Past, present, and foreseeable childbearing patterns among US ethnic groups: a comparison of formulations with and without uncertainty

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Among industrialized countries, the US is characterized by above-average fertility. Fertility levels and patterns, differs systematically between racial and ethnic groups in the US population. This variation is observed in both period and cohort measures, although the latter exhibit more regular trends than the former measures. The present study investigates US fertility dynamics at the national level in the recent past for 3 major racial/ethnic categories: Hispanics, Black Non-Hispanics, and Non-Black Non-Hispanics. In addition to past and present trends, future implications are assessed through projections, in which exercise an approach that incorporates uncertainty and a conventional deterministic "scenario" approach are contrasted.

Analyses of ethnic fertility patterns in the US have been largely restricted to period measures due to the absence of extended historical series on the fertility of the highly important Hispanic ethnic categories. Fortunately, recent methodological advances have made it possible to distinguish the effects of birth spacing ("tempo effects") from temporal changes in the ultimate level ("quantum") of fertility. Extrapolation of these parameters enables assessment of levels and trends in completed fertility for cohorts currently in childbearing ages.

Recent developments in demographic projection methodology have addressed the issue of incorporating uncertainty about he future trajectories of the components of population growth. The "stochastic projection" school of thought has both advocates and critics. The present study explores the relative merits of the "stochastic" approach and conventional scenario-based projection. The (Kohler-Ortega) fertility model employed in the analysis facilitates definition of two conventional scenarios with respect to tempo effects: one in which present trends in child spacing come to a halt ("postponement stops") and one in which postponement continues at historically observed rates ("postponement continues") when combined with analogous assumptions about the quantum of fertility, a set of 4 conventionally-formulated scenarios is available. The stochastic alternative is developed by fitting ARIMA models to the underlying parameters of the model, which yield point estimates and error variances. When the latter are treated as elements of a multivariate (normal) distribution, a set of realizations can be obtained through use of a random number generator. This enables assessment of both the central tendency of completed fertility and the dispersion about that mean, which can be expressed in the form of statistical confidence intervals. In practice, we incorporate covariances between the 3 race/ethnic categories and the first two parities. The results provide insight not only into future tendencies in patterns of childbearing, but also the manner and extent to which the two projection methodologies differ with regard to childbearing patterns.

One advantage of the Kohler-Ortega methodology is that it distinguishes birth order, in recognition of the fact that the event of a birth is a transition in parity to the mother. Of course, this in turn calls for application of a parity distribution to develop overall summary measures of fertility. For dates in the future, in which the parity distribution is not observed, we compare an approach that advances the parity distribution without regard to mortality (similar to Kohler and Ortega's original approach) to one which uses a forecast life table.

The analysis reveals that levels of completed fertility of the 3 race/ethnic categories are remarkably stable over time. Changes in timing of births have taken the form of both postponement and acceleration. Looking towards the future, no dramatic changes are foreseeable, and overall US fertility promises to remain at a level substantially higher than that of most West European populations today. However, all of the temporal changes, observed or foreseen, in US fertility are minor in comparison to the differences between race/ethnic categories within the US population. If the available data are any guide, the prevailing differentials in fertility levels and patterns by race and Hispanic origin are apt to sustain themselves into the future, at least as far as qualitative results are concerned.