

Do mothers decide? The impact of preferences in maternity care

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Propositions about health care services

1. Diagnosed patients: *You get what you need*
2. Random patients: *You get what you get*
3. Expert patients: *You get the best*
4. Consumer patients: *You get what you want*

Background

- A major shift in the position of government authorities: Users of public service accept no longer to be treated as “*pawns*”; they are “*queens*” (Le Grand). Health care is a major case in point.
- Physicians are expected to involve their patients in treatment decisions. Patients are believed to be an expert of her own health. Patients should also participate in treatment decisions since they imply different risks and health care gains.
- A number of medical conditions lack clear diagnostic criteria for choice of medical treatment (clinical uncertainty).

The problem is hard to investigate

1. We require data on a high number of comparable medical conditions where choice of treatment can be influenced by patient preferences.
2. We must handle reverse causality - that governments, hospitals and physicians can influence patients' treatment preferences.
3. Patient survey data has questionable validity.

Immigrant treatment preferences

1. Do immigrants bring preferences for medical treatment to Norway, and do Norwegian hospitals accommodate their wishes?
2. Do immigrant attitudes change as they live in Norway, so they are treated more like native patients after some years?

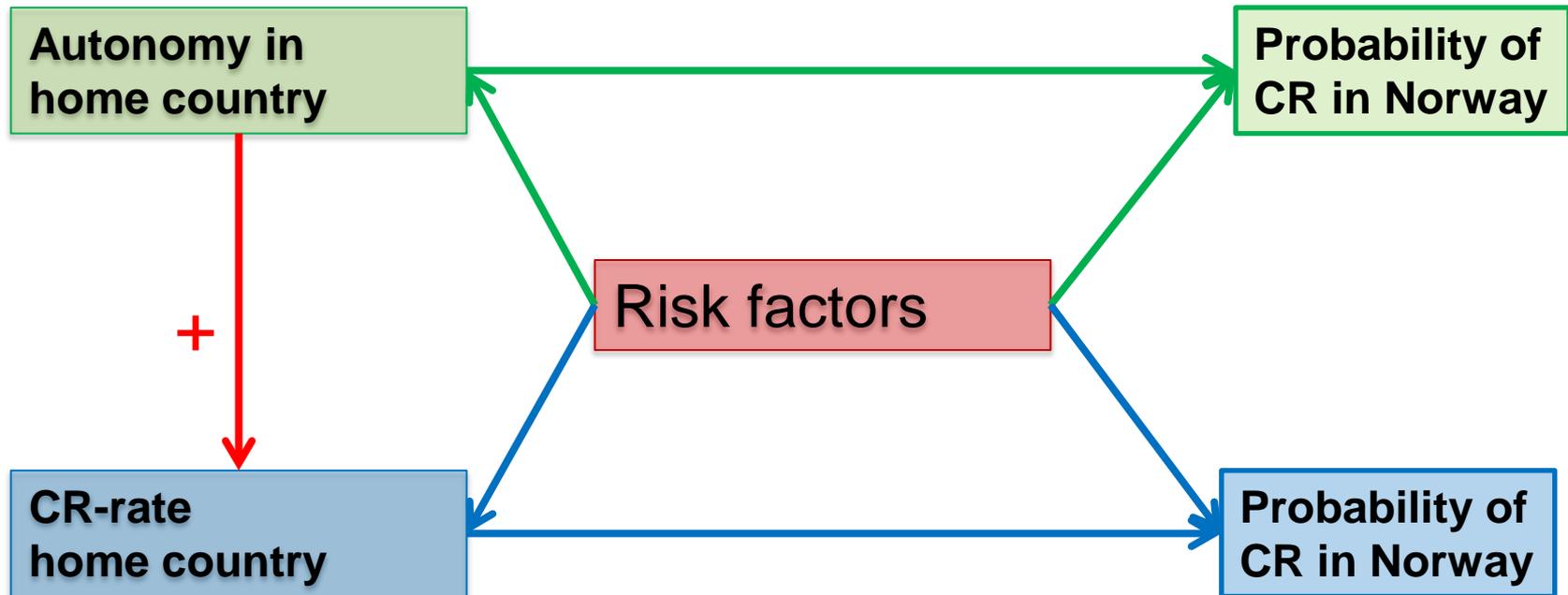
Some initial observations

- Considerable clinical uncertainty with respect to mode of delivery.
- Considerable time-series and country variation in Caesarean section rates (such as Latin America and South East Asia versus Central Asia and Sub-Saharan Africa; lots of variation in Europe).
- In Norway, immigrant mothers deliver more frequently by Caesareans. Why?

Data

- Data from the Norwegian Medical Birth Registry (1970-2005)
 - 2 million births, of which 133 000 births are by immigrant mothers from 179 countries
- Data on Caesarean section rates:
 - European Health for All Database (WHO European Regional Office)
 - Demographic and Health Surveys
- Data on preferences (control over live in home country):
 - Five Waves of World Value Survey:
 - 1981-1984 wave
 - 1989-1993 wave
 - 1994-1999 wave
 - 1999-2004 wave
 - 2005-2008 wave

Research design



The autonomy index

Source: World Value Survey

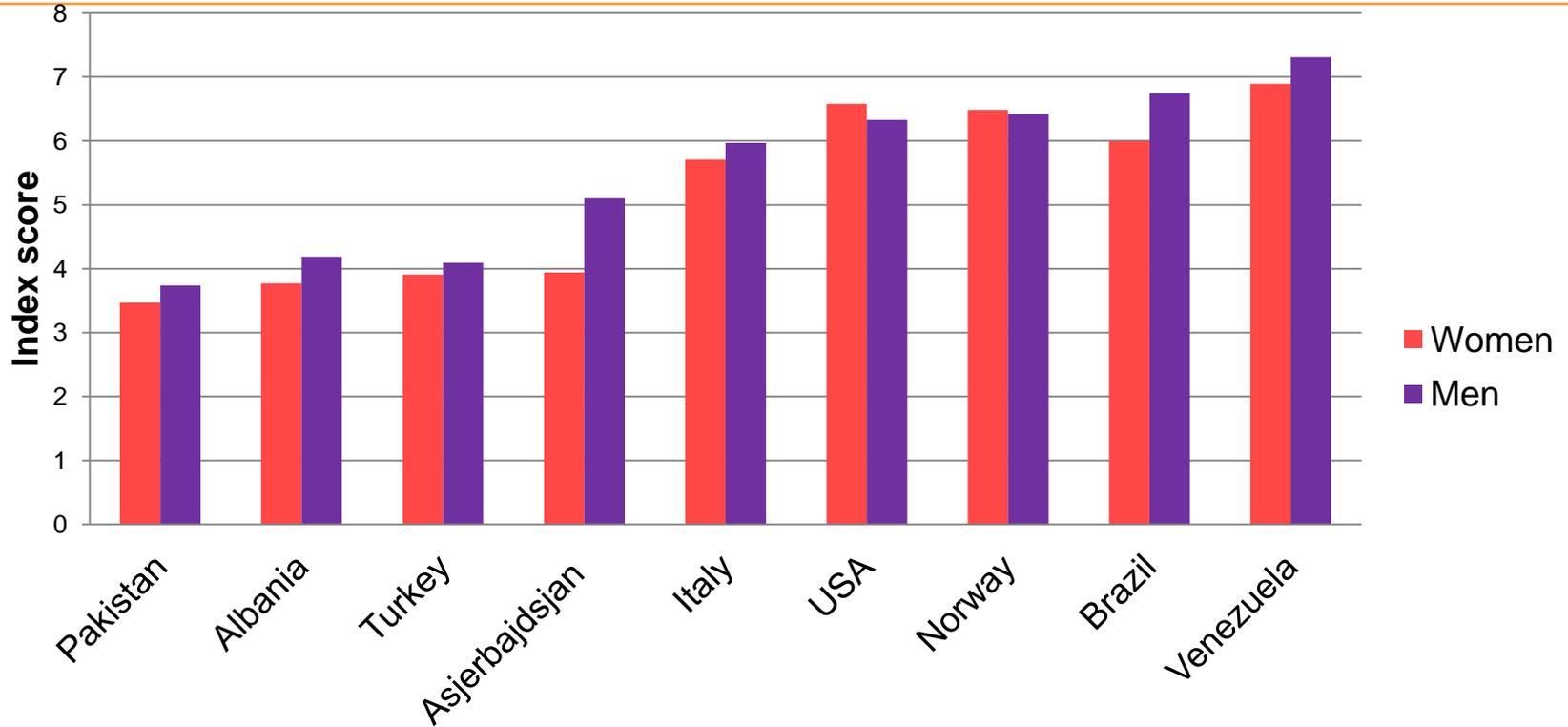
The autonomy index is measured by the following question:

Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them.

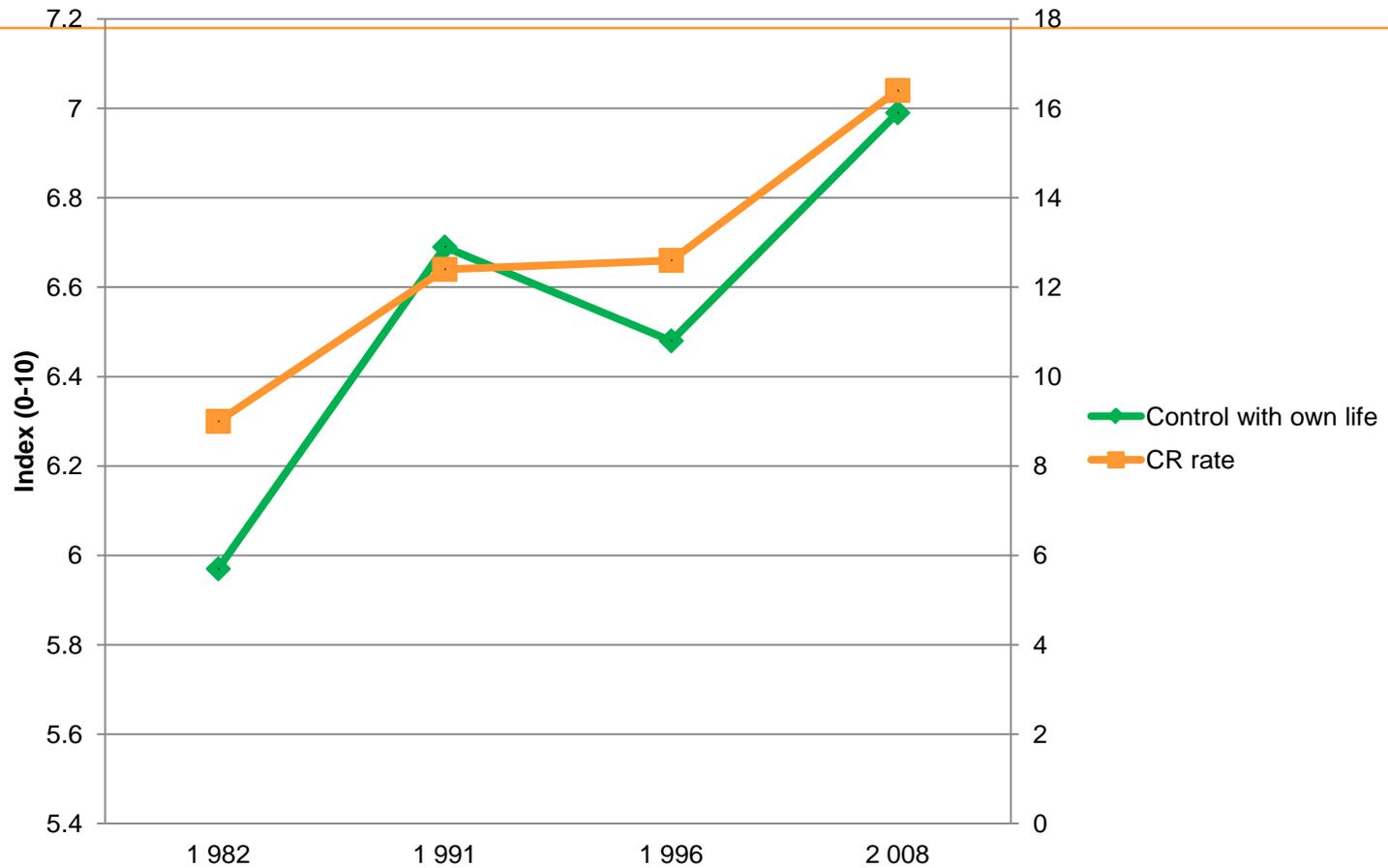
Please use this scale where 1 means "none at all" and 10 means "a great deal" to indicate how much freedom of choice and control you feel you have over the way your life turns out.

Whether men and women believe that they have free choice and control over their own life.

(Respondents less than 40 years of age. Selected countries ca. 1996)
1='none at all'; 10='a great deal'. Source: World Value Survey.



Norwegian women's perceptions of control with life, and Caesarean rate in Norway 1982-2008.



The cross national pattern

- We perform a regression analysis based on over time variation in the autonomy index and in the cr-rate in a large number of countries.
- A one point increase in the autonomy indicators leads to a 2.2 percent increase in the Caesarean rate.
- For example: In Norway, the index has increased from 6 to 7 from 1982 to 2008. The (preliminary) analysis indicates that higher autonomy has induced a 2.2 percent increase in the cr-rate.

The Norwegian case

Core assumption I: Mother's preferences are shaped by prevalence of Caesareans in her home country.

Core assumption II: When women have control over their own life (autonomy), they are used to make decisions, articulate their demands, and to see their wishes being carried out.

Regression model

- (1) $\text{Pr}(\text{Caesarean section in Norway}) = \alpha_0 + \alpha_1 \text{Caesarean section rate in the home country}$
- + medical control variables + fixed effects for maternity unit + fixed effects for year
 - + fixed effects for home country

Identification strategy

1. Norway has a standardized institutional setting (private insurance is not relevant)
2. With fixed effects for hospitals, we cancel out the effects of hospitals' practice style (which could correlate with preferences)
3. The model comprises a very large set of control variables, including conventional diagnostic criteria as well as parents' education level
4. We believe home country Caesarean rates tap a causal effect because:
 1. Reverse causality is unlikely since Caesarean section rates in Norway is not likely to affect medical practice in other countries.
 2. Self-selection is unlikely since people immigrate to Norway for other reasons than birth preferences (asylum seekers, employment, family reunion)

Table 1*Characteristics of the immigrant populations represented in the Medical Birth Registry of Norway, 1970-2005*

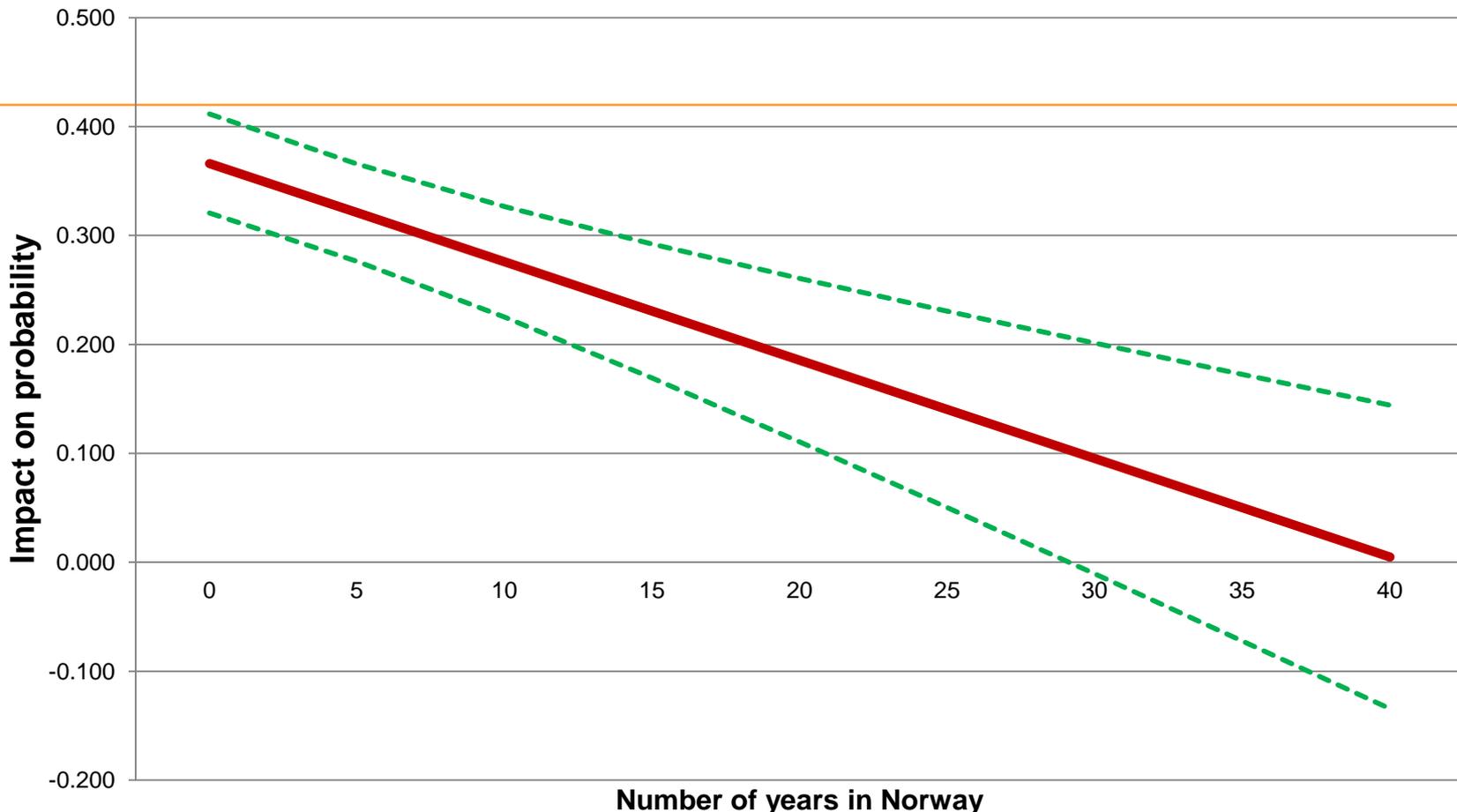
Country of origin	Number of deliveries in Norway	Percentage of deliveries with known prevalence of Caesarean section from the mothers' country of origin	Number of years immigrants are represented in the data	Number of years with known prevalence of Caesarean section from the mothers' country of origin	Mean prevalence of Caesarean section from the mothers' country of origin (per cent)
Western Europe					
Austria	318	66.0	36	24	12.7
Belgium	387	77.0	36	27	12.3
Denmark	9 845	100.0	36	36	11.9
Finland	3 585	100.0	36	36	13.1
France	1 207	95.9	36	34	12.9
Germany	4 228	79.4	36	29	16.5
Greece	120	95.8	35	34	21.6
Iceland	1 729	100.0	36	36	11.2
Ireland	342	90.9	36	34	11.2
Italy	374	75.7	36	26	24.5
Luxembourg	11	72.7	9	6	20.4
Malta	27	18.5	20	4	22.7
Mexico	4	25.0	4	1	2.5

Empirical estimates I: The impact of cr-rate in homeland

- A 10 percent increase corresponds to the difference between Sweden and Switzerland.
- A 10 percent increase in homeland cr-rate generates an increase in the probability of a Caesarean in Norway of 3,4 percent.

The impact of home country cr-rate on the probability of a Caesarean in Norway

(Estimates are based on table 3, II)

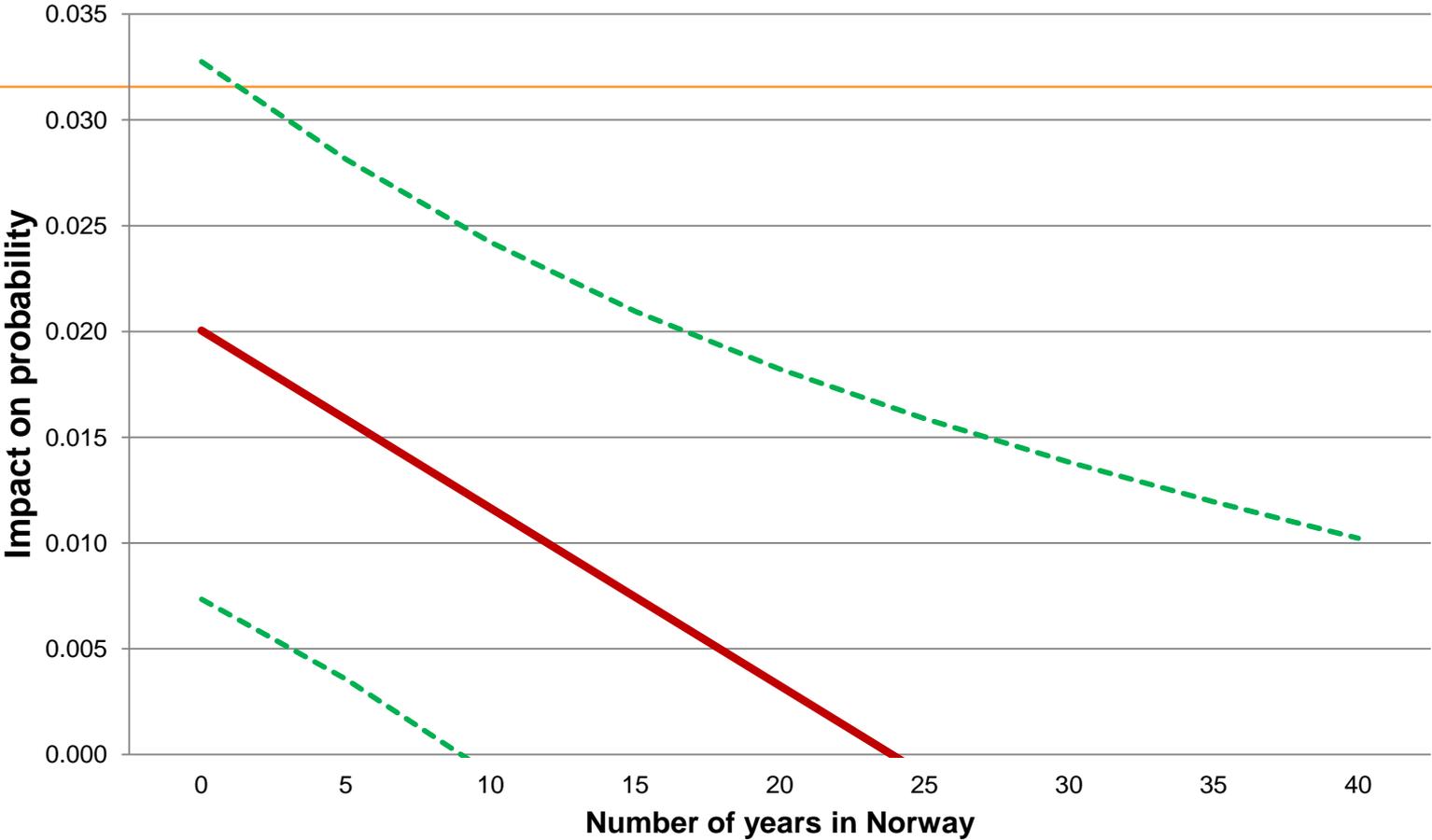


— Effect on cr probability - - - 95% confidence interval - - - 95% confidence interval

Empirical estimates II: The impact of attitudes in homeland

- A 1 point increase in the autonomy index corresponds to the difference between Italy and Norway.
- A 1 point increase leads to an increase in probability of a Caesarean in Norway of 1,5 percent.

The impact of home country values on the probability of a Caesarean in Norway (Estimates are based on table 3, IV)



— Effect on cr probability

- - - 95% confidence interval

- - - 95% confidence interval

Conclusion: Patient preferences do affect treatment decisions

1. CR-rate in immigrant homeland affect the likelihood of Caesarean in Norway
2. Attitudes in immigrant homeland influence the likelihood of Caesarean in Norway
3. The impact of motherland CR-rates and attitudes decrease as number of years in Norway increase.