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ABSTRACT

Has the Growth in "Fast Casual" Mexican Restaurants Impacted Weight Gain?*

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.

JEL Classification: I10, J1, R20

Keywords: restaurant proximity, food environment, maternal weight gain

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1 Introduction

More than one-third of the U.S. adult population is obese (35.7%).[1] 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).[2]

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

[1] Source: NCHS Data Brief, January 2012, `http://www.cdc.gov/obesity/data/adult.html`.
[2] See also, `http://www.salud-america.org/sites/www.salud-america.org`

about the roles played by different types of restaurants or variety in the food environment. Thus, the goal of 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.[3] 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.,

[3]http://www.economist.com/news/business/21638120-why-slightly-more-upmarket-outlets-are-eating-fast foods-lunch-better-burgers-choicer-chicken.

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.[4] 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'

[4]See, for instance, http://smartblogs.com/food-and-beverage/2012/03/08/why-fast casual-connects-so-well-with-the-social-consumer/.

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 that in a sector such as the restaurant industry, which faces relatively high fixed costs and markedly heterogeneous preferences, a product will be made available only if there is sufficient demand for it (George and Waldfogel, 2003; Waldfogel, 2003). As suggested by Waldfogel (2008), the provision of public goods responds to the preferences of the median voter, whereas the supply of local private goods responds to the preferences of the median consumer. Thus, supply is importantly related to the demographic composition of the market. Consistent with this hypothesis, Schiff (2014) shows that the presence of ethnic neighborhoods increases the likelihood that a market supports a particular cuisine. Therefore, the provision of private goods is lumpy and sensitive to the distribution of preferences. This is particularly true for perishable products that need to be consumed locally.

Because the agglomeration of individuals with a given set of tastes results in the provision of certain products, Waldfogel (2008) suggests that immigration may have positive externalities on the subgroup of locals with similar tastes, eventually shifting the median consumer's equilibrium. Consistent with this conjecture, he shows that the mix of locally available restaurants is sensitive to zip code demographics, such as race and education. Mazzolari

and Neumark (2012) provide further evidence that immigration affects product variety by testing directly the relationship between immigrant inflows and the composition of products in the retail and restaurant sectors. Duerksen et al. (2007) and Hanni et al. (2010) provide evidence that Mexican restaurants may promote access to healthier options, supporting policy interventions such as "Salud Tiene Sabor." I extend these studies by examining whether the growth of fast casual ethnic restaurants, particularly Mexican restaurants, has affected weight gain.

From a theoretical perspective, immigration may affect the provision of healthy food in a neighborhood by affecting both demand and supply. If immigrants have healthier diets than natives, as the public health literature suggests (Guendelman and Abrams, 1995), then the demand for healthy products may increase in the neighborhoods into which immigrants move. If the population is composed of two types, healthy and unhealthy, one might expect that immigration would benefit the healthy types by increasing the availability of healthy products in a given neighborhood.

Even if tastes are stable in the population and preferences are not affected by supply over the short run, food variety may favor the consumption of healthy products among healthy types. Thus, not only can proximity to healthy options reduce the cost of healthy food, but it may also reduce self-control problems typical of obesogenic environments (O'Donoghue and Rabin, 2000; Laibson, 2001; O'Donoghue and Rabin, 2000; DellaVigna, 2009). Demand may also be affected by peer effects. Finally, immigrants may increase the supply of ethnic food because of their comparative advantage in its production (Mazzolari and Neumark, 2012). However, whether increased access to fast casual ethnic restaurants promotes the consumption of healthy food and positively affects the health of a community is ultimately an empirical question. By focusing on the dominant type of fast casual restaurants, this study analyzes the effects of proximity to Mexican restaurants on maternal weight gain during pregnancy.

3 Data and Empirical Specification

3.1 Data

The main data used in this study are drawn from the Vital Statistics Natality Data for Florida and the National Establishment Time Series Database (NETS, Dun and Bradstreet). Specifically, the data on maternal and child outcomes are drawn from the birth certificates of all children born in the Miami metropolitan area between 1990 and 2009. I obtained confidential information on mother's and father's full name, mother's exact date of birth, and the complete residential address, which I used to link births to the same mother. These administrative records include information on maternal age, education, race, ethnicity, and country of birth; whether the mother smoked during pregnancy; child's gender, birth order, and type of birth; and maternal weight gain.[5] Following Currie et al. (2010), I restrict the sample to singleton births and to mothers with at least two births during the sample period, and include only those records with complete information on weight gain.[6] The final sample consists of 565,871 observations.

The NETS data set provides time series information on establishment mobility patterns, sales growth performance, job creation and destruction, changes in primary markets, and historical D&B ratings. I obtained a panel of all establishments in SIC codes 58 ("Eating and Drinking Places") and 54 ("Food Stores") for the period 1990 to 2009. Here, I use the addresses, names, and categorical classifications to identify different types of restaurants and their exact geographical locations. These data have been often in previous studies on the restaurant industry. They are considered more precise than the yellow pages or business directories (Mazzolari and Neumark, 2012; Currie et al., 2010) and are considered the best for studying business locations (Kolko et al., 2007). In addition, the NETS data contain information on the primary standard industrial classification of each establishment. Through letter surveys, phone surveys, or internet updates, the establishment chooses (or Dun and

[5] A limitation of the Natality data is that they do not include information on time spent in the US.
[6] This information is missing for 7.7% of the sample.

Bradstreet assigns) its primary (and secondary) SICs from a list of over 18,750 eight -digit SICs developed by Dun and Bradstreet.

To identify Mexican restaurants, which represent the largest category of ethnic fast casual restaurants in the United States , I use a narrower indicator, namely, SIC 58120112 ("Mexican restaurants"). Note that Mexican-American fast-food restaurants, such as Taco Bell, are classified as fast-food restaurants and are not included in the Mexican restaurant definition used in this study. Additionally, I use the company name to identify Mexican restaurants that may have been misreported as generic eating places—but not classified as fast-food restaurants— by searching for words in the business names that suggest a Mexican restaurant (e.g., "Mexican," "Mexico," "Burrito").[7] I consider only the top 10 fast-food chains as fast-food restaurants (Currie et al., 2010). The fast-food list includes McDonalds, Subway, Burger King, Taco Bell, Pizza Hut, Little Caesars, KFC, Wendy's, Domino's Pizza, and Jack in the Box.[8] I also identify cafeterias, pizza places, and family restaurants. Finally, I include data on the availability of food stores, which are classified separately as supermarkets, grocery stores, and convenience stores (Meltzer and Schuetz, 2011; Emond et al., 2012).

Using $ArcInfo$, I merge these data with the information drawn from the universe of Florida births using the latitude and longitude of the maternal residential address and of the restaurant locations. In particular, following Currie et al. (2010), I match the data on weight gain during pregnancy and on birth outcomes with the proximity to fast-food restaurants, Mexican restaurants, other types of restaurants, and supermarkets in the year that overlaps most closely with the gestation period. Distance from a restaurant is defined as the distance between two points on Earth.[9]

[7] However, the results are robust only to using the SIC classifications.

[8] As an alternative classification for fast-food restaurants, I consider all establishments in the eight-digit SIC for fast food and all chains listed as fast-food restaurants by Wikipedia. However, the main results are not substantially affected by this definition, because the top 10 fast-food chains cover most of the market.

[9]

3.2 Summary Statistics

Table 1 shows the summary statistics for the main variables used in the analysis. Using restaurant data and mothers' residential addresses, I construct indicators for the presence of fast-food restaurants, Mexican restaurants, other restaurants, and supermarkets or grocery stores within 0.5 miles of the addresses, which is a distance that a person can walk in approximately 10 minutes. This measure of proximity follows that used in the existing literature (Davis and Carpenter, 2009; Rundle et al., 2009; Currie et al., 2010).

Column 1 includes the data on all births. Column 2 presents the same statistics, but for the restricted sample of mothers who have had at least two children. Then, in column 3 (4), I restrict the sample to mothers who reside within 0.5 miles of a fast-food (Mexican) restaurant. Approximately 40.3% of pregnant mothers in the sample live within 0.5 miles of a fast-food restaurants and 12.5% live within 0.5 miles of a Mexican restaurant. Mothers who live near fast-food and Mexican restaurants have slightly different characteristics to those of average mothers. Mothers who live in proximity to Mexican restaurants tend to be younger, and are less likely to be black, more likely to be Hispanic, and less likely to smoke. There are 135,068 mothers in the sample who have at least two children. Furthermore, 101,469 mothers experienced a change in fast-food availability within 0.5 miles, and 47,046 mothers experienced a change in Mexican restaurant availability within 0.5 miles.

3.3 Empirical Specification

The baseline specification is:

$$Y_{izt} = \beta_1 F5_{izt} + \beta_2 MX5_{izt} + \beta_4 3Other5_{izt} + \beta_4 SPM5_{izt} + \delta X_{izt} + Z_{zt} + d_i + \epsilon_{izt}, \qquad (1)$$

where Y_{it} is an indicator that takes the value one if mother i living in zip code z at time t gains more than 20 kg during pregnancy; $F5$ is an indicator that takes the value one if there is a-fast food restaurant within 0.5 miles of the mother's residential address; $MX5$ is

an indicator that takes the value one if there is a Mexican restaurant within 0.5 miles of the mother's residential address; $Other5$ is an indicator that takes the value one if other types of restaurants (not classified as Mexican or fast food) are available within 0.5 miles of the mother's residential address; $SPM5$ is a vector of three indicators, namely, whether the mother lived within 0.5 miles of a supermarket, grocery store, or convenience store; and X_{izt} is a vector of time-varying maternal characteristics, including age dummies, four dummies for education (high school dropout, high school graduate, some college, college or more), tobacco use during pregnancy, child's gender, parity, marital status and year dummies, and race and ethnicity dummies. Moreover, Z_{zt} is a set of time-varying zip code characteristics, including the share of high school dropouts, high school, college graduates, and those with more than a college degree; the share of Hispanics and blacks; the share of Cuban, Puerto Rican, and Mexican mothers; the share of the female population; income per capita; and income per capita among Hispanics. Finally, d_i is a mother fixed effect. Standard errors are clustered by mother. In alternative specifications, I include zip code fixed effects, which capture time-invariant characteristics at the zip code level.

In practice, the baseline empirical strategy compares two women who had similar access to fast-food restaurants, supermarkets, or convenience stores, but differential access to ethnic/fast casual restaurants. However, using an alternative model, I also report estimates obtained without controlling for the presence of other types of restaurants or supermarkets.

Because the variation in restaurant supply across pregnancies could be induced by changes in the local food environment or by mothers relocating, I also consider an alternative model that focuses on mothers who resided in the same place, thus limiting the source of variation to the opening and closing of different types of nearby restaurants between pregnancies. This within-mother analysis allows me to control for individual unobservables that might affect both her own locational choices and the likelihood of negative health outcomes. Note that measurement errors in store entry and location data may cause an attenuation bias in the main estimates of the study. Furthermore, the attenuation bias may be exacerbated by the

use of an individual fixed effects model (Wooldridge, 2010).

4 Main Results

Table 2 analyzes the relationship between the food environment and excessive maternal weight gain. Following previous studies, as the dependent variable, I use a dummy variable that takes the value one if weight gain is above 20 kg. This threshold has been used previously in the literature, because the incidence of low Apgar[10] scores is shown to increase significantly with weight gain above 20 kg (Currie et al., 2010). To mitigate the possible endogeneity bias caused by the correlation between immigrants' location choices and neighborhood changes in the supply of food environment, the main analysis focuses on US-born mothers. However, I discuss the results for the foreign-born population in Section 4.2.

When analyzing all US-born mothers with at least two pregnancies in the sample, I find no evidence of significant effects of proximity to fast food (column 1).[11] Differences in the sample sizes and populations analyzed can explain the differences with respect to the findings of Currie et al. (2010). Although the overall estimated effect of the availability of fast-food restaurants within 0.5 miles (coef., -0.0028; s.e., 0.004) is not statistically different from that of Currie et al. (2010) (+0.002; 0.001), note that the combination of the two decreases the posterior estimates of the effect size. The sign of the coefficient of the availability of fast-food restaurants becomes positive, although not statistically significant, when analyzing shorter distances.[12]

The availability of a Mexican restaurant within 0.5 miles is associated with a 1.1 percentage point reduction in the likelihood of gaining excessive weight during pregnancy (column

[10]The Apgar scale is determined by evaluating the newborn using five simple criteria: appearance, pulse, grimace, activity, respiration.

[11]Although OLS estimates confirm a positive correlation between fast-food exposure and maternal weight gain, when controlling for sociodemographic variables, the coefficient shrinks and becomes non-significant. Among US-born mothers, the positive correlation remains robust to the addition of individual sociodemographic controls and zip code time-varying characteristics, but becomes non-significant once zip code (mother) fixed effects are included. These results are available upon request.

[12]In particular, the estimated coefficient when analyzing the availability within 0.1 miles is 0.019 (s.e, 0.012), and the point estimate is 0.005 (s.e., 0.005) when considering the availability within 0.25 miles.

1). This corresponds to an effect of 8.5% with respect to the incidence of excessive weight gain in the sample. When including both mother and zip code fixed effects (column 2), the coefficient remains significant and essentially unchanged. When restricting the sample to mothers who did not change zip codes or addresses across pregnancies (columns 3–4), the point estimate remains relatively stable—if anything, it increases in absolute value. However, the coefficient is only marginally significant when I reduce the identification power by excluding from the analysis mothers who changed neighborhoods across pregnancies. These results suggest that in the absence of access to healthier fast casual restaurants, mothers would have shifted to less healthy fast-food consumption or at-home dining options. In addition, the lack of significant effects on foreign-born may be consistent with foreign-born being less likely to dine out, having healthier diets, and spending more time preparing food.[13] These results are robust to the inclusion of zip code-specific time trends (Table A.2).

Table 3 shows the heterogeneity of the results across sociodemographic groups. The coefficient of proximity to Mexican restaurants is larger among mothers who are minorities, less educated, and younger.[14] While these differences are not estimated precisely, the point estimates reported in columns 2–4 are smaller for US-born white mothers than they are for US-born black mothers. Columns 5 and 6 show that the coefficient is significantly smaller among mothers who have at least some college education (column 6) than it is for mothers who have a high school degree or less (column 5). Finally, in column 7, I restrict the analysis to mothers who gave birth at a relatively young age (below the median age in the sample, 28). Again, although the differences across groups are not statistically significant, the point estimate is larger than it is among mothers who gave birth at a later age (column 8).[15]

[13]There is no significant difference in the point-estimates when not controlling for other fast-food restaurants or for grocery stores. This partially reflects the reality that, in practice, in most places (and for 67% of the observations) where a Mexican restaurant is available, other fast-food restaurants are too.

[14]The results are similar when including zip code fixed effects and when focusing on stayers.

[15]Interestingly, the effects are larger among women who were not overweight before the pregnancy and for those who already had children and, thus, are likely more time constrained. Table A.4 shows that the coefficient is larger among women who already had a child. This may be explained by the fact that pregnant women who have older children may be particularly pressed for time and more inclined to dine out. However, the results reported in Table A.4 are not statistically significant and should be interpreted with caution, given the size of the standard errors and the lack of identification power.

In Table 4, I check how the estimates vary with proximity. The availability of a Mexican restaurant within 0.1 miles is associated with a 4.8 percentage point reduction in the likelihood of gaining excessive weight during the pregnancy (column 1). The effect reduces to 2 percentage points at 0.25 miles (column 3). Column 3 reports the baseline estimate of a 1.1 percentage point reduction for mothers living with 0.5 miles of a Mexican restaurant. The coefficient becomes much smaller when considering the availability of a Mexican restaurant within one mile (column 4). Overall, it is reassuring to see that the coefficient (in absolute value) monotonically decreases with distance and becomes larger when we analyze availability within 0.1 or 0.25 miles.

4.1 Robustness Checks

Table 5 presents an unconfoundedness test that examines the effects of future restaurant openings and analyzes the effects of weight-gain determinants that should not be affected by the food environment. Consistent with the identification assumption, future openings of Mexican restaurant have no effect on maternal weight gain (see columns 1–3).

Columns 4–6 present a placebo test that analyzes the relationship between the availability of different types of restaurants and time-varying individual characteristics, controlling for mother fixed effects. Here, I examine maternal smoking, marital status, and an indicator for quality of care. These variables are time-varying within mothers. If the identification assumption is correctly specified, then these variables should not be correlated with changes in the food environment and, in particular, with proximity to Mexican restaurants. Consistent with this prior, I find no evidence that these individual time-varying characteristics are correlated with the availability of a Mexican restaurant within 0.5 miles.

As a further robustness test, I create an index of excessive weight gain risk using all available covariates and test whether the availability of a Mexican restaurant within half a mile is significantly correlated with the index. In practice, I first regress the observable determinants of weight gain (i.e., the set of controls used in the main specification) on the

indicator for excessive weight gain, and then use the fitted values as an index of weight-gain determinants. Column 7 shows that the coefficient of the predicted risk of excessive weight gain is very small and negative, suggesting that, if anything, omitted determinants may be biasing the estimates toward zero. There is also no evidence of significant effects on C-section births.

These results do not allow us to rule out the possibility that the results presented thus far capture unobserved shifts in demand that are correlated with the opening and closing of restaurants across areas. However, our findings show that the coefficients reported in Tables 2–4 are not confounded by observable individual characteristics that are known to affect maternal weight gain during pregnancy, thus mitigating concerns that unobservables may confound the main estimates.

Because recommended weight-gain thresholds vary with pre-pregnancy BMI, I test the effects of the availability of a Mexican restaurant on a BMI-specific indicator of "normal weight gain" (see Table A.1). [16]. Unfortunately, information on pre-pregnancy BMI is only available since 2004, severely restricting the sample size. However, OLS estimates confirm a protective effect of the availability of a Mexican restaurant within 0.5 miles from mother's residence during pregnancy. Furthermore, while the fixed-effects estimate is imprecise, owing to the large standard errors, the point-estimate remains fairly stable.

4.2 Other Results

Among first-generation Hispanic mothers, the availability of a Mexican restaurant within 0.5 miles is not significantly associated with excessive weight gain during pregnancy (see Table A.3. The coefficient is positive, but not estimated precisely. The eating habits of foreign-born Hispanics are markedly different from those of their native counterparts. The lack of significant effects on first-generation mothers may be consistent with existing evidence that first-generation Hispanics are less likely to dine out and are more likely to have healthier

[16] I construct this measure following the CDC recommendation: `https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pregnancy-weight-gain.htm`

diets (Vargas, 2012; Guendelman and Abrams, 1995). Thus, first-generation Hispanics are less likely to be affected by the availability of Mexican restaurants in the neighborhood. However, these results should be interpreted with caution. Previous studies have shown that immigrant women have a lower BMI than that of their native counterparts upon arrival, but that their BMI levels almost completely converge to American BMIs within 10 years of arrival (Antecol and Bedard, 2006). If immigrant location choices are correlated with the supply of ethnic restaurants and with their process of assimilation, our relationship of interest will be confounded.

Since 2004, the birth records have included information on pre-pregnancy BMI. Using this information, the results suggest that, if anything, proximity to a Mexican restaurant seems to have a larger protective effect (in terms of a lower likelihood of excessive weight gain) among mothers who were not overweight at the beginning of the pregnancy (BMI $\geq$ 25) (Table A.4, columns 3–4). However, because this analysis is restricted to the period from 2004 onward, the sample of pregnancies for mothers with at least two singleton births is substantially smaller. Thus, these coefficients are not estimated precisely, and should be interpreted with caution. Using the 2004–2009 sample, I also analyze the effects of proximity to Mexican restaurants on weight gain across pregnancies. While I do not have sufficient power to identify a statistically significant effect, the point estimates reported in columns 1–3 of Table A.5 suggest that the availability of a Mexican restaurant reduces the risk of weight gain across pregnancies and of the likelihood of becoming obese or overweight. There is no evidence of significant effects on gestational hypertension or diabetes.

Table A.6 shows no evidence of significant effects of proximity to either fast-food or Mexican restaurants on various metrics, such as birth weight in grams, incidence of low birth weight (birth weight below 2,500 grams), and the likelihood of reporting a low five-minute Apgar score (Apgar < 8) score.[17]

[17]The Apgar scale is determined by evaluating the newborn baby on five simple criteria, on a scale from zero to two, and summing the five values obtained. The resulting Apgar score ranges from zero to 10.

5 Conclusion

This study extends previous works by analyzing the role of Mexican restaurants and examining a broad set of maternal and pregnancy outcomes. I exploit changes in restaurant availability within half a mile of the mother's residential address across births of the same mother. I find that US-born mothers living within half a mile of a Mexican restaurant are less likely to gain excessive weight during pregnancy. These results suggest that this relationship might be stronger among those at higher risk of unhealthy behaviors, and might be characterized by low socioeconomic status (i.e., less educated, young, black women). Finally, there is no evidence of significant effects on other maternal and child health outcomes.

More research is needed to identify the exact mechanisms underlying these results and to evaluate their external validity. Nevertheless, these results provide some support for policy programs seeking to promote ethnic restaurants and foods as a strategy to increase access to healthy options and to encourage healthy eating in low-income neighborhoods.

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Table 1: Summary Statistics, Florida Birth Records (1990-2009), Miami CBSA

	All births	Siblings only	Siblings ≤0.5mile from a fast food rest.	Siblings ≤0.5mile from a Mexican rest.
Age of mother	26.32	26.06	26.49	26.13
Mother graduated from high school	0.33	0.32	0.30	0.30
Mother attended some college	0.20	0.19	0.18	0.17
Mother attended college or more	0.24	0.23	0.26	0.25
Mother is black	0.40	0.42	0.31	0.29
Mother is Hispanic	0.32	0.35	0.44	0.48
Mother smoked	0.04	0.03	0.03	0.03
Child is male	0.51	0.51	0.51	0.51
Parity	0.99	1.15	1.15	1.13
Weight gain grater than 20 k	0.17	0.16	0.16	0.16
Observations	231,735	150,943	40,842	13,179

Notes - There are 135,068 mothers with two or more children in the sample. There are 101,469 mothers who experience a change in fast food availability within 0.5 miles and 47,046 mothers who experienced a change in Mexican restaurant availability within 0.5 miles.

Table 2: Food Environment and Excessive Weight Gain (greater than 20 kg), Florida Birth Records (1990–2009), Miami CBSA: Alternative Specifications

Demographic Sub-samples:	(1) US Born Overall	(2) US Born Overall	(3) US Born Stayers (same zip code)	(4) US Born Stayers (same address)
Availability of a Mexican restaurant within 0.5 miles	-0.0113** (0.005)	-0.0110** (0.006)	-0.0134 (0.008)	-0.0134 (0.008)
Availability of a fast food restaurant within 0.5 miles	-0.0028 (0.004)	-0.0028 (0.004)	-0.0030 (0.005)	-0.0030
Availability of other eating places within 0.5 miles	0.0046 (0.004)	0.0046 (0.004)	0.0096 (0.007)	0.0096
Availability of a convenience store within 0.5 miles	0.0033 (0.003)	0.0033 (0.003)	-0.0031 (0.005)	-0.0031 (0.005)
Availability of a grocery store within 0.5 miles	0.0029 (0.004)	0.0029 (0.004)	0.0005 (0.006)	0.0005 (0.006)
Availability of a supermarket within 0.5 miles	-0.0011 (0.004)	-0.0011 (0.004)	0.0028 (0.006)	0.0028 (0.006)
Mother fixed effects	YES	YES	YES	NO
Zip code fixed effects	NO	YES	NO	NO
Observations	213,541	213,541	134,162	134,112

Notes - The unit of observation is a pregnancy for mothers with at least two singleton births. The dependent variable is excessive maternal weight gain, defined as a dummy variable that equals 1 when the weight gain during pregnancy is greater than 20 kg. The entries reported in rows are the respective coefficients on dummies for the availability of a Mexican restaurant, a fast food restaurant, other eating places (not classified as Mexican or fast food), a convenience store, a grocery store, or a supermarket within 0.5 miles of the mother's residence. All estimates include controls for time-varying mother characteristics, including child's gender, mother's education (4 groups), mother's age dummies, parity, marital status, tobacco use during pregnancy, and child's year of birth dummies. The regressions also include a set of controls at the zip code level: share of adults (over 25) with a high school degree or less, some college, college or more; share of female, black, white and Hispanic population; share of Cuban, Mexican and Puerto Rican mothers; poverty rate; per capita income; and per capita income in the Hispanic population. The zip-code level data are drawn from the 1990 US Census for all pregnancies that occurred before 2000 and from the 2000 US Census for pregnancies that occurred after 2000. Other control variables include indicators for missing information (tobacco use, parity, marital status, race). All estimates include mother fixed effects. Column 2 includes zip code fixed effects. Column 3 restricts the analysis to mothers who lived in the same zip code across pregnancies. Standard errors clustered by mother are reported in parentheses.

Table 3: Food Environment and Excessive Weight Gain (greater than 20 kg) by Sociodemographic Groups, Florida Birth Records (1990–2009), Miami CBSA

	(1) Overall	(2) Whites	(3) Blacks & Hispanics	(4) Blacks	(5) Hispanics	(6) Low Skilled	(7) High Skilled	(8) Age < 28	(9) Age ≥ 28
Availability of a Mexican restaurant	-0.0113**	-0.0070	-0.0112*	-0.0103	-0.0051	-0.0180**	0.0002	-0.0105	-0.0073
within 0.5 miles	(0.005)	(0.007)	(0.006)	(0.009)	(0.008)	(0.007)	(0.009)	(0.008)	(0.010)
Availability of a fast food restaurant	-0.0028	-0.0022	-0.0051	-0.0024	-0.0075	-0.0047	0.0024	-0.0016	-0.0022
within 0.5 miles	(0.004)	(0.005)	(0.004)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.007)
Availability of another eating place	0.0046	-0.0006	0.0053	0.0079	-0.0026	-0.0003	0.0045	0.0082	0.0062
within 0.5 miles	(0.004)	(0.006)	(0.005)	(0.007)	(0.008)	(0.006)	(0.007)	(0.006)	(0.008)
Availability of a grocery store	0.0029	0.0024	0.0018	0.0031	-0.0010	0.0013	0.0048	-0.0014	0.0046
within 0.5 miles	(0.004)	(0.005)	(0.004)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.007)
Availability of a convenience store	0.0033	-0.0010	0.0046	0.0043	0.0013	0.0047	0.0028	0.0017	0.0078
within 0.5 miles	(0.003)	(0.005)	(0.004)	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)	(0.006)
Availability of a supermarket	-0.0011	-0.0107**	0.0016	0.0053	0.008	0.0002	-0.0056	0.0017	-0.0044
within 0.5 miles	(0.004)	(0.005)	(0.004)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.007)
Mother fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	213,541	129,267	153,418	84,274	69,144	114,437	99,104	123,658	89,883

Notes - The unit of observation is a pregnancy for mothers with at least two singleton births. The dependent variable is excessive maternal weight gain, defined as a dummy variable that equals 1 when the weight gain during pregnancy is greater than 20 kg. The entries reported in rows are the respective coefficients on dummies for the availability of a Mexican restaurant, a fast food restaurant, other eating places (not classified as Mexican or fast food), a convenience store, a grocery store, or a supermarket within 0.5 miles of the mother's residence. All estimates include controls for time-varying mother characteristics, including child's gender, mother's education (4 groups), mother's age dummies, parity, marital status, tobacco use during pregnancy, and child's year of birth dummies. The regressions also include a set of controls at the zip code level: share of adults (over 25) with high school degree or less, some college, college or more; share of female, black, white and Hispanic population; share of Cuban, Mexican and Puerto Rican mothers; poverty rate; per capita income; and per capita income in the Hispanic population. The zip-code level data are drawn from the 1990 US Census for all pregnancies that occurred before 2000 and from the 2000 US Census for pregnancies that occurred after 2000. Other control variables are indicators for missing information (tobacco use, parity, marital status, race). All estimates include mother fixed effects. Standard errors clustered by mother are reported in parentheses.

Table 4: Food Environment and Excessive Weight Gain (greater than 20 kg), by Different Distances, Florida Birth Records (1990–2009), Miami CBSA

Availability of a Mexican restaurant within 0.1 miles	-0.0483**			
	(0.0242)			
Availability of a Mexican restaurant within .25 miles		-0.0212**		
		(0.00954)		
Availability of a Mexican restaurant within 0.5 miles			-0.0113**	
			(0.00543)	
Availability of a Mexican restaurant within 1 mile				-0.00257
				(0.00373)
Observations	213,541	213,541	213,541	213,541

Notes - The unit of observation is a pregnancy for mothers with at least two singleton births. The dependent variable is excessive maternal weight gain, defined as a dummy variable that equals 1 when the weight gain during pregnancy is greater than 20 kg. All estimates include dummies for the availability of a fast food restaurant, other eating places (not classified as Mexican or fast food), a convenience store, a grocery store, or a supermarket within the distance considered for Mexican restaurants; and controls for time-varying mother characteristics, including child's gender, mother's education (4 groups), mother's age dummies, parity, marital status, tobacco use during pregnancy, and child's year of birth dummies. The regressions also include a set of controls at the zip code level: share of adults (over 25) with high school degree or less, some college, college or more; share of female, black, white and Hispanic population; share of Cuban, Mexican and Puerto Rican mothers; poverty rate; per capita income; and per capita income in the Hispanic population. The zip-code level data are drawn from the 1990 US Census for all pregnancies that occurred before 2000 and from the 2000 US Census for pregnancies that occurred after 2000. Other control variables are indicators for missing information (tobacco use, parity, marital status, race). All estimates include mother fixed effects. Standard errors clustered by mother are reported in parentheses.

Table 5: Unconfoundedness and Placebo Tests: Florida Birth Records (1990–2009), Miami CBSA

Dependent variable:	(1) Excessive weight gain	(2) Excessive weight gain	(3) Excessive weight gain	(4) Mother smokes	(5) Adequate prenatal care	(6) Mother is married	(7) Excessive Weight Gain Risk Index
Availability of a Mexican restaurant within 0.5 miles	-0.019**	-0.020**	-0.013**	0.001	-0.002	0.005	-0.001***
	(0.009)	(0.009)	(0.006)	(0.002)	(0.005)	(0.005)	(0.000)
Availability of a Mexican restaurant within 0.5 miles, 1 year later	0.010						
	(0.008)						
Availability of a Mexican restaurant within 0.5 miles, 2 years later		0.010					
		(0.009)					
Availability of a Mexican restaurant within 0.5 miles, 3 years later			0.002				
			(0.006)				
Mother fixed effects	YES	YES	YES	YES	YES	YES	YES
Observations	213,541	213,541	213,541	213,541	213,541	213,541	213,541

Notes - The unit of observation is a pregnancy for mothers with at least two singleton births. All estimates include controls for the availability of a fast food restaurant, other eating places (not classified as Mexican or fast food), a convenience store, a grocery store, or a supermarket within 0.5 miles of the mother's residence and time-varying mother characteristics, including child's gender, mother's education (4 groups), mother's age dummies, parity, marital status, child's year of birth dummies. The regressions also include a set of controls at the zip code level: share of adults (over 25) with high school degree or less, some college, college or more; share of female, black, white and Hispanic population; share of Cuban, Mexican and Puerto Rican mothers; poverty rate; per capita income; and per capita income in the Hispanic population. The zip-code level data are drawn from the 1990 US Census for all pregnancies that occurred before 2000 and from the 2000 US Census for pregnancies that occurred after 2000. All estimates include mother fixed effects. Standard errors clustered by mother are reported in parentheses.

6 Appendix

Appendix A

Table A.1: Food Environment and Normal Weight Gain by Pre-Pregnancy BMI, Florida Birth Records (1990–2009), Miami CBSA

	(1)	(2)
Availability of a Mexican restaurant	0.012**	0.0092
within 0.5 miles	(0.005)	(0.015)
Mother fixed effects	NO	YES
Observations	67,595	67,595

Notes - The unit of observation is a pregnancy for mothers with at least two singleton births. The dependent variable is normal maternal weight gain, defined as a dummy variable that equals 1 when the weight gain during pregnancy is within the recommended range for a given pre-pregnancy BMI. All estimates include controls for the availability of a fast food restaurant, other eating places (not classified as Mexican or fast food), a convenience store, a grocery store, or a supermarket within 0.5 miles of the mother's residence and time-varying mother characteristics, including child's gender, mother's education (4 groups), mother's age dummies, parity, marital status, tobacco use during pregnancy, and child's year of birth dummies. The regressions also include a set of controls at the zip code level: share of adults (over 25) with high school degree or less, some college, college or more; share of female, black, white and Hispanic population; share of Cuban, Mexican and Puerto Rican mothers; poverty rate; per capita income; and per capita income in the Hispanic population. The zip-code level data are drawn from the 1990 US Census for all pregnancies that occurred before 2000 and from the 2000 US Census for pregnancies that occurred after 2000. Other control variables are indicators for missing information (tobacco use, parity, marital status, race). All estimates include mother fixed effects. Standard errors clustered by mother are reported in parentheses.

Table A.2: Food Environment and Excessive Weight Gain (greater than 20 kg), Florida Birth Records (1990–2009), Miami CBSA: Alternative Specifications

Demographic Sub-samples:	(1) US Born Overall	(2) US Born Overall	(3) US Born Stayers (same zip code)	(4) US Born Stayers (same address)
Availability of a Mexican restaurant within 0.5 miles	-0.0110** (0.006)	-0.0107* (0.006)	-0.0161* (0.009)	-0.0161* (0.009)
Mother fixed effects	YES	YES	YES	NO
Zip code fixed effects	NO	YES	NO	NO
Zip code specific time trends	YES	YES	YES	YES
Observations	213,616	213,616	134,162	134,112
R-squared	0.009	0.011	0.019	0.019

Notes - The unit of observation is a pregnancy for mothers with at least two singleton births. The dependent variable is excessive maternal weight gain, defined as a dummy variable that equals 1 when the weight gain during pregnancy is greater than 20 kg. The entries reported in rows are the respective coefficients on dummies for the availability of a Mexican restaurant, a fast food restaurant, other eating places (not classified as Mexican or fast food), a convenience store, a grocery store, or a supermarket within 0.5 miles of the mother's residence. All estimates include controls for time-varying mother characteristics, including child's gender, mother's education (4 groups), mother's age dummies, parity, marital status, tobacco use during pregnancy, and child's year of birth dummies. The regressions also include a set of controls at the zip code level: share of adults (over 25) with a high school degree or less, some college, college or more; share of female, black, white and Hispanic population; share of Cuban, Mexican and Puerto Rican mothers; poverty rate; per capita income; and per capita income in the Hispanic population. The zip-code level data are drawn from the 1990 US Census for all pregnancies that occurred before 2000 and from the 2000 US Census for pregnancies that occurred after 2000. Other control variables include indicators for missing information (tobacco use, parity, marital status, race). All estimates include mother fixed effects. Column 2 includes zip code fixed effects. Column 3 restricts the analysis to mothers who lived in the same zip code across pregnancies. Standard errors clustered by mother are reported in parentheses.

Table A.3: Food Environment and Excessive Weight Gain (greater than 20 kg) Among 1^{st} gen. Hispanics, Florida Birth Records (1990–2009), Miami CBSA

	(1) All	(2) All	(3) Stayers	(4) Low Skilled	(5) High Skilled	(6) Age < 28	(7) Age ≥ 28
Availability of a Mexican restaurant	0.0059	0.0076	0.0064	-0.0065	0.0204	-0.0115	-0.0048
within 0.5 miles	(0.007)	(0.007)	(0.010)	(0.009)	(0.013)	(0.012)	(0.011)
Mother fixed effects	YES	YES	YES	YES	YES	YES	YES
Zip Code fixed effects	NO	YES	NO	NO	NO	NO	NO
Observations	104,541	104,541	74,610	59,696	44,845	44,007	60,534

Notes - The unit of observation is a pregnancy for mothers with at least two singleton births. The sample is restricted to mothers born in Cuba, Mexico, or Puerto Rico. The dependent variable is excessive maternal weight gain, defined as a dummy variable that equals 1 when the weight gain during pregnancy is greater than 20 kg. All estimates include dummies for the availability of a fast food restaurant, other eating places (not classified as Mexican or fast food), a convenience store, a grocery store, or a supermarket within 0.5 miles of the mother's residence. All estimates include controls for time-varying mother characteristics, including child's gender, mother's education (4 groups), mother's age dummies, parity, marital status, tobacco use during pregnancy, and child's year of birth dummies. The regressions also include a set of controls at the zip code level: share of adults (over 25) with high school degree or less, some college, college or more; share of female, black, white and Hispanic population; share of Cuban, Mexican and Puerto Rican mothers; poverty rate; per capita income; and per capita income in the Hispanic population. The zip-code level data are drawn from the 1990 US Census for all pregnancies that occurred before 2000 and from the 2000 US Census for pregnancies that occurred after 2000. Other control variables are indicators for missing information (tobacco use, parity, marital status, race). All estimates include mother fixed effects. Standard errors clustered by mother are reported in parentheses.

Table A.4: Food Environment and Excessive Weight Gain (greater than 20 kg) by number of previous children and BMI before pregnancy, Florida Birth Records (1990–2009), Miami CBSA

	(1) No other children	(2) Has other children	(3) Was Overweight (BMI< 25) before pregnancy	(4) Was not Overweight(BMI≥25) before pregnancy
	1991–2009	1991–2009	2004–2009	2004–2009
Availability of a Mexican restaurant within 0.5 miles	0.0054	-0.0162**	-0.0176	0.0152
	(0.048)	(0.008)	(0.016)	(0.023)
Mother fixed effects	YES	YES	YES	YES
Observations	96,229	117,312	33,225	28,693

Notes - The unit of observation is a pregnancy for mothers with at least two singleton births. The dependent variable is excessive maternal weight gain, defined as a dummy variable that equals 1 when the weight gain during pregnancy is greater than 20 kg. All estimates include controls for the availability of a fast food restaurant, other eating places (not classified as Mexican or fast food), a convenience store, a grocery store, or a supermarket within 0.5 miles of the mother's residence and time-varying mother characteristics, including child's gender, mother's education (4 groups), mother's age dummies, parity, marital status, tobacco use during pregnancy, and child's year of birth dummies. The regressions also include a set of controls at the zip code level: share of adults (over 25) with high school degree or less, some college, college or more; share of female, black, white and Hispanic population; share of Cuban, Mexican and Puerto Rican mothers; poverty rate; per capita income; and per capita income in the Hispanic population. The zip-code level data are drawn from the 1990 US Census for all pregnancies that occurred before 2000 and from the 2000 US Census for pregnancies that occurred after 2000. Other control variables are indicators for missing information (tobacco use, parity, marital status, race). All estimates include mother fixed effects. Standard errors clustered by mother are reported in parentheses.

Table A.5: Food Environment and Other Maternal Outcomes, Florida Birth Records (2004–2009), Miami CBSA

Dependent Variable	(1) Weight Gain (in kg) Across Pregnancies	(2) Overweight (BMI≥25)	(3) Obese (BMI≥30)	(4) Hypertension	(5) Diabetes
Availability of a Mexican restaurant within 0.5 miles	-0.8762 (0.591)	-0.0157 (0.012)	-0.0006 (0.010)	0.0061 (0.005)	0.0007 (0.002)
Mother fixed effects	YES	YES	YES	YES	YES
Observations	63,872	63,436	63,436	71,790	71,790

Notes - The unit of observation is a pregnancy for mothers with at least two singleton births. All estimates include controls for the availability of a fast food restaurant, other eating places (not classified as Mexican or fast food), a convenience store, a grocery store, or a supermarket within 0.5 miles of the mother's residence and time-varying mother characteristics, including child's gender, mother's education (4 groups), mother's age dummies, parity, marital status, tobacco use during pregnancy, and child's year of birth dummies. The regressions also include a set of controls at the zip code level: share of adults (over 25) with high school degree or less, some college, college or more; share of female, black, white and Hispanic population; share of Cuban, Mexican and Puerto Rican mothers; poverty rate; per capita income; and per capita income in the Hispanic population. The zip-code level data are drawn from the 1990 US Census for all pregnancies that occurred before 2000 and from the 2000 US Census for pregnancies that occurred after 2000. Other control variables are indicators for missing information (tobacco use, parity, marital status, race). All estimates include mother fixed effects. Standard errors clustered by mother are reported in parentheses.

Table A.6: Food Environment and Birth Outcomes, Florida Birth Records (1990–2009), Miami CBSA

Dependent Variable:	(1) Birth weight (grams)	(2) Low birth weight (< 2,500 grams)	(3) Very low birth weight (< 1,500 grams)	(4) Low Apgar Score	(5) Birth weight
Availability of a Mexican restaurant within 0.5 miles	2.8544 (6.805)	-0.0035 (0.004)	0.0004 (0.002)	0.0016 (0.002)	0.0006 (0.003)
Mother fixed effects	YES	YES	YES	YES	YES
Observations	233,550	233,550	233,550	233,010	233,550

Notes - The unit of observation is a pregnancy for mothers with at least two singleton births. The estimates include controls for the availability of a fast food restaurant, other eating places (not classified as Mexican or fast food), a convenience store, a grocery store, or a supermarket within 0.5 miles of the mother's residence and time-varying mother characteristics, including child's gender, mother's education (4 groups), mother's age dummies, parity, marital status, tobacco use during pregnancy, and child's year of birth dummies. The regressions also included a set of controls at the zip code level: share of adults (over 25) with high school degree or less, some college, college or more; share of female, black, white and Hispanic population; share of Cuban, Mexican and Puerto Rican mothers; poverty rate; per capita income; and per capita income in the Hispanic population. The zip-code level data are drawn from the 1990 US Census for all pregnancies that occurred before 2000 and from the 2000 US Census for pregnancies that occurred after 2000. Other control variables are indicators for missing information (tobacco use, parity, marital status, race). All estimates include mother fixed effects. Standard errors clustered by mother are reported in parentheses.