

How long can postponement continue? Some Illustrative Calculations

International Meeting on
Postponement of Childbearing in Europe
Vienna, December 1-3, 2005

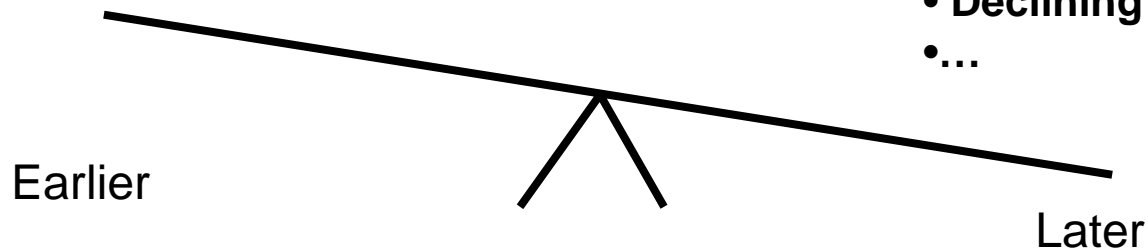
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When is optimal age?

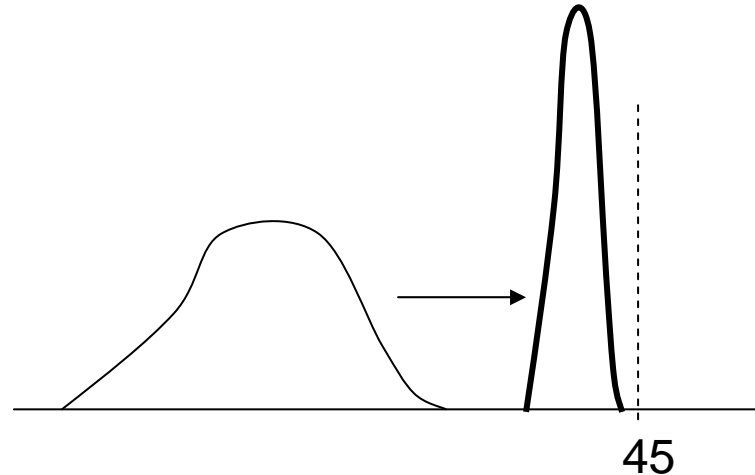
- More years to enjoy kids
- Physical strength / stamina
- Grandparents
- Can reach parity target
- Others are doing it
- ...

- Opportunity costs
 - Schooling
 - Career development
- Find better partner
- Others are doing it
- Uncertainty
- Longer life
- Can provide child with better life
- Declining ideal family size
- ...



- Don't know when teeter-totter will balance
- Looks like not yet at optimum – mean ages still rising
- Our approach – ask how high the optimum could be

How far will postponement go?



- We place limits on late fertility and on compression of distribution and provide illustrative scenarios.
- Focus on 1st births for simplicity
- With low fertility, timing of first birth the major determinant of mean age of all childbearing.

Limiting factors

1. Upper age bound for fecundity

No more than 1/3 of births after age 35 – this allows most to have 2nd child, so no *necessary* decline in fertility.)

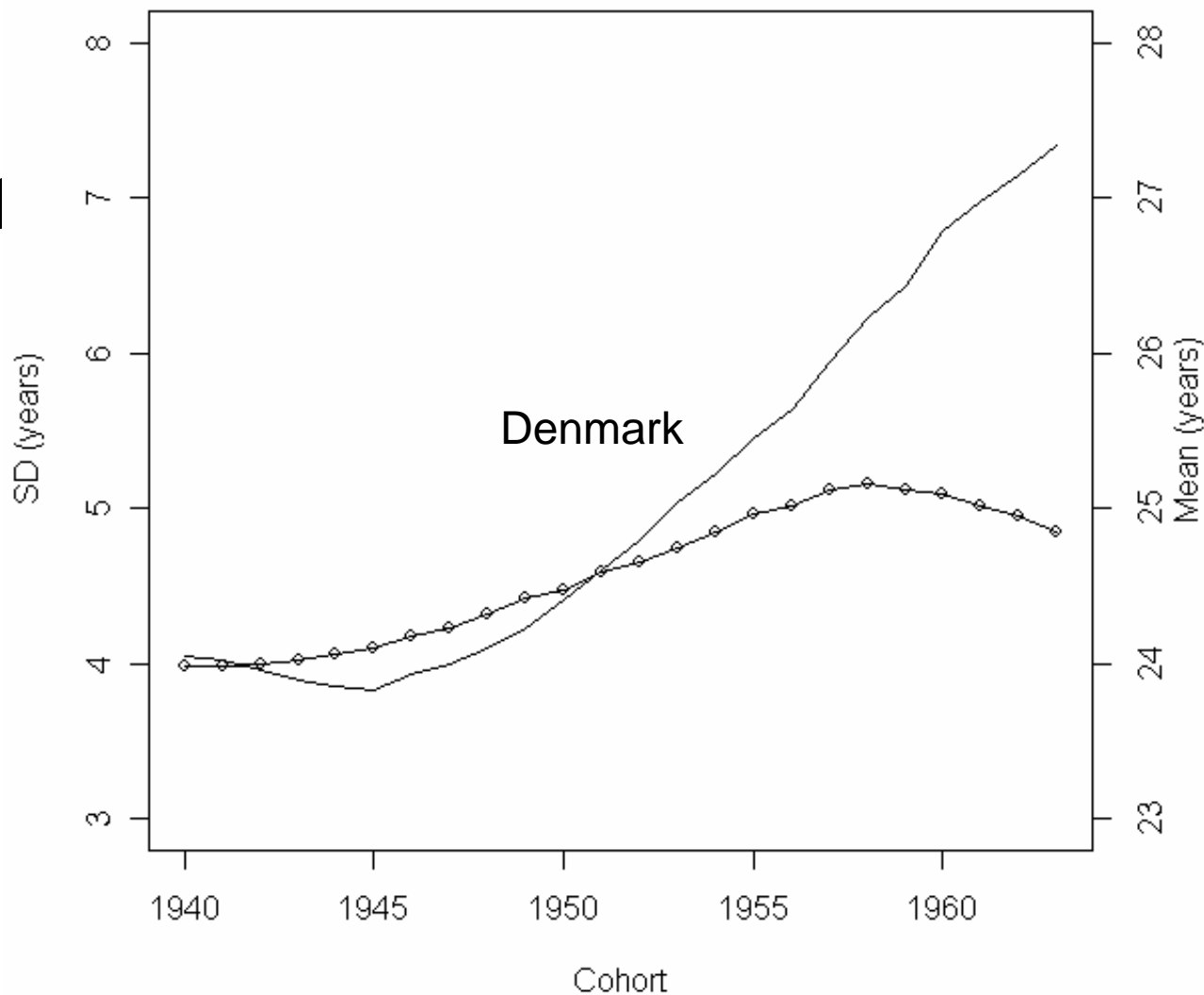
2. Preserving variance / heterogeneity

Standard deviation (SD) no less than observed in pre-postponement cohorts.

(We think of SD is joint result of fecundability, social class, parity desires, random events of finding partner etc.)

Why lower limit for variability?

- Otherwise, limit is just oldest age of reproduction
- Empirically, some catch up.



Scenarios for Postponement

1. Simple shift : all ages postpone same
2. Convergence: young postpone more
3. Divergence: old postpone more
4. Shifting middle: old and young stay put

Each scenario has plausible story-line
Our implementation is highly stylized.

(Alternatively can use model schedules:
Coale-Trussell/McNeil, Hernes, Gamma dis'n, Brass
Polynomial etc. ... results about the same.)

Methodology

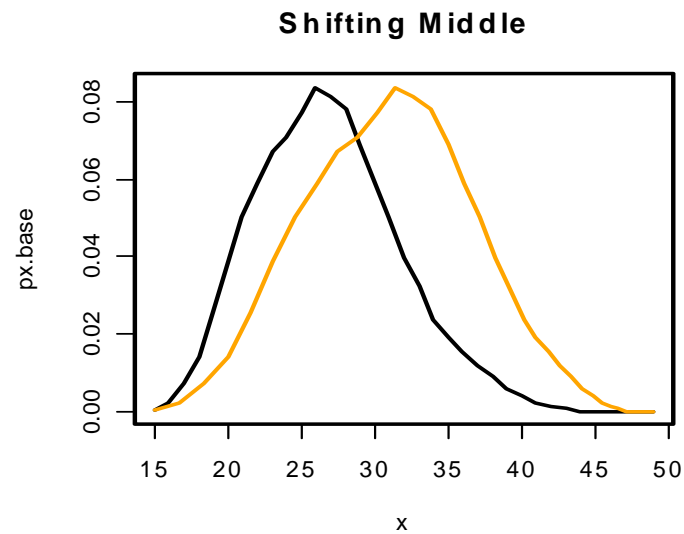
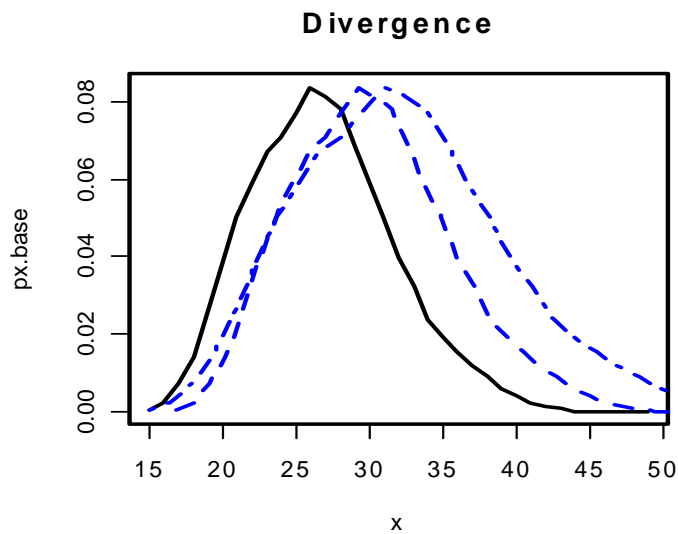
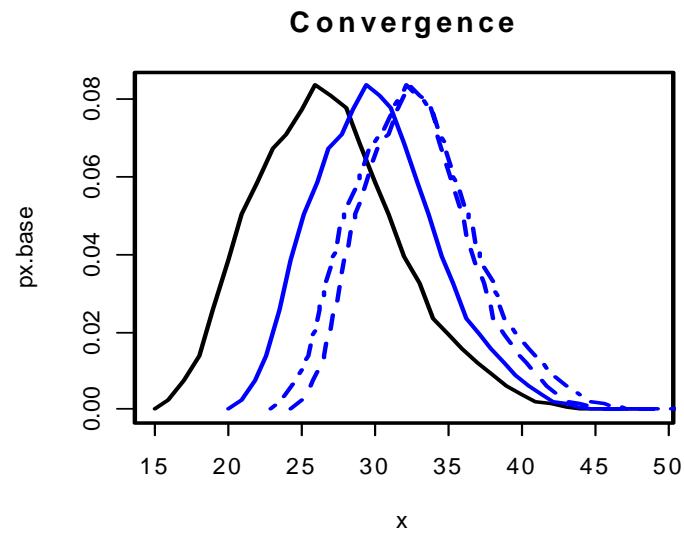
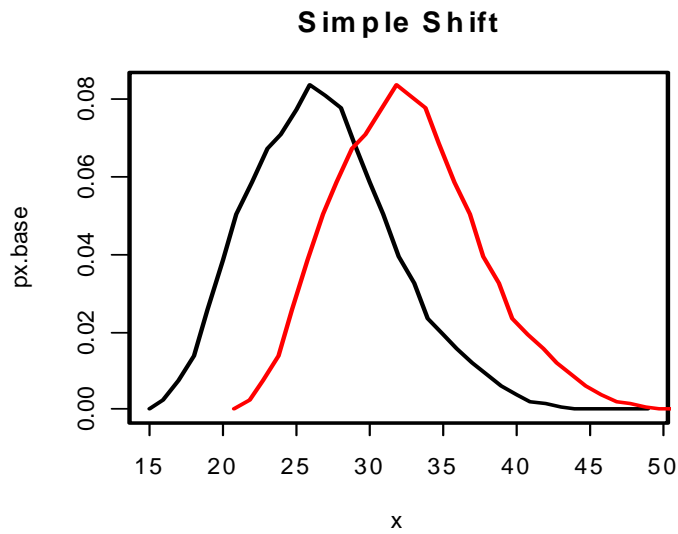
Baseline schedule $f(x)$ for Danish cohort of 1963

Scenarios (Highly stylized)	$x \rightarrow$
1. Simple shift	$x + b_1$
2. Linear convergence	$x + (50 - x) b_2$
3. Shifting convergence*	$(x + b_3)/c_4$
4. Linear divergence	$x + (x - 15) b_3$
5. Shifting Middle	$x + (50 - x)(x - 15) b_5$

Choose b_i in order to maximize mean age at first birth, staying within constraints

Results (Graphical):

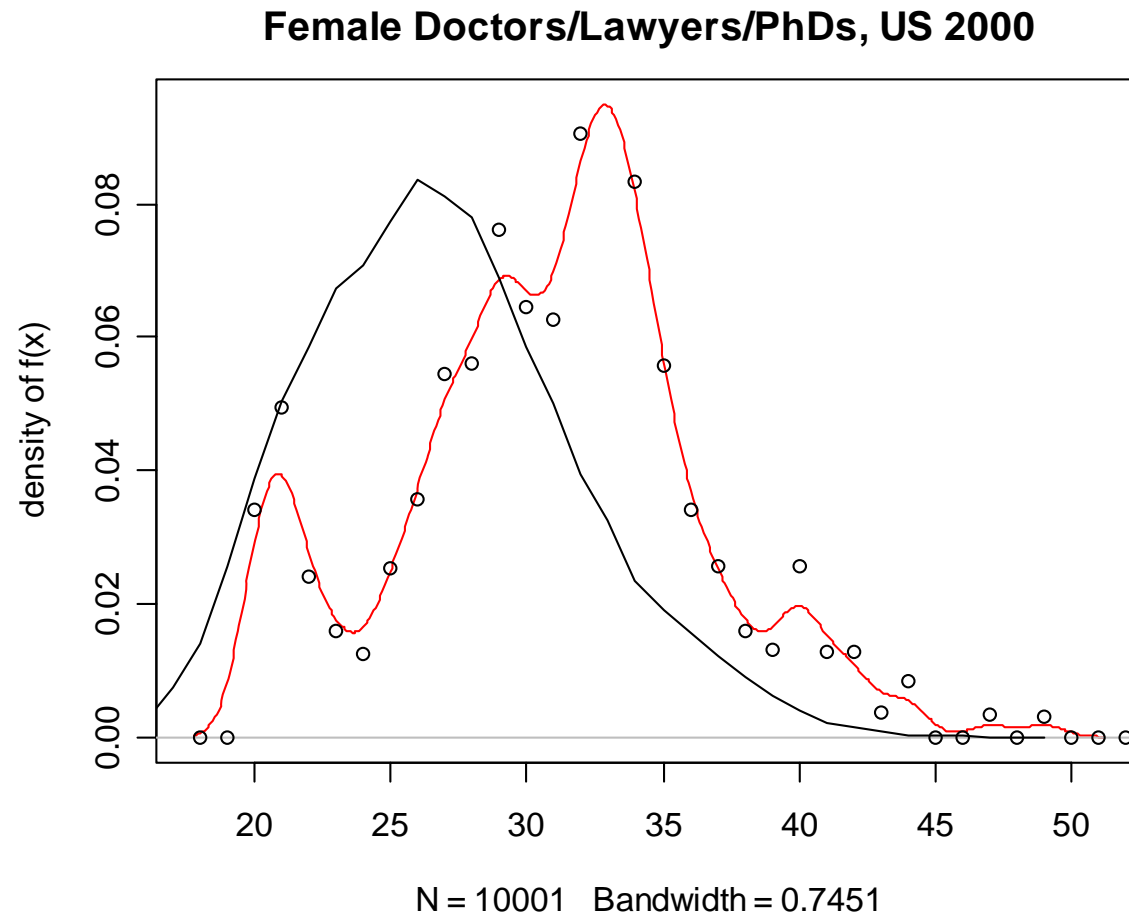
All kinds of shifts “look” plausible – hard to reject



Results (Quantitative)

Scenario	Mean (years)	SD (yrs)	<25 %	>35 %	> 40 %
Baseline (Denmark '63)	27.3	4.9	41	7	1
Simple Shift	33.1	4.9	6	<u>33</u>	9
Convergence (1)	30.7	<u>4.1</u>	13	15	2
Convergence (2)	33.4	3.5	<1	<u>33</u>	5
Shifting Convergence	33.4	<u>4.1</u>	2	<u>33</u>	7
Divergence	32.7	7.0	19	<u>33</u>	14
Proportional rescaling	32.9	5.8	13	<u>33</u>	12
Shifting Middle	32.5	5.8	16	<u>33</u>	10
U.S. Lawyers/Doctors/Phds	31.3*	5.5*	16*	21*	7*
* All parities					

Of course other alternatives also possible



Note:
US disn
All parities
TFR = 1.5

Note: US childbearing still early (1st birth about 25, all births about 27) 10

What does this mean?

- Conservatively, 4-6 years of postponement of first births are possible.
- At rate of 1 year per decade, this means half a century of postponement.
- By this time, new technologies?
- Safe to say no natural limits to postponement in next 20 years or so.

New Questions?

- Perhaps behavioral question is not:
“When will postponement stop?”

But rather

“Why won’t postponement continue?”

Or maybe,

“Why do women still have children so early?”

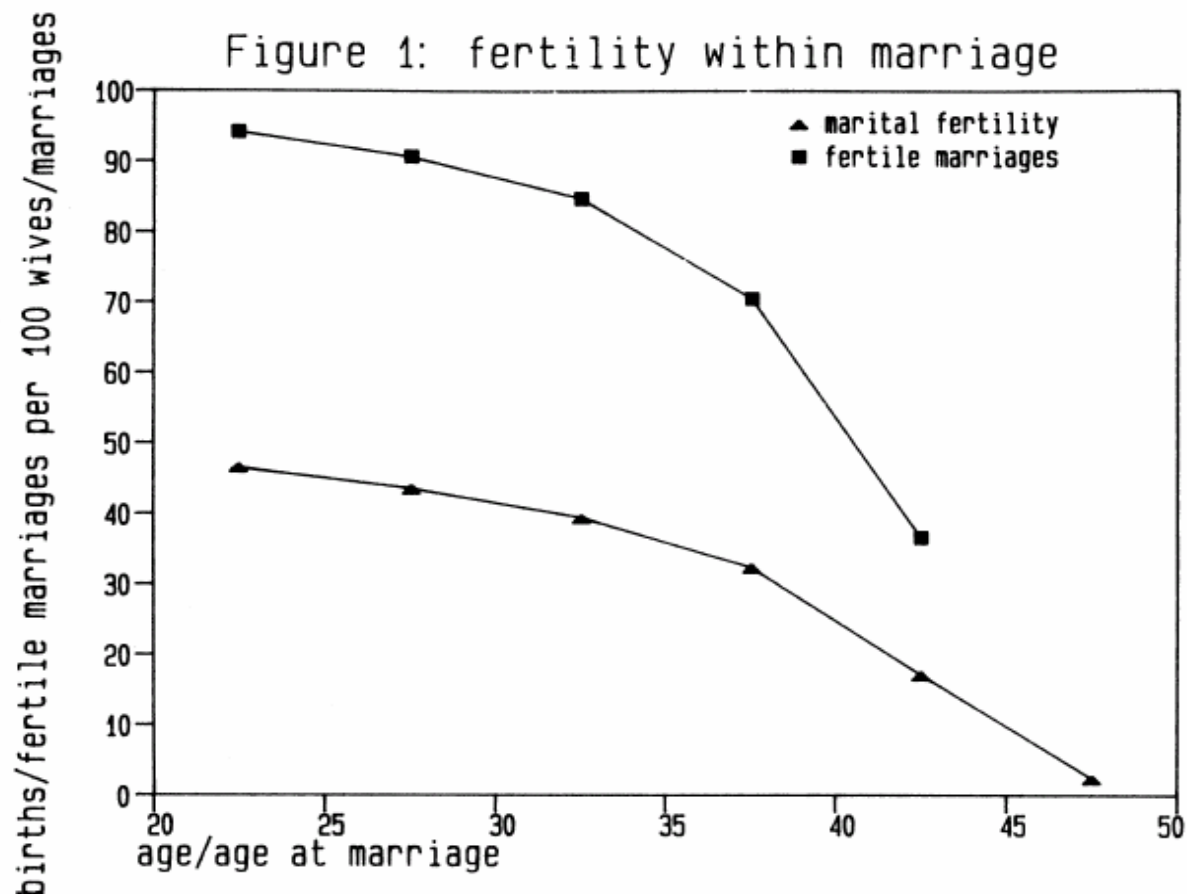
Idea

- *“Postponement, measured as increases in mean age at childbearing, cannot continue forever given a fixed age-range of childbearing.”*
-- Hagewen & Morgan (2005)
- Where is limit?
(Simplest answer – some wall: “45”)
- Heterogeneity in fecundity, life course, desired-parity mean than not everyone can/wants to have children at 44.999999.
- By experimenting with different age-shifts, can we get a sense of plausible population maximum mean age?

Why upper age for fecundity?

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DEMOGRAPHY, volume 22, number 4, November 1985



Source: Menken (1985)

This and many other studies, show only a little decline before age 40 14