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Are economic trends associated with child maltreatment? Preliminary results from the recent recession using state level data

Lina Millett *, Paul Lanier, Brett Drake

Brown School of Social Work, Washington University in St. Louis, Campus Box 1196, One Brookings Drive, St. Louis, MO 63130, United States

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ABSTRACT

The objective of this study is to investigate the effects of the recent economic recession on child maltreatment rates. Specifically, we examine whether unemployment rates, labor force participation, and food stamp usage are associated with aggregate rates of child abuse and neglect (CAN) rates using state-level data. Theory and prior empirical evidence supports the relationship between family and neighborhood poverty and incidence of child maltreatment; however, the relationship between general economic environment and CAN remains unclear.

The study uses a multiple case study design at the state level, analyzing administrative child maltreatment and economic data for seven U.S. states. Aggregate numbers for child maltreatment reports and food stamp usage were obtained from state respective agencies and economic data for unemployment and labor force from the Current Population Survey from the Bureau of Labor Statistics. Empirical growth plots and OLS regression were used to examine changes in maltreatment and utilization of economic variables as predictors over time. Bivariate correlations and OLS regression results show a weak and inconsistent relationship between the economic indicators in this study and maltreatment rates. Several possible reasons accounting for these results are explored.

1. Introduction

While national rates of child maltreatment have been declining over time (Sedlak et al., 2010; U.S. Department of Health, Human Services (USDHHS), 2010), there is a concern that the current economic recession will alter this positive trend. Most of these concerns are found in anecdotal reports provided by media sources while no recent review from official data sources is available (Chang, 2009; Hendricks, 2010; Hughes, 2009; Szep, 2009). While there are well-established theoretical and empirical links relating family poverty to child maltreatment (Drake & Zuravin, 1998; Pelton, 1978; Sedlak et al., 2010) it is less clear how overall rates of child maltreatment are related to general economic environment. Limited prior empirical evidence supports a direct relationship between child maltreatment and economic deprivation at a community level (Krugman, Lenherr, Betz, & Fryer, 1986; Steinberg, Catalano, & Dooley, 1981). Some suggest economic prosperity may have been partly responsible for declining child maltreatment rates in the 1990s (Finkelhor & Jones, 2006). If the two are strongly related, the current economic slowdown may bring higher child abuse and neglect (CAN) rates. While a slowdown in early 2000s did not show higher CAN rates the current U.S. recession warrants a timely new look at the relationship between CAN and economic insecurities in the country (USDHHS, 2007). Even though the recession has not run its full course it is important to look at its early effects from a CAN prevention policy perspective. If child maltreatment is related to broader current economic trends in the country then the same public policies tackling economic downturn can also be viewed as potentially effective in child maltreatment prevention.

1.1. Empirical findings relating child maltreatment to economic factors

Child maltreatment in the U.S. has been consistently linked to poverty, in particular, lack of parental income and impoverished neighborhoods (Coulton, Crampton, Irwin, Spilsbury, & Korbin, 2007). Pelton (1978) was among the first to suggest that there is a real relationship between social class and child maltreatment. He stated that a classless view of child maltreatment was influenced by several factors, including the medical model of child maltreatment that dismissed the importance of social context. Since then a number of studies using both Child Protective Services (CPS) and non-CPS data and utilizing different sampling methods have supported a direct relationship between low income and CAN that is unlikely due to class bias in CPS (Drake & Pandey, 1996; Drake & Zuravin, 1998; Jason & Andereck, 1983; Jonson-Reid, Drake, & Kohl, 2009; Sedlak, 1991; Sedlak & Broadhurst, 1996; Sedlak et al., 2010).

The strongest empirical evidence for a direct relationship between economic insecurity and CAN exists in individual and family level

* Corresponding author. Tel.: +1 314 484 0811; fax: +1 314 935 7283.
E-mail addresses: lmillett@gwbmail.wustl.edu (L. Millett), planier@wustl.edu (P. Lanier), brettd@wustl.edu (B. Drake).

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studies. The findings of the Fourth National Incidence Study of Child Abuse and Neglect (NIS-4) suggest that children whose parents were unemployed experienced two to three times higher rates of neglect than those whose parents were employed (Sedlak et al., 2010). Additionally, those whose parents were not in the labor force experienced two to three times higher rates of overall CAN, two times higher abuse and three times higher neglect. These findings were consistent with prior NIS studies (Sedlak, 1991; Sedlak & Broadhurst, 1996). Slack and colleagues found that lower employment and higher perceived material hardship was associated with higher frequency of physical discipline (spanking) after controlling for parenting characteristics (Slack, Holl, McDaniel, Yoo, & Bolger, 2004).

Studies measuring economic deprivation at a neighborhood level (block, census track, or zip code level) have found a consistent relationship between aggregate rates of neighborhood poverty and CAN (Drake & Pandey, 1996; Coulton, Korbin, Su, & Chow, 1995; Freisthler, 2004). Neighborhood rates of unemployment have generally been found to be related to aggregate rates of CAN (Freisthler, 2004; Deccio, Horner, & Wilson, 1994; Krishnan & Morrison, 1995). Some have found that unemployment rates were gender specific, with a higher percentage of unemployed males posing a greater risk for child maltreatment (Young & Gately, 1988; Gillham, Tanner, & Cheyne, 1998), while one study did not find a relationship between unemployment and CAN (Freisthler, Needell, & Gruenewald, 2005). Studies examining the relationship between labor force participation and CAN have found that an increase in women's labor force participation has produced lower overall as well as by type of CAN rates at aggregate level (Ernst, 2000; Young & Gately, 1988; Zuravin, 1989). Although these results are gender specific and the conceptualization of labor force is limited to childcare burden, the findings suggest that CAN is related to a family's economic insecurity through their ability to purchase childcare.

Some inconsistencies do exist between study findings. One study found that higher unemployment rate in Colorado between 1964 and 1985 was associated with higher number of physical abuse cases in one city (Denver) for the same year ($r^2 = 0.66$) (Krugman et al., 1986). Another study comparing child abuse before and after an increase in the unemployment rate in one U.K. city in the 1980s found no association between unemployment and CAN for families who experienced a sudden job loss but had previously held a stable employment (Taitz, King, Nickolson, & Kessel, 1987). Still another study examining the relationship between unemployment rate and child abuse in one rural county in the northwestern U.S. from 1978 to 1991 found that higher unemployment was associated with a decrease in child maltreatment, which was explained by seasonal anticipated unemployment that reduced family's stress ($r^2 = -0.79$) (Pare, 1992).

Another indicator of economic insecurity, welfare receipt, has generally been linked to CAN. While studies have differed in regard to welfare programs and characteristics analyzed, previous welfare receipt (Aid to Families with Dependent Children [AFDC]/Temporary Assistance to Needy Families [TANF]), duration of receipt, and less generous state welfare benefits have been linked to higher CAN occurrence, recidivism, and out-of-home care rates (Drake, Jonson-Reid, & Sapokaite, 2006; Needell, Cuccaro-Alamin, Brookhart, & Lee, 1999; Paxson & Waldfogel, 2002; Slack et al., 2003). On the other hand, at least one study has found no relationship between welfare participation and child welfare involvement (Dworsky, Courtney, & Zinn, 2007). Still, another study employing methods to control for selection bias in Medicaid-eligible children found that both joint and separate family's participation in WIC and food stamps lowered the risk for substantiated CAN reports and health-related problems (Lee, Mackey-Bilaver, & Chin, 2006).

While most studies examining economic conditions and maltreatment looked at overall CAN rates, a few have examined CAN by type. Aggregate rates of physical abuse and neglect have been consistently linked to community level rates of poverty and unemployment (Drake & Pandey, 1996; Ernst, 2000; Freistler, Midanik, & Gruenewald, 2004; Gillham et al., 1998; Zuravin, 1989). Evidence regarding sexual abuse is less consistent (Drake & Pandey, 1996). Additionally, a few studies suggest that higher female labor force participation is related to lower rates of physical and sexual abuse and also neglect (Ernst, 2000; Zuravin, 1989).

1.2. Explanations for the link between economic factors and child maltreatment

The association between economic deprivation and CAN is explained by several theoretical conceptualizations. An ecological framework suggests that child maltreatment occurs as a result of transactions between individual and his or her environment, including families, neighborhoods, and larger communities (Coulton et al., 2007). While family factors are the most proximal and have direct effects on CAN occurrence, neighborhood and larger community factors may also impact CAN indirectly, perhaps through parenting behaviors, family situational factors or broader societal processes (Cicchetti, Toth, & Maughan, 2000). Ecological theory suggests that there may be etiological differences in regard to CAN types, especially as they relate to different degrees and types of transactions across system levels. Although all types of CAN are influenced by environmental factors, neglect and physical abuse have stronger theoretical grounding to financial insecurity than sexual abuse does, which is more linked to the individual micro-environment. One of the advantages of the ecological model is that it provides a framework for simultaneously considering extant mid-range theories within the broader context of environment.

Stress theory suggests that high levels of stress, alone or moderated by other factors, such as parental belief in discipline, may increase the risk for child maltreatment (Crouch & Behl, 2001). Lack of income may influence parental emotional well-being and parenting practices through increased stress (Conger, Reuter, & Conger, 2009). Parents that are highly stressed are more likely to engage in rapid information processing as a way to control their children's behaviors (Milner, 1993). On the other hand, lack of income and budget constraints may prevent parents from providing adequate care necessary for a healthy environment for children's development, which may result in omission or neglect (Berger, 2004). In addition, some economic theory suggests that poorer parents may maltreat their children by under-investing in their care because they may not see a high utility of their future returns (Becker, 1993).

Theories regarding community-level risk factors for CAN suggest that community structure, in particular low social organization, weak collective efficacy, and low quality and availability of community resources that provide parental supports bring about environmental stressors that affect transactions between parents and children at home (Coulton et al., 1995; Freistler, Merritt, & LaScala, 2006). In addition, many poor communities lack parenting support, which could help to mitigate stress at home.

1.3. Other perspectives and key issues

In addition to the above literature dealing directly with child maltreatment, there exists a body of work, which explores the relationship between economic factors and other outcomes in children and families (e.g. crime and health). There is some research that has explored how economic downturns are related to health and mental health outcomes. Ruhm (2000) found that while physical health benefited from recession as a result of less smoking and more physical activity, mental health (measured by suicide rates) declined. This supports the indirect relationship between unemployment and child maltreatment as parental mental health has been found to be significantly related to punitive and neglectful parenting behaviors (Lovejoy, Graczyk, O'Hare, & Neuman, 2000).

Theory and empirical research linking crime and macroeconomic conditions in the country, such as unemployment or low-income wages, have showed that economic conditions have ambiguous effects on crime. On one hand, economic theory suggests that legitimate opportunities increase with good labor market conditions (Becker, 1968). On the other hand, activities associated with crime, such as alcohol, drugs, and guns, are considered to be normal goods (average demand increases as income increases), making the relationship between the country's economy and crime to be less clearly related (Cook & Zarkin, 1985; Levitt, 2004). Empirical studies show that there is a significant relationship between unemployment and property crime (Gould, Weinberg, & Mustard, 2002), with higher unemployment being associated with increase in property crime. However, studies examining the relationship between unemployment and violent crime have found inconsistent results (Levitt, 2004; Raphael & Winter-Ebmer, 2001). Given the lack of consistency of the results from crime literature, it is difficult to draw definitive comparisons for how recession will effect child maltreatment.

Some work unpacks economic effects in a greater detail, specifically looking at chronicity of poverty and structural factors from a lifetime risk perspective relative to individual psychosocial outcomes. Rank and Hirschl (2001) suggest that poverty is a fairly common event in individual's life. Using a life course methodology, the authors show that while duration of poverty is relatively short for the majority, it is marked by chronicity for many, particularly less educated and minority populations. Consequently, this perspective suggests that while volatility in family income is a dynamic event affecting quite a large number of families, chronic poverty signifies structural inequalities in the society. Some empirical work suggests that prolonged or persistent poverty may affect aggression and negative health outcomes among adolescents and young adults (Najman et al., 2010). In addition, one study found social inequality (measured by relative versus absolute poverty) may impact negative health outcomes while controlling for income level (Vagero & Illskey, 1995). Unfortunately, this issue is not well understood in child welfare and future research has yet to address different effects of persistent versus volatile poverty on child outcomes.

Applying the above theoretical framework, the economic downturn is seen as a macro system factor that is suggested to influence changes in caregiver's employment, income level, and welfare utilization. Changes in family's environmental factors (material and social resources) are hypothesized to influence parental stress level. Diminishing resources and heightened stress may increase negative parent–child interactions and serve as a financial constraint to providing adequate care necessary for healthy children's development, which is presumed to increase the risk for child maltreatment.

1.4. Study hypotheses

The purpose of this analysis is to document unemployment rates, labor force participation, food stamp usage (when available) and child maltreatment rates (by type when available) during the period prior to and immediately following the economic downturn of late 2008. We explore the following hypotheses:

- Economic indicators, unemployment rates and food stamp usage will show an increase while labor force participation will decrease following the 2008 economic downturn.
- Child maltreatment rates will be inversely associated with labor force participation and directly associated with unemployment and food stamp usage over time.
- Within maltreatment types, physical abuse and neglect rates will show stronger associations with economic indicators than will sexual abuse.

2. Methodology

2.1. Data and sample

The study uses a multiple case study design at the state level, analyzing publicly available administrative child maltreatment and economic data for seven U.S. states (Arizona, California, Massachusetts, Missouri, North Carolina, Oregon, and Wisconsin). These states were selected following a publicly available online systematic survey of state level data. The criteria for the sample selection included that state level child maltreatment data be available for the pre (before 2009) and post economic recession period (after 2009). We made a conscious decision not to aggregate state data but instead to conduct state level analysis, given differences in regard to laws and procedures governing definitions, reporting, and substantiation of maltreatment.

2.2. Measures

Child maltreatment measures include aggregate numbers of screened in reports (six states), screened out reports (two states), total reports (three states), and reports by maltreatment type (three states). Economic insecurity data included three measures: unemployment, labor force participation, and food stamp usage. Data for unemployment and labor force participation were obtained by the Current Population Survey from the Bureau of Labor Statistics while food stamp utilization data were obtained from respective state income maintenance agencies. The available child maltreatment data for each state determined the timeframe for each state in this analysis. Economic data on three variables (labor force, unemployment and food stamp) were matched to child maltreatment data although food stamp usage data was not available for all data points in one state (MO).

We use the U.S. Labor department's definitions for unemployment and labor force participation. Unemployment rate is defined as the proportion of the labor force that is available for work and have made efforts to find employment during the four-week period (U.S. Department of Labor [DOL], n.d.). Labor force participation, defined as a proportion of working age civilian non-institutional population that is in the labor force (employed and unemployed), is a less well-known measure of economic performance (DOL, n.d.). Although closely related, unemployment and labor force participation represent conceptually distinct constructs; utility of both has not been well understood in child welfare.

Participation in food stamps in our study is regarded as an indicator of poverty. Given the well-documented relationship between family poverty and child maltreatment we were interested in looking at the relationship between poverty at state level and CAN during the recession. Due to the lack of data for poverty at the time of this analysis we use participation in the food stamp program, which is a less stringent substitute for official poverty data (eligibility for food stamps is under 130% of the federal poverty line).

2.3. Analyses

Data analysis was conducted in R 2.11. The relationship between each state's economic performance and child maltreatment rate was examined using Pearson's bivariate correlations. Maltreatment rates per 1000 children under 18 and food stamp rates per 1000 individuals were used instead of raw numbers to account for population growth over time. Table 1 includes a summary of measures for child maltreatment and economic insecurity by state. It should be noted that there are four different time periods used in these calculations depending on the state data system (annual, monthly, semi-annual, and quarterly).

The change in maltreatment rate over time in each state was first examined using exploratory empirical growth plots using ordinary

Table 1
Measures for child abuse and neglect (CAN) and economic insecurity.

Variables	Arizona	California	Massachusetts	Missouri	N Carolina	Oregon	Wisconsin
CAN screened in reports	X		X	X	X	X	X
CAN screened out reports			X			X	
Total CAN reports		X	X			X	
CAN by type	X	X				X	
Unemployment	X	X	X	X	X	X	X
Labor force participation	X	X	X	X	X	X	X
Food stamps participation	X	X	X	X	X	X	X
Frequency	Semi-annual	Annual	Quarterly	Monthly	Annual	Annual	Monthly
Time frame	10/2005–09/2009	2001–2009 (Oct–Sep)	1/2007–12/2009	1/2007–4/2010	2000–2009	2001–2009	1/2008–5/2010

least squares (OLS) regression. Despite the assumptions of independence and homoscedasticity that are violated using repeated measures in longitudinal data, the OLS estimates are useful for exploratory purposes and still provide unbiased estimates of the intercept and slope for each state (Singer & Willett, 2003). Curvilinear change in OLS was assessed using a quadratic time variable. Time was centered at January 2008 as month zero for all states in order to standardize across states and for interpretation of estimates at the beginning of the recession. Each economic indicator was then entered into the model as a time-varying predictor to determine the effect on the maltreatment rate.

3. Results

3.1. Descriptive findings

The seven states generally experienced higher unemployment rates, lower labor force participation (except no change in AZ), and higher food stamp usage indicating recession at the state level. On the other hand, child maltreatment rates, overall and by type, did not significantly change after the recession began in any of the states. In a few states, the descriptive data indicates that CAN rates may be decreasing. Table 2 presents data for the main variables during pre and post recession period, where pre-recession period is taken from 2007 or first available (2008 for WI). See Appendix A for child maltreatment trend figures by state.

3.2. Bivariate results

In every state except Arizona, Pearson's bivariate correlations were non-significant indicating no association between unemployment rate and child maltreatment. The correlation in Arizona ($r=-0.74$, $p<0.05$) indicates a negative association between maltreatment and unemployment rates. California ($r=0.83$, $p<0.01$) and Oregon ($r=-0.99$, $p<0.001$) also had significant associations between labor participation and maltreatment but in opposite directions. Arizona ($r=-0.72$, $p<0.05$), California ($r=-0.90$, $p<0.01$), and Oregon ($r=0.82$, $p<0.01$) had significant associations between food stamp usage and maltreatment rate, again with Oregon having a positive association while California and Arizona had negative associations. Massachusetts, North Carolina, and Wisconsin had no significant correlations between maltreatment rates and the economic indicators.

3.3. Results from empirical growth plots and OLS

Empirical growth plots and OLS regression were created to describe the change over time of maltreatment rates in each state. Linear and quadratic models were compared to determine the best fit for each state. Arizona ($b_{time}=-0.02$, $p<0.05$), California ($b_{time}=-0.03$, $p<0.001$), and Oregon ($b_{time}=0.14$, $p<0.01$) had a linear relationship while Missouri ($b_{time}=-0.02$, $p<0.05$; $b_{time}2=0.001$, $p<0.05$), North Carolina ($b_{time}=-0.06$, $p<0.01$; $b_{time}2=-0.001$, $p<0.001$), and Wisconsin ($b_{time}=-0.03$, $p<0.05$; $b_{time}2=0.001$, $p<0.05$) also had significant quadratic terms. Massachusetts did not have a significant change over time in maltreatment rate.

Unemployment rate, food stamp usage, and labor force participation were all non-significant predictors of maltreatment controlling for time and did not improve the model for any individual state except California. Food stamp usage ($F=20.7$, $p=0.006$), unemployment rate ($F=10.1$, $p=0.02$), and labor force participation ($F=8.32$, $p=0.03$) significantly improved the model fit for California when entered separately in the model. When entered in the model together, each per 1000 person increase in usage of food stamps was associated with a 1.5 point decrease in maltreatment rate per month ($b_{FS}=-1.49$, $p<0.05$) with a decrease of 0.02 points each month in this relationship ($b_{FS\times TIME}=0.016$, $p<0.05$), a 1% increase in labor force participation was associated with 1 point drop in maltreatment rate ($b_{LF}=-1.17$, $p<0.05$) with a decrease of 0.05 points in this relationship ($b_{LF\times TIME}=0.046$, $p<0.05$), and a 0.01% in the unemployment rate was associated with a 9 point increase in maltreatment rate ($b_{UN}=8.71$, $p<0.05$) with no significant change in the relationship over time.

Maltreatment rate by type was modeled for the three states that had available data. For Arizona, neglect ($b_{TIME}=-0.02$, $p<0.05$) significantly decreased while sexual abuse and physical abuse did not

Table 2
Descriptive results for pre and post recession (2007or first available—last recorded).

State	Unemployment		Labor force participation		Food stamps usage[A]		Child maltreatment reports[B]	
	Pre recession (%)	Post recession (%)	Pre recession (%)	Post recession (%)	Pre recession	Post recession	Pre recession	Post recession
Arizona[SA 1]	3.8	9.3	63.5	63.5	35.6	56.2	10.8	9.5
California[AN 2]	5.4	11.4	65.7	65.1	22.7	28.9	49.2	47.2
Massachusetts[Qrt 3]	4.5	9.2	67.6	64.9	36.7	59.0	8.3	8.1
Missouri[MO 4]	4.7	9.5	67.7	64.5	51.4[5]	64.7[6]	3.0	3.7
N Carolina[AN 2]	4.7	10.6	65.8	63.7	43.2	51.6	31.8	30.3
Oregon[AN 2]	5.1	11.1	65.6	65.3	43.5	63.1	30.6	32.8
Wisconsin[MO 7]	4.4	8.2	70.7	68.8	71.8	129.1	1.9	1.8

Notes. [A]Food Stamp data is presented as rate per 1000 individuals; [B]Child maltreatment reports are screened in rates per 1000 children, except for California, where maltreatment reports are rates of total number of reports per 1000 children; [AN]Annual; [SA]Semi-annual; [QRT]Quarterly; [MO]Monthly. [1]Pre recession: 4/2007–9/2007, post recession: 4/2009–9/2009, [2]pre recession: 2007, post recession: 2009, [3]pre recession: 1/2007–4/2007, post recession: 10/2009–1/2010, [4]pre recession: 1/2007, post recession: 4/2010, [5]pre recession: 10/2007, [6]post recession: 9/2009, [7]pre recession: 1/2008, post recession: 5/2010.

show significant change. Economic indicators were not significant predictors for each type in Arizona. For Oregon, neglect ($b_{TIME} = 0.03$, $p<0.01$) and sexual abuse ($b_{TIME} = 0.003$, $p<0.05$) increased significantly over time while physical abuse did not. The economic indicators were not significant predictors by type in Oregon. In California, neglect showed an increase ($b_{TIME} = 0.03$, $p<0.05$) while physical abuse ($b_{TIME} = -0.01$, $p<0.05$) and sexual abuse ($b_{TIME} = -0.01$, $p<0.05$) showed a decrease. Each 0.01% increase in the unemployment rate ($b_{UN} = 0.28$, $p<0.01$) was associated with a 0.3 point increase in the maltreatment rate and this relationship decreased 0.01 points each month ($b_{UN \times TIME} = 0.28$, $p<0.05$). Economic indicators did not predict physical and sexual abuse rates.

4. Discussion

The purpose of this study was to investigate the association between available indicators of economic conditions and child maltreatment rates. Specifically, we explored whether unemployment, labor force participation and food stamp utilization predict child maltreatment during the recent economic recession. Theory and some prior empirical findings suggest that we could have expected that child maltreatment rates would go up post 2008. Our data did not show any general evidence of this anticipated relationship. Only California had rates of maltreatment that were significantly associated with the economic indicators when controlling for change over time. However, in this state there was not a strong or consistent relationship in the anticipated direction for these economic indicators and the outcome of maltreatment. Overall rates of maltreatment increased with unemployment, decreased with food stamps usage, and decreased with labor force participation. Increases in the unemployment rate predicted increased rates of neglect while physical and sexual abuse changes were not predicted by economic indicators. Given inconsistent findings in only one state of the seven examined, this data does not provide support for a relationship between the economic downturn and maltreatment rates. Below we explore several possible reasons why this may be so.

First, the design and measurement of our study have a few shortcomings. The sample had only seven states, and it is possible that the states included in the sample may not be representative of the rest of the country. For example, it is possible that some states provided extra supports to families during the economic downturn, which helped to reduce stress at home and avoid maltreating behaviors. On the other hand, it is possible that the measures in this study were too crude to detect the relationship. The economic indicators used in this study might not have been the most valid measures of the level of economic insecurity most typically associated with child maltreatment. Additionally, our proxy to poverty, food stamps, does not account for those who do not participate in the program due to the lack of knowledge or inability to sign up. It is also possible that the state level unit of analysis might have been too large, obscuring the local effects.

Another limitation is that sufficient time may not yet have elapsed since the recession. Perhaps a certain amount of time has to pass before loss of financial resources induces parental stress at home. There is some emerging evidence that a lag effect may exist, where negative consequences may follow economic downturn by many months (American Academy of Pediatrics, 2010). Third, official reports of child maltreatment do not fully capture actual maltreatment. It is suggested that CPS account for only for a small portion of all maltreatment in the country (Fallon et al., 2010). Therefore, even though this study failed to discover the anticipated relationship between economic insecurity and CAN, it does not demonstrate conclusively that maltreatment rates have not changed. In fact, it could be that maltreatment had increased among certain types of families, perhaps previously unknown to CPS, that have not been reported yet. It is believed that the first CAN report is usually not the first incident of maltreatment to occur in the family. In other words, it is likely that a child is maltreated multiple times before a report to CPS is made, if ever. On the other hand, it could also be that increasing stressors (due to economic conditions) may habituate visibility of CAN. Fourth, it is possible that system response, also related to economic conditions, may alter how cases are screened in and screened out. Fortunately, data on both screened in and screened out cases were available for two states. We found relatively stable screened out rates in both states, implying that CPS practices might have remained relatively unaffected by recession cut backs in human and financial resources. Lastly, our results are best interpreted while viewing poverty in a dynamic way. Hopefully, future research will be able to unlock more finely tuned economic measures for at least some areas during this period (e.g. detailed gradations of poverty, chronicity of poverty and short term stressors, assets, and parent's ability to pay for necessities) (Barth, Wildfire, & Green, 2006). Such data could go a long way towards addressing the issues raised above and would contribute to a better understanding of which aspects of poverty affect child maltreatment.

Our study also offers several strengths. We use universal counts for child maltreatment measures that are not based on samples. The advantage of universal measures is having actual counts that are free of sampling and measurement errors. We use reports or screened-in reports, not substantiated reports. This avoids the problem of shifting substantiation rates, which can occur when new systems are implemented (e.g. alternative response tracks). It is also consistent with the growing consensus (Hussey et al., 2005; Kohl, Jonson-Reid, & Drake, 2009) that unsubstantiated and substantiated cases are more similar than different (Drake, 1996).

We use several conceptually distinct measures to assess economic conditions. While unemployment rate may fluctuate as a result of perception of economic conditions in the country due to people entering and leaving the labor force, labor force participation rate is a more stable measure of economic performance, as it demonstrates the proportion of population that are employed and looking for jobs versus those that are not in the labor force. Another advantage is in the use of similar measures across states. Had we been dependent on more finely tuned measures of poverty, we could not have compared different states using the same variables, making it hard to assess the generality of the trend during the economic downturn. Lastly, our sample included multiple states, diverse geographically and culturally, all of which showed similar results. Future research should include a larger sample and more data points as well as explore if there are measures and other unit of analysis that are better at detecting the relationship.

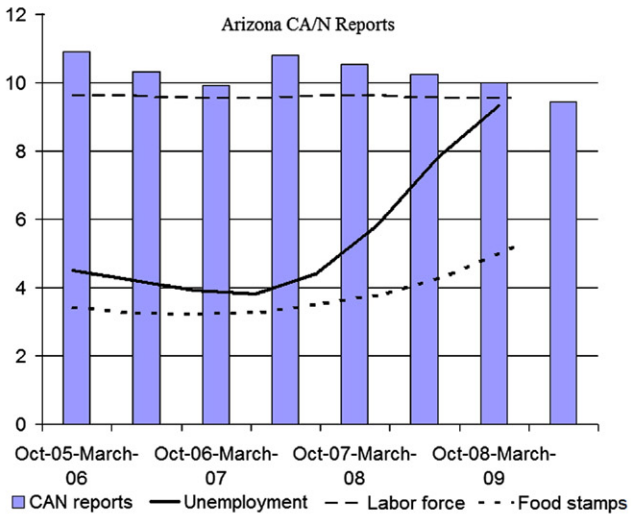
5. Conclusion

In the light of prior work, our findings may not be as surprising as they may appear. It would seem natural to expect higher rates of child maltreatment during periods of economic downturn, given the evidence showing a higher incidence of maltreatment in poor populations. However, other work suggests that the relationship between poverty and child maltreatment is not always straightforward. For example, recent work using NCANDS data (Wulczyn, 2009) has shown that while high poverty states have almost half again as much reported maltreatment as lower poverty states, only a small percent of this variance could be directly attributed to poverty in multivariate models.

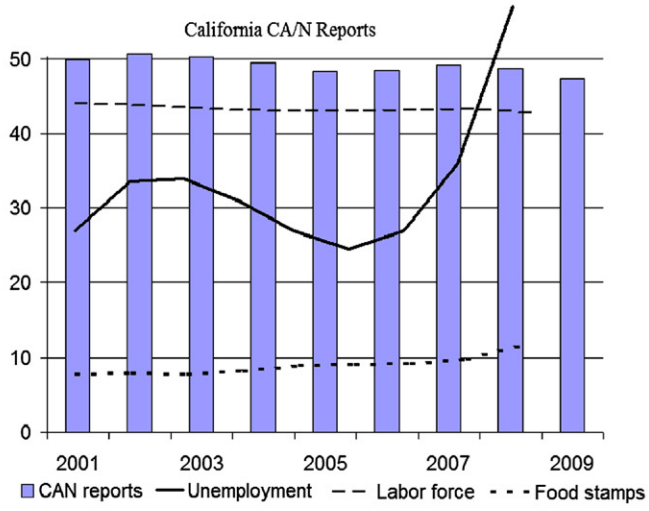
Simple poverty rates may not tell the whole story. The recent decline in physical and sexual abuse, for example (Finkelhor & Jones, 2006) does not seem attributable to overall poverty rates, but may be more closely linked to changes in concentrated poverty (Drake & Rank, 2009). Finkelhor and Jones further suggest that prevention and education efforts, coupled with advances in treatment (pharmacology) may complement any reductions in maltreatment due to purely economic conditions. It is our hope that as more data accrues, continued knowledge building and refinement of theory may begin to be able to inform policy and practice improvements to better serve our nation's most vulnerable children.

Appendix A

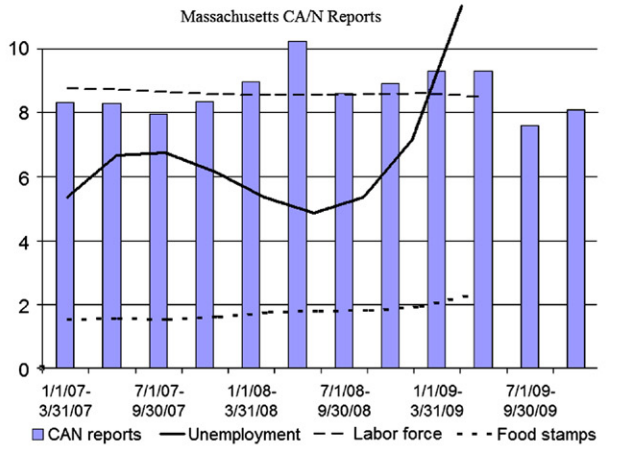
Figures depicting child maltreatment trends by state



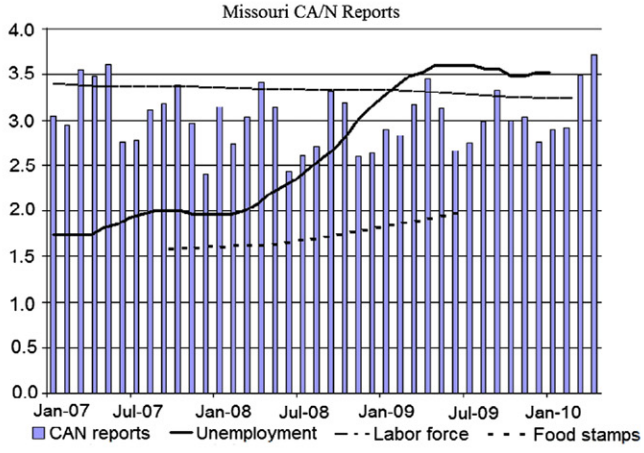
Note: Unemployment ranges from 4.5%-9.3%; Labor force: 64.0%-63.5%; Food stamps: 37.3-56.2



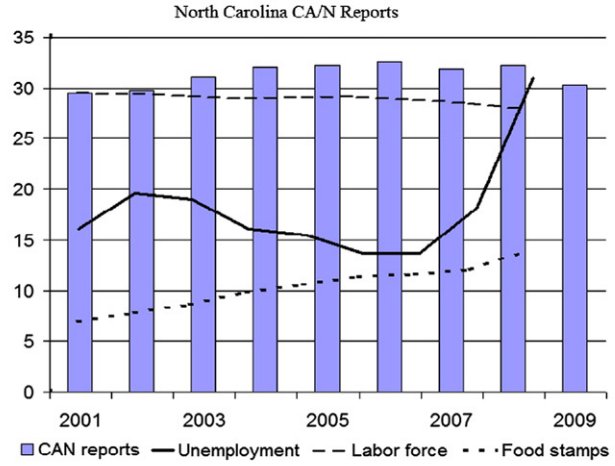
Note: Unemployment ranges from 5.4%-11.4%; Labor force: 67.2%-65.1%; Food stamps: 19.2-28.9



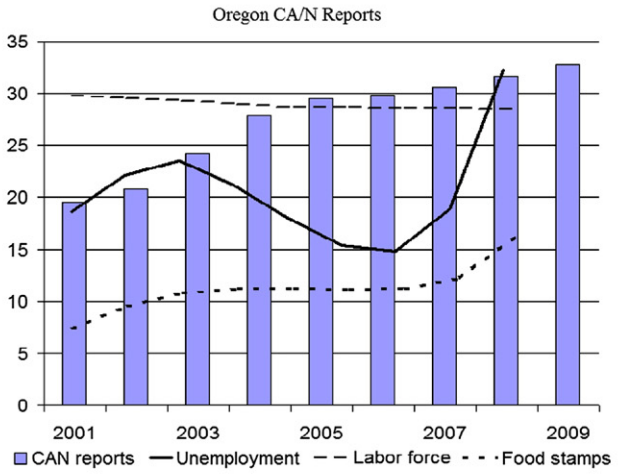
Note: Unemployment ranges from 4.5%-9.2%; Labor force: 67.6%-64.9%; Food stamps: 36.7-59.0



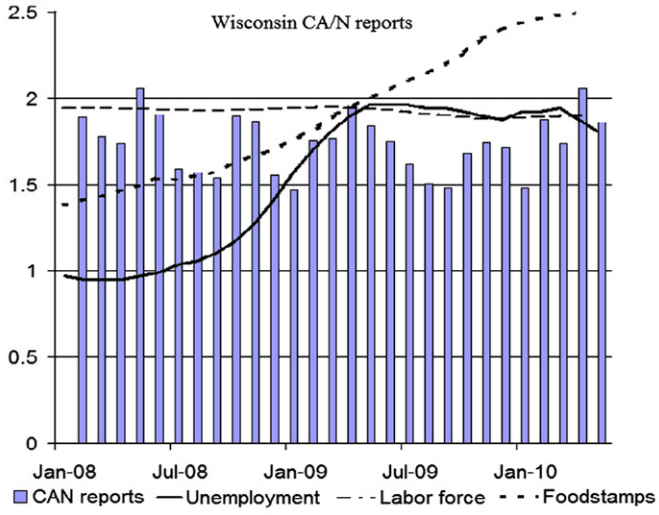
Note: Unemployment ranges from 4.7%-9.5%; Labor force: 67.7%-64.5%; Food stamps: 51.4-64.7



Note: Unemployment ranges from 5.5%-10.6%; Labor force: 67.1%-63.7%; Food stamps: 26-51.6



Note: Unemployment ranges from 6.4%-11.1%; Labor force: 68.2%-65.3%; Food stamps: 28.5-63.1



Note: Unemployment ranges from 4.4%-8.2%; Labor force: 70.7%-68.8%; Food stamps: 71.8-129.1

Appendix A (*continued*).

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