

Can we apply a population approach to preterm birth prevention?

An ecological study of preterm and early term births in 34 high-income countries.

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Background

- Preterm birth, < 37 weeks of gestational age GA, is associated with adverse health outcomes with life-long consequences¹. Early term births, 37-38 weeks are also at higher risks of adverse health outcomes than infants born full term, at 39 and 40 weeks²
- We do not know if risk factors for delivery before full term are specific to preterm births or to earlier delivery more generally
- Current prevention interventions target the highest risk pregnancies with very little reduction in preterm birth rates therefore, other approaches to prevention are needed

Aim: We investigated whether variations in preterm birth rates and trends reflect differences in risk of earlier delivery across the gestational age spectrum in high-income countries.

Key findings

- Rates of early term birth vary widely across high-income countries from 15 to 30% of all births
- Rates and trends of early term and preterm birth were correlated overall and for indicated initiated and spontaneous births
- Common risk factors may be responsible for shifts in the gestational age distribution.
- **Our results support further investigation of a population approach to preterm birth prevention.**

Methods

Data sources:

- Routine aggregate data on the gestational age (GA) distribution overall and by mode of delivery
- In 27 European countries/regions, the United States, Canada, Japan and Australia
- Data from 1996-2010.

Study population:

Singleton live births
 ≥22 weeks GA

Definitions:

We used the best obstetric estimate of GA, in completed weeks..

Main outcomes:

- Preterm birth (22-36 weeks GA)
- Early term birth (37-38 weeks GA)
- Mean term GA (37-41 weeks GA)

Statistical analyses:

Pearson's test, adjusted for clustering in time series analyses.

Results

□ **GA rates:** Preterm birth rates ranged from 4.1%-8.2% (med: 5.5%). Early term birth rates ranged from 15.6%-30.8% (med: 22.2%) in 2010

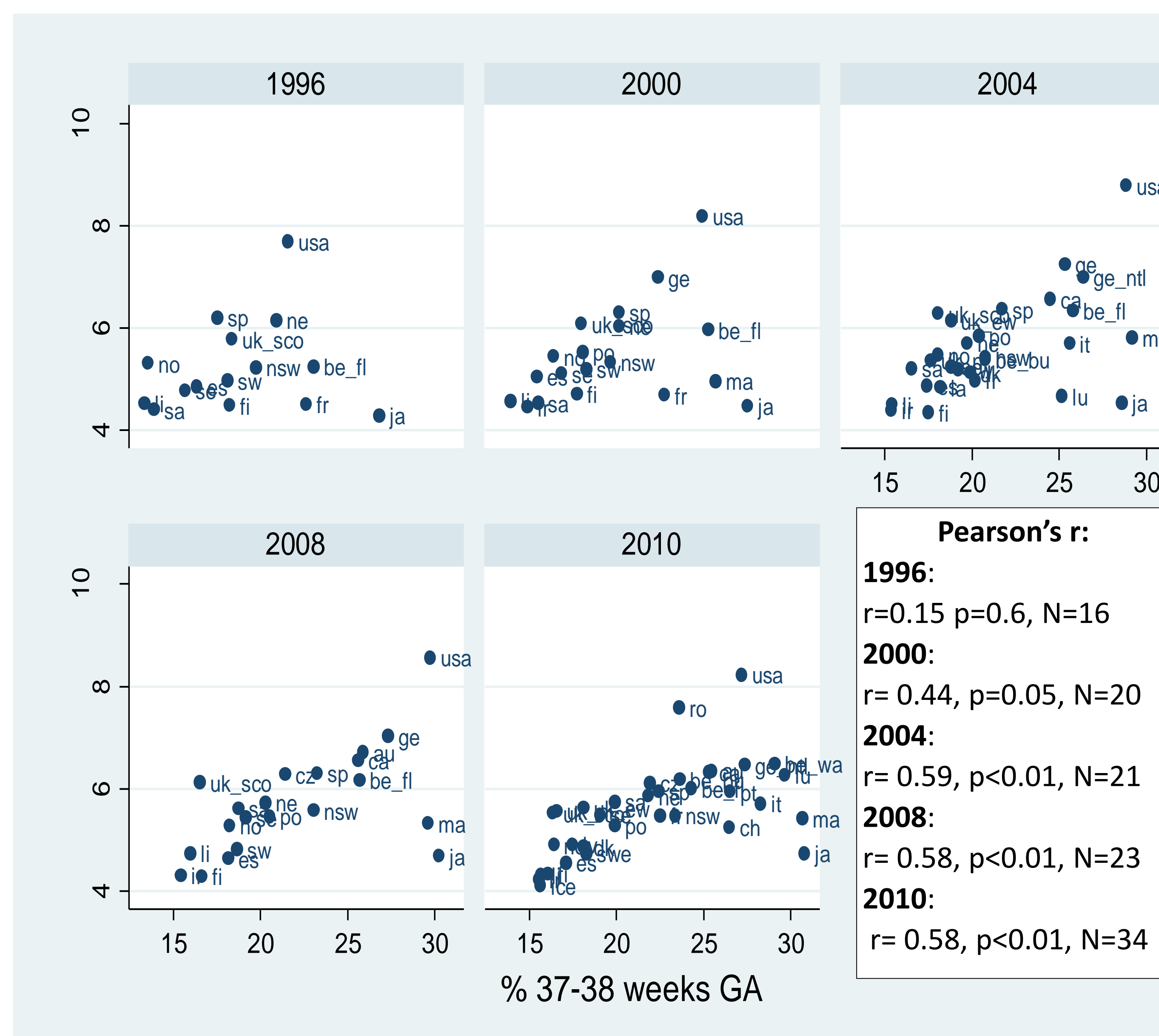


Figure 1. Associations between preterm birth rates (<37 weeks) and early term birth rates (37-38 weeks) in 1996, 2000, 2004, 2008, 2010

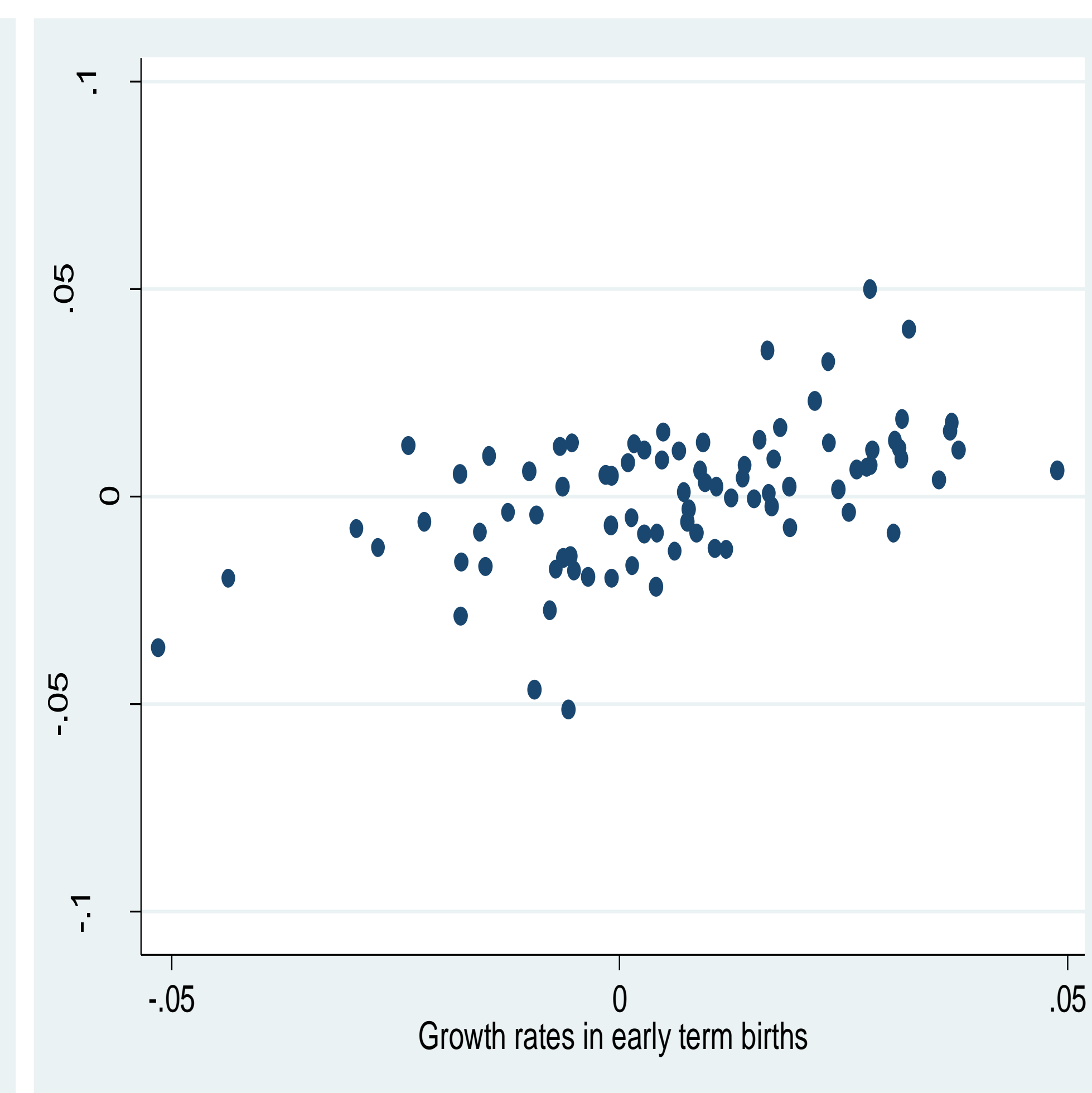


Fig.2 Time series associations between compound annual preterm and early term growth rates in 1996-2010

**Adjusted-
 Pearson's r:
 r=0.55 p<0.01
 N=83**

□ **By mode of onset of delivery:** Time series results were similar for spontaneous (adj-r= 0.31, p<0.01; N=47) and provider-initiated births (adj- r = 0.37, p<0.01; N=45)

References :
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