

PREFACE

This volume of "Acta Universitatis Lodziensis" includes the invited guests' papers at the WAS-89 meeting being held in Sulejów as well as those written specially for this volume.

There are 10 papers on econometrics and statistics. The papers cover such topics as:

t1) efficiency and precision of estimation methods (see the papers by W. Milo; A. Balcerak - A. Tomaszewicz)

t2) small sample properties of:

- independence tests for contingency tables (see Bismarck's paper),

- univariate normality tests (Domański - Wagner's paper),

- length of runs test (see: Domański - Tomaszewicz's paper),

- Goldfeld-Quandt tests (see: Balcerak - Tomaszewicz's paper);

t3) linear regression diagnostics of:

- sensitivity of l.s.e. (Konarzewska's paper);

- structural parameters changes (Gajda's paper);

t4) application of Dagum distribution in income studies (see: Jędrzejczak's paper).

The authors aimed at studying the behaviour known methods and proposing some new elements knowledge about them.

The editors and authors express their gratitude to the Ministry of National Education for providing financial help within the CPBP 10.09 research programme.

Łódź 20 June 1990

Władysław Milo, Andrzej S. Tomaszewicz

PROFESSOR ANDRZEJ S. TOMASZEWICZ

1938-1991



Professor Andrzej S. Tomaszewicz was born on April 17, 1938, in Bydgoszcz, in a intelligentsia family. In 1941 his father Mi-kołaj died. In October 1944, his mother with her two sons - Andrzej - Antoni and Andrzej - Stefan - moved to Radom. Andrzej S. Tomaszewicz completed his primary education in 1950 and passed his maturity exam at the Technical School of Finance in 1953. In the same year he started his studies at the Main School of Plan-ning and Statistics in Warsaw, from which he graduated in 1957. After the studies he started his first job in the Valves Manufac-ture in Warsaw as a economist. In 1960 he moved to Łódź, where he started studies at the Faculty of Mathematics, Physics and Chemistry of the University of Łódź. He became M.Sc. in mathe-matics in 1965 and started work at the Institute of Econometrics and Statistics (at that time Department of Econometrics) of the

University of Łódź, at first as a student assistant, then assistant and senior assistant. At the same time, performing his didactic tasks, he completed a four year post-graduate studies. In 1971 he defended his doctor's thesis on *Stochastic structure of the consumers' demand models* (in Polish), written under the scientific guidance of Prof. dr hab. W. Welfe and he was promoted a docent.

In the academic year 1974/1975 he was granted one year scientific-research fellowship at the University of North Carolina, Chapel Hill, N.C., U.S.A. where he worked with a world famous statistician, prof. Norman Johnson.

In 1985 he presented his habilitation dissertation titled "*One equation econometric models with non-classical assumptions* (in Polish) and the Board of the Faculty of Econometrics and Statistics granted him the title of assistant-professor. In December 1986 he was given the post of docent. In 1990 he prepared a professor book titled *Econometric tests* (in Polish) and became extraordinary professor of the University of Łódź.

Professor Andrzej S. Tomaszewicz gave foundation to the Work Room of Numerical Computations at the Institute of Econometrics and Statistics UŁ, and recently to the Department of Operational Researches, which he headed successfully.

He organized and personally put into action many works associated with computers programming, and recently, microcomputers. He knew many computers' programming languages, such as the internal language and symbolic languages Algol, Fortran, Pascal and C. Since he started his work at the University of Łódź, he also specialized himself in the application of computer techniques to statistical-econometric research. He was the author of over 1000 programmes and procedures for various types of computers. Also, he worked out a microcomputer optimizing system for preparing the arrangement of didactic classes for the needs of Faculty of Economics and Sociology of the University of Łódź.

Professor A. S. Tomaszewicz is the author or co-author of over 150 works and scientific elaborations, mainly in the field of econometric and statistical reasoning, particularly statistical tests, estimation methods in the case of autocorrelation, and the application of mathematical methods in management. His work brought him the award of the Rector of UŁ (eight times), and

the Minister's award four times. He often presented the results of his research at international symposia, seminars and conferences both at home and abroad.

During the previous and present tenures he was a member of the Committee of Statistics and Econometrics of PAN.

Between 1979-1975 he supervised the research project *Econometric models of functioning of the industrial sectors and their problems of the regression analysis* (in Polish) carried into action within the framework of basic problem 06.2.04, coordinated by the PAN Institute of Mathematics. In the period (1971-1974) he was also the dean's plenipotentiary in the field of cooperation with the Institute of Electronic Computations Techniques.

For fifteen years (1976-1990) he was holding the post of the scientific secretary of the Ministry problem R.III.9, and then (1986-1990) of the Central Programme of Basic Researches 10.09 - *Econometric modelling and forecasting of economic processes* (in Polish).

In 1982-1985 he was a member of the editorial team of "Przegląd Statystyczny". He was also socially active - in the years 1988-1990 he was he president of the Łódź Branch of the Polish Statistical Society, and in the present tenure he was a member of the board of the Łódź Branch of the Polish Statistical Society.

The interests and scientific works by Prof. Andrzej S. Tomaszewicz can be divided into three main research streams: practical application of econometrics, application of operational research and the theory of econometrics.

He published a series of 30 articles devoted to a class of linear models of trend with autocorrelation of the random component and heteroscedasciscity. A summary of some stage of his research in this field was his habilitation dissertation as well as some parts of the earlier two volume monograph *Econometric market models. Estimation - Forecasts - Simulation* (in Polish) under the supervision of Prof. W. Welfe, published by the PWE. Another important stream of his interests was the theory of econometric tests - tests verifying stated assumptions on the econometric model. Most often tests of this kind are constructed on the basis of maximum likelihood method, which guarantees their good asymptotic properties. Not always, however, these tests are optimal in small samples. Obtaining the analytical solution for small samples in the area of distribution analysis is a really hard task. Practi-

cally, the only way is the numerical analysis, using often the Monte-Carlo methods. Prof. A. S. Tomaszewicz was successful in applying these methods. The primary achievements of Prof. A. S. Tomaszewicz are:

- construction of statistics distribution methods for non-parametric tests on the basis of recurrence formulas,
- construction and application of numerical simulation method in the determination of critical values of these tests,
- development of the randomized tests theory by the introduction of the notion of interpolated quantiles,
- construction and application of approximation of interpolated quantiles of the tests statistics distribution.

A synthesis of this subject is the prepared monograph *Econometric tests*, summing up its output and indicating the direction of further research.

Apart from the investigation in the theory of econometrics and statistics, Prof. A. S. Tomaszewicz dealt also with the problems of practical applications. The results of research in the demand models were included in the monograph *Econometric methods of demand elasticity estimation against the income, on the basis households' budget analyses* (in Polish), published by GUS and several other works.

Prof. A. S. Tomaszewicz participated in many works covering the operational researches in an enterprise, and particularly, (from 1986), in the optimization models of raw materials, semi-products and finished products inventories under uncertainty. He was the author or co-author of several works in this field.

Many of his colleagues were inspired by his ingenious remarks, advising, comments on an extremely broad spectrum of subjects of discussions or research topics.

Some of our colleagues were lucky to work with him, publish jointly and learn new ideas in studying the small sample properties of tests, estimators, stochastic programming. Benefiting so much from him in their scientific and life careers they will spread the approach, ideas which prevailed in the great personality of Professor A. S. Tomaszewicz.

Co-editor, Authors, Co-Authors and Colleagues