

Period average parity (PAP)

The *PAP* is a summary index of period fertility computed from the age- and parity-specific fertility index for first births (termed here as $PATFR_1$) and the set of parity progression rates to second and later births, constructed from duration- and parity-specific birth probabilities ($PPR_{i,i+1}$). The *PAP* has two major advantages over the ordinary *TFR*. First, it is based on parity-specific indicators, and therefore it is controlling for the actual parity composition of the female population, which is not the case of the *TFR* that standardizes fertility solely for age distribution of women of reproductive age. Second, the *PAP* is less affected by the ongoing changes in the timing of childbearing (“tempo effects”; Bongaarts and Feeney 1998) which have distorted the *TFR* in Austria since the 1970s. As a result, the *PAP* reflects better the actual fertility level (*quantum*) in Austria, and it also gets closer to the completed fertility rates of the birth cohorts of women having children during a given period of time.

The *period average parity (PAP)* is computed for each parity category $j > 1$ by combining the *PATFR* index for parity 1 with the parity progression ratios for parities up to j :

$$PAP_j(t) = PATFR_1(t) \prod_{i=1}^{j-1} PPR_{i,i+1}(t) = PAP_{j-1}(t) \cdot PPR_{j-1,j}(t)$$

The highest parity-progression category (5+ to 6+) accounts for the progression from the fourth birth to the fifth and all the subsequent births:

$$PAP_{6+}(t) = PATFR_1(t) \prod_{i=1}^{5+} PPR_{i,i+1}(t) = PAP_5 \cdot PPR_{5+,6+}(t)$$

The overall index of period average parity is computed as follows:

$$PAP(t) = PATFR_1(t) + \sum_{j=2}^{6+} PAP_j(t)$$

Note that in the computations for Vienna, the highest parity-progression category is by one birth lower (i.e., from 4+ to 5+) than in the case of data for the whole Austria.