

Spatial-temporal distribution of preterm birth in China, 1990-2020: A systematic review and modelling analysis

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We found a gradual increase in the preterm birth risk in most provinces in China since 1990, with an average annual increase of 0.7% nationally. Specifically, some provinces were identified as high-risk provinces for either consistently high preterm birth rates (e.g. Jiangxi) or relatively large increases (e.g. Shanxi) since 1990.

BACKGROUND

- Little is known about the long-term trends of preterm birth rates in China and their geographic variation by province.

OBJECTIVES

- To estimate the annual spatial-temporal distribution of preterm birth rates in China by province from 1990 to 2020.

DATA SOURCES

- We searched PubMed, EMBASE, Web of Science, CNKI, WANFANG and VIP from January 1990 to September 2023. Studies that provided data on preterm births in China after 1990 were included.

METHODS

- We estimated the annual preterm birth risk by province using Bayesian multilevel logistic regression models considering potential socioeconomic, environmental, and sanitary predictors.

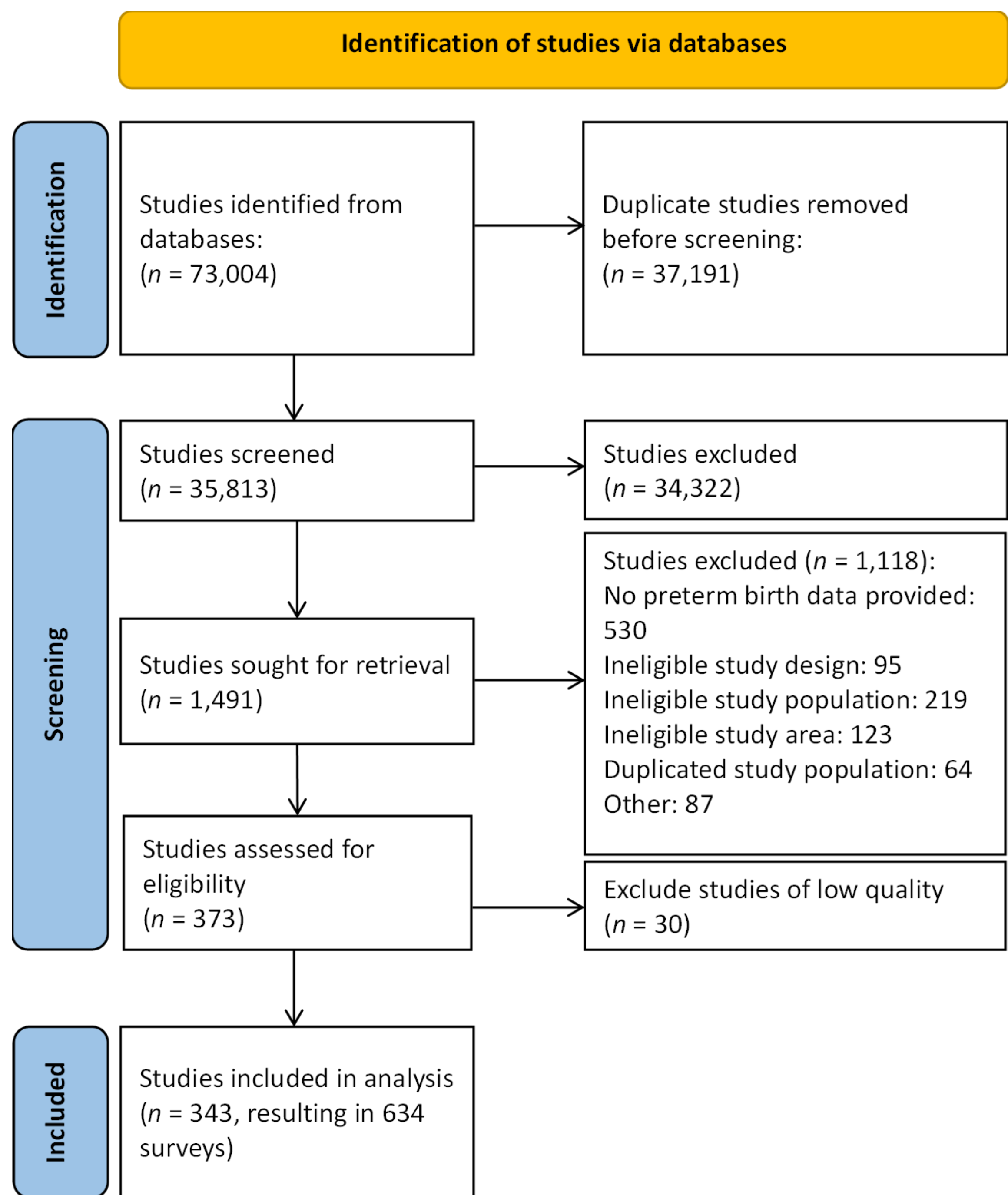


Figure 1. PRISMA flow diagram

RESULTS CONCLUSIONS

- Based on 634 survey data from 343 included studies, we found a gradual increase in the preterm birth risk in most provinces in China since 1990, with an average annual increase of 0.7% nationally.
- In 2020, the estimates of preterm birth rates ranged from 2.9% (95% Bayesian credible interval [BCI] 2.1, 3.8) in Inner Mongolia to 8.5% (95% BCI 6.6, 10.9) in Jiangxi, with the national estimate of 5.9% (95% BCI 4.3, 8.1).
- Specifically, some provinces were identified as high-risk provinces for either consistently high preterm birth rates (e.g. Jiangxi) or relatively large increases (e.g. Shanxi) since 1990.

CONCLUSIONS

- This study provides annual information on the preterm birth risk in China since 1990 and identifies high-risk provinces to assist in targeted control and intervention for this health issue.

FIGURES

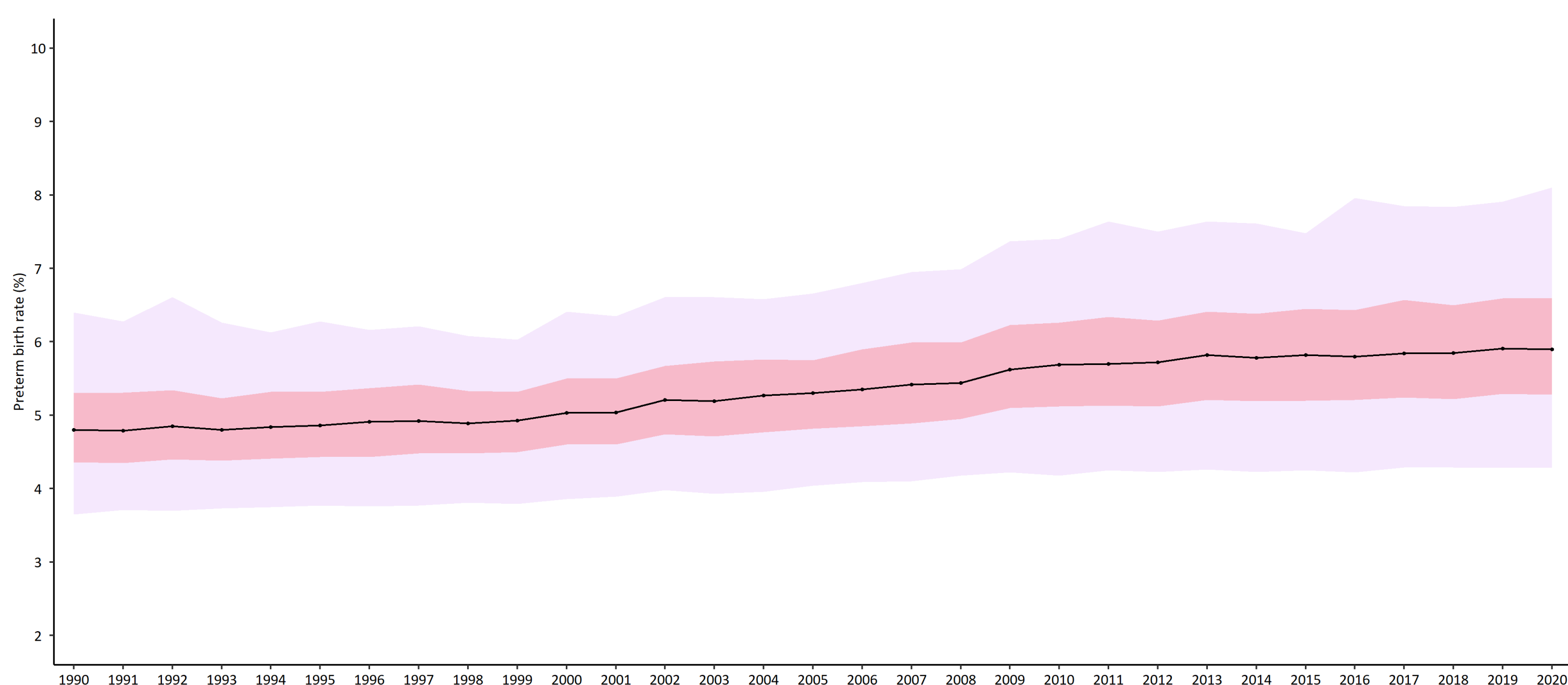


Figure 2. National estimation of preterm birth rates and its trends since 1990 in China

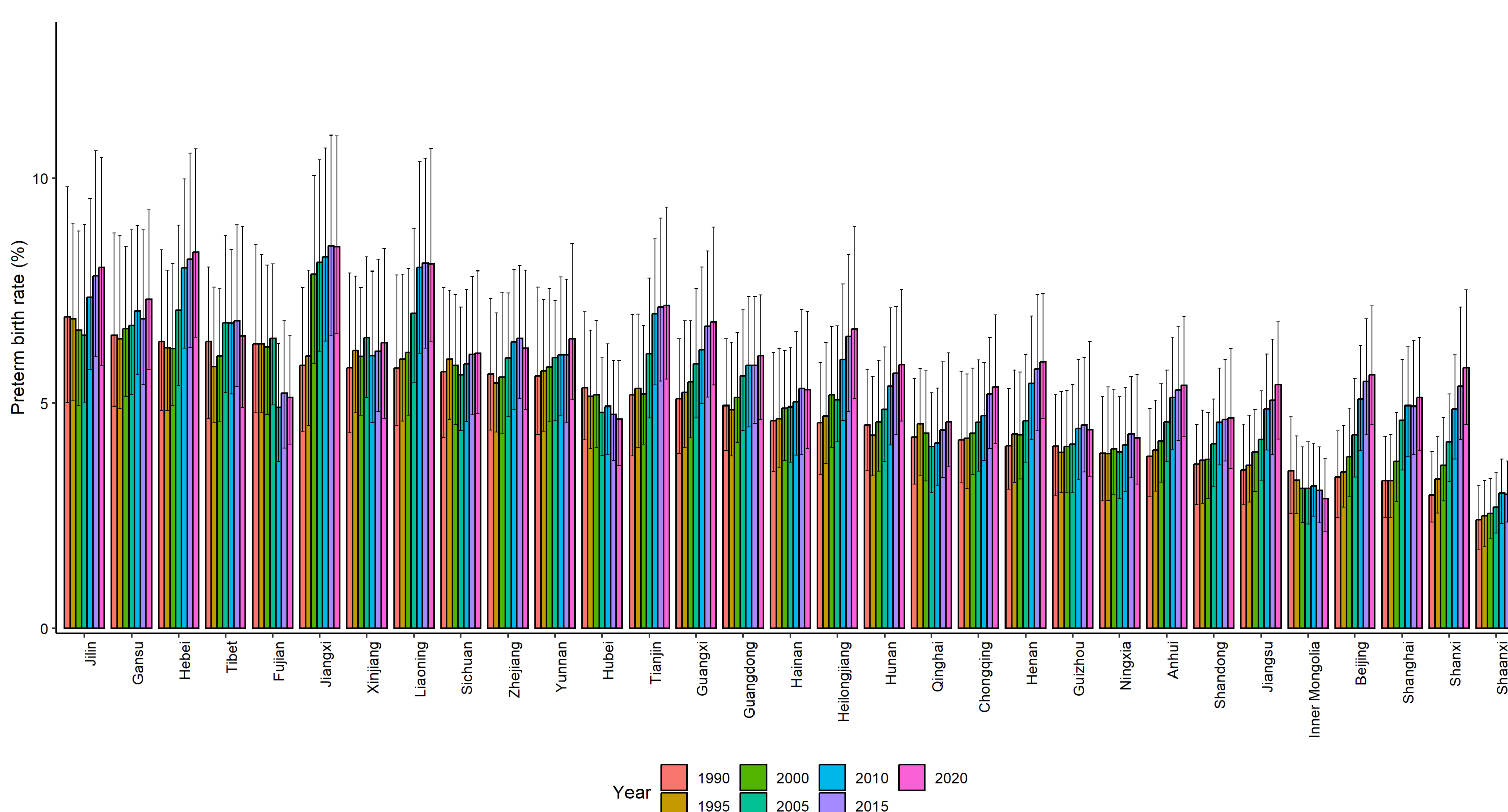


Figure 3. Provincial estimation of preterm birth rates every five years since 1990 in China

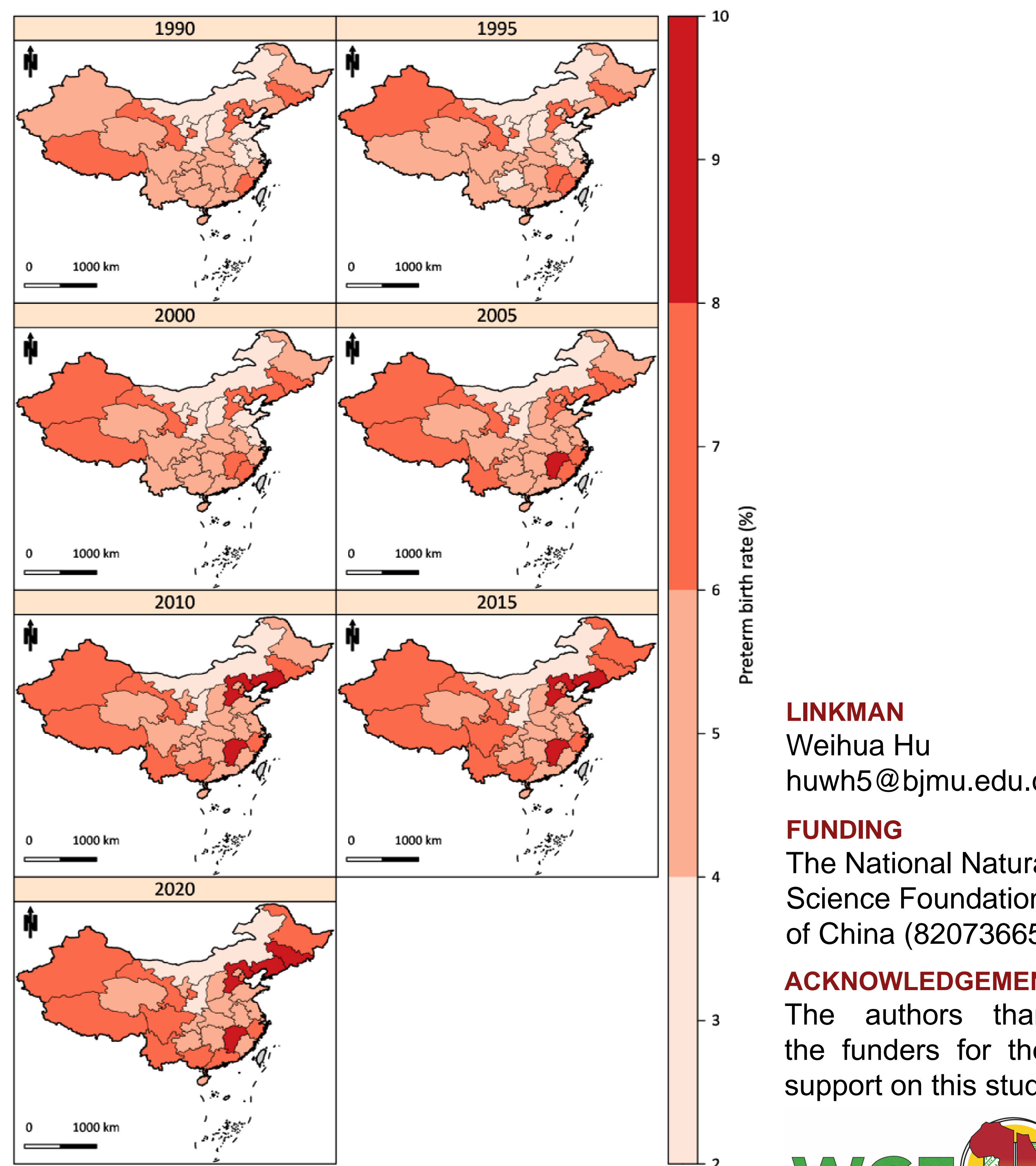


Figure 4. Provincial geographical diversity in preterm birth rates in China

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