



# Has the growth in “fast casual” Mexican restaurants impacted weight gain?

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## ABSTRACT

The United States is witnessing a boom in fast casual restaurants owing to the recent growth of ethnic restaurants throughout the country. This study examines the effects of proximity to a Mexican restaurant—the dominant type of ethnic fast casual restaurant—on maternal and child health. I match data on the complete residential addresses of all mothers who gave birth in the Miami metropolitan area between 1990 and 2009 to a time series of all establishments (restaurants and stores) selling food and drink. This unique data set allows me to use mother fixed effects and to exploit the variation over time of the food environment to identify the effects on maternal weight gain and childbirth outcomes. The results show that living in proximity to a Mexican restaurant is associated with an 8% lower likelihood of excessive weight gain among US-born mothers. These effects are concentrated in low-income neighborhoods and among members of disadvantaged groups (e.g., low-skilled, young, and African-American individuals). However, the results show no protective effect for foreign-born mothers. Lastly, there is no evidence of significant effects on other maternal outcomes or on various child health metrics at birth.

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## 1. Introduction

More than one-third of the U.S. adult population is obese (35.7%).<sup>2</sup> Obesity is associated with higher risks of heart disease, stroke, type II diabetes, and certain types of cancer. Obesity is particularly high among non-Hispanic blacks (47.8%) and Hispanics (42.5%). Important factors that explain the disparities in obesity rates include limited access to healthy food, an increase in the away-from-home share of daily caloric intake, differences in preferences for healthy food, and the affordability of healthy food. Despite scant evidence that access to healthy food promotes healthier diets, several policy interventions have been introduced to improve access to healthy food. Community interventions in low-income neighborhoods have tried to favor supermarket entry and to promote healthy food offerings among retailers and

restaurants. In areas characterized by a high immigrant density, programs such as “Salud Tiene Sabor” and “Steps to a Healthier Salinas” focus explicitly on helping ethnic restaurants promote healthy menus and reduce fats, while increasing the availability of fruit and vegetables (Hanni et al., 2010; Nevarez et al., 2013).<sup>3</sup>

A few studies have attempted to analyze the causal effects of the food environment on weight gain by exploiting the entry of fast-food restaurants or large chain retailers, such as Walmart (e.g., Courtemanche and Carden, 2011). However, although previous studies suggest that fast food is less healthy and may be an important contributor to obesity (Rosenheck, 2008; Prescott and Logan, 2017; Zagorsky and Smith, 2017; Madden, 2017), there is little evidence that exposure to fast-food restaurants has causal effects on health. Different research strategies have led to slightly different conclusions about the magnitude and significance of the effect of proximity to fast-food restaurants on weight gain and obesity rates (Anderson and Matsa, 2011; Currie et al., 2010; Lhila, 2011). However, there is a growing consensus that such proximity plays a minimal role in explaining observed disparities in nutritional consumption (Handbury et al., 2015). On the contrary, we know relatively little about the roles played by different types of restaurants or variety in the food environment. Thus, the goal of

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<sup>2</sup> Source: NCHS Data Brief, January 2012, <http://www.cdc.gov/obesity/data/adult.html>.

<sup>3</sup> See also, <http://www.salud-america.org/sites/www.salud-america.org>.

this study is to analyze the effects on weight gain of people's proximity to Mexican restaurants, the dominant type of ethnic fast casual restaurant.

In recent years, fast casual restaurants (e.g., Chipotle, Shake Shack, Freshii), which promise "fresh food," but at similar prices to those of major burger joints, have been the only source of growth in the restaurant sector. Since 1999, the sector has grown by 550%, or approximately 10 times the growth of the fast-food industry over the same period (source: Euromonitor). In 2014, Americans spent \$ 21 billion at fast casual restaurants, accounting for more than one-quarter of total food service sales (source: National Restaurant Association). Within this segment, Mexican and, more generally, Latin and Caribbean-inspired fast casual chains have appeared, with Chipotle and Qdoba leading the segment.<sup>4</sup> The popularity of these restaurants is driven by the rapid growth of the Hispanic population. Indeed, Schiff (2014) and Mazzolari and Neumark (2012) show that immigration is associated with increased restaurant diversity and restaurant choice for natives. First-generation immigrants, and especially first-generation Hispanics, tend to have healthier dietary habits than those of their US-born counterparts (Vargas, 2012; Guendelman and Abrams, 1995). Therefore, immigration may increase the demand for healthier menus and, thus, the availability of healthy options in food deserts. In particular, the entry of immigrants with similar tastes to a subgroup of locals (the "healthy types") may increase the provision of products preferred by those natives. The result is an increase in their access to healthy options, particularly in low-income neighborhoods that are characterized by less diversity and a higher proportion of "unhealthy" restaurants (Schiff, 2014; Meltzer and Schuetz, 2011). This may, in turn, increase healthy consumption by reducing disparities in access to healthy food.

Consistent with this hypothesis, previous studies have found that ethnic restaurants are more likely to offer non-fried carbohydrate offerings, fruits, and vegetables (Hanni et al., 2010), as well as playing an important role in improving access to healthy food in low-income, Latino communities (Nevarez et al., 2013; Emond et al., 2012). Furthermore, using survey data, Duerksen et al. (2007) show that child and parent body mass index (BMI) values are lowest among Mexican-American families who select Mexican restaurants. This evidence provides partial support for programs promoting ethnic restaurants as channels for increasing access to healthy food. However, to the best of my knowledge, the effects on weight gain of fast casual ethnic restaurants and of increased diversity in the food environment have not yet been studied.

This study attempts to fill this gap in the literature on food deserts and proximity to fast food restaurants by analyzing the relationship between proximity to Mexican restaurants and weight gain. I focus on a sample of pregnant women and examine the effects on excessive maternal weight gain, which has been linked to long-term overweight and obesity, as well as various adverse health outcomes (Derbyshire, 2009). In addition, I examine the effects on other pregnancy outcomes, including several metrics of child fitness at birth. Because of the identification strategy and the focus on maternal weight gain, this study is closely related to that of Lhila (2011), who provides evidence of a positive association between greater access to fast-food restaurants and excessive weight gain during pregnancy, but finds no significant effects on birth outcomes. This work is also related to that of Currie et al. (2010), who estimate very small positive effects on maternal weight gain using administrative records.

I obtained data on all births in the Miami metropolitan area between 1990 and 2009 and matched them to a directory of all eating and drinking establishments and food stores that were open in the metropolitan area over the same period. One reason to focus on this area is that, in the Miami metropolitan area, the growth of ethnic restaurants has been particularly rapid over the last 20 years.<sup>5</sup> The main advantages of analyzing weight gain during pregnancy is that it allows me to exploit a large sample of administrative records drawn from the Vital Statistics of Florida and to use the variation in the food environment across the same mothers' pregnancies. Mother fixed effects account for time-invariant individual heterogeneity that may be correlated with individual location and the likelihood of gaining excessive weight. Similarly to Currie et al. (2010), I use data on the exact geographic locations of restaurants to analyze how the availability of fast food and ethnically defined restaurants is related to maternal weight gain, pregnancy outcomes, and child health at birth.

The results suggest that proximity to a Mexican restaurant is associated with a lower likelihood of excessive weight gain among US-born mothers during pregnancy. The effects appear to be larger among minority, low-skilled, and young mothers, although these differences are not estimated precisely. I find no protective effect of proximity to Mexican restaurants for foreign-born mothers, and no evidence of significant effects on other maternal or child health outcomes (e.g., hypertension, diabetes, child birth weight). Finally, I find no evidence of significant effects of fast food proximity.

A natural concern with the identification strategy is that while I am trying to estimate the effects of changes in the supply of fast casual restaurants, the estimates may capture unobservable shifts in the demand for such restaurants or ethnic foods. In particular, these chains are likely to open in areas where there are higher chances of market success and demand is expected to be strong. Thus, one may be concerned that unobserved determinants of health and eating behavior may be correlated with changes in the availability of ethnic restaurants. If the density of ethnic restaurants is correlated with a lower risk of weight gain, I may overestimate the positive effects of proximity to fast casual ethnic restaurants. As in Currie et al. (2010), I am not able to rule out this possibility. However, note that the maternal fixed effects mean that the key identifying assumption is that the maternal behavior/weight gain of the same mother should not change in the absence of a change in the local food environment across pregnancies. Furthermore, to strengthen the credibility of the identification strategy and the causal interpretation of the results, I present several sensitivity analyses and unconfoundedness tests. In particular, I show that proximity to future fast casual restaurants has no effect on maternal weight gain. Furthermore, changes in the proximity to Mexican restaurants are not correlated with other important determinants of weight gain. It is also worth noting that measurement error may induce attenuation bias in our estimates. Finally, the results are robust to the inclusion of a wide set of time-varying neighborhood characteristics.

This paper is organized as follows. Section 2 presents the conceptual framework. Section 3 discusses the data, empirical specification, and identification strategy, and Section 4 presents the main results of the study. Lastly, Section 5 concludes the paper.

## 2. Conceptual framework

Surveys of restaurant operators suggest that restaurants and food retailers are reluctant to offer healthy products in certain neighborhoods owing to a lack of demand. A likely explanation is

<sup>4</sup> <http://www.economist.com/news/business/21638120-why-slightly-more-up-market-outlets-are-eating-fastfoods-lunch-better-burgers-choicer-chicken>.

<sup>5</sup> See, for instance, <http://smartblogs.com/food-and-beverage/2012/03/08/why-fastcasual-connects-so-well-with-the-social-consumer/>.

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