Liste di matrici – Fecondità

- età madre
- Provincia

Problema (1)

Dati "disallineati" → alcuni parlano di anni diversi

Problema (2)

Framework dell'analisi

$F_i : \Omega \to \mathbb{R}^{34}$ vettore aleatorio

↳ spazio aleatorio (il numero di figli non è deterministico)

$i = 1, \dots, 107$ per ogni provincia

$f_i^{(j)}$ $\quad j = 2002, \dots, 2021$

↳ $\in \mathbb{R}^{34}$ Realizzazione del vettore aleatorio

34 è un numero alto → fda

Siccome voglio
derivata 1ª (trivial)
2ª (quanto è piatta / stretta la curva)

→

$F_i : \mathcal{R} \to \underbrace{C^2_{[17,50]}}$

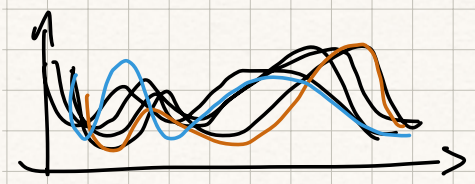
con attenzione,

gli estremi non sono affidabili

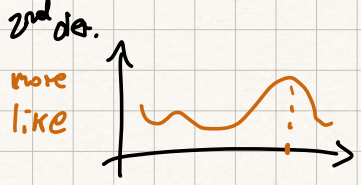
$\hat{f}^{(j)} \in C^2_{(17,50)}$

Smoothing → problema aperto

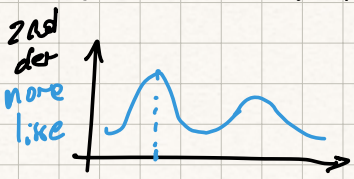
Idea 1 – 2nd derivative



Hp: → Nord (or High-level instruction districts)



→ Sud (or Lower-level instruction districts)



i.e. We would like to verify if the instruction level produces out of a change in the behaviour of families wrt the urgency of having a child.

More specific:

→ In country with a high level instruction we expect to observe an "acceleration" in having kids in a more advanced age, with a more pronounced shift due to the fact that a women is "running out of time";

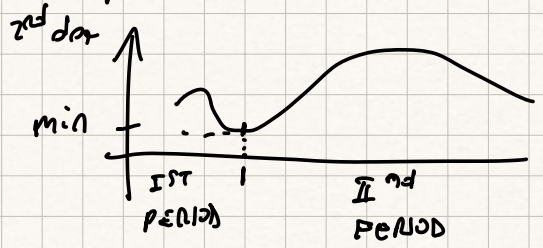
→ In country with a lower level we expect an early acceleration maybe less steep. If I'm not studying I may decide to have a family (and a child) earlier;

Possible statistics to make inference:

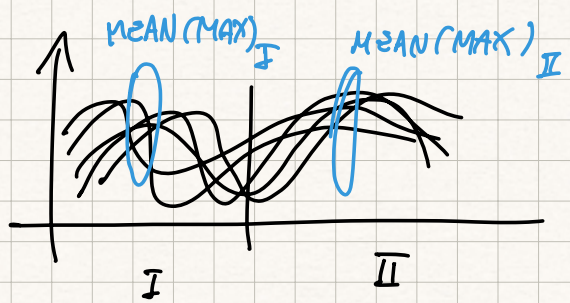
	PRO	CONS
→ MAX :	→ Can observe properly the peak	→ We are not properly interested to the peak but more on the tendency of 1st - 2nd part

→ DIFF (MED(MAX)) :

1) divide on two period the time, in the min possible :



2) Compute MED(MAX) or MEAN(MAX) of the two period:



3) Compute the DIFFERENCE