

Currency demand and MIMIC models: towards a structured hybrid model-based estimation of the shadow economy size

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Abstract Model-based econometric techniques of the shadow economy estimation have been increasingly popular, but a systematic approach to getting the best of their complementarities has so far been missing. We review the dominant approaches in the literature – currency demand analysis (CDA) and MIMIC model – and propose a novel hybrid procedure that addresses their previous critique, in particular the misspecification issues in CDA equations and the vague transformation of the latent variable obtained via MIMIC model into interpretable levels and paths of the shadow economy. Our proposal is based on a new identification scheme for the MIMIC model, referred to as ‘reverse standardization’. It supplies the MIMIC model with the panel-structured information on the latent variable’s mean and variance obtained from the CDA estimates, treating this information as given in the restricted full information maximum likelihood function. This approach allows us to avoid some controversial steps, such as choosing an externally estimated reference point for benchmarking or adopting other *ad hoc* identifying assumptions. We estimate the shadow economy for up to 43 countries, with the results obtained in the range of 2.8% to 29.9% of GDP. Various versions of our models remain robust as regards changes in the level of the shadow economy over time and the relative position of the analysed countries. We also find that the contribution of (a correctly specified) MIMIC model to the measurement of trends in the shadow economy is marginal as compared to the contribution of the CDA model.

Keywords Shadow economy · MIMIC · Currency Demand Approach · Restricted Full Information Maximum Likelihood

JEL classification C10 · C51 · C59 · E26 · H26 · O17

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