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## MEMORIES OF PROFESSOR ZDZISŁAW HELLWIG (1925-2013)

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**On the 8<sup>th</sup> of November 2013  
we said our last sorrowful goodbyes  
to Our Dear Mentor and Friend Professor Zdzisław Hellwig.  
He left us forever**

On the 8<sup>th</sup> of November 2013 the Senate of the Wrocław University of Economics gathered for a special meeting. The academic community was commemorating Professor Zdzisław Hellwig – one of the greatest Polish experts in the fields of statistics and econometrics, as well as a man of brilliant mind and kind heart, and an excellent teacher. Professor Hellwig's brief biography was presented by Prof. Andrzej Gospodarowicz, Rector of the University of Economics. Speeches followed, delivered by friends, students, and co-workers of Professor Hellwig: Prof. Stanisław Bartosiewicz, Prof. Maria Cieślak, Prof. Walenty Ostasiewicz, Prof. Jerzy Korczak, Prof. Czesław Domański (from Łódź University), Prof. Andrzej Barczak (from Katowice University of Economics). Letters of condolence were read aloud.



Professor Zdzisław Henryk Hellwig was born on the 26<sup>th</sup> of May 1925 in Dokszyce, a small town in the Vilnius region, which was a part of Poland from 1922 to 1939. After the Lithuanian Republic was established in 1940 as a part of the USSR, Vilnius became its capital. It was in Vilnius in 1941 that Professor Hellwig finished the Zygmunt August junior high school. Having completed this stage of his education, he spent three years working as an assistant accountant at an estate in Dokszyce.<sup>1</sup>

He joined the partisans in 1944. As a soldier of the Home Army 4<sup>th</sup> Cavalry Brigade – a reconnaissance cavalryman – he took part in capturing Vilnius. For resisting incorporation into Berling's Army, he was transferred to the coal mines in the Donets Basin. He came back home in November of the same year, but the region was no longer Polish – it had become a part of the USSR. In 1946 he was repatriated to Poland, to the so-called Regained Territories and, more precisely, to Wrocław.

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<sup>1</sup> Photo of Professor Zdzisław Hellwig taken by Z. Rusnak in 2012.

In June 1947 he finished a high school for adults. It was in the same year that he began studies at the School of Commerce. He received an MA in 1952, at the Warsaw School of Economics, in the Department of Commerce. At the request of Professor Jan Falewicz, the head of the Department of Statistics, Zdzisław Hellwig, MA, was employed as an independent scholar at the start of the academic year 1953/1954. In 1958 he defended his Ph.D. dissertation titled *Regresja liniowa i jej zastosowania w ekonomii (Linear Regression and Its Uses in Economics)*.

Having completed his Ph.D., he received a British Council scholarship and went to London and Cambridge. During his stay in England he carried out his scientific research under the supervision of Sir Richard Stone – future laureate of the Nobel Memorial Prize in Economic Sciences – and wrote his habilitation thesis entitled *Przyczynek do teorii regresji (Introduction to Regression Theory)*. On the basis of his scholarly achievements and his dissertation he defended his habilitation at the Department of Finance and Statistics of the Warsaw School of Economics in 1962. It was in the same year that he was appointed Head of the Department of Statistics at the School of Economics in Wrocław. In 1967 he received the title of professor and then, in 1973 – the title of full professor.

Since 1962, when Professor Hellwig was appointed the head of the Department of Statistics, he held this post continuously until his retirement in 1995. At the same time, from 1969 to 1995 he was also the head of the Economic Calculation Institute, and then – after the reorganization – of the Economic Cybernetics Institute. He was assigned the post of the pro-rector of education three times (1962-1965, 1968-1970, 1979-1981).

From 1968 to 1974 he was a UNESCO foreign expert in Paris. He also gave lectures at the universities in Ibadan, Nigeria, and in Japan, at Tohoku University.

Among numerous prizes that the professor was awarded with, one should perhaps mention the Prime Minister's Award for exceptional scholarly work received in 1996 as well as *honoris causa* degrees of the Academy of Economics in Kraków (1985) and of the School of Economics in Prague (1994) in recognition of his great services rendered to development of economics and to the growth of international scientific cooperation.

Moreover, in acknowledgement of his merits in the fields of scholarly and didactic work, his personal involvement in the functioning of academic organizations as well as his involvement in institutional activities at both national and international level, the Wrocław University of Economics awarded Professor Zdzisław Hellwig the Crystal Alumnus prize – for the entirety of his lifetime achievements.

The professor also received numerous awards and distinctions given by the state, such as the Knight's Cross, the Officer's Cross, and the Commander's Cross of the Order of Polonia Restituta.

The professor's scientific body of work includes several hundred works in the fields of theory and application of quantitative methods in economics.

It was as early as 1959 that he published a book titled *Elementy rachunku prawdopodobieństwa i statystyki matematycznej (Elements of probability theory*

and mathematical statistics), which became a basic textbook for generations of economists. Its popularity may be confirmed by the fact that it has had 13 editions.

Another important work by Professor Hellwig, besides *Linear Regression and its applications to Economics*, is Stochastic Approximation published in 1965. Such terms as distance random variable as well as the spectrum and trace of random variable distribution – introduced in this very work – constituted an inspiration for young scholars in the department and for employees of other universities.

Similarly, he contributed the idea and the editorial supervision of such acclaimed joint publications as 1971 *Automatyczne przetwarzanie informacji (Automatic Information Processing)*, 1975 *Maszyny cyfrowe i ich zastosowanie (Computing Devices and their Application)* and 1976 *Elementy rachunku ekonomicznego (Elements of Economics Account)*. These books have been republished several times as they were the basic source of information about computing devices used all over the country.

His greatest academic, didactic, and organizational achievement that had the range of the entire country may definitely be what is now called computerization. At that time the Polish word *komputer* was not used yet, and Professor Hellwig even suggested a term *arele* (arytmometr elektryczny – electrical arithmometer).

At the beginning of the 1960s, thanks to Professor Hellwig's initiative and exceptional organizational skills, a calculation unit was established at the Department of Statistics, in which an Odra 1003 computer – then known as an electrical computing device – was installed. This place was used not only for scholarly research in the field of electronic calculation technique, but also for educating students and workers of industrial facilities. The curriculum included nearly all the significant programming languages. The students would obtain theoretical knowledge of computers and practical skills in computer programming.

Among the multiple works written by the professor, one may find publications that cover issues covering such diverse research areas as:

- modeling of socio-economic development,
- economic prognosis,
- multidimensional comparative analysis and taxonometry.

The basic issue that was given thought in all of Professor Hellwig's works in the field of econometric modeling is the nature of the econometric model, the way it is constructed, an assessment of its quality and the model's interpretation. The professor drew attention to the issue of the large number of variables in the econometric model and was the first person in Poland to research the choice of variables for the model.

The textbook *Zarys ekonometrii (Introduction to Econometrics)*, which was originated and edited by Professor Hellwig, is a work that deserves attention in that field of interest.

Research related to economic prognosis, started in 1970s, is still continuing and being developed. The crawling trend method introduced by Professor Hellwig is nowadays one of the commonly used methods of flattening time series and their prognosis.

The professor's greatest achievements are connected with taxonomic methods and methods of multidimensional comparative analysis. They are acknowledged not only in Poland, but have gained international recognition. In these works, Professor Hellwig drew attention to the real possibilities of applying taxonomic methods of linear ordering to economic problems. He introduced synthetic measure – based on the concept of *development pattern* and commonly known as *Hellwig's economic development measure* – and an algorithm of grouping objects into relatively homogeneous subsets and the division of characteristics into *stimulants* and *destimulants* on the basis of the types of preferences. These ideas have inspired a number of scholars in various Polish institutions. The terms – also introduced by Professor Hellwig – of *development measure*, *development pattern*, *development path* and the *optimal trajectory of development*, *aggregate and its information potential* – are still employed by scientists representing various fields of study.

Professor Hellwig also inspired a lot of research in the field of insurance statistics. He perceived the necessity for applying probability theory, mathematical statistics, random processes theory and demography for the purpose of assessing the risk of the insured, both in terms of life and economic insurances. Professor Hellwig initiated scientific research on insurance in the 1990s. The result of the analysis – ranging from actuarial mathematics to methods of estimating insurance risk – carried out at the Department of Statistics and Economic Cybernetics came in the form of the first Polish publications on the subject. Thanks to them, the Wrocław University of Economics became one of the most important universities in Poland dealing with similar research.

The professor was also a pioneer in the field of sustainable development; an area that is now treated with great interest by scholars, businessmen, and politicians. His 1963 work on forecasting economic events served as a basis for the creation of ALERT – a unique early-warning system applied to the national economy. This research was and still is an object of interest for many scholars and numerous doctorate and habilitation dissertations focus on it. It was already in 1981 that Professor Hellwig published two works related to sustainable development: *Zjawisko oscylacji w przyspieszonym rozwoju gospodarczym (Oscillation in Accelerated Economic Development)* and *Równowaga ekonomiczna. Pojęcia i kontrowersje (Economic equilibrium. Terms and controversies)*. One may consider the 2012 Quality of Life and Sustainable Development conference, organized in Wrocław by the Department of Statistics at the University of Economics, as a direct continuation of research in that field.

When discussing Professor Hellwig's achievements, one should not forget about his involvement in the publishing process. He was first the secretary of the editorial board for Academic Papers of the School of Economics and then its editor-in-chief. He initiated the print of numerous joint publications, for which he additionally played the role of the science editor. He was also the founder of the current *Badania Operacyjne i Decyzje (Operational Research and Decisions)* periodical, issued in collaboration by the Wrocław University of Economics and the University of

Technology in Wrocław. The editorial work of Professor Hellwig is continued at the Department of Statistics.

It is difficult to find a person that could compare to Professor Zdzisław Hellwig in terms of organizational skills. It was thanks to his initiative that numerous contacts with universities both in the country and abroad were established and tightened. The cooperation with the Departments of Statistics in Kraków and Katowice and the friendship of three great personages of Polish quantitative sciences – Professors Z. Pawłowski, K. Zając, and Z. Hellwig – resulted in 1964 in academic meetings called the Conference of Southern Poland, since 1997 known as SEMPP.

Academic contact with the Marburg University and with the Prague School of Economics – in both cases started by Professor Hellwig – are still continued at the Department of Statistics. The reputation of a university is shaped by professors, their scientific output, their ideas for development of academic research and for educating students, their ability to put those ideas into practice. The current position of the Wrocław University of Economics in the national and international science is to a large extent due to the efforts of Professor Hellwig and his students. Among the rectors of this university there are three direct pupils of the professor – he was the supervisor of both their doctorate and habilitation dissertations.

Professor Zdzisław Hellwig was one of the greatest economists in Poland. He was a brilliant teacher, much appreciated by his students, and a mentor to his co-workers; an authority in fields of science and morality. During his career he supervised the work of thirty-four doctors and more than ten habilitation dissertations. For more than twenty years he was a member of the Central Qualification Commission for Science Personnel. His thorough reviews and assessments of the promotion applications were highly regarded by the society of Polish economists.

Professor Hellwig was characterized by unique kindness and cordiality towards his students and co-workers. He always found time to offer help or advice in dealing with difficult scientific issues. He was well aware of how important and necessary the knowledge of foreign languages was for research purposes. That is why he requested younger staff members to expand their knowledge in this field by obligatory participation in language classes delivered by the teachers from the Department of Foreign Languages. He placed his interest in numerous areas of science, especially in history, geography, and – in the last years of his life – astrophysics. He was a great erudite and an excellent storyteller always surrounded by people who gladly made use of his broad knowledge and experience.

He was a man of exquisite personality – one that inspired and motivated young workers to seek and accept challenges in scientific research. He also cared deeply about the integration of the academic society on both a private and professional level, so that his co-workers would constitute one united, supportive family.

Written by  
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