

# **Estimating Arms Imports**

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## **Abstract**

In Smith and Tasiran (2005), we estimated demand functions for arms imports for a balanced panel of 52 countries 1981-1999 using cases where there were non-zero observations from the two main data sources WMEAT and SIPRI in all years. Such full data sets can create a sample selection problem. The main aim of this paper is thus to estimate the missing values and allow for possible sample selection using information from 99 more countries for the same period. Imputations for missing values are obtained in two ways: using simple means of non-zero longitudinal observations and using auxiliary information from other series. Then, the Horvitz-Thompson estimator values are computed using observed and imputed values together with their respective sampling design weights. In the analysis, we first estimate probability models of 14 different combinations of non-missing, zero and missing observations including the larger groups of agreements and disagreements. In a second step, we estimate probit selection and tobit primary regressions for demand of arms imports using observed, predicted and imputed values. Lastly, we use tobit selection rule instead of probit selection rule in the main models. The results obtained in this paper, are compared with those of Smith and Tasiran (2005).