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The Social Externality of Health Insurance: Evidence from Unemployment Insurance Generosity and Children Mortality[1]

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Abstract

This paper explores the potential health externality of an important social program in the US, the Unemployment Insurance (UI) program. Exploiting the variations of UI benefits across states and over the years 1970-2000 and applying a difference-in-difference-in-difference identification strategy, we find that UI benefits have the potential to reduce child mortality rates. Among mothers fully eligible for the UI benefits compared to non-eligible mothers, a $1,000 increase in maximum benefit is associated with 5.3 and 0.24 fewer deaths per 1,000 infants and toddlers, respectively. The effects are robust across various specifications, subsamples, and alternative measures of UI benefits. The results do not appear to be driven by the compositional changes in states' welfare programs or the endogenous economic indicators that cause the changes in UI laws. The potential mechanisms of impact are improved birth outcomes and better prenatal care during pregnancy. Some policy implications are discussed.

Keywords: Unemployment Insurance, Infant Mortality, Toddler Mortality, Health, Fetal Origin Hypothesis, Birth Outcomes, Panel Data, Prenatal Care

JEL: H75, I12, I18, D62, J13

1. Introduction

A relatively large and growing body of literature investigates the externalities of social insurance and welfare programs specifically for health outcomes (Beach and Lopresti, 2019; Figlio et al., 2009; Hsu et al., 2018; Kuka, 2020). The effects of a welfare program are more pronounced among the more vulnerable population who benefit more from expansions in the benefits (Braun et al., 2016; Feldstein, 2005; Leonard and Mas, 2008; Noghani Behambari et al., 2020; Philipson and Becker, 1998). A strand of this literature points to the fact that infants' health outcomes are very sensitive to the welfare of mothers and that welfare payments have the potential to considerably improve infants'

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health outcomes (Chen et al., 2016; Cole and Currie, 1993; Hoynes et al., 2015; Lindo, 2011; Noghanibehambari et al., 2020; Thompson, 2017). For instance, Noghanibehambari et al. (2020) explore the effects of expansions in child support policies as a way to improve the welfare and income of single mothers and find that the enforcement of child support laws was associated with lower child and infant mortality. They suggest that the primary channel of impact is improvements in birth outcomes as a result of better prenatal care.

Unemployment Insurance (UI) program is a joint program between the federal government and state authorities and aims to help unemployed individuals who were laid off overcome the hardship of unemployment. The main purpose of the program is to smooth income and consumption during difficult times (Chetty, 2006; East and Kuka, 2015). However, it has been documented to affect a wide range of outcomes including mental health (Tefft, 2011), smoking and drinking (Fu and Liu, 2019; Lantis and Teahan, 2018), and crime (Beach and Lopresti, 2019; NoghaniBehambari and Maden, 2020). As a temporary increase in income of families during predicaments of unemployment periods, UI benefits have the potential to improve the health of individuals including infants and children. For instance, Kuka (2020) explores the effect of expansions in UI benefits on health outcomes and finds that the unemployed individuals who reside in states with higher benefit payments reveal better health measures than those who reside in states with lower benefits. However, no study has attempted to explore the health externality of UI benefits for infant mortality and children mortality outcomes. This paper aims to fill this gap in the literature.

We explore the effect of expansions in UI benefits on mortality rates among infants and children. Exploiting the variations in UI schedule across US states and over the years (1970-2000) and using the universe of death records, we find that UI benefits have protective effects for child mortality rates. Moreover, we introduce two channels of impact. First, we show that increases in UI payments improve birth outcomes which in turn can leave the infants with higher health endowment and lower mortality during childhood. Second, the results suggest that the benefits generate incentives among affected pregnant mothers to have better prenatal care in terms of the number of doctor visits and earlier start date of prenatal care.

Quantifying the benefits of social insurance has important policy implications. The design of an optimal welfare program is based on its costs and benefits. The structure of social programs is only sub-optimal if there are externalities that have not been taken into account. The results of this paper help policymakers design an optimal schedule for UI benefits by introducing the positive externalities of the program for children's health outcomes.

The contribution of this paper to the literature is twofold. First, to the best of our knowledge, this is the first study to explore the effect of UI benefits, as a temporary cash transfer to unemployed mothers, on child mortality rates. Second, it adds to the literature on the optimal design of UI schedule by providing evidence on its health externalities. This contribution is not only policy-relevant but also emphasizes the importance of income on mortality rates of children.

The rest of the paper is organized as follows. In section 2, we go over a brief review of the literature. Section 3 introduces the data sources. In section 4, we discuss the empirical method and identification strategy. Section 5 goes over the main results of the paper. Section 6 provides evidence on the robustness of the results. We introduce two

channels of impact in section 7. Finally, we depart some concluding remarks in section 8.

2. Literature Review

UI benefits can affect health outcomes through various channels. First, it can increase the income during times of hardships and providing necessary resources for subsistence. Baird et al. (2011) explore this channel for the case of 59 countries and document that there is a strong negative association between income shocks and infant mortality rates. This channel could also work under its side effects on income inequality. Waldmann (1992) shows that when rich people become richer and the gap between poor and rich widens the rates of infant mortality also increase. The association persists even after controlling for education and medical expenses. Similar studies also relate the income to health outcomes and mortality rates of children (Case et al., 2002; Filmer, 1999; Haile and Niño-Zarazúa, 2018; Hanmer et al., 2003; Kim, 2017; Thakrar et al., 2018; Wolfe and Behrman, 1982).

Second, better welfare could also provide households with better nutrition or generally a better health environment. Several studies point to the fact that nutrition is among the important determinants of infants' health outcomes (Da Silva Lopes et al., 2017; Hambidge and Krebs, 2018; Smith et al., 2017).

Third, the expectation of being protected during unemployment spells generate households to locate in healthier residential areas with lower levels of pollution. (Chay and Greenstone, 2003) exploit the variation in pollution due to the 1981-82 recession to explore its effect on infant mortality rates. They find that a one-percent reduction in Total Suspended Particulates is associated with a 0.35 percent reduction in infant mortality rates. Other studies also document the negative externalities of pollution for infants and children's health outcomes (Currie, 2009; Currie et al., 2009; Hill, 2018).

Fourth, the UI benefits increase the lifetime expected earnings and generate an incentive for pregnant mothers to apply better prenatal care and health behavior during prenatal development. Therefore, it has the potential to improve birth outcomes. Hoynes et al. (2015) take advantage of expansions in federally funded Earned Income Tax Credit (EITC) in order to investigate its effects on infants' birth outcomes. They find that an increase of $1,000 in the EITC benefits increases the birth weight among black children by 18 grams. They suggest that one of the mechanisms of impact could be better prenatal care and lower negative health behavior such as drinking and smoking all of which has been linked to improved birth outcomes (Barreca and Page, 2015; Colman et al., 2003; Conway and Deb, 2005; Currie and Grogger, 2002; Dave et al., 2019; Markowitz, 2008; Reichman and Florio, 1996; Yan, 2014).

The improved birth outcomes equip infants with better health endowments which in turn help them survive infancy and childhood (Lau et al., 2013; Luke and Keith, 1992; McCormick, 1985; Tomes, 1981). Moreover, the improved birth outcomes also have long-term effects not only for child mortality but also on their cognitive development (Chatterji et al., 2014; Figlio et al., 2014; Fletcher, 2011), education and earnings in adulthood (Almond and Mazumder, 2005; J. R. Behrman and Rosenzweig, 2004; Bharadwaj et al., 2018; Black et al., 2007; Conley et al., 2006; Currie and Moretti, 2007; Maruyama and Heinesen, 2020; Miller and Wherry, 2019), and morbidity and cause-specific mortality in old ages (Behrman et al., 2007; Callaghan et al., 2006; Helgertz and Nilsson, 2019; Lawlor et al., 2006; NoghaniBehambari et al., 2020; Strand

and Kunst, 2006; van den Berg et al., 2011; Yeung et al., 2014).

3. Data Sources

This paper uses a wide array of data sources. The mortality data comes from death certificate files of the National Center for Health Statistics. The birth data comes from Natality detailed files extracted from the National Center for Health Statistics. The population data is extracted from (SEER, 2019). Unemployment insurance data is extracted from replication materials of NoghaniBehambari and Maden (2020).

State covariates and their data sources are as follows. Welfare expenditure per capita is extracted from (Kaplan, 2018). GSP and income per capita are extracted from the Bureau of Economic Analysis. The unemployment rate is extracted from the Bureau of Labor Statistics. Average wage data is from the Quarterly Census of Employment and Wages and taken from replication programs of Noghanibehambari et al. (2020). Labor union coverage rates are calculated using Current Population data extracted from Flood et al. (2018).

Table 1 shows the summary statistics of the final sample. On average, there are 11.3 and 2.7 infant and child deaths per 1,000 infants and child population, respectively. The primary proxy to capture UI benefits is what we call *Maximum Benefits* which is the *maximum duration of UI payments in weeks* times *maximum weekly payments under the UI program*. On average, the maximum benefit between 1970 and 2000 was $11,103 in 2000 dollars. Figure 1 shows the geographic distribution of maximum benefit in 1970 and the changes in maximum benefit between 2000 and 1970. The important point regarding this figure is that neither the initial levels of UI benefits nor the changes have geographic clustering which otherwise could have affected the results. Figure 2 illustrates the geographic distribution of child mortality rates across US states in the year 2000.

4. Empirical Strategy

4.1. Endogeneity issues

The main assumption behind our empirical strategy is that changes in UI laws are orthogonal to other determinants of child mortality. There are two testable concerns regarding this assumption. First, state authorities may change UI benefits as the economic conditions in the state deteriorate. Since the economic conditions are shown to influence child mortality rates they could bias the estimates (Dallolio et al., 2012; Ensor et al., 2010; U.-G. Gerdtham and Johannesson, 2004; U. G. Gerdtham and Johannesson, 2003; Harris, 1988). We explore this source of Endogeneity by running a series of state-by-year panel data regressions of benefits on state-level economic indicators including state and year fixed effects as well as state by year trend. The results, reported in Table 2, rule out this concern. The unemployment rate, employment per population ratio, average wages, labor union coverage, and fertility cannot statistically explain the variations in UI benefits. Second, state authorities may change the composition of other welfare programs to cover the increases in UI benefits and as these programs also have the potential to influence child mortality they could generate Endogeneity problems (Galiani et al., 2005; Goodman-Bacon, 2018a; Noghanibehambari et al., 2020; Sah, 1991). Table 3 shows the results of regressing welfare payments on maximum benefits. There is no evidence of a correlation between the UI maximum benefit and other welfare payments. The fact that there is a positive and strong correlation between total UI payments and maximum benefit confirms the appropriateness of the proxy (column 5).

4.2. Econometric Method

Our empirical strategy compares the outcomes of UI eligible mothers to non-eligible mothers (first difference) in states with higher benefits to states with lower benefits (second difference) over time (third difference). Specifically, we use regressions of the following form:

$$y_{argst} = \alpha_0 + \alpha_1 UI\ Eligible_{argst} \times Max\ Ben_{st} + \alpha_2 UI\ Eligible_{argst} + \alpha_3 Max\ ben_{st} + \alpha_4 X_{arg} + \alpha_5 Z_{st} + \xi_{arg} + \zeta_s \times T + \eta_t + \epsilon_{argst} \quad (1)$$

Where y is the mortality rate of children in age group a (0-4, 0-1, and 1-4 years old) in race group r (white, black, other) with gender g in state s observed in year t. $UI\ Eligible$ is the share of mothers in the respective cell that are eligible for UI benefits, i.e. are laid off their job. This variable is calculated using Current Population Survey data files in accompany with US census 1970. $Max\ Ben$ is the UI maximum benefit, our constructed proxy for UI benefits which is explained in section 3. In X, we include some average parental characteristics in each cell. These covariates include average mothers' education, mothers' insurance coverage, mothers' eligibility for Medicaid, and mothers' ownership of dwelling. In Z, we include some state by year covariates (shown in Table 1). The parameter ξ represents fixed effects for age, race, and gender. The parameter η shows the year fixed effects. The state fixed effects, ζ, are interacted with a linear year trend T. ϵ represents a disturbance term. All regressions are weighted using the child population in the respective age group. All standard errors are clustered on the state level.

The coefficient of interest is a_1 which shows the effect of a change in UI maximum benefit among eligible mothers to non-eligible mothers.

5. Main Results

The main results of the paper are reported in Table 4 for different outcomes and specifications. Since the primary coefficient of interest in equation 1 is a_1, we only show the estimated effects for this parameter. Using the full specification estimations, a $1,000 rise in maximum benefits is associated with 1.3, 5.4, and 0.3 fewer deaths to children, infants, and toddlers per 1,000 age-specific child population, respectively. These effects are equivalent to a 48, 46, and 45 percent reduction from the mean of mortality for each respective outcome variable. These effects are quite robust across different specifications where we only include state and year fixed effects (columns 1, 4, and 7), including a wide range of state covariates (columns 2, 5, and 8), as well as adding a linear state by year trend (columns 3, 6, and 9). The estimated coefficients are statistically significant at conventional levels and economically large. These results are in line with other studies that explore the positive externalities of welfare programs on children's health outcomes (Currie et al., 1993; Goodman-Bacon, 2018a, 2018b; Haile and Niño-Zarazúa, 2018; Hu, 1999; Neelakantan, 2009; Noghanibehambari et al., 2020).

It should be noted that although the marginal effects are different their percentage effects are quite similar. For instance, the death rate among infants is 11.31 while among toddlers it is 0.53 deaths per 1,000 age-specific child population. Therefore, a similar shock among these two groups will definitely have higher life-saving effects among infants than toddlers. An alert reader should focus on changes relative to the mean, which in this table is quite similar.

The second fact to note is the small R-squared for regression. The reported R-squared in models are quite similar and in some cases even higher than those reported in the literature (see, for instance, (Noghanibehambari et al., 2020b)). Besides, child mortality is an incidence that is highly prevalent among low birth weight newborns and those prematurely born infants (Da Silva Lopes et al., 2017; Luke and Keith, 1992; McCormick, 1985). These outcomes are highly associated with genetic attributes of mothers and geographic features and economy-wide characteristics (included in state and time fixed effects) as well as welfare programs (included in UI benefit variable) can only marginally influence these outcomes. Thus, it is not surprising that the R-squared is low in various models.

6. Robustness Checks

Table 5 shows the results across subsamples based on gender (columns 1 and 2) and race (columns 3 and 4). The results show that boys are more affected by changes in benefits. A $1,000 change in UI maximum benefit is associated with 5.9 fewer deaths among boys while it causes 4.6 fewer deaths among girls. This pattern holds for all three outcome variables. Besides, the effects are more pronounced among black children and considerably smaller among white children. These are in line with the literature that minorities benefit more from increases in income and welfare (Hoynes et al., 2015; Noghanibehambari et al., 2020; Shen, 2018).

To search for the robustness of the results based on the constructed proxy of UI benefits, Table 6 shows the results where we replace UI maximum benefit with UI maximum weekly pay (columns 1, 3, and 5) and with the log of UI maximum benefit (columns 2, 4, and 6). The results are statistically significant and economically similar to the main results. For instance, looking at column 2 and log of maximum benefit, an 8 percent rise in maximum benefits (equivalent to about $900 change from the mean) is associated with 1.29 fewer child death per 1,000 child population. This is very similar to the 1.28 unit change of column 3 in Table 4 as a $1,000 shock to the level of maximum benefits.

7. Mechanisms of Impact

One potential channel of impact through which UI benefits may affect child mortality is improvements in birth outcomes as the adverse birth outcomes are shown to be associated with higher rates of mortality during infancy and childhood (Conley et al., 2006; Lau et al., 2013, 2013; Luke and Keith, 1992; McGovern, 2019; Paneth, 1995). Using birth data between the years 1970-2000 and applying the same strategy as in equation 1, Table 7 shows the results of maximum benefits on infants' birth outcomes (columns 1-4). A $1,000 rise in maximum benefits is associated with roughly 2.6 grams higher birth weight, 0.2 percentage point lower likelihood of low birth weight, 0.3 percentage point lower likelihood of preterm birth, and 0.021 units rise in Apgar score. All the effects are statistically significant and economically large. For instance, the marginal effect of 0.2 percentage points for low birth weight implies a 2.7 reduction from the mean of low birth weight over the sample period.

These effects could partly be explained by changes in mothers' prenatal care. As shown in columns 5 and 6 of Table 7, a $1,000 increase in benefits is associated with 0.09 more *prenatal doctor visits* and 0.04 months reduction in the *month prenatal care began.* These could act as a potential channel of impact as the quantity and timing of prenatal care is documented to cause improved birth outcomes (Corman et al., 2019; Currie and Grogger, 2002; Hoynes et al., 2015; Joyce, 1999; Sonchak, 2015).

Conclusion

Understanding the externalities of welfare programs is important for policymakers to design optimal structures and schedules. This paper introduced a positive externality of an important social program in the US, the Unemployment Insurance program. Exploiting the state-year variations of UI benefits between the years 1970-2000 and applying a difference-in- difference-in-difference identification strategy, we found that UI benefits have the potential to reduce child death rates. Among mothers fully eligible for the UI benefits to non-eligible mothers, a $1,000 increase in maximum benefits is associated with 5.3 and 0.24 fewer deaths per 1,000 infants and toddlers, respectively. These effects are equivalent to a reduction of 46 and 45 percent from the mean of infant and toddler mortality rates over the sample period.

The effects were robust across specifications and subsamples with larger effects among boys and minorities. The results were also robust to alternative measures of UI benefits. We showed that one potential channel of impact could be an improvement in birth outcomes. A $1,000 increase in benefits is associated with a 0.2 and 0.3 percentage point reduction in the likelihood of low birth weight and preterm birth. The higher quantity of prenatal care and better timing of prenatal care could partly explain the effects on birth outcomes and subsequently child mortality rates.

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Tables

Table 1: *Summary Statistics*

Variable	Observations	Mean	Std. Dev.	Min	Max
Child Mortality Data:					
Child Mortality per 1,000 Child (age 0-4)	47,430	2.718	10.093	0	253.471
Infant Mortality per 1,000 Child (age 0-1)	47,430	11.318	50.077	0	1251.392
Toddler Mortality per 1,000 Child (age 1-4)	47,430	0.534	1.215	0	19.140
Child Mortality Rate by Sex-Gender Cells					
Blacks, Girls	7,905	1.376	4.597	0	46.475
Blacks, Boys	7,905	1.719	5.726	0	56.851
Whites, Girls	7,905	4.846	13.238	0	188.388
Whites, Boys	7,905	6.524	17.737	0	253.471
Infant Mortality Rate by Sex-Gender Cells					
Blacks, Girls	7,905	5.856	22.858	0	229.45
Blacks, Boys	7,905	7.308	28.478	0	280.674
Whites, Girls	7,905	19.994	66.261	0	930.077
Whites, Boys	7,905	26.956	88.808	0	1251.392
Toddler Mortality Rate by Sex-Gender Cells					
Blacks, Girls	7,905	0.238	0.485	0	4.839
Blacks, Boys	7,905	0.300	0.593	0	4.946
Whites, Girls	7,905	.998	1.566	0	16.344
Whites, Boys	7,905	1.334	2.033	0	19.14
Children Characteristics:					
Age	47,430	2	1.414	0	4
Sex (female==1)	47,430	0.500	0.500	0	1
white	47,430	0.333	0.471	0	1
black	47,430	0.333	0.471	0	1
other	47,430	0.333	0.471	0	1
State Characteristics:					
GSP per Capita	47,430	39613.195	12631.597	20500.438	151582.670
Unemployment Rate	47,430	6.203	2.089	2.300	17.800
%Blacks	47,430	10.979	10.474	0.174	69.374
%Whites	47,430	84.924	12.552	24.038	99.645
%Males	47,430	48.936	0.928	46.264	54.601
%Aged 25-55	47,430	48.543	3.521	38.793	56.139
Average Weekly Wages	47,430	824.885	136.097	0	1991.75
Log Transfers	47,430	17.121	1.100	13.715	19.664
Log Income Maintenance	47,430	14.847	1.197	11.355	17.909
Log Unemployment Insurance Payments	47,430	13.806	1.182	10.475	16.797
Log Other Welfare Payments	47,430	16.955	1.102	13.164	19.466
Minimum Wage	47,430	8.043	1.111	6.266	13.213
Education Expenditure per Capita	47,430	1.430	0.466	0.458	4.878
Health Expenditure per Capita	47,430	0.137	0.084	0.014	0.813
Policing Expenditure per Capita	47,430	0.046	0.074	0.001	0.852
Black Arrest Rate per 100,000 Population	47,430	617.911	797.325	0	7312.297
White Arrest Rate per 100,000 Population	47,430	56.771	25.975	0	231.04
Male Arrest Rate per 100,000 Population	47,430	110.38	47.370	0	415.756

Variable	Observations	Mean	Std. Dev.	Min	Max
UI Maximum Weekly Payments	47,430	417.898	99.615	229.295	923.342
UI Maximum Benefit	47,430	11.103	2.979	5.962	27.700
Log UI Maximum Benefit	47,430	9.282	0.249	8.693	10.229
UI Duration (Weeks)	47,430	26.078	0.554	26	30
Mothers' Characteristics:					
Education<12	47,430	0.133	0.063	0.035	0.403
Education=12	47,430	0.52	0.053	0.353	0.670
Some College	47,430	0.245	0.049	0.110	0.391
Bachelor and Above	47,430	0.102	0.070	0.018	0.397
Ownership of Dwelling	47,430	0.697	0.065	0.378	0.822
Is UI Eligible?	47,430	0.0309	0.0217	0	0.01
Infants' Characteristics:					
Birth Weight (grams)	47,430	3327.982	602.795	227	8165
Gestational Weeks	47,430	39.043	2.700	17	52
Term Birth Weight	47,430	3447.394	482.650	227	8165
Low Birth Weight	47,430	0.072	0.259	0	1
Extremely Low Birth Weight	47,430	0.013	0.113	0	1
Small for Gestational Age	47,430	0.102	0.302	0	1
Preterm Birth	47,430	0.178	0.382	0	1
Low Apgar Score	47,430	0.031	0.175	0	1

Table 2: *Endogeneity of UI Benefits to States' Economic Conditions*

	Outcome: UI Maximum Benefit					
	(1)	(2)	(3)	(4)	(5)	(6)
Unemployment Rate	0.162 (0.152)					-0.143 (0.168)
Employment per Population Ratio		0.027 (0.082)				0.090 (0.059)
Average Wages			0.017 (0.014)			0.013 (0.012)
Labor Union Coverage Rate				-0.034 (0.027)		-0.052 (0.042)
Lag Fertility					-0.019 (0.016)	-0.014 (0.020)
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
State Trend	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.93	0.93	0.93	0.93	0.90	0.95
Observations	1,581	1,581	1,581	1,581	1,581	1,581

Notes. Standard errors, reported in parentheses, are clustered at the state level. All dollar values are converted into 2000 dollars to reflect real values. All regressions are weighted using the average state population over the sample period.
*** p<0.01, ** p<0.05, * p<0.1

Table 3: *Endogeneity of UI Benefits to States' Other Welfare Programs*

	Health Expenditure per Capita	Education Expenditure per Capita	Log Transfer Receipts	Log Income Maintenance Benefits	Log Total UI Benefits	Log Other Welfare Payments	Medicaid Coverage Rate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Real Maximum Benefit ($1,000)	0.532 (1.290)	-5.032 (9.047)	0.011 (0.019)	-0.012 (0.016)	0.098*** (0.018)	-0.031 (0.021)	0.249 (0.196)
States Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.79	0.84	0.98	0.95	0.85	0.98	0.60
Observations	1,581	1,581	1,581	1,581	1,581	1,581	1,581

Notes. Standard errors, reported in parentheses, are clustered at the state level. All dollar values are converted into 2000 dollars to reflect real values. All regressions are weighted using the average state population over the sample period.
*** p<0.01, ** p<0.05, * p<0.1

Table 4: *Unemployment Insurance Generosity and Child Mortality Rates*

	Outcome: Child Mortality Rate			Outcome: Infant Mortality Rate			Outcome: Toddler Mortality Rate		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
UI Maximum Benefit	-0.117 (0.109)	-0.073 (0.080)	-0.059 (0.130)	-0.181 (0.462)	-0.442 (0.414)	-0.375 (0.574)	0.101*** (0.026)	0.053*** (0.019)	0.077*** (0.016)
UI Eligible	36.870*** (3.660)	27.468*** (2.695)	13.990*** (7.514)	15.330*** (1.190)	11.479*** (1.492)	6.952*** (2.874)	7.219*** (0.776)	5.281*** (0.625)	4.112*** (1.340)
UI Maximum Benefit × UI Eligible	-0.860*** (0.216)	-1.219*** (0.208)	-1.283*** (0.209)	-3.656*** (0.904)	-5.101*** (0.869)	-5.373*** (0.871)	-0.150*** (0.042)	-0.233*** (0.043)	-0.245*** (0.043)
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
States Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
State Trend	No	No	Yes	No	No	Yes	No	No	Yes
R^2	0.13	0.14	0.14	0.09	0.09	0.09	0.45	0.46	0.47
Observations	47,430	47,430	47,430	47,430	47,430	47,430	47,430	47,430	47,430

Notes. Standard errors, reported in parentheses, are clustered at the state level. All dollar values are converted into 2000 dollars to reflect real values. All regressions are weighted using the average state-level child population over the sample period.
*** p<0.01, ** p<0.05, * p<0.1

Table 5: *Heterogeneity of the Effects of Unemployment Insurance Benefits on Children Mortality Rate by Gender and Race*

	Subsample: Boys	Subsample: Girls	Subsample: Blacks	Subsample: Whites
	(1)	(2)	(3)	(4)
Panel A. Outcome: Child Mortality Rate				
UI Maximum Benefit × UI Eligible	-1.426*** (0.245)	-1.100*** (0.192)	-1.711*** (0.385)	0.075 (0.125)
R^2	0.14	0.14	0.14	0.14
Observations	47,430	47,430	47,430	47,430
Panel A. Outcome: Infant Mortality Rate				
UI Maximum Benefit × UI Eligible	-5.965*** (1.102)	-4.608*** (0.802)	-6.596*** (2.625)	0.428*** (0.582)
R^2	0.09	0.09	0.09	0.09
Observations	47,430	47,430	47,430	47,430
Panel A. Outcome: Toddler Mortality Rate				
UI Maximum Benefit × UI Eligible	-0.273*** (0.052)	-0.209*** (0.039)	0.295*** (0.046)	0.136*** (0.059)
R^2	0.48	0.45	0.46	0.47
Observations	47,430	47,430	47,430	47,430
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
States Controls	Yes	Yes	Yes	Yes
State Trend	Yes	Yes	Yes	Yes

Notes. Standard errors, reported in parentheses, are clustered at the state level. All dollar values are converted into 2000 dollars to reflect real values. All regressions are weighted using the average state-level child population over the sample period.
*** p<0.01, ** p<0.05, * p<0.1

Table 6: *Robustness of the Effects of Unemployment Insurance Generosity to Alternative Measures of UI Benefits*

	Outcome: Child Mortality rate		Outcome: Infant Mortality rate		Outcome: Toddler Mortality rate	
	(1)	(2)	(3)	(4)	(5)	(6)
UI Maximum Weekly Pay × UI Eligible	-0.038*** (0.006)		-0.159*** (0.025)		-0.007*** (0.001)	
Log UI Maximum Benefit × UI Eligible		-16.145*** (2.385)		-66.818*** (9.963)		-3.275*** (0.492)
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
States Controls	Yes	Yes	Yes	Yes	Yes	Yes
State Trend	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.14	0.14	0.09	0.09	0.47	0.47
Observations	47,430	47,430	47,430	47,430	47,430	47,430

Notes. Standard errors, reported in parentheses, are clustered at the state level. All dollar values are converted into 2000 dollars to reflect real values. All regressions are weighted using the average state-level child population over the sample period.
*** p<0.01, ** p<0.05, * p<0.1

Table 7: *Potential Mechanism Channel: Birth Outcomes and Mothers' Health Behavior during Pregnancy*

	Outcomes: Infants' Health Outcomes				Outcomes: Mothers' Health Behavior During Pregnancy	
	Birth Weight	Low Birth Weight	Preterm Birth	Apgar Score	Prenatal Visits	Month Prenatal Care Began
	(1)	(2)	(3)	(4)	(5)	(6)
UI Maximum Benefit × UI Eligible	2.598*** (0.489)	-0.002** (0.001)	-0.003*** (0.001)	0.021*** (0.005)	0.089*** (0.026)	-0.042*** (0.009)
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
States Controls	Yes	Yes	Yes	Yes	Yes	Yes
State Trend	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.85	0.59	0.61	0.70	0.85	0.81
Observations	47,430	47,430	47,430	47,430	47,430	47,430

Notes. Standard errors, reported in parentheses, are clustered at the state level. All dollar values are converted into 2000 dollars to reflect real values. All regressions are weighted using the average state-level birth counts over the sample period.
*** p<0.01, ** p<0.05, * p<0.1

Figures

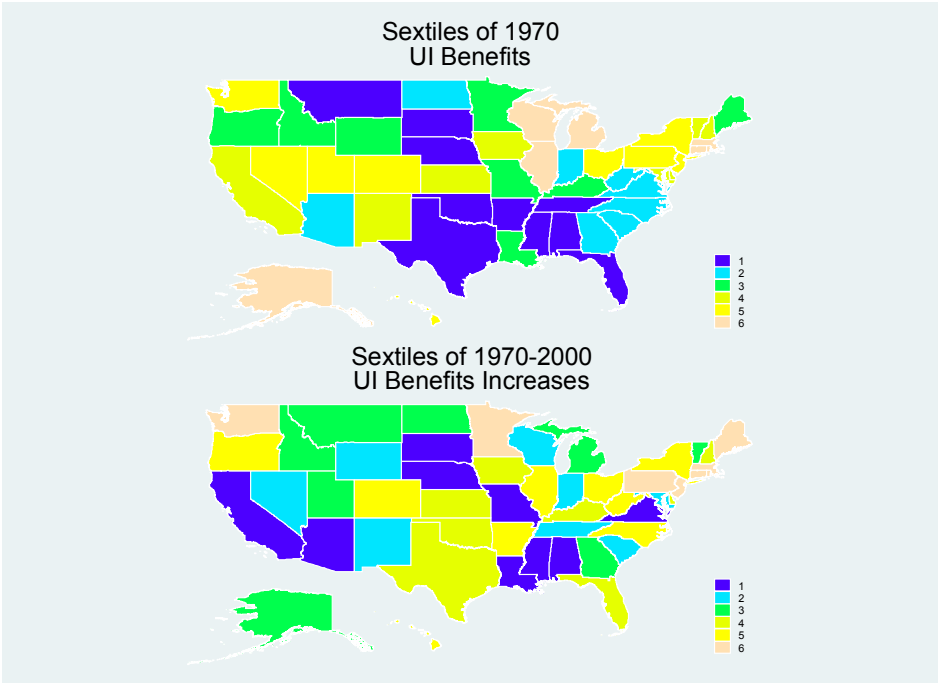

Figure 1: *Geographic Distribution of UI Benefits at 1970 and Changes in Benefits over the Sample Period (1970-2000)*

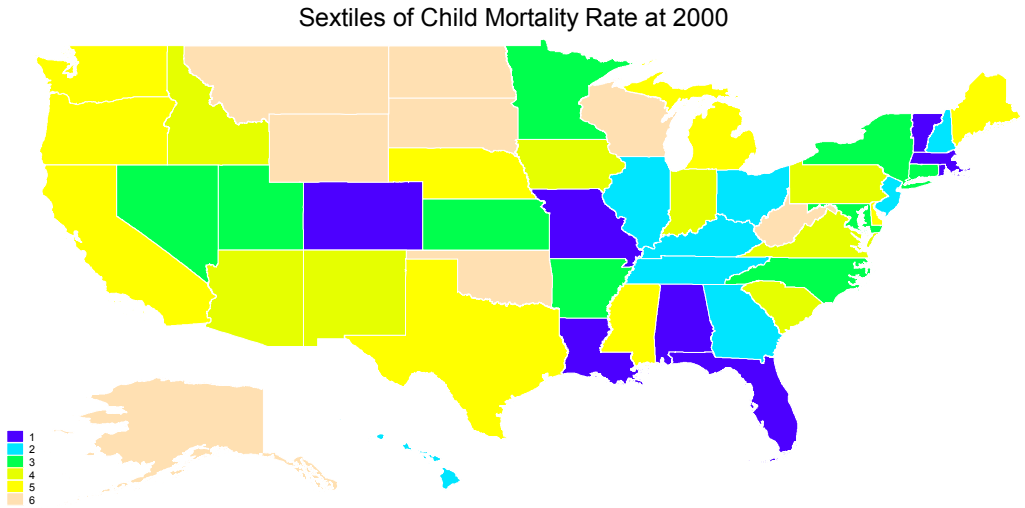

Figure 2: *Geographic Distribution of Child Mortality Rates across the US States*