Effects of Local Job Losses on Child Maltreatment Injuries and Investigations

Anika Schenck-Fontaine, Anna Gassman-Pines, Christina M. Gibson-Davis, & Elizabeth O. Ananat

Specific aims and significance. Child abuse and neglect endangers children’s physical and mental health. To design effective prevention and intervention strategies, it is necessary to understand what family and community-level factors contribute to child maltreatment behavior. While a substantial body of research illuminates the family-level predictors of maltreatment, the role of community-level factors, such as economic conditions, remains less understood. For example, economic recessions are associated with significant risk factors for maltreatment, including psychological distress and economic instability.1,2 Yet, counter to expectations, community-level economic losses are not consistently associated with an increase in child maltreatment incidence.3-5 This paper aims to disentangle this apparent contradiction, in which recessions increase risk factors for child maltreatment but are not consistently linked to increases in actual rates of child maltreatment, by testing the effect of community-wide job losses on the frequency and severity of child maltreatment injuries and investigations in North Carolina.

Relevant literature. According to the Family Stress Model, community-level economic conditions can impact the risk of child maltreatment behavior through effects on the health, emotional distress, and mental health of the parents.6 The evidence on the effects of economic downturns on the incidence of maltreatment is mixed, but this inconsistency can be partly explained by the use of Child Protective Services (CPS) data to measure maltreatment.3-5,7-11 which conflates frequency of child maltreatment with severity. CPS administrative data capture maltreatment incidents of all severity levels but typically provide no information about severity, making it impossible to identify the effects of economic downturns on maltreatment severity. Thus, the use of CPS data may mask changes in the severity of maltreatment that have gone undetected in prior research.

On the other hand, studies using hospital emergency room (ER) data, which capture only more severe cases of maltreatment, consistently find that economic downturns predict an increase in the frequency of child maltreatment injuries.12-14 Moreover, one hospital study also assessed effects of an economic downturn on both the frequency and severity of maltreatment-related injuries and found that both increased during the downturn.13 This suggests that economic downturns may impact the severity of maltreatment, even if overall rates of maltreatment are unchanged. Such an increase in severity is consistent with the expectation that families in which interactions are already strained are more vulnerable to changes in financial strain and psychological distress. This study combines both measures of child maltreatment, ER visits and CPS reports, to disentangle this differential effect on the frequency and severity of maltreatment.

Research design, methodology, and data sources. This study combines monthly data from three North Carolina (NC) administrative data sets from 2007 to 2011. Data on community-level job losses come from the NC Job Loss Databank provided by the North Carolina Employment Security Commission and contain information about job losses due to business closings and layoffs for all counties. We have used these data to create monthly measures of community-wide job loss as a percent of the working-age (age 25-64) population. Cumulative lagged predictor variables will be included in the analysis. Because forced job losses are a surprise to workers and communities, they are more likely to reflect exclusively exogenous changes in the economy than the commonly used unemployment rate.15
Child maltreatment CPS investigation data come from the NC Central Registry System. The CPS administrative data contain information on screened-in reports of maltreatment (i.e., reports accepted by CPS for further assessment or investigation) for all counties. The frequency of child maltreatment will be measured as the rate of total screened-in reports per 1,000 children aged 0-17 in each county. Severity is inferred from the alternative response system track assignment that occurs at the initial screening. Reports assigned to the Traditional Investigation (TI) track are considered more severe than Family Assessment (FA) track reports. Patient-level data on child maltreatment-related ER visits come from the NC Division of Health Service Regulation and include patient demographics and ICD-9-CM diagnoses codes. ICD-9-CM diagnosis codes for child maltreatment and maltreatment-related injuries, such as shaken infant syndrome and abusive head trauma, will be used to identify instances of possible child maltreatment based on coding schemes used in prior research. The frequency of maltreatment will be measured as the rate of total maltreatment-related ER visits per 1,000 children aged 0-17 in each county.

Finally, to determine whether job losses differentially impact child maltreatment behavior in more economically disadvantaged communities, this study will include a sub-group analysis. The sample of counties will be divided into those that fell below and above the 75th percentile in the 2004 unemployment rate, as an indicator of the local economy prior to the study period. Counties will be considered most economically disadvantaged if they had an average unemployment rate higher than 75% of all counties.

This study will use fixed-effects generalized linear models. Poisson regression models appropriate for modeling non-normally distributed counts and rates will be used to examine the effect of community-wide job losses on the rate of maltreatment reports and ER visits per 1,000 children. All regression models will include dichotomous indicators for the following: county, to capture persistent differences between counties; year of CPS report or ER visit, to capture statewide changes that may affect job losses and child maltreatment; month of CPS report or ER visit, to address seasonality; and linear county over-time trends to capture smoothly evolving differences in job losses and child maltreatment by county. This approach isolates the effect of job losses that were shocks relative to the overall economy in the state, within districts, and evolving trends within districts, and controls for all stable differences between districts.

Preliminary analyses and implications. Preliminary analyses using CPS administrative data show that community-level job losses have no effect on the frequency of screened-in reports of child maltreatment (Table 1). However, Column 1 of Table 2 shows that job losses predict an increase in the percent of reports assigned to the more severe TI track immediately following job losses, with the effect attenuating six months after job losses. The sub-group analysis results show that this severity effect is larger and more immediate in more economically disadvantaged districts (Table 2, Columns 2 and 3). These preliminary findings demonstrate that the effects of economic downturns occur at the intensive margin, increasing the severity of maltreatment reports, and not at the extensive margin, increasing the number of reports. The results also show that this severity effect is larger and more immediate in more economically disadvantaged districts. Similar analyses will be conducted using ER maltreatment injury data and it is hypothesized that job losses predict an increase in the frequency of maltreatment-related ER visits, reflecting an increase in more severe incidents of child maltreatment.

Child maltreatment places a child at serious risk of injury and can also increase that child’s risk of future health and social problems and a better understanding of the community-level factors that impact child maltreatment behavior is critical to the development of effective
prevention strategies. By combining two measures of child maltreatment and by using a robust empirical strategy, this study improves on previous work and the findings will fill an important gap in the literature on how economic conditions impact child well-being.

Table 1. Effects of Local Job Losses on Rate of Screened-In Reports (per 1,000 Children)

<table>
<thead>
<tr>
<th>% Affected by Job Losses*</th>
<th>All Districts</th>
<th>Most Disadvantaged Districts</th>
<th>Less Disadvantaged Districts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month of Report</td>
<td>0.995 (0.979 - 1.011)</td>
<td>1.001 (0.977 - 1.027)</td>
<td>0.993 (0.973 - 1.014)</td>
</tr>
<tr>
<td>1-3 Months Before Report</td>
<td>0.992 (0.984 - 1.000)</td>
<td>0.986* (0.973 - 0.999)</td>
<td>0.995 (0.985 - 1.005)</td>
</tr>
<tr>
<td>4-6 Months Before Report</td>
<td>0.997 (0.988 - 1.005)</td>
<td>1.001 (0.988 - 1.015)</td>
<td>0.995 (0.984 - 1.006)</td>
</tr>
<tr>
<td>7-9 Months Before Report</td>
<td>0.998 (0.989 - 1.007)</td>
<td>1.009 (0.993 - 1.026)</td>
<td>0.994 (0.983 - 1.005)</td>
</tr>
<tr>
<td>10-12 Months Before Report</td>
<td>0.994 (0.985 - 1.004)</td>
<td>0.990 (0.974 - 1.006)</td>
<td>0.996 (0.985 - 1.008)</td>
</tr>
</tbody>
</table>

Base Rate | 5.93 | 6.67 | 5.70
N | 3024 | 720 | 2,304

Notes: Robust standard errors in parentheses. Controls include year fixed effects, district fixed effects, month fixed effects, and linear district time trends. Most economically disadvantaged districts have 2004 unemployment rate above the 75th percentile. Significant difference between sub-groups denoted by ††p<0.01, †p<0.05
* Measured as the total number of workers who lost jobs during the window, as a percentage of the district's working-age (25-64) population
** p<0.01, * p<0.05

Table 2. Effects of Local Job Losses on Percent of Total Screened-In Reports Assigned to Traditional Investigation Track

<table>
<thead>
<tr>
<th>% Affected by Job Losses*</th>
<th>All Districts</th>
<th>Most Disadvantaged Districts</th>
<th>Less Disadvantaged Districts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month of Report</td>
<td>0.002 (-0.016 - 0.015)</td>
<td>-0.005 (-0.037 - 0.028)</td>
<td>0.004 (-0.008 - 0.016)</td>
</tr>
<tr>
<td>1-3 Months Before Report</td>
<td>0.011** (0.004 - 0.018)</td>
<td>0.022**† (0.010 - 0.035)</td>
<td>0.004 (-0.004 - 0.011)</td>
</tr>
<tr>
<td>4-6 Months Before Report</td>
<td>0.014** (0.007 - 0.022)</td>
<td>0.023**† (0.006 - 0.039)</td>
<td>0.008* (0.001 - 0.015)</td>
</tr>
<tr>
<td>7-9 Months Before Report</td>
<td>0.007* (0.000 - 0.015)</td>
<td>0.007 (-0.009 - 0.023)</td>
<td>0.006 (-0.001 - 0.014)</td>
</tr>
<tr>
<td>10-12 Months Before Report</td>
<td>0.001 (-0.005 - 0.008)</td>
<td>-0.006 (-0.017 - 0.006)</td>
<td>0.003 (-0.004 - 0.011)</td>
</tr>
</tbody>
</table>

Base % of Total Screened-In Reports | 33.05 | 35.83 | 32.11
N | 3024 | 720 | 2,304

Notes: Robust standard errors in parentheses. Controls include year fixed effects, district fixed effects, month fixed effects, and linear district time trends. Most economically disadvantaged districts have 2004 unemployment rate above the 75th percentile. Significant difference between sub-groups denoted by ††p<0.01, †p<0.05
* Measured as the total number of workers who lost jobs during the window, as a percentage of the district's working-age (25-64) population
** p<0.01, * p<0.05

References:


