TRENDS IN THE USE OF SOFTWARE PRODUCTS
IN THE LEARNING PROCESS.

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Students of the departments of economics in the process of learning and in the subsequent work are faced with the problems related to the processing of big data volumes and to the complex calculations, thus they must possess the practical skills of mathematical modeling in economics. Therefore study process requires special software that allows automation of the process of modeling. In addition, special software can help to increase students' engagement, improve the quality of their independent work, as well as to enhance the training. Today there is a number of programs that support various statistical calculations   .

Currently, the following software solutions are used during the study of econometrics: spreadsheets (Excel); mathematical framework MathCAD; general purpose statistical software, that contains a wide range of statistical methods (Statistica, SPSS); specialized software designed to solve econometric problems (EViews, Stata); projects focused on programming (Project R et al.).

Let's briefly describe each solution.

Excel is widely used due to its simplicity and relatively low cost. It allows you to research correlations and to build forecasts. Furthermore, this software can import data from various sources speeding up data entry. The main disadvantages of this software are: the difficulties in dealing with very large data sets, as well as difficulties during implementation of complex algorithms. This software doesn't support simultaneous access to the same file; it also doesn't have any flexible mechanisms to restrict access to the data, whereas in practice, some data should have a limited access.

MathCAD is mathematically oriented programming language designed for building algorithms that solve mathematical, scientific and technical problems in the most convenient, compact and easy to understand way. The system has a lot of options to perform the most common symbolic calculations and transformations. It has a wide range of instrumental, graphical and analytical tools. It has powerful mathematical capabilities that allow problem solving without having to call external procedures. On of the program features is support and ability to choose between various unit systems: SI, CGS, MKS, English, it also allows you to create your own. The results of calculations, of course, also receive the proper dimension and unit system. Benefit of this feature cannot be overestimated, since it allows to track errors in the calculations.

STATISTICA and SPSS is a spreadsheet with the menu system, designed to work with spatial data and time series, that provides automatic reporting of the

simulation results. SPSS program focuses on applied research in the social sciences, and, as a consequence, the lack of modern methods and models of advanced econometrics distinguish it. A lot of books, that explain how to use the package, are written and published. A basic set of popular statistical methods of analysis is implemented. Developers of software products offer a single-user and multi-user licenses for educational activities. The abundance of options and settings complicates the development packages.

Eviews and Stata are commercial software, developed for economists in 1994 and in 1985 respectively. The program provides the possibility of programming any sequence of commands. Software packages contain complete data sets to demonstrate and study their features. Developers on their own sites offer multiple licenses of their software (from student to professional). Both packages provide numerous opportunities for the analysis of time series and panel data. One of the benefits of these programs is the availability of low-cost student version. The drawbacks are: limited number of books that explain how to work with the package.

Project R: R is a programming language and software environment that is used to perform statistical calculations and construction of graphical objects. R is open source software that is freely distributed under GNU license. GNU license agreement gives you a right to make a free copy, modify, and distribute the code. The main ideas of R CRAN (Comprehensive R Archive Network, http://cran.r-project.org) system are constant expansion, collective testing and prompt distribution of applied data processing tools.

The software contains a large set of statistical functions, and also has built-in help and tips. R language provides the user with almost unlimited possibilities for data visualization. Since R is widely used by professional statisticians, the most recent developments of statistical science are rapidly becoming available to users worldwide R in the form of additional libraries. These libraries (there are already several thousand) can be freely downloaded from the project website, or from the author's websites. Programming language R is the most powerful free software tool with an incredibly wide range of libraries. No commercial system of statistical analysis is developing as fast as today R.

R is widely used by the analysts from the largest IT and finance companies, leading universities and research centers. Thus, it can be sated that the skills of R-programming provide an additional competitive advantage in employment.

Project-oriented programming language R and its only English based syntax are making R difficult to study. However R has many advantages compared with other software. Unlike commercial statistical software license costs, which can be several thousand dollars, R is distributed free of charge.

Can be considered appropriate to use in the classroom some tools software environment R, which is now the de facto standard for statistical computing.