Example 2: Communicating non-additivity of tables protected by the CKM

The cell key method is applied to all cells separately, with marginal and intermediate sums being treated in the same way as internal cell values. Therefore, the change to a marginal sum is not necessarily equal to the sum of the changes to the respective internal cells. The procedure is similar to the usual way deterministic rounding is applied: marginal sums are first computed and then rounded, instead of summing up rounded interior cells. This guarantees the same stochastic properties of the noise and ensures the same low maximum noise needed to have sufficient protection. This approach also preserves consistency between different tables, because when applying random noise using the cell key method, identical table cells will always receive the exact same amount of noise.

*Advice to the statistics producers*

*The familiar footnote for rounding differences can be adapted to this situation: “Due to the protection of confidential data by adding some noise, the sum of individual cells may be a little different from the marginal totals”.*