



The Effect of Near-Cash Transfers on Infant Health: Evidence from Transportation Subsidy in Seoul, South Korea

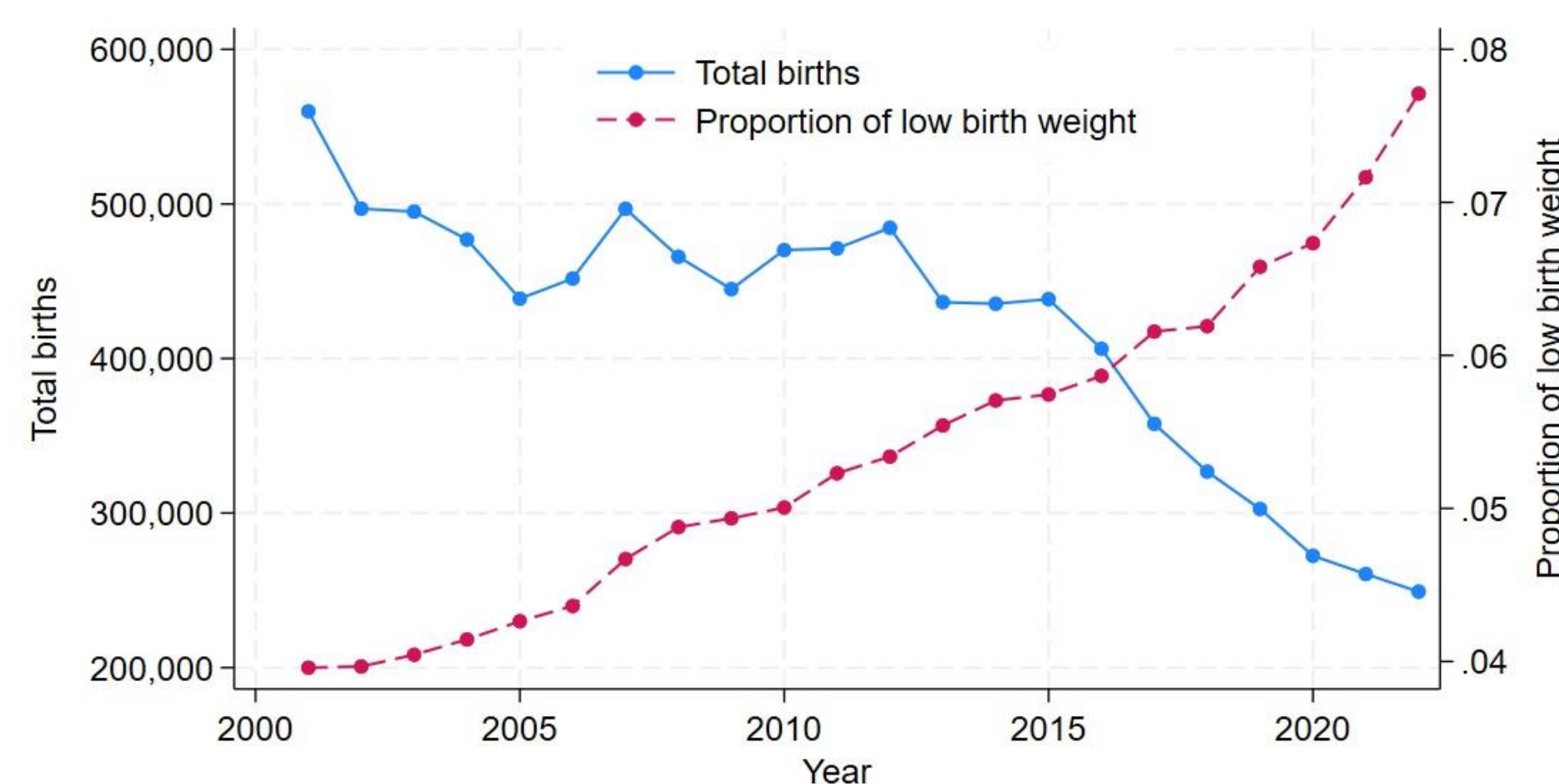
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Introduction

Motivation

- Infant health is one of the keys to understanding future human capital and inequality, as it is influenced by parents' SES and affects future income and health outcomes
- Despite economic and educational advances, infant health in South Korea has worsened as the total number of birth has decreased
- Given this context, it is crucial to examine whether government financial support can improve infant health



Goals of This Paper

- Evaluate the effectiveness of policy targeting pregnant women in a highly developed urban setting
- Investigate whether near-cash transfers have effects similar to cash transfer programs
- Identify which groups are most significantly affected by the policy

Contributions

- Near-cash transfers have been shown to improve infant health in a highly educated, high-income city
- The effect is similar to that of cash transfers, demonstrating a 5% decrease in low birthweight as reported in previous literature with a similar setting
- Highlight notable effects on first-child, low-income areas, and non-working mothers in these areas

Institutional Background and Data

Institutional Background

- **Implementation:** The Seoul Transportation Subsidy (STS) for pregnant women was implemented on July 1, 2022, after uncertainty about its implementation due to the June 2022 local elections
- **Subsidy Details:** The STS offers a one-time, unconditional transportation allowance of USD 540 (based on the 2022 exchange rate) provided as credit card points, usable from pregnancy until three months postpartum
- **Eligibility Criteria:** Women who have been residents of Seoul for at least six months and gave birth on or after July 1, 2022, were eligible for the subsidy

Data

- Vital statistics of Korea: Individual-level administrative data from 2021 to 2022

Empirical Strategy

Difference-in-differences model

$$Y_{igt} = \alpha_0 + \alpha_1 \text{Subsidy}_{gt} + \beta X_{igt} + \theta_c + \tau_m + \epsilon_{igt}$$

- Y_{igt} : Intrauterine health outcomes for individual i
 - Birth weight (kg), Low birthweight (less than 2.5kg), Very low birthweight (less than 1.5kg), Preterm birth (birth before 37 weeks)
- Subsidy_{gt} : A dummy variable equals to 1 if the birth occurred after the STS implementation (July 1, 2022) in Seoul, and 0 otherwise (Metropolitan area)
- X_{igt} : A vector of children's and parental characteristics
- θ_c : County fixed effect, τ_m : Year-month fixed effect

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Results

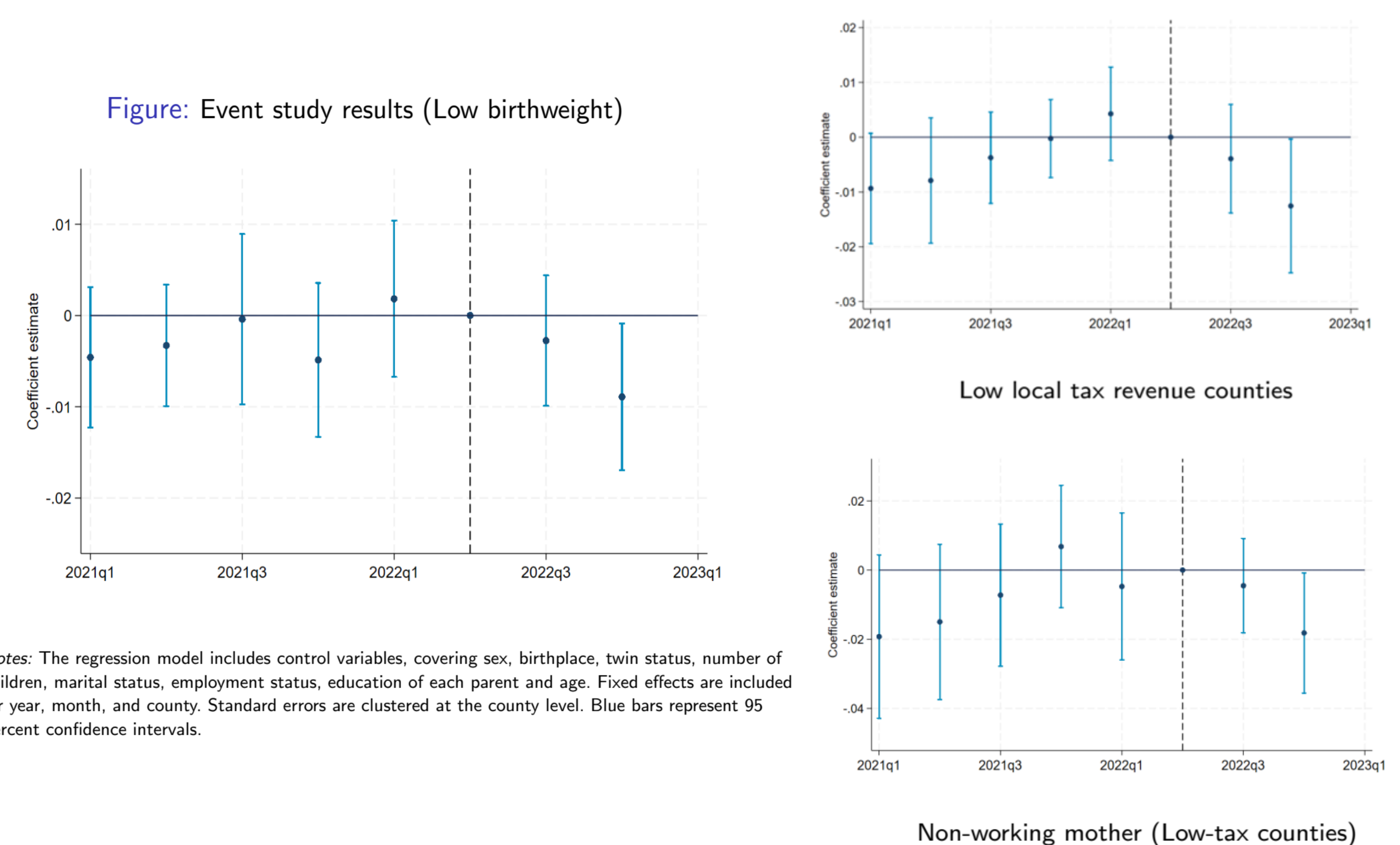
- The incidence of low birthweight decreased by 5%, with no significant effects observed on other variables
- Primary effects are observed in the following groups:
 - First child (singleton)
 - Low local tax revenue counties
 - Non-working mothers in low local tax revenue counties

Table: DID results (Seoul vs. Metropolitan area)

	(1) Bw (kg)	(2) Lbw (<2.5kg)	(3) Vlbw (<1.5kg)	(4) Preterm Birth
<i>Full Sample</i>				
Treatment Effects	0.00390 (0.0041)	-0.00378* (0.0023)	-0.000186 (0.0009)	-0.00167 (0.0026)
Mean of dependant var.	3.1461	0.0756	0.0076	0.0463
Observations	227,364	227,364	227,364	227,246
<i>First child, singleton only</i>				
Treatment Effects	0.00934 (0.0056)	-0.00567** (0.0028)	-0.000813 (0.0008)	-0.000537 (0.0024)
Mean of dependant var.	3.182	0.0471	0.0052	0.0293
N	130,200	130,200	130,200	130,122

Notes: The sample consists of data from the years 2021 to 2022. Standard errors are clustered at the county level. Robust standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure: Event study results (Low birthweight)



Notes: The regression model includes control variables, covering sex, birthplace, twin status, number of children, marital status, employment status, education of each parent and age. Fixed effects are included for year, month, and county. Standard errors are clustered at the county level. Blue bars represent 95 percent confidence intervals.

Discussion

Possible mechanisms

- **Reduced Mobility Burden:** Taking a taxi instead of public transportation can reduce energy use in a dense city; however, increased transportation budgets seem to offset gasoline costs, improving mobility and contributing to household income rather than solely enhancing mobility
- **Stress Relief:** Stress may be alleviated through increased household income, enabling the purchase of necessary items
- **Improved Nutrition:** Pregnant women may benefit from a higher consumption of nutritious food
- **Limited Impact of Medical Costs:** In South Korea, universal health insurance and prenatal medical subsidies (approximately 770 USD) cover most prenatal care costs, limiting the potential impact of medical care on outcomes

Conclusions

- **Impact on Low Birthweight:** The STS significantly reduced the incidence of low birthweight, even in a highly developed city, with no significant effects on other outcomes
- **Importance of Prenatal Support:** The stronger effect on firstborns highlights the importance of providing support before birth
- **Targeting Less-Empowered Groups:** Direct subsidies are especially beneficial for less-empowered recipients, such as non-working mothers, who have limited influence over household decisions

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