Editorial

Legacy of professor Aivazian

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Professor Sergey Aivazian (see Fig. 1) was a unique person both academically and humanly. He bred generations of mathematicians, statisticians, econometricians.
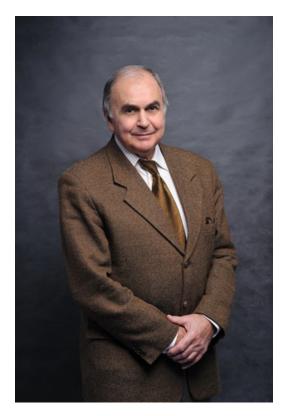

Fig. 1. Professor Sergey Artemievich Aivazian.

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His vast academic contribution was both direct and indirect. Directly he advanced quality of life theory by intensively working with professors Makarov and Afanasiev at the Central Economics and Mathematics Institute (CEMI) located in Moscow. They produced important policy implications for Russia extending professor Amartya Sen's ideas who got the Nobel Prize in economics (Sen, 1998).

Professor Aivazian inspired and helped with advice to his CEMI colleagues, including professors Kolenikov, Kudrov. In addition to research of Russian households (Aivazian & Kolenikov, 2000), professor Kolenikov was the first to familiarize professor Aivazian with the Stata econometrics software (Kolenikov, 2001).

Professor Aivazian in person supervised many master students and PhD students starting from Demidenko in 1970s to Isakin in 1999, Kudrov in 2009. Many people attended his courses on multivariate statistical analysis, quality of life modeling, Bayesian estimation tools like professor Furmanov.

Henry Penikas worked with professor Aivazian since 2006, prepared master thesis under joint supervision of professors Aivazian and Gardes in 2008, defended PhD thesis under the supervision of professor Aivazian in 2011. Translated the (Baum, 2006) textbook on Stata and edited it with professor Aivazian in 2016.

Many people communicated with professor Aivazian and discussed their research ideas at the popular Tsakhkadzor conference. Those are Lipovetsky, Brodsky, Shemyakin. Professor Aivazian established it in 1970 to regularly take place every four years not far from the Armenian capital Yerevan. In 2020 the conference could have been a jubilee 10th anniversary one (Makarov, 2020). If there were no pandemics-induced isolation, the conference was targeted to start on the birthday of professor Aivazian, on June 24.

Professor Aivazian promoted international cooperation, particularly with France, Switzerland, the UK and the US. Specifically, he arranged a joint educational program at the Moscow School of Economics (MSE) with professors Carlevaro and Gilli. In France he collaborated with professors Diday and Gardes. Professor Aivazian made available to Russian academic community the book of (Diday, 1979) by making its translation in Russian. Together with Gardes they developed the consumer behavior theory of professor Agnus Deaton who obtained Nobel Prize in economics (Deaton, 2015).

The most outstanding case in international collaboration, in the personal view of your guest editor, represents professor Fantazzini. He obtained his PhD in Italy and then moved to Russia. Together with professor Aivazian they published a textbook on financial econometrics. Since then professor Fantazzini successfully defended his thesis for the degree of Doctor of Sciences in 2020. This is the upper (second) academic degree in Russia that follows the PhD one.

Indirect contribution to the generations of Russian researchers was attained by the publication of several textbooks of professor Aivazian. Earlier more experienced generation of academicians well remember a black three-volume textbooks of his co-authored with professors Yenuykov and Meshalkin published in 1983–1989. Younger generation to which your guest editor belongs to was educated on the green two-volume textbook prepared by professors Aivazian and Mkhitaryan published in 1998–2001. In Russia when we pronounce 'cluster-analysis' we always think of professor Aivazian.

This special issue offers a snapshot into the legacy of professor Aivazian that is currently embedded with his direct and indirect followers, namely, with those whom he taught, whom he helped enter the professional academic world, with whom he collaborated at work or communicated at the conferences, and many those who studied by his textbooks.

The issue starts with a set of remembrances.

Profs. Fabrizio Carlevaro and Manfred Gilli start with a "Tribute to Sergey Aivazian". They write about joint projects undertaken with professor Aivazian, and particularly on the common educational program with the Moscow School of Economics within the M.V. Lomonosov Moscow State University.

Prof. Eugene Demidenko then shares his personal remembrances how he started his academic career due to indirect supervision by professor Aivazian and how he continued communication with him for many ongoing years.

Prof. Maksim Isakin tells us how he started his research under professor Aivazian's guidance when he moved from his home town of Perm to Moscow.

Prof. Stan Lipovetsky speaks of his acquaintance with prof. Aivazian; how they met at various conferences including at CEMI and in Armenia.

Profs. Vladimir Mkhitaryan describes his collaboration with professor Aivazian. He talks about professor Aivazian's numerous contributions ranging from education to research, as well as about the rich endowment that professor Aivazian has left in his books.

Then we offer a set of research works. Professors Mikhail Afanasyev and Alexander Kudrov present "Methodology of socio-economic development assessment given the characteristics of regional differentiation". This is a concise description of professor Aivazian recent contribution to the domain of the quality of life modeling.

Profs. Ekaterina Batalova, Kirill Furmanov and Ekaterina Shelkova present "A binary choice model with partial observability for panel data". The peculiarity of model is that the ultimate binary decision is de facto driven by two factors (two parties mutual decision coincidence) whereas each of the decisions is not observed.

Profs. Ilya Boguslavsky, Slava Z. Brodsky, Gennady R. Ioffe discuss the "Regular Uniform Main-Effect Designs Derivable from Geometric Factorial Designs in 2n Runs". We may deem the approach as an alternative to the econometric tool. We recommend the reader to familiarize herself with it.

Prof. Eugene Demidenko draws attention to the "Approximations of the power functions for Wald, likelihood ratio, and score tests and their applications to linear and logistic regressions". He looks at the global properties that deliver findings unobserved when studying local ones.

Profs. Liwei Huang and Arkady Shemyakin study "Empirical Comparison of Skewed t-copula Models for Insurance and Financial Data". Copulas form part of the financial domain econometric and multivariate statistical analysis applications that professor Aivazian intensively engaged in last 15 years of his life.

Prof. Dean Fantazzini proceeds with "Discussing copulas with Sergey Aivazian: a memoir". He particularly focuses on copula applications to operational risk management.

Prof. Henry Penikas finalizes with the "The Review of the Open Challenges in the IRB Loan Portfolio Credit Risk Modeling". Professor Aivazian helped to breed the approach to discovering those challenges starting from the discussions of the professor Fantazzini works.

We hope this special issue helps the reader to better understand professor Aivazian as a person and find ideas for one's further research projects.

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