Maternal employment, time use, and overweight children:
A series of implications of legal marijuana sales

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Abstract: When states allow for recreational use and sale of marijuana legally, we find that parents with grade-school aged kids in the household have lower employment rates and lower labor force participation rates. As a plausible explanation, we offer evidence establishing a concurrent increase in older worker labor force participation and employment, which likely is attributable to the latter's greater ability to manage work-limiting conditions. In a two-stage estimation, we also show that the grade-school aged children of women not in the labor force following legal marijuana sales have a lower prevalence of obesity. Finally, we show in time use data that parents are spending more times cooking food and less time dining out with their kids following marijuana legalization.

1. Introduction

Evidence supports the importance of parental time, particularly by mothers, as an input to child well-being. Working mothers have less time to spend at home, which has a small but deleterious effect on the cognitive ability of young children, controlling for household and parental characteristics (Ruhm, 2004). Other research shows that parental time is relatively more productive as an input to child development than family income (Del Boca et al. 2014). One significant role a parent with more time to devote to child care can have is to guide their children's nutrition (Natale et al., 2014). A key factor in maintaining a healthy eating environment is to limit meals prepared outside the home and cook more in the home. This reduces weight problems in young children and improves their eating habits (Altman et al. 2015). This is important since obesity is one of the most important current public health challenges according to the World Health Organization (2017) and the U.S. has a nearly 20% obesity rate among 6-19 year olds (Ogden et al. 2016). Childhood obesity is linked to adult obesity (Brisbois et al. 2012), which has many adverse health consequences, including cardiovascular disease, cancer, and early mortality (Shields set al., 2012; Vucenik et al., 2012). Childhood obesity costs $315 billion annually as children age into adulthood and use more health care services (Cawley and Datar, 2016).

In this paper, we identify an unlikely source of variation in parental employment that we link to child obesity and parental time allocation. Specifically, we show that recreational marijuana laws, which are now in effect in eight states and the District of Columbia, are followed by a decrease in labor force participation of mothers of young

children. Although there are a number of potential explanations as to why this might be the case, we find evidence that the most plausible explanation is the concurrent increase in employment and labor force participation of older people. The latter matches evidence from existing studies (Abouk and Adam 2018, Nichols and Maclean, 2017; Bradford and Bradford 2016) suggesting that older worker behavior is most affected by changes in the legal environment of recreational marijuana. Those over the age of 55 are by far the fastest growing group of marijuana users in the U.S. (Azofeifa et al. 2016), with use growing about 400% since 2002 according to their analysis of the National Survey on Drug Use and Health (NSDUH). We believe that older workers are better able to treat work-limiting symptoms with cannabis rather than leaving them untreated or treating them with methods with worse side effects. Since we find that it is mothers of young children in wealthier households that decrease their labor force participation in our sample, we suspect that the increased labor supply of older people is leading to wage reductions that push wages below the reservation wage of mothers more marginally attached to the labor force.

We show that this change in labor force participation among younger women is accompanied by a number of additional changes. First, the increasing rates of obesity of elementary school-aged children in states with legal marijuana sales slowdown compared with other states with no change in legal status. We confirm in longitudinal individual-level data that it is the children of mothers less likely to be working because of legal recreational sales that are the reason for this effect. Second, we also confirm that among parents with children in states with legal marijuana, there are significant changes in how

parents use their time. More time is spend on home-cooked meals and less time is spent eating out. Together, these results both show that women that are not in the labor force are having a positive influence on the health of their children.

Our finding of a causal effect of maternal employment on child health is similar to other research on the topic (e.g., Anderson, 2003; Ziol-Guest et al. 2012, Datar et al. 2014). The novelty of our paper is to use as exogenous variation a new and growing trend in states, which is to make marijuana sales legal. It also exploits variation of a group of mothers more marginally attached to the labor force because the effect is strongest among mothers of elementary-school aged kids with relatively high family incomes. These women are likely close to indifferent between entering employment when their kids began school full-time and staying at home. From this standpoint, recreational marijuana having a positive effect on child health through changing the labor supply of a marginally attached group of workers appears to be a net gain in societal welfare. The next decade will likely see many new states pass recreational marijuana laws, so the potential for these indirect positive effects on child health are important to consider. Obviously, recreational marijuana has many other effects, positive and negative, against which the results of this paper should be included.

The remainder of the paper is organized as follows. The second section describes the legal climate of marijuana use and sale in the U.S. and outlines our identification strategy. The third section reviews the literatures on the various outcomes our paper links to marijuana legalization. The fourth section establishes the labor market outcomes following the legalization of recreational marijuana using 2005-2016 Current Population

Survey (CPS) data. The fifth section estimates effects of changes in labor supply induced by legalized marijuana on childhood obesity using the restricted-use Early Childhood Longitudinal Study-Kindergarten: 2011 (ECLS-K). The sixth section offers suggestive evidence underlying the mechanism of the relationships using the 2005-2016 American Time Use Survey (ATUS). The seventh section offers robustness checks. The final section concludes and discusses the implications of the results.

2. Recreational marijuana legalization and expected impact on use

There have been nine states to date that have passed allowing for sale or cultivation of recreational marijuana in addition to the District of Columbia.[1] These are Alaska, California, Colorado, Maine, Massachusetts, Nevada, Oregon, Vermont, and Washington. Table 1 summarizes the four states and legal sales effective dates for the states we will use to identify effects of recreational marijuana legalization. Colorado and Washington passed their laws in 2012 and Alaska and Oregon passed legislation in 2014. Sales in Alaska and Oregon did not begin until 2016 and late 2015, respectively. Thus, for our purposes, these four states will serve as our treatment group since we have observations before and after they approved recreational use. These states are similar in terms of what they allow in terms of purchasing. Adults age 21 and older can purchase up to one ounce of pot from a licensed vendor. As far as growing and cultivating, the Colorado law is the most generous. Adults can own up to six marijuana plants, with three among them

[1] Cultivation and possession of marijuana for recreational purposes is legal while sales are prohibited in Washington D.C.

budding at any one time. This makes ready access to marijuana most prevalent in Colorado. So we might suspect that Colorado will show the largest effects.

Since legislation is relatively new, there has not been a substantial amount of rigorous research in terms of assessing the impact of the laws. Most of the basic statistics generated have assessed the impact on sales receipts and the creation of jobs in a new sector. In Colorado, there has been well over $100 million collected in tax receipts from the sale of marijuana annually and an industry created that employs tens of thousands of people (Miller 2016). Although there has been limited evidence produced concerning the use of marijuana, the tax receipts and employment in the industry suggest a substantial increase in the number of Coloradoans using marijuana recreationally. Allen et al. (2017) showed that over two-thirds of those who were previous marijuana users tried new products after legalization, suggesting at least a broadening of their use if not an increase.

We summarized the changes in the use in past 30 days of marijuana across various age groups in Colorado using the biennial National Survey on Drug Use and Health (NSDUH) for the years 2011-2012 and 2014-2015. Among those ages 26 and over, Colorado experienced a near doubling of adult marijuana use following legalization. There was not nearly such an increase the U.S. as a whole over this time period. Also, among Coloradans for whom marijuana remained illegal (those under age 18), there was no increase in use.

This suggests that the likely marijuana users in these states skew older. That was generally the case for those who increased use once cannabis became prescribed for medicinal purposes. The legalization of recreational use, which we study in this paper, is

different than legalization for medical use. Over half of the states in the U.S also allow use of marijuana for those with medical conditions. Although use for medicinal purposes is far more limited than recreational allowance, several studies on marijuana for medicinal use helps inform our study. Bradford and Bradford (2016), for example, show a decrease in Medicare Part D prescriptions for older adults in states with medicinal marijuana programs. Nicholas and Maclean (2016) show positive impacts on health and labor market outcomes for older adults using the Health and Retirement Study. Both of these studies would suggest that it might be among those ages 55 and older where the marginal increase in use would be most pronounced. Our study always controls for whether a medicinal marijuana program is in effect, identifying the marginal effects of legalized recreational sale.

Our paper fits into the general literature on the side effects of legalizing marijuana. There have been some attempts to assess consequences of the legislation, with the most scientific of these focused on hospitalizations. Kim et al. (2016) showed that there was a significant increase in emergency room visits coded as possibly related to cannabis use following legalization, but the increase was largely driven by those coming from out of state. More concerning were the increased in unintentional pediatric exposure. Wang (2016) found an increase in such incidents, which were largely stemming from young children earing food containing marijuana.

Other work has focused on the spillover effect legalization might have on younger users. Cerda et al. (2017) found that there was a significant increase in use among 8th and 10th graders in Washington using the Monitoring the Future Survey. They found no

evidence of a change in marijuana use in Colorado following legalization. We believe that these spillover effects are possible. But the group we study for obesity related outcomes (approximately ages 6-12) would not be affected these spillovers.

Our connecting of the changing legality of marijuana and time use is not unique. Shu and Gershenson (2016) evaluated the change in time use among college students following state medical marijuana legalization. The increased availability of marijuana following states' allowing people with medical conditions to use cannabis was found to be associated with reduced time studying and attending class and more time watching television. The various time demands on students are far different than on parents, however. Shu and Gershenson (2016) were also observing differences among students who were potentially using pot illegally, rather than parents that are using it legally.

3. Conceptual framework

3.1 Labor Market Outcomes

Given the discussion in the previous section, the primary expectation of legal recreational marijuana is to have its largest marginal impact on older adults. This has a number of potential impacts on labor market outcomes, and in this section we appeal to the literature that links marijuana use and labor market outcomes. The physiological literature is suggestive that marijuana has a number of adverse impacts that might suggest poor labor market outcomes. This includes compromised cognition (Gilman et. al 2014; Price et al. 2015), dulled emotionality and motivation (Volcow et al. 2016), and increased propensity for accidents (Wadsworth et al. 2006). This literature often focuses on the

more chronic users of marijuana. The likely heightened use in our study will be among those of advanced ages. Given the profile of the increased users in our sample, it is arguably more informative to review the literature on increased use among those of more advanced ages who are using marijuana less as a habitual drug and more as a treatment for their symptoms. Nichols and Maclean (2017) use the Health and Retirement study to show that older works increase their labor supply in states that pass medical marijuana legislation. The positive effect is attributable to older workers, particularly males, reporting fewer work limiting disabilities. Sabia and Nguyen (2016) also study the labor market effects of medical marijuana laws, finding that older adults fare relatively better in terms of employment and wages than their younger counterparts.

The likely reason for marijuana improving the relative employment of older adults in the labor market could be attributable to the possibility that it provides a treatment option for individuals that otherwise would not seek treatment or self-medicate with something with worse side effects such as opioid pain relievers. Bradford and Bradford (2016) show that spending on prescription drugs as part of Medicare Part D was significantly less in states that allowed for use of cannabis to treat symptoms. The spending reduction was concentrated on medicines for which cannabis would be considered a viable alternative. Bachhuber et al. (2014) and Powell et al. (2018) show that there was a decline in opioid-related mortality following passage of medical marijuana laws.

Marijuana availability might also affect alcohol use. The literature on whether alcohol and marijuana are substitutes or compliments is mixed (Pacula 1998, Lucas et al.

2016), but Anderson et al. (2013) used traffic fatality data to show a reduction in accidents when medical marijuana use was allowed, suggesting the substitution of medical marijuana for alcohol. Ullman (2016) showed that there was a reduction in sickness absences from work once medical marijuana was allowed, which he attributed to individuals that had previously self-medicated using alcohol shifting toward marijuana use. The reduction in absences were concentrated among middle-aged males. Sabia and Nguyen (2016) also showed that alcohol use declined after the passage of medical marijuana legislation.

If there is the potential for increased employment of older adults because of better management of work-limiting conditions, this has unclear implications for other workers. There is the potential for younger workers, particularly the more marginally attached workers, to be crowded out of employment and the labor force in the short-term with an unexpected increase in labor supply of another group (Boeri et al. 2017). This is the case here, as workers searching for a job at a wage exceeding their reservation wage find it more difficult to find such a job if older workers have shifted a market labor supply curve to the right. Unlike the much maligned "lump of labor" theory, which contends labor supply is fixed even over longer periods of time, we contend in our case there is the distinct possibility that marginally attaches workers with steeper labor-leisure indifference curves and greater family income might opt of the labor force in the case of increase employment and downward pressure on wages. We will find that younger women with children that are elementary-school aged reduce their labor force participation. This is indeed the workers that would have steeper labor-leisure indifference curves. We also will show that these mothers tend to come from higher in the family income distribution,

indicating their non-labor income is greater. Ultimately, we cannot prove that it is the increase of older worker participation that is crowding them temporarily out of the labor market, but we view this as the most logical potential explanation.

There are several other explanations that possibly could explain their lower labor force participation that are possible, but we view as less likely. To the extent that marijuana sales are substitutes for other products, women with smaller children who wish to avoid working in establishments that sell marijuana may find job openings less plentiful than other workers. Second, women with children may also use marijuana in increasing numbers once it is sold legally, which limits their labor force participation as they are less productive. Although possible, this seems less likely because there is no reason to believe women with children would have their productivity uniquely affected by marijuana. In fact, evidence suggests the opposite (Epstein et al., 2018) and our time use results are at odds with this possibility. Finally, women may worry of increased presence of marijuana and the potential for their children to be affected. In turn, they drop out of the labor force to spend more time with them. This latter explanation might seem more plausible if labor supply effects were concentrated on older children, rather than grade-school aged kids.

3.2 Parental employment, time use and child health

If indeed there is reduced time spent working among parents with young children in states with recreational marijuana laws, this might affect how they spend time with their children. Much evidence supports the importance of parental time as an input to child

well-being. Maternal employment, in particular, has been frequently studied. Ruhm (2004) shows a small but significant deleterious effect among the cognitive ability of young children whose mothers worked during the first few years of their life, controlling for household and other parental characteristics. This finding has been revisited a number of times, including by Bernal (2008) who controls for the effect child development might have on maternal employment itself.

Del Boca et al. (2014) estimates an empirical model where household preferences for child outcomes are taken into account, along with the productive capabilities of time and money inputs from both parents. The relevant findings for our purposes is that inputs by both parents are important for child development, and it is time spent, rather than money, that is the more productive input into child development

Other research has looked more directly at whether childhood obesity is affected by parental employment. Anderson et al. (2003) used matched child-mother pairs from the NLSY to show that the more time mothers spent working the more likely the child was overweight. The effect is concentrated among those from higher socioeconomic strata, suggesting but not proving that time is an important component. This finding has been shown in the U.S. in a number of different ways using different data (e.g., Fertig et al. 2009, Ziol-Guest et al. 2012, Datar et al. 2014). The link between a child's weight and maternal employment has been studied outside of the U.S. as well, but the results have been less conclusive (e.g, Gwozdz et al. 2014, Nie, P., & Sousa-Poza 2014).

Although the link between parental employment and childhood weight is well established in the U.S. the literature is less clear in showing a clear mechanism for this

association. There is one descriptive study, conducted by Cawley and Liu (2014). Using the American Time Use Study (ATUS), that shows working mothers spend 17 fewer minutes cooking and 10 fewer minutes eating with children. They also spend less time playing with and supervising them. All of these things could contribute to childhood obesity. Moreover, the authors show that husbands and partners do not make up for the significant reduction in maternal time spent in these activities. The limitation of this study is that the authors cannot directly link these changes in parenting behavior to obesity. They merely suggest plausible mechanisms for the link.

This link was more directly tested by Anderson (2014). They used the Early Childhood Longitudinal Survey-Kindergarten Class of 1998–1999 (ECLS-K) to test whether maternal employment and family routines had an effect on whether a child was obese. More importantly, they tested whether routines such as bedtime and eating family meals mitigate the effect of maternal employment once entered into a regression. Interestingly, there does not seem to be a substantial decline in the obesity link once these controls are added even though the routines and maternal employment are highly correlated. One study limitation was that there was not specificity on the nature of the family meals, such as whether they were home-cooked. They only had information on a small subset of respondents concerning whether there were fast food meals or healthy meals eaten during a week. The estimates in this subgroup were imprecise.

A separate literature has more directly looked at where food is consumed and its link to childhood obesity. This clearly shows that a higher incidence of meals per week eaten away from home (Gillis and Bar-Or 2003, Ayala et al. 2008) is associated with

greater risk of a child being overweight or obese. Food away from home leads to more energy-dense and caloric consumption (Powell and Nguyen 2013) in larger portions (Ayala et al. 2008). Altman et al. (2015) studied the impact of a reduction in meals eaten away from home in a randomized control trial. They found a significant improvement in the quality of diet among younger obese and overweight children (ages 7-11). They also observed a relative reduction in their treatment group of standardized BMI and percent body fat. This suggested that policies that increased food consumption at home could lead to improved outcomes related to the diet and weight of younger children.

4. Estimating labor supply effects

4.1 Data and estimation methods

We use repeated cross-sections of the CPS from 2005-2016 to assess the effect of legalized marijuana on labor market outcomes across the age distribution. There are two labor market variables that we have for the entire sample for a household head or spouse. That is, we know in a given month whether a person is employed or not in the labor force. We contend that these variables provide the best information as to whether someone is supplying their labor or removing themselves from the labor force.

Table 2 summarizes these variables for the entire sample of mothers ages 21-55 and separately for states that legalize marijuana. There are similar labor force participation rates and employment rates among the entire sample of women with children and the four states that legalize marijuana (CO, WA, OR, and AK). There is also a clear increase in

the proportion of those not in the labor force. Employment rates correspondingly decline. We will more finely pinpoint for whom the effects hold.

Table 2 also includes the covariates that we will include in the regressions. We will include whether the state had a medical marijuana legalization (MML) program in operation. We will also include variables for whether the state had expanded their Medicaid programs in 2014 or later. Controls for minimum wages, which are higher on average in the treatment states, will be included. Controls for policies that may be correlated with passage of marijuana laws, including tobacco taxes, and beer taxes are all included. We also include a standard set of race and demographic controls that might influence labor market participation. We strongly believe, however, that there is no reason to suspect policy endogeneity with respect to labor market outcomes.

Although our primary group of interest is women ages 21-55 with children, we will also estimate effects on various other subgroups of women without children and men. Regardless of group, we estimate equations of the form:

$$(1) \qquad Y_{ist} = \alpha + \beta_1 Legrec_{st} + X_{ist}\beta_2 + \delta_s + \tau_t + \varepsilon_{st}.$$

Y is the labor market variable in question, with *i, s,* and *t* denoting individual, state, and month respectively. Legrec indicating legal sales of recreational marijuana are allowed. State and year-month fixed effects are included, along with all control variables listed in Table 2 and included in the X vector. Since employment and non-labor force

participation are two key outcome variables, our estimation technique will be a linear probability model. Despite its drawbacks, it is preferable in the presence of fixed effects.[2]

We also supplement the difference-in-difference analysis with the synthetic control method because of questions of difference-in-difference methodology validity when there are few treatment groups. Most importantly, standard errors are potentially misleading (Cameron and Miller 2015). It is also the case that the synthetic control analysis identifies a counterfactual that matches the underlying trends in the treatment group. We follow the methodology proposed by Abadie et al. (2010) by identifying a weighted average of the set of control states that best matches each of treatments. We plot the key labor market outcomes for women with children to verify that indeed they are decreasing their employment and labor force participation. In all synthetic control estimations, we use the average outcome variables in pretreatment years as predictors. For the estimated coefficients we report clustered standard errors (Bertrand et. al 2004) and the wild cluster-bootstrap p-values with the null imposed (Cameron et al. 2008) which is a preferred method when there are few treated clusters.

4.2. Labor Supply Results

Table 3 shows the effects of recreational marijuana laws on labor force participation for mothers in the order that we conceived of the tests. It is also breaks the effect down by age group. Column (1) starts with the fairly broad sample of mothers,

[2] Available upon request, our results are robust when use a logit regression model.

testing whether there is a change in their labor supply. We find a small but 0.013 increase in the probability a mother is not in the labor force. Again, these are mother ages 21-55 with any child under 18 in the household. Column (2) more specifically tests for effects on labor force participation among women with elementary-aged children. Among women with 6-12 year olds at home, their rate of not being in the labor force grows the most and is significant at the .05 level. This is a group for whom re-entering the labor force is common after their children begin full-time elementary school. This group after marijuana laws are passed are participating at a lower-rate, perhaps because of a reduction. We also estimate employment effects in Table 3. These confirm the basic results for labor force participation. There is a clear decrease in labor supply at the extensive margin among women with children in states passing marijuana laws.

We next verify the effects of Table 3 in synthetic control analyses. Figure 1 plots all women ages 21-55 with children in Colorado, Washington, Oregon and Alaska over the sample period. Each state is matched to a synthetic control based on pre-treatment trends in labor force participation and employment. These states are drawn from all other states yet to have recreational marijuana sales. The resulting synthetic control is a weighted average for labor force participation and employment that matches the treatment cases most closely.

For both Colorado and Washington, sales began in 2014 so an annual synthetic control matching is the cleanest in terms of matching pre-treatment annual trends. We also have three clear post-treatment years to observe the effects. Washington began sales mid-2014 so the effect for 2014 is not as clean. Oregon and Alaska did not begin sales

until well into 2015 and 2016 so we essentially have neither a clean break to analyze nor do we have enough years to depict a meaningful effect. The Colorado and Washington results in figure 1 confirm the Table 3 findings. For women with children, there is break in trend in these states that separate from its synthetic control group's trend. The break is even more pronounced when we limit the sample to just mothers with elementary school kids in Figure 2. In this case, the Colorado and Oregon results are much clearer in showing the change in labor supply.

We next estimate labor supply effects for groups other than women with children. Use of marijuana tends to be higher among people without children (Epstein et al., 2018). The idea here is to find a plausible explanation as to why women who have elementary-aged children are not participating in the labor force as much as they did before sales were legal. Table 4 confirms that one group is substantially increasing labor supply at the extensive margin—older adults (56-64) without children (See the results for individuals with no child 65 and older in the Appendix). The increase in employment of this group is positive and significant. The proportion not in the labor force also decreases. For younger people (21-55) without kids, we observe no substantive effect on employment.

The results of this section confirm lower labor supply at the extensive margin for women with grade-school aged children. There may be several explanations for this, as outlined above, but the most plausible is the concurrent increase in labor supply at the extensive margin of older workers. Others have found this effect for older workers as well (Nichols and Maclean 2017), and those over 55 are by far the fastest growing demographic of marijuana users. This is consistent with statistics on marijuana use, as

well as recent literature suggesting older individuals are using marijuana to treat symptoms that might be work-debilitating.

5. Effects on obesity through reduced maternal employment

5.1 Data and methodology

We are interested in determining whether this reduced labor force participation of younger mothers, concentrated among the more affluent families, affects child health. We will use the restricted-use ECLS-K, which follows the development of the kindergarten class of 2010-11 as they proceed through school in different states in US. These longitudinal data include measures of obesity and other demographic characteristics that can be used to assess the impact of changing marijuana legality on child weight. We have data available through the 4th grade interview in July 2015. This limits our identification of treatment effects to Colorado and Washington. These states both had decreases in maternal employment as shown in Figures 1 and 2. Our obesity measure is derived using international cutoff points recommended by the Childhood Obesity Working Group of the International Obesity Taskforce. About 11% of the observations in our sample report obese children.

We have limited information available to us in the survey, including sex, race, and ethnicity of the children. We also have the family income in various brackets. Most importantly, we know whether the parent(s) of the children in the survey worked. We also know whether the school is public or private. Since it is longitudinal data fielded at randomly selected schools, we have school identifiers and child identifiers. The latter

make up for the limited number of control variables as we can include school and child fixed effects in our models. Given we have state identifiers, we can control for the same set of policy variables we had in our labor supply analysis.

We engage in three sets of estimations to determine the extent to which there is a relationship between recreational marijuana legalization and childhood weight. The first is a reduced form fixed effects estimation similar to that summarized in equation (1). In the baseline mode, we include all controls for state policies that we included in the CPS estimates, as well as whether the child is in a public school. As with the labor supply analysis, we engage in synthetic control analyses on the two states for which are able to identify an effect, Colorado and Washington. We contend that it is arguably more important to assess robustness with the synthetic control method for the obesity results because we only have two treatment states.

Given we have maternal employment in the ECLS-K data as well, we can explicitly identify the obesity effect for mothers not working following legal marijuana sales. We estimate this through a two-stage least squares model:

$$(2) \qquad Emp_{ist} = \alpha + \beta_1 Legrecst + Xist\beta_2 + M_{ist}\beta_2 + \delta s + \tau t + \varepsilon st.$$

$$(3) \qquad weight_{ist} = \gamma + \omega_1 Emp + Xist\omega_2 + M_{ist}\omega_2 + \delta s + \tau t + \mu st.$$

The first stage (equation (1)) estimates the probability that the mother of child i is employed, conditional on the whether marijuana sales are legal, state and year fixed effects, and the X vector. The X vector contain all relevant controls from the baseline

reduced form regression. In equation (3), weight is a binary dependent variable indicating that the child is overweight or obese. The vector M will also include variables that indicate whether an a second parent in the house is working and household income. The labor market analysis above indicated that these are important to the decision to leave the labor force for the marginally attached worker after the passage of legal marijuana sales.. The latter controls capture the true variation in labor supply that we are trying to identify, which is a marginally attached mother dropping out of the labor force. The second stage estimate provides the effect of a mother being employed on the obesity or overweight status of the child.

5.2 Results

Table 6 presents the reduced form results. Columns (1)-(3) in Panel A present the estimates with the controls available to us for obesity based on three specifications discussed above. Panel B presents similar results when the sample is restricted to states with the medical marijuana law. There is a large drop in the prevalence obesity among kids in families in states after the passage of legal marijuana sales compared with other states. The estimates remain strong even as we add school fixed effects and child fixed effects. Certainly with just two states as treatments, inference is problematic. We note, however that the effect is one of the larger estimates in the tables, suggesting that the impact is substantial even compared with other known factors, including child race. An interesting finding is that the minimum wage-obesity correlation is negative, which is consistent with recent literature (Meltzer and Chen 2011).

To verify the validity of this finding, we also engage in synthetic control analyses. Figure 3A verifies that the effect is strong for Colorado and the two years after there were sales. For Washington, there is just one full year of data following the beginning of sales since the interviews in the ECLS-K are conducted before the legal sales began in mid-2014. In both cases, however, there is clear break from trend in both states. The break in Washington is notably smaller. Figure 3B presents the results when the sample is restricted to states with the medical marijuana law.

The final test we conduct is to perform a two-stage estimation. Table 7 shows the first stage estimation of the effect of recreational marijuana on maternal employment. Before we add school and child fixed effects, the effect is strong, especially when states with the medical marijuana law are considered for the analysis. The F-statistic of the excluded IV in 10.04, which is the accepted threshold indicating the strength of the IV. The second stage shows a strong and significant positive effect of maternal employment, as varied through recreational marijuana sales, on childhood obesity. Once we include individual child fixed effects, the variation left for recreational marijuana to identify is small. Therefore, the IV is weak and provides no new information.

The 2SLS results, along with the reduced form results of Table 6, show a link from recreational marijuana to child obesity. That link appears to have something to do with maternal employment. When we identify maternal employment through the variation in recreational marijuana across time and state, we estimate lower obesity.

6. Time use of mothers following passage of marijuana laws

The mechanism by which the above results work is if indeed mothers (or parents) with school-aged children in states where there are young school-aged children are indeed changing their behaviors. The data source we use to assess this potential set of outcomes is the ATUS. The ATUS is administered through the Bureau of Labor Statistics on a subset of households who finish their participation in the eights wave of the CPS using the same sampling methodology as the CPS. We use data from 2005-2016. This is the only survey that exists that contains detailed information about how people spend their time on both labor market and non-market activities. The latter is essential to our work, as it contains information about how one spends their time eating, drinking, or spending time at home. One issues with the ATUS is the more limited observations we have for mothers as compared with the other two data sources. For this reason, we cannot be as specific in terms of narrowing the population down to only mothers with 6-12 year olds at home or that would leave us with very few observations for which to draw a conclusions. We limit attention to mothers ages 21-45, which we believe potentially captures parents likely to have an elementary school child at home. We also think that this provides us with more observations and still likely will capture behaviors for the group in question.

Table 8 present the summary statistics for mothers ages 21-45 in the ATUS 2005-2016. Table 9 shows estimates versions of equation (1) with two uses of times as the dependent variable—cooking meals at home and dining out. In a typical day, mothers spend about one hour cooking meals in the home. This varies widely, however, across parents, with more educated and higher income families devoting less time to preparing

meals and more time eating out. What is clear, however, is that in states passing recreational marijuana laws there is a significant increase in time spent per day cooking at home of over 18 minutes. As for dining out with children, the second column shows that this is reduced significantly as well. The final column of Table 9 contrasts the time spent on cooking food for women of similar ages without children. Column (3) shows that women without children do not exhibit any change in their time use on preparing home-made meals.

The explanation behind Table 9 is consistent with the findings outlined in the rest of the paper. Mothers with young children are spending less time working and more time engaging in activities conducive to improving the nutritional health of their children. This results in lower obesity rates.

Table 10 provides some additional evidence of what parents are doing with their time. Certainly, not working likely affects time allocation in ways other than through increased time cooking meals. The table divides relevant categories in to family/child care activities (Panel A) and personal activities (Panel B). We do not find an effect on a use of time, however, that is as strong as we did with meal preparation except perhaps with grocery shopping, which again is consistent with the previous results. There appears to be some reduction in time spent on the health of the child or in medical care, but this is difficult to interpret. If the parents are spending more time with the child, then the child may be healthier and in less need of medical attention. Moreover, these activities have low means in terms of amount of time spent on them.

The panel B of Table 10 provides evidence on whether there is a change in personal use of time. There is no effect on time spent using tobacco or drugs. This is an intensive time measure, rather than an incidence of use measure. It also includes drugs that are arguably substitutes for marijuana. But, it is still consistent with our prior expectations that mothers would not be using recreationally marijuana substantially more than other groups. Among the other person activities, television viewing is the only other activity significantly affected.

7. Conclusions

Policies on legalizing marijuana for recreational purposes have been recently adopted in some states that have already legalized medical marijuana. These new policies have been shown to have mixed effect on adolescents. Using multiple sources of data, our results suggest that legalizing marijuana sales reduces labor force participation and employment among mothers ages 21-55, especially among those who have elementary school age children, leading to a reduction in children's body weight. We also present suggestive evidence that mothers not participating in the labor force spend more time on cooking food and less time on dining out with their children, which could explain the observed decline in obesity rate.

Our study has some limitations. We are not able (yet) to identify whether the CPS respondents immigrate to the states legalizing recreational marijuana although we find no such evidence in the ECLS-K longitudinal study.

Given that several states are investigating the implementation of similar laws, it is very essential to identify the consequences of these laws. The current study highlights an overlooked aspect of the policy, which is seemingly promising in partially addressing a public health concern in US: childhood obesity.

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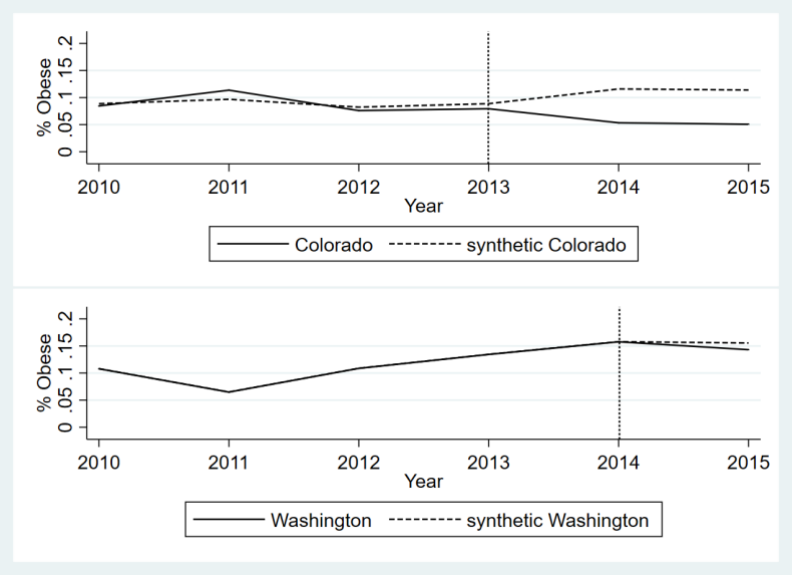
Figure 1: Synthetic control approach, Women 21-55 with kids, CPS 2005-2016

Figure 2: Synthetic control approach, Women 21-55 with kids 6-12, CPS 2005-2016

Figure 3: Synthetic control results for obesity—ECLS-K: 2011

A) All states in the sample



B) States with medical marijuana law in the sample

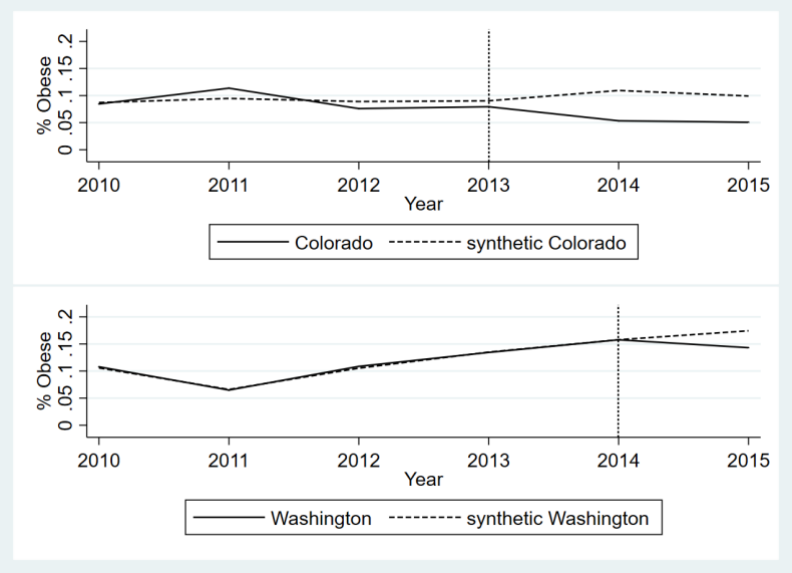


Table 1: States with Legal Marijuana sales

State	Effective date of first legal sale
Colorado	1/1/14
Washington	7/8/14
Oregon	10/1/15
Alaska	10/29/16

Source: Prescription Drugs Abuse Policy System (PDAPS) and states Department of Health.

Table 2: CPS Summary Statistics, Mothers Ages 21-55

VARIABLES	(1) Overall	(2) In CO, WA, OR, and AK before legalization	(3) In CO, WA, OR, and AK following legalization
Not in labor force	0.261	0.270	0.289
Employed	0.700	0.691	0.684
Recreational marijuana law	0.008	0.000	1.000
MML	0.315	1.000	1.000
Minimum wage in 2016 $	6.581	7.036	8.801
ACA Medicaid expansion	0.123	0.081	1.000
Tobacco tax in 2016 $	2.330	2.576	2.808
Beer tax in 2016 $	0.297	0.429	0.361
Age	39.621	39.311	39.696
White non-Hispanic	0.756	0.812	0.818
Black non-Hispanic	0.106	0.032	0.038
Hispanic	0.055	0.029	0.035
Married	0.759	0.793	0.791
High school	0.262	0.233	0.202
Some college	0.309	0.344	0.305
College graduate	0.222	0.235	0.255
Graduate degree	0.110	0.105	0.155
In School or College	0.018	0.015	0.042
Observations	2,382,378	134,179	19,521

Table 3: Labor force participation and Employment of mothers, overall, by age and with younger children

	(1)	(2)	(3)	(4)
	Not in labor force		Employed	
	Mothers 21-55	Mothers 21-55 with kids 6-12	Mothers 21-55	Mothers 21-55 with kids 6-12
Recreational marijuana	0.013*	0.029***	-0.011**	-0.026***
	(0.007)	(0.005)	(0.005)	(0.007)
Wild bootstrap p-value	[0.104]	[0.021]	[0.111]	[0.042]
MML	-0.004	-0.001	0.002	-0.002
	(0.003)	(0.005)	(0.003)	(0.006)
Minimum Wage in 2016 $	0.004	0.009***	-0.001	-0.007**
	(0.003)	(0.002)	(0.002)	(0.003)
ACA Medicaid expansion	-0.005*	-0.008*	0.004	0.008
	(0.003)	(0.005)	(0.003)	(0.005)
Real tobacco tax in 2016 $	-0.003	-0.006**	0.003*	0.006**
	(0.002)	(0.002)	(0.002)	(0.003)
Beer tax in 2016 $	0.010**	0.018***	-0.011**	-0.018**
	(0.003)	(0.005)	(0.004)	(0.005)
White non-Hispanic	-0.043**	-0.040**	0.047**	0.044**
	(0.014)	(0.013)	(0.016)	(0.014)
Black non-Hispanic	-0.085***	-0.082***	0.059**	0.056**
	(0.017)	(0.015)	(0.019)	(0.017)
Hispanic	-0.052***	-0.059***	0.043***	0.050***
	(0.011)	(0.010)	(0.011)	(0.010)
Married	0.112***	0.100***	-0.080***	-0.071***
	(0.009)	(0.011)	(0.010)	(0.011)
High school	-0.169***	-0.153***	0.186***	0.169***
	(0.008)	(0.010)	(0.008)	(0.010)
Some college	-0.232***	-0.211***	0.254***	0.232***
	(0.006)	(0.009)	(0.006)	(0.009)
College graduate	-0.245***	-0.236***	0.277***	0.270***
	(0.007)	(0.009)	(0.007)	(0.009)
Graduate degree	-0.316***	-0.309***	0.352***	0.347***
	(0.008)	(0.009)	(0.007)	(0.009)
In School or College	0.083***	0.114***	-0.085***	-0.114***
	(0.009)	(0.012)	(0.009)	(0.012)
Observations	2379406	705339	2379406	705339
R^2	0.063	0.053	0.066	0.053

Note: Each column reports the results for a linear regression weighted by CPS sampling weights. The numbers in parentheses are standard errors clustered at the state level. Wild cluster-bootstrap p-values are reported in brackets. In addition to the listed independent variables, age, state and year-month dummies are controlled for. *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Labor supply effects of other subgroups

	(1)	(2)	(3)	(4)
	Men & women 21-55 with no kids		Men & women 56-64 with no kids	
	Not in labor force	Employed	Not in labor force	Employed
Recreational marijuana	-0.001	0.002	-0.017**	0.021**
	(0.005)	(0.006)	(0.006)	(0.008)
Wild bootstrap p-value	[0.933]	[0.779]	[0.109]	[0.086]
MML	-0.001	0.001	-0.001	0.001
	(0.003)	(0.005)	(0.005)	(0.004)
Minimum Wage in 2016 $	0.002	0.003	0.011**	-0.008**
	(0.003)	(0.004)	(0.003)	(0.003)
ACA Medicaid expansion	-0.001	-0.003	-0.003	0.002
	(0.003)	(0.004)	(0.007)	(0.007)
Real tobacco tax in 2016 $	-0.000	0.002	-0.003	0.003
	(0.001)	(0.002)	(0.003)	(0.003)
Beer tax in 2016 $	0.014*	-0.012	0.007	-0.006
	(0.007)	(0.008)	(0.013)	(0.014)
White non-Hispanic	-0.065***	0.070***	-0.007	0.014**
	(0.006)	(0.007)	(0.007)	(0.006)
Black non-Hispanic	-0.023**	0.003	0.064***	-0.063***
	(0.009)	(0.010)	(0.010)	(0.010)
Hispanic	-0.071***	0.065***	-0.011	0.010
	(0.006)	(0.007)	(0.011)	(0.009)
Married	0.007*	0.010**	-0.022***	0.036***
	(0.004)	(0.004)	(0.005)	(0.005)
High school	-0.139***	0.155***	-0.146***	0.146***
	(0.011)	(0.012)	(0.009)	(0.008)
Some college	-0.188***	0.212***	-0.208***	0.205***
	(0.012)	(0.012)	(0.009)	(0.008)
College graduate	-0.229***	0.267***	-0.269***	0.269***
	(0.012)	(0.013)	(0.008)	(0.008)
Graduate degree	-0.253***	0.299***	-0.315***	0.321***
	(0.012)	(0.013)	(0.007)	(0.008)
In School or College	0.243***	-0.228***	0.000	0.000
	(0.011)	(0.010)	(.)	(.)
Observations	2821487	2821487	1487995	1487995
R^2	0.065	0.067	0.084	0.081

Note: Each column reports the results for a linear regression weighted by CPS sampling weights. The numbers in parentheses are standard errors clustered at the state level. Wild cluster-bootstrap p-values are reported in brackets. In addition to the listed independent variables, age, state and year-month dummies are controlled for. *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Effect of recreational marijuana on labor supply by family income, mothers 21-55 with kids

	Not in labor force	Employed	N
Higher income families (>$75k)			
Women 21-55 with children	0.020**	-0.020**	1,102,239
	(0.008)	(0.010)	
	[0.075]	[0.048]	
Women with children ages 6-12	0.032**	-0.031*	
	(0.016)	(0.018)	330,340
	[0.085]	[0.142]	
Lower income families (<$75k)			
Women 21-55 with children	0.013	-0.009	1,277,167
	(0.016)	(0.013)	
	[0.567]	[0.587]	
Women with children ages 6-12	0.033	-0.029	
	(0.023)	(0.026)	374,999
	[0.297]	[0.665]	

Note: Each cell reports the results for a linear regression weighted by CPS sampling weights. The numbers in parentheses are standard errors clustered at the state level. Wild cluster-bootstrap p-values are reported in brackets. All independent variables reported in Table 3 are controlled for. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Estimated effects of legal marijuana sales on obesity ECLS-K: 2011

Panel A: All states (n=41)	(1) Basic model	(2) School FEs	(3) Child FEs
Recreational marijuana	-0.042* (0.022)	-0.042** (0.020)	-0.042* (0.025)
Observations	33,666	33,666	33,666
R^2	0.026	0.196	0.761
Panel B: States with medical marijuana law (n=18)			
Recreational marijuana	-0.041** (0.019)	-0.036* (0.019)	-0.041* (0.020)
Observations	14,060	14,060	14,060
R^2	0.020	0.191	0.763

Note: Each column in each panel reports the results for a linear regression weighted by ECLS-K sampling weights. The numbers in parentheses are standard errors clustered at the state level. Wild cluster-bootstrap p-values are not reported since bootstrapping is computationally very intensive in the presence of numerous fixed effects. In addition to the listed independent variables, state and wave dummies are controlled for. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Two Stage least squares estimate of effect of maternal employment on obesity, ECLS-K: 2011

Panel A: All states (n=41)	(1) Basic model	(2) With school fixed effects	(3) With child fixed effects
First Stage			
Effect of recreational marijuana sales on employment	-0.033**	-0.061*	-0.034**
	(0.015)	(0.030)	(0.016)
F-statistic of significance of excluded IV	4.86	4.04	4.58
Second stage			
Effect of employment on obesity	1.295***	0.696***	1.228***
	(0.249)	(0.148)	(0.278)
Observations	33,666	33,666	33,666
Panel B: States with medical marijuana law (n=18)			
First Stage			
Effect of recreational marijuana sales on employment	-0.035**	-0.068**	-0.035**
	(0.011)	(0.024)	(0.012)
F-statistic of significance of excluded IV	10.04	7.90	8.25
Second stage			
Effect of employment on obesity	1.195***	0.547***	1.157***
	(0.371)	(0.168)	(0.380)
Observations	14,060	14,060	14,060

Note: Each column in each panel reports the results for a two stage least squares regression weighted by ECLS-K sampling weights. The numbers in parentheses are standard errors clustered at the state level. Wild cluster-bootstrap p-values are not reported since bootstrapping is computationally very intensive in the presence of numerous fixed effects. In addition to the listed independent variables, state and wave dummies are controlled for. *** p<0.01, ** p<0.05, * p<0.01.

Table 8: Summary statistics, Mothers ages 21-45, ATUS 2005-2016

VARIABLES	(1) Overall (1)	(2) In CO, WA, OR, and AK before legalization (2)	(3) In CO, WA, OR, and AK following legalization (3)
Time spent on preparing food at home	55.421	53.528	71.206
Tobacco or drug at home	0.131	0.244	0.172
Time with child in bar & restaurant	7.591	6.581	5.597
Time spent on child care (overal)	106.773	106.233	109.421
Time with child present at home	267.555	273.895	292.781
Time spent on child education	7.844	7.168	7.742
Time spent on child health	2.807	3.598	1.429
Time on medical care for child	2.198	2.522	1.258
Time spent on eating with child at home	32.092	33.936	34.670
Time spent on grocery shopping	9.597	9.568	11.635
Recreational marijuana law	0.009	0.000	1.000
MML	0.263	1.000	1.000
Minimum wages in 2016 $	7.710	8.669	8.967
ACA Medicaid expansion	0.099	0.057	1.000
Real tobacco tax in 2016 $	2.240	2.621	2.897
Beer tax in 2016 $	0.292	0.268	0.378
weekend	0.504	0.487	0.536
White non-Hispanic	0.644	0.745	0.704
Black non-Hispanic	0.113	0.030	0.021
Other non-Hispanic	0.175	0.142	0.155
Married	0.671	0.720	0.691
High school	0.257	0.231	0.193
Some college	0.255	0.271	0.249
College graduate	0.211	0.234	0.253
Graduate degree	0.174	0.167	0.245
In School or College	0.090	0.089	0.099
Observations	26,456	1,395	233

Table 9: Effect of Recreational Marijuana Legalization on Time Use, Mothers ages 21-45

	Mothers 21-45		Women 21-45 with no child
VARIABLES	Cooking Food	Dine out with kids	Cooking Food
Recreational marijuana	18.854	-2.336	-0.027
	(5.065)***	(0.616)***	(4.632)
Wild bootstrap p-value	[0.193]	[0.105]	[0.996]
MML	-0.207	0.246	-0.481
	(2.646)	(0.614)	(2.624)
Minimum wages in 2016 $	-1.707	-0.531	0.576
	(1.216)	(0.290)*	(1.470)
ACA Medicaid expansion	2.281	0.039	1.790
	(2.061)	(0.649)	(2.634)
Real tobacco tax in 2016 $	-0.915	-0.247	1.026
	(1.012)	(0.344)	(1.279)
Beer tax in 2016 $	-1.397	1.640	-3.784
	(2.756)	(0.821)*	(4.754)
weekend	-4.404	5.872	1.130
	(0.960)***	(0.432)***	(1.297)
White non-Hispanic	-29.021	1.939	-14.338
	(2.831)***	(0.573)***	(3.227)***
Black non-Hispanic	-25.344	-0.800	-10.875
	(3.177)***	(0.711)	(4.756)**
Other non-Hispanic	-8.880	0.798	-7.173
	(3.317)**	(0.982)	(3.538)**
Married	20.167	1.853	15.522
	(1.770)***	(0.316)***	(2.118)***
High school	-15.695	0.933	-19.624
	(2.460)***	(0.469)*	(4.032)***
Some college	-23.835	2.323	-22.739
	(3.147)***	(0.392)***	(3.468)***
College graduate	-27.037	4.400	-25.422
	(3.655)***	(0.482)***	(3.268)***
Graduate degree	-31.414	4.123	-24.925
	(3.814)***	(0.532)***	(3.535)***
In School or College	-3.668	-0.909	-3.392
	(1.864)*	(0.465)*	(1.294)**
Observations	26,456	26,456	8,088
R^2	0.102	0.039	0.116

Note: Each column reports the results for a linear regression weighted by ATUS sampling weights. The numbers in parentheses are standard errors clustered at the state level. Wild cluster-bootstrap p-values are reported in brackets. In addition to the listed independent variables, age, state and year-month dummies are controlled for. *** p<0.01, ** p<0.05, * p<0.1.

Table 10: Effects of recreational marijuana on other uses of time for mothers ages 21-45

Panel A: Activities related to family/ child care					
childcare	Child at home	Child health	Child medical care	Eat at home	Grocery shopping
-9.361	9.886	-2.627*	-1.678*	2.028	4.442**
(6.828)	(12.514)	(1.544)	(0.967)	(1.918)	(2.168)
[0.381]	[0.580]	[0.210]	[0.214]	[0.513]	[0.089]
Panel B: Activities related to one's self					
Tobacco and alcohol use	Personal care	Socializing	Sports	Television	Sleep
-0.268***	3.429	6.685	1.338	14.046***	2.664
(0.090)	(13.247)	(12.983)	(2.326)	(5.075)	(11.950)
[0.023]	[0.818]	[0.655]	[0.605]	[0.093]	[0.838]

Note: Each cell reports the estimated coefficient of the main policy variable for a linear regression weighted by ATUS sampling weights. The numbers in parentheses are standard errors clustered at the state level. Wild cluster-bootstrap p-values are reported in brackets. All independent variables reported in Table 3 are controlled for. *** p<0.01, ** p<0.05, * p<0.1.

Appendix

Table A1: Estimated effects of legal marijuana sales on obesity form the Early Childhood Longitudinal Study

	(1)	(2) School FEs	(3) Child FEs
Recreational marijuana	-0.042*	-0.042**	-0.042*
	(0.022)	(0.020)	(0.025)
MML	0.009	0.001	0.010
	(0.012)	(0.008)	(0.013)
Minimum wages in 2016 $	-0.028***	-0.022***	-0.029***
	(0.010)	(0.008)	(0.011)
Medicaid Expansion	-0.002	-0.003	-0.001
	(0.010)	(0.010)	(0.011)
Real tobacco tax in 2016 $	0.003	-0.003	0.002
	(0.012)	(0.007)	(0.013)
Beer tax in 2016 $	-0.011	0.006	-0.014*
	(0.007)	(0.007)	(0.008)
Child male	-0.006	-0.008	
	(0.011)	(0.013)	
Child white	-0.060***	-0.065***	
	(0.019)	(0.024)	
Child black	0.003	-0.000	
	(0.022)	(0.026)	
Child Hispanic	0.045***	0.005	
	(0.014)	(0.019)	
Public school	0.025**	-0.047***	
	(0.012)	(0.013)	
Observations	33,666	33,666	33,666
R-squared	0.026	0.196	0.761

Note: Each column reports the results for a linear regression weighted by ECLS-K sampling weights. The numbers in parentheses are standard errors clustered at the state level. Wild cluster-bootstrap p-values are not reported since bootstrapping is computationally very intensive in the presence of numerous fixed effects. In addition to the listed independent variables, state and wave dummies are controlled for. *** p<0.01, ** p<0.05, * p<0.1.

Table A2: Estimated effects of legal marijuana sales on obesity form the Early Childhood Longitudinal Study—States with medical marijuana law only

VARIABLES	(1) Obese	(2) School FEs	(3) Child FEs
Recreational marijuana	-0.041**	-0.036*	-0.041*
	(0.019)	(0.019)	(0.020)
MML	0.015	0.007	0.015
	(0.012)	(0.007)	(0.013)
Minimum wages in 2016 $	-0.026	-0.010	-0.027
	(0.020)	(0.013)	(0.021)
Medicaid Expansion	0.007	0.010	0.007
	(0.009)	(0.010)	(0.010)
Real tobacco tax in 2016 $	0.006	0.002	0.005
	(0.013)	(0.008)	(0.014)
Beer tax in 2016 $	0.074***	0.058***	0.074***
	(0.017)	(0.017)	(0.018)
Child male	0.002	-0.007	
	(0.017)	(0.021)	
Child white	-0.054**	-0.047	
	(0.024)	(0.027)	
Child black	-0.020	-0.040	
	(0.040)	(0.043)	
Child Hispanic	0.038*	-0.002	
	(0.019)	(0.034)	
Public school	0.014	-0.026	
	(0.014)	(0.018)	
Observations	14,060	14,060	14,060
R-squared	0.020	0.191	0.763

Table A3: Robustness – selected results control group limited to only MML states, CPS 2005-2016

	(1)	(2)	(3)	(4)
	Not in labor force		Employment	
Panel A: Mothers with kids	Mothers 21-55	Mothers 21-55 with kids 6-12	Mothers 21-55	Mothers 21-55 with kids 6-12
Recreational marijuana	0.016**	0.024**	-0.013**	-0.021**
	(0.007)	(0.008)	(0.005)	(0.008)
Wild bootstrap p-value	[0.127]	[0.086]	[0.103]	[0.210]
Observations	1359480	404193	1359480	404193
R^2	0.060	0.051	0.065	0.051
	Not in labor force		Employment	
Panel B: Men & women with no kids	Age 21-55	Age 56+	Age 21-55	Age 56+
Recreational marijuana	0.005	-0.004	-0.004	0.006*
	(0.004)	(0.005)	(0.003)	(0.003)
Wild bootstrap p-value	[0.379]	[0.481]	[0.272]	[0.202]
Observations	1600654	1600654	2069215	2069215
R^2	0.065	0.068	0.278	0.259

Note: Each column in each panel reports the results for a linear regression weighted by CPS sampling weights. The sample is limited to states with the medical marijuana law. The numbers in parentheses are standard errors clustered at the state level. Wild cluster-bootstrap p-values are reported in brackets. In addition to the listed independent variables, age, state and year-month dummies are controlled for. *** p<0.01, ** p<0.05, * p<0.1.