suburban areas.

Despite the spatial diffusion and rapid increase in volume of flexible office spaces during the COVID era, questions persist regarding future trends. Remote work in Japan remains relatively low compared to other highly developed economies. A July 2020 survey of workers in eight countries found workers in Japan were the least likely to participate in remote work (31%). By contrast, 75% of workers in China, 61% in the U.S., 61% in Italy, and 55% in the U.K. worked remotely (Mori, 2021). Furthermore, although satisfaction with remote work increased over time among Japanese workers, remote work rates have declined slightly as the influence of the COVID-19 pandemic has receded (Japan Productivity Center, 2023). Thus, while the association between the rise of remote work and the demand for suburban flexible offices in Tokyo is notable, the durability of these alternative work arrangements will be a key component in shaping the spatial demand for flexible office spaces in the coming years.

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