The statistical structure of the US input matrices: 1947-2007

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This paper conducts a large scale study of the statistical characteristics of industry-by-industry input coefficient matrices A=[aij]. The review of the literature shows that there is a common use of probabilistic assumption in their IO models together with a lack of information on the statistical properties of actual IO matrices. Using the US Benchmark Input-Output accounts, for the 60 years period from 1947-2007, and at the most detailed level possible, we find a series of statistical regularities in several elements of A and of its spectrum. We compute frequency distributions and other exploratory data techniques and find a statistical structure in these 12 matrices. A simulation analysis is performed and concludes that 5% of the aij coefficients are enough to replicate the statistical structure found for the whole matrix. The existence of these stylized facts provides crucial information for scholars working in a multi-sectoral linear models with probabilistic features and calls for explanations of the economic forces generating the statistical regularities.