Poor Areas Urban Zoning and Access to Opportunities: The Case of Special Zones of Social Interest (ZEIS) in Recife, Brazil

With approximately 85% of its population living in cities, Brazil is a highly urbanized country. This rapid urbanization in a large developing country like Brazil has created significant challenges in providing urban infrastructure services and adequate housing for its citizens. In this context, areas with better infrastructure and proximity to jobs are highly valued, which leads to significant residential segregation and pushes poorer populations to the outskirts. The ZEIS (Special Zones of Social Interest), initiated in the northeastern city of Recife in the 1980s, served as the primary public policy response to the exclusion of the poorest communities from access to employment opportunities and services. This zoning defines a specific urban area for low-income family housing, with the aim of avoiding the displacement of residents from locations closer to services and jobs, while improving the quality of housing in the residences (garbage collection, access to the sanitation network, and access to the water network, for example). ZEIS areas also have their own urban regulations and flexible construction templates that prevent or discourage their incorporation into the market (such as the prohibition of combining lots for the construction of new buildings). Today ZEIS is present in more than 2,000 Brazilian municipalities, although the impacts of this instrument are still poorly evaluated. Despite the recent work by Sobrinho and Silveira Neto (2024) on the impact of ZEIS on urban infrastructure services, there is no study that evaluates the impact of ZEIS on the quality of insertion of their residents into the labor market. The current study aims to fill this gap. More specifically, we assess how ZEIS affects residents' employment opportunities and income in the City of Recife. To the best of our knowledge, this is the first investigation about the influence of this Brazilian zoning on labor market outcomes in the literature. Note that, although well-intentioned, the ZEIS restricts housing supply and may lead to higher housing prices and increased urban sprawl, resulting in longer commuting times. In particular, Lima and Silveira Neto (2018) e Dantas et al. (2018) have shown that urban regulation increases rents and propriety prices in the Brazilian cities and Lima and Monastério (2024) have found that FAR (Floor Area ratio) restriction positively impact on urban areas in Brazil. To assess the impact of ZEIS on labor market outcomes, we used official data from Cadúnico (*Cadastro Único para Programas Sociais*), a database of the Ministry of Development and Social Welfare, Family and Combating Hunger, and two strategies to deal with potential endogeneities associated with living in a ZEIS and the accessibility index. First, we used the entropy balance for the state of being in or out of the ZEIS and, second, an instrumental variable for the job accessibility index. The instrumental variable is based on railways built in the 19th century in Recife for the transportation of sugar from sugarcane during the Brazilian Empire period (Recife was the main Brazilian center of sugarcane production during the colonial period and the second Brazilian city to receive a railway). The Cadúnico database covers all low-income Brazilian families, and its microdata provide a wide variety of information about these families, including individual and labor market characteristics and full residential addresses. Together with company location information from RAIS (*Relatório Annual de Informações Sociais*), another official database source for Brazilian firms from the Ministry of Employment and Labor, this information from Cadúnico allows different employment accessibility measures to be obtained. The railways were originally used exclusively for transporting sugarcane and cotton from the countryside to the harbor in Recife (the city corresponded to only the center neighborhoods closer to the harbor). As a result, they are not integral to the current labor market conditions. However, they were

constructed on flat and sturdy areas in the city, which led to the development of many avenues and streets around them. Thus, our instrument can be considered exogenous (because its not related to the previous or current labor market conditions) and relevant (because it the railways were built in the better geographic sites). The relevance is confirmed by traditional tests. We obtained three main results. First, we show that better access to employment increases the likelihood that an individual lives in a ZEIS. A result that is consistent with the idea that such zoning was created to ensure better access to the city's opportunities. Second, after balancing the sample by entropy and adjusting for the instrumental variable, we find that the higher probability of being employed for those living in a ZEIS can be fully attributed to this better accessibility to employment opportunities for its residents. In other words, the channel through which ZEIS housing provides an advantage in the probability of employment for its residents is through the better location of their housing (better access to employment). Our third result indicates that ZEIS zoning has no effect on the labor income of its residents. In other words, despite increasing employment opportunities, living in the ZEIS does not increase the labor income of its residents, a result that is consistent with the similarities in human capital characteristics between ZEIS residents and nonresidents. In line with the low educational level of the Cadúnico individuals, we also show that the impact of job accessibility on the probability of being employed is greater when considering an indicator of job accessibility with less education. In order to assess the reliability of the evidence generated, we have conducted an important set of robustness tests. In particular, we show that our main results hold when using different accessibility indicators, including the access to jobs walking, using public transport, and distance of residences to the CBD. We also show that all our results hold when specific samples are used. In particular, there are no changes when evidence is obtained only from favela residents, whether they live in ZEIS or not. Such a test is important because favelas are officially considered urban agglomerations with low-income populations and may therefore influence the dissemination of information useful for employment. In general, the evidence from the work supports the idea that the creation of ZEISs facilitates access to employment for their residents and significantly increases their chances of employment. However, two caveats are necessary. First, it must be kept in mind that such a positive outcome may also be associated with greater urban sprawl and worsened access conditions for low-income families who do not live in the ZEIS. Second, it is also likely that by limiting the area available for new housing in the city, ZEIS will have a positive impact on housing prices, which will also particularly harm low-income families who do not live in ZEIS. In this sense, it is even possible that the presence of ZEIS could increase the number of people living in the city's favelas. These points suggest a very clear future research agenda. It is opportune to study the impact of ZEIS on the urban sprawl of cities that adopt such a policy and on the average commuting time of poor families who do not live in ZEIS. In addition, in our context, it is quite informative to also study the impact of the adoption of ZEIS on the number of people living in favelas in the cities that implemented the policy.