



Perspectives on U.S. Fertility Trends

Hans-Peter Kohler

Social Security Administration — TAPM
15 February 2019



Reasons for Concern?

Reversal of "Fortunes"?

**Life-course, Period and
Cohort Fertility**

**Postponement
Transition**

**Implications for
Forecasting**

Fertility Recuperation

Conclusions

US Fertility Trends—A Reasons for Concern?

Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of “Fortunes”?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions



Health

The U.S. fertility rate just hit a historic low. Why some demographers are freaking out.



Will The Fertility Rate Recover? Probably Not, A New Study Says



Elizabeth Bauer Contributor ⓘ

Retirement

I write about retirement policy from an actuary's perspective.



Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions



Commentary: Afraid you won't be able to retire? There are good reasons to worry

Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

Postponement
Transition

Implications for
Forecasting

Fertility Recuperation

Conclusions

US Fertility Distinct among High-Income Countries?

Short Title of Presentation

H.-P. Kohler



Report by the 2007 Technical Panel on Assumptions and Methods:

- ▶ While the Panel believes that lower levels of fertility are likely, [...] factors that have led to a fertility level in the U.S. that is substantially above the experience of most other high-income nations.
- ▶ The high fertility rate of U.S. women may be the result of a greater ability to combine work and childbearing. Flexible work hours, access to a range of public and private child support services, and the relative ease of leaving and re-entering the work force make this a more viable lifestyle option.
- ▶ One might argue that the U.S. simply trails behind Europe and Japan, and that fertility will fall to historically low levels in future years...

Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

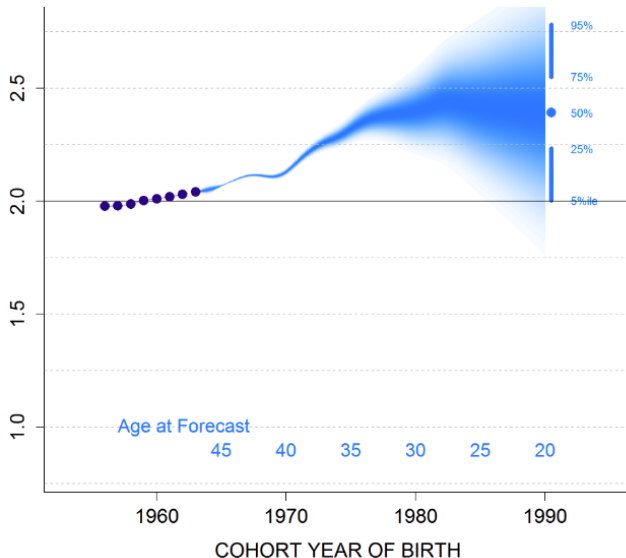
Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions

Forecasts of U.S. Cohort Fertility



Source: Schmertman et al. (2014). Bayesian Forecasting of Cohort Fertility. *J American Statistical Assoc.* Forecast from 2010 onwards

Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions

Individual Behaviors, Cohort- and Period Fertility

Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of "Fortunes"?

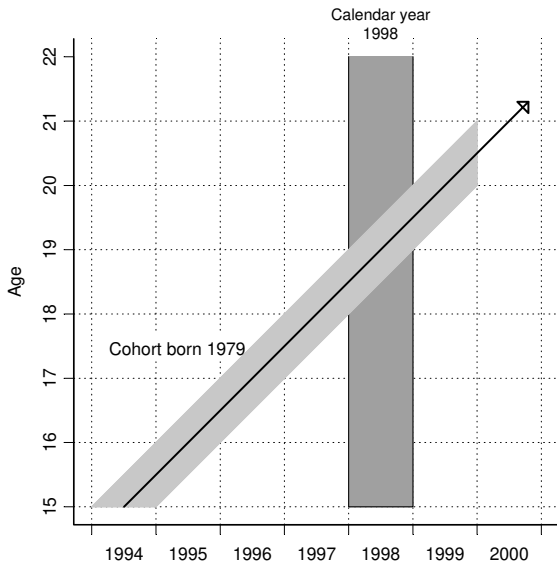
Life-course, Period and Cohort Fertility

Postponement
Transition

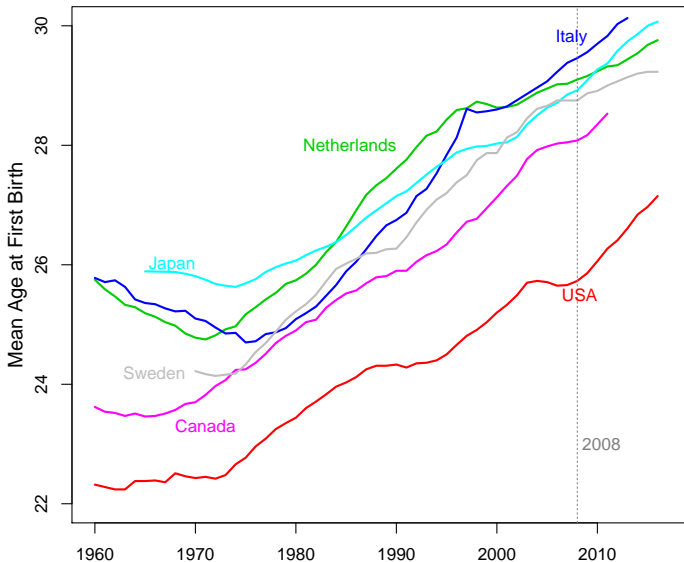
Implications for
Forecasting

Fertility Recuperation

Conclusions



Mean Age at First Birth in High Income Countries



Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

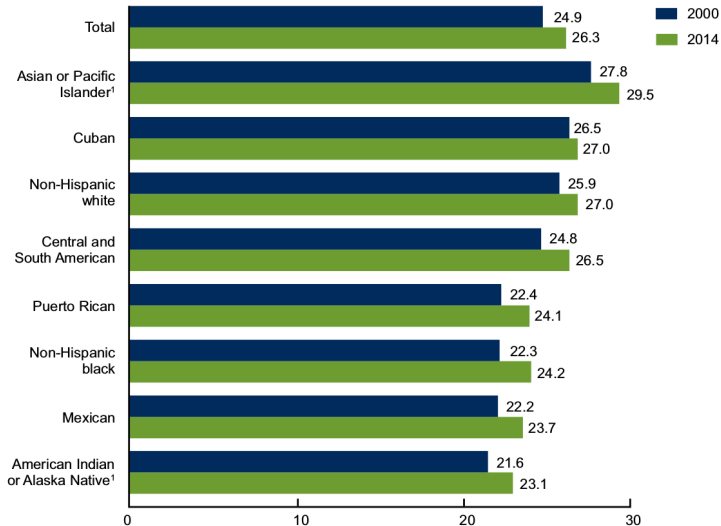
Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions

Mean Age at First Birth, by Race and Hispanic Origin



Source: NCHS Data Brief No. 232, January 2016: Mean Age of Mothers is on the Rise

Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

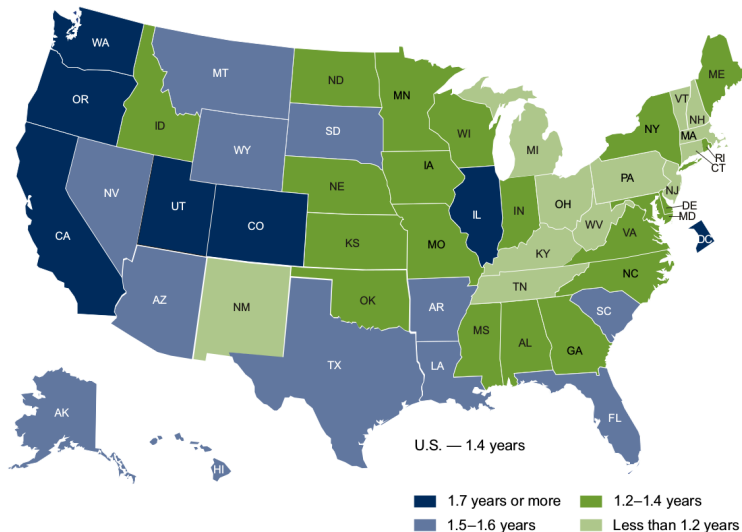
Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions

Change in Mean Age at First Birth, 2000–14, by State



Source: NCHS Data Brief No. 232, January 2016: Mean Age of Mothers is on the Rise

Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of “Fortunes”?

Life-course, Period and Cohort Fertility

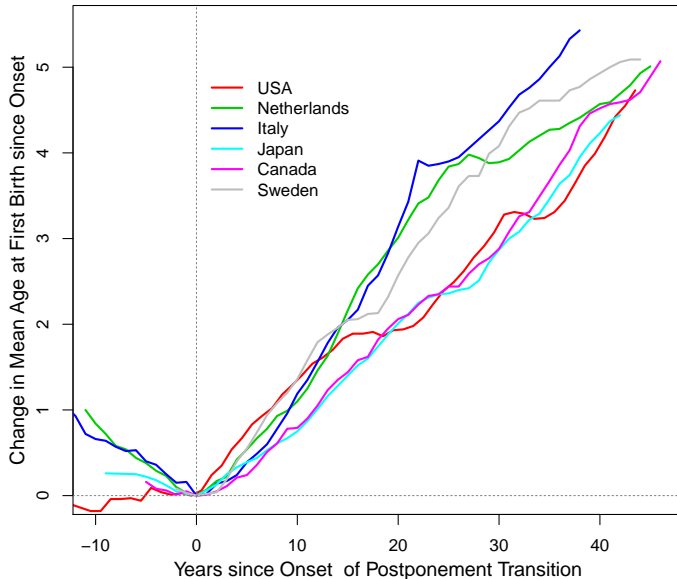
Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions

Postponement Transition in Fertility



Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions



Postponement Transition: Fundamental shift from relatively early to relatively late patterns of childbearing related to transformation of the life-course

- ▶ Various “trigger events,” ranging from uncertainty in early adulthood to high-returns to human capital
- ▶ Occurs across a wide range of socioeconomic conditions
- ▶ Once initiated, populations experience rapid, large and persistent delays in childbearing
- ▶ Continues even if “initiating conditions” reverse

Conceptual implication: investigate, theorize about, and empirically model/forecast both tempo and quantum of fertility!

Reasons for Concern?

Reversal of “Fortunes”?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions

Characteristics of Postponement Transitions

Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of “Fortunes”?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions

Postponement Transition: Fundamental shift from relatively early to relatively late patterns of childbearing related to transformation of the life-course

- ▶ Various “trigger events,” ranging from uncertainty in early adulthood to high-returns to human capital
- ▶ Occurs across a wide range of socioeconomic conditions
- ▶ Once initiated, populations experience rapid, large and persistent delays in childbearing
- ▶ Continues even if “initiating conditions” reverse

Conceptual implication: investigate, theorize about, and empirically model/forecast both tempo and quantum of fertility!

Demographic Implications of Postponement Transitions

Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

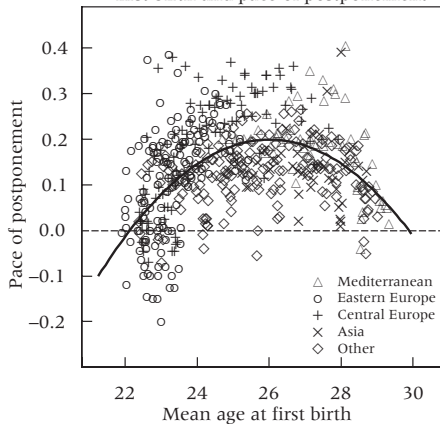
Postponement Transition

Implications for Forecasting

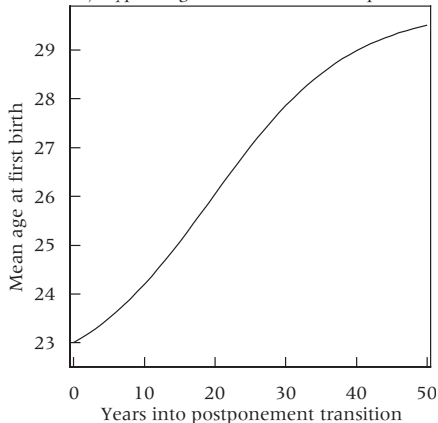
Fertility Recuperation

Conclusions

A) Relationship between mean age at first birth and pace of postponement



B) Typical age at first birth time-path



Demographic Implications of Postponement Transitions

Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of "Fortunes"?

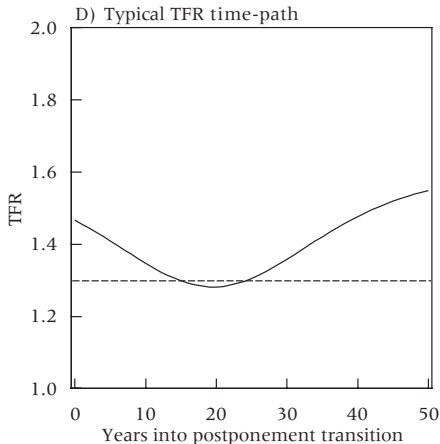
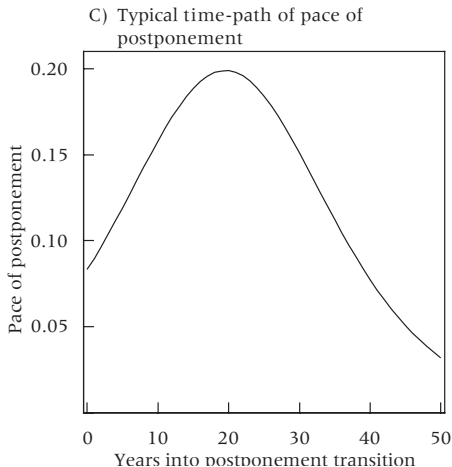
Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions



Implications for Fertility Forecasting

- ▶ Integrated methods including both quantum and tempo of fertility (e.g., Kohler-Ortega and variants thereof)
- ▶ Emphasis on cohort fertility, and period-cohort fertility relationship

Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of “Fortunes”?

Life-course, Period and Cohort Fertility

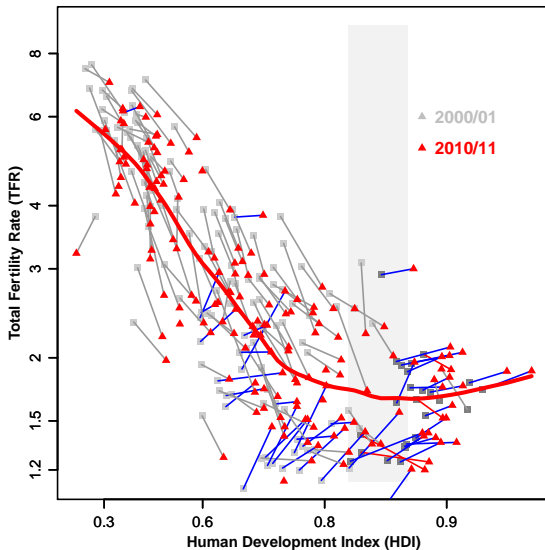
Postponement
Transition

Implications for
Forecasting

Fertility Recuperation

Conclusions

Global Fertility Transition: TFR and HDI



Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

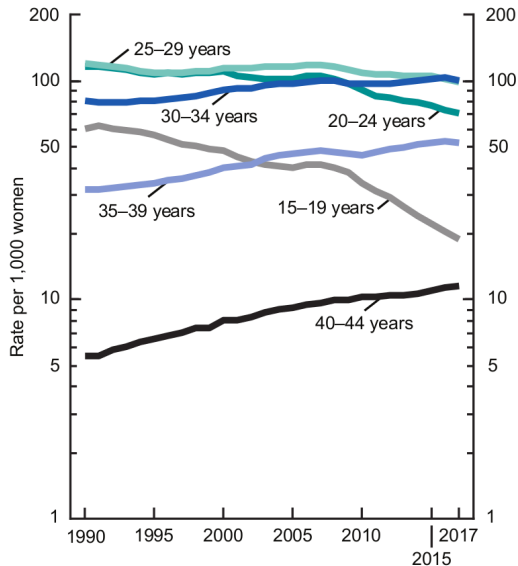
Fertility Recuperation

Conclusions

Recuperation of Fertility at Older Ages

Short Title of Presentation

H.-P. Kohler



Source: NVSR 67-8: Births: Final Data for 2017

Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

Postponement
Transition

Implications for
Forecasting

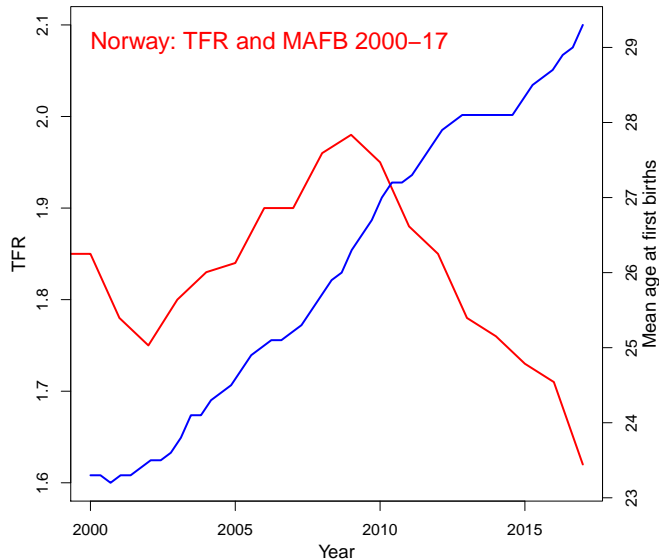
Fertility Recuperation

Conclusions

Recuperation of Fertility: Potential Challenges Ahead

Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of “Fortunes”?

Life-course, Period and Cohort Fertility

Postponement
Transition

Implications for
Forecasting

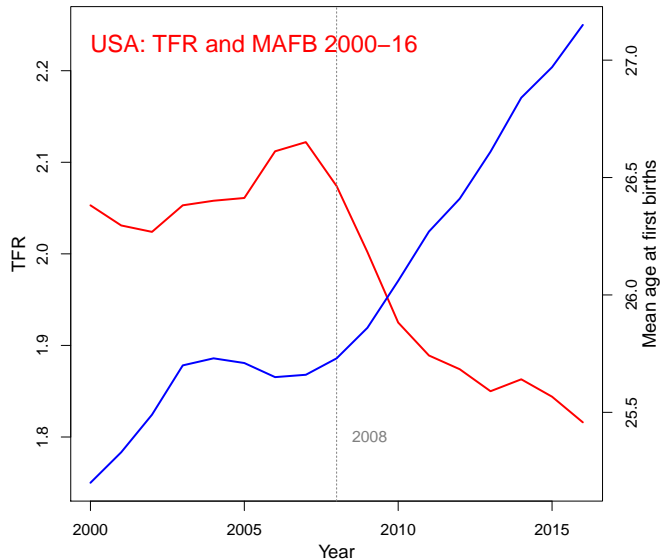
Fertility Recuperation

Conclusions

Recuperation of Fertility: Potential Challenges Ahead

Short Title of Presentation

H.-P. Kohler



Reasons for Concern?

Reversal of “Fortunes”?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions

U.S. Fertility at a Crossroads—Cautious Conclusions

Short Title of Presentation

H.-P. Kohler



- ▶ **Ongoing postponement transition, potential to continue for considerable time**
- ▶ Indication for recent decline in quantum of fertility
- ▶ Potential for further TFR decline and prolonged period of significantly below-replacement fertility
- ▶ Cohort fertility likely to remain substantially higher than period fertility
- ▶ **Methodological Considerations:**

• Period fertility requires data aggregation and is thus subject to significant measurement error, which may be especially large for the estimation of fertility

• Cohort fertility requires follow-up of representative cohorts of women

Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions

U.S. Fertility at a Crossroads—Cautious Conclusions

Short Title of Presentation

H.-P. Kohler



- ▶ Ongoing postponement transition, potential to continue for considerable time
- ▶ Indication for recent decline in quantum of fertility
- ▶ Potential for further TFR decline and prolonged period of significantly below-replacement fertility
- ▶ Cohort fertility likely to remain substantially higher than period fertility
- ▶ Methodological Considerations:

Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions

U.S. Fertility at a Crossroads—Cautious Conclusions

Short Title of Presentation

H.-P. Kohler



- ▶ Ongoing postponement transition, potential to continue for considerable time
- ▶ Indication for recent decline in quantum of fertility
- ▶ Potential for further TFR decline and prolonged period of significantly below-replacement fertility
- ▶ Cohort fertility likely to remain substantially higher than period fertility
- ▶ Methodological Considerations:
 - ▶ Forecasting requires new approaches based on life-course changes
 - ▶ investigate, theorize about, and empirically model/forecast both tempo and quantum of fertility
 - ▶ potentially consider implications of quality-quantity trade-off in fertility

Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions

U.S. Fertility at a Crossroads—Cautious Conclusions

Short Title of Presentation

H.-P. Kohler



- ▶ Ongoing postponement transition, potential to continue for considerable time
- ▶ Indication for recent decline in quantum of fertility
- ▶ Potential for further TFR decline and prolonged period of significantly below-replacement fertility
- ▶ Cohort fertility likely to remain substantially higher than period fertility
- ▶ **Methodological Considerations:**
 - ▶ Forecasting requires new approaches based on life-course changes
 - ▶ investigate, theorize about, and empirically model/forecast both tempo and quantum of fertility
 - ▶ potentially consider implications of quality-quantity trade-off in fertility

Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions

U.S. Fertility at a Crossroads—Cautious Conclusions

Short Title of Presentation

H.-P. Kohler



- ▶ Ongoing postponement transition, potential to continue for considerable time
- ▶ Indication for recent decline in quantum of fertility
- ▶ Potential for further TFR decline and prolonged period of significantly below-replacement fertility
- ▶ Cohort fertility likely to remain substantially higher than period fertility
- ▶ **Methodological Considerations:**
 - ▶ Forecasting requires new approaches based on life-course changes
 - ▶ investigate, theorize about, and empirically model/forecast both tempo and quantum of fertility
 - ▶ potentially consider implications of quality-quantity trade-off in fertility

Reasons for Concern?

Reversal of "Fortunes"?

Life-course, Period and Cohort Fertility

Postponement Transition

Implications for Forecasting

Fertility Recuperation

Conclusions