Property valuation is a complicated and difficult process. The result is a specific value informing what is the most likely price of given real estate on the market. In the theory and practice of real estate valuations, a system including approaches, methods and techniques was developed. Generally it is based on gathering and analyzing facts about the real estate market. These data include in particular the prices, incomes and property characteristics. On the basis of this information, real estate market characteristics and value must be estimated. Real estate valuation is not just a practical task in which real estate valuers perform valuations. Valuers are not usually able to carry out a valuation in complete and statistically proper way, because they use very simplified methods, based on pairwise comparisons of given real estate to at most several similar objects in terms of market characteristics. As a result, quite coarse results might be obtained. Szczecin real estate mass valuation algorithm is a much professional tool. Based on the built real estate database and by individual valuation of only representative sample of real estate, it allows in one process to valuate a large number of properties. The algorithm will work correctly if the matrix **A** (the matrix of the real estate attributes impact of on value) will be properly determined. In the present version of the algorithm, the matrix is calibrated by experts. Unresolved problem is how to professionally, econometrically estimate this matrix. This is exactly the problem underlying this proposal. Based on the research, a system (understood as a set of econometric, statistical, and expert procedures) will be proposed, which can be used in mass property valuation algorithms, increasing the objectivity and quality of valuations.