



Department of Statistics and Econometrics

THEMES for the post – associate professor poz.40

Macroeconomic Statistics

1. Matters relating to the establishment and development of official statistics institution in Romania
2. System of National Accounts - function, object, history, classifications, basic concepts
3. The particular processes SNA
4. Components and economic circuit description: Graphic through accounts by equations
5. Institutional aggregation and description of the main sectors: companies, households, the state, the rest of the world
6. The main synthetic accounts: Synthetic goods account (account 0), synthetic production account (account 1) account to create income accounts (2), income distribution account (account 3), the statement of income redistribution (Account 4), the use of income account (account 5), amending assets account (account 6), income property financing change (account 7) The rest of the world account (account 8)
7. Description of the main methods for calculating macroeconomic aggregates results: - production method, the method used, - method income
8. National Wealth basis for the development of a national economy: concepts, definitions, steps of determining national wealth: the national wealth accumulated national wealth in natural, spiritual national wealth
9. Workforce expression of factor of production labor, labor volume, structure, movement, usage efficiency (labor productivity) remuneration
10. The calculation of regional GDP
11. Determine the volume of the underground economy
12. Comparison of macroeconomic indicators, comparing the space, time comparison
13. Measuring inflation indicators and determining the comparable expression
14. Human Development Indicators

Bibliography

- Anghelache C., Isaic-Maniu A., Mitrut C., Voineagu V. – Sistemul conturilor nationale, Ed. Economica, Bucuresti, 2007
- Isaic Maniu ,Al.,Mitruț,C.,Voineagu,V.,Statistica pentru managementul afacerilor, Ed. Economică, București,1999;

Discipline Econometrics

Simple regression model

Defining simple regression model and parameter estimation writing the model by presenting concrete examples; assumptions; parameter estimation by the method of least squares (review)

Testing parameters parameter estimator and estimate; properties of estimators; significance testing parameters estimation intervals for the parameters



Validation of regression model

ANOVA

And determining the correlation test report

Testing the correlation coefficient

Using economic analysis model

Testing normality of errors; predicting variable explained: point and confidence interval;
examples evidence the simple regression model using

The multiple regression

The presentation and parameter estimation writing using an example model;
assumptions; parameter estimation

Statistical tests, selecting the best model of nonlinear regression models properties of
estimators, significance testing and confidence intervals; test the validity of the model choice
of regression model

Regression model assumptions and verification

Homoscedasticității analysis (causes, consequences heteroschedasticității presence of errors,
statistical tests, correction)

Autocorrelation analysis errors (causes, consequences presence of autocorrelation errors,
statistical tests, correction)

Multicollinearity analysis (causes, consequences of multicollinearity, statistical tests,
correction)

Simultaneous equations models (model definition from one example; conditions identification
parameter estimation)

The econometric analysis of time series

Characteristics of time series (review)

- Definition of the series;
- Types of series;
- Components of the series;
- Estimating trend

Smoothing techniques of time series

Three. Seasonal component

- Identification
- Estimate
- Forecasting phenomena affected by seasonality

Stationary time series

- Definition;
- Models: MA, AR, ARMA, ARIMA

Procedure Box - Jenkins

- Stages with appropriate statistical tests;
- Application

Bibliography

1. Voineagu, V., Țițan, E., Țerban, R., Ghiță, S., Todose, D., Boboc, C., Pele, D., Teorie și
practică econometrică, Ed. METEOR PRESS, București, 2007
2. Andrei, T., Statistică și econometrie, Ed. Economică, București, 2004
3. Andrei, T., Bourbonais, R, Econometrie, Ed. Economică, București, 2008



Discipline SAMPLING AND STATISTICAL SURVEYS

1. Basic concepts in the theory of survey
2. Organization and implementation of statistical surveys -preliminary steps -storage of purpose and objectives -definition of the population - choice of data collection method
3. Elaborating the questionnaire -principles -type questions -the success of the questions
4. Pilot survey
5. Verification of the representativeness of the samples and methods for their recovery
6. Types of errors encountered in selective research and sampling procedures used
7. Simple random survey with equal and unequal probabilities
8. Started survey
9. The series survey
10. multistage and multiphase survey
11. Samples based on fixed samples
12. Non-probability reports and online surveys

Bibliography

1. Isaic-Maniu Al.-Tehnica sondajelor si anchetelor. Ed. Independenta economica, Pitesti, 2001
2. Niculescu-Aron I., G., - Sondajul statistic in cercetarea fortei de munca, Ed. ASE. Bucuresti, 2005
3. Dumitrecu M. – Sondaje statistice si aplicatii, Ed. Tehnica, Bucuresti, 2000

Discipline STATISTICS

1. Indicatorii statistics absolute and relative average statistical indicators - definition, typology, mean, relative sizes.
2. Serii of distribution (distribution) indicators consist of a series of distribution according to a numeric variable, variation in a community indicators divided into groups indicators of a series of attributes, average and dispersion of alternatives.
3. Analysis of variance ANOVA
4. Statistical survey definition, stages, basic concepts sampling procedures varificarea representativeness main types of survey indicators general collectivity parameter estimation determine the volume of sample required stratified sampling
5. Normal distribution. Central limit theorem. calculation and interpretation of z values. point estimate and confidence interval of the mean for the variable non-alternative. determine the confidence interval for the mean of the variable alternative, if repeated and repeatable random simple selection and specific indicators and unrepeatably repeated simple random sampling for alternatives.
6. Testarea statistical hypotheses. concepts, steps, calculation and interpretation. testing means and variances for high and low volume samples.
7. Analiza links between statistical variables regression, correlation method nonparametric method of measuring the intensity of the relationship
8. Serii chronological. definition, typology, graphics specific indicators time series. determining the trend component by mechanical and analytical
9. Regional series description of variation in space extrapolation in territorial hierarchy of administrative units



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10. Statistical index, individual indices, aggregated synthetic indexes, weighting systems, consumer price index

Bibliography:

- Voineagu V.; Titan E.; Ghita S.; Boboc C.; Todose D., Statistica. Baze teoretice si aplicatii ,Economica, Bucuresti, 2007
- Isaic Maniu ,Al., Mitruț, C., Voineagu, V., Statistica, Ed. Universitară, București, 2004;
- Isaic Maniu ,Al., Mitruț, C., Voineagu, V., Statistica pentru managementul afacerilor, Ed. Economică, București, 1999;