

Individual task of “Microeconometric” course - 2018

1. Use the database (Database.xlsx), which represents the activity of different shops of one firm. Take a shop according to your variant. Data contains such variables:
 - Sales – sales in a local currency,
 - SalesItem – sales in items,
 - Cheques - number of cheques,
 - Warehouse – items, reserved in warehouse,
 - Staff – number of workers in the shop,
 - Consultants – number of consultants in the shop,
 - Square – square of the shop,
 - Date – date of sales,
 - Hour – hour, when items were sold.
2. Define new variables for the database, f.e. average price, day of week, month, etc. Explain why these variables should be investigated while building regressions.
3. Calculate the best linear regression, which forecasts either Sales or SalesItem, Test the regression with standard econometric tests.
4. Calculate the best quantile regression for the data provide, include analysis of the regression.
5. Define a new variable, which represents a quality of sales, f.e. “4- high sales”, “3 – good sales”, “2- average sales”, “1- bad sales”. Calculate the best count model for this variable. Analyse it.
6. Define a variable, which is equal to 0, if sales were decreased, 1 – otherwise, Build a logit/probit model for this case. Analyse it.
7. Define 3 different criteria for truncation a sample. Build necessary regression and analyse them.
8. Take into consideration 3 different shops according to your variant. Calculate a panel regression for them with necessary tests and analysis.
9. Calculate forecasts for September 2018 by all models.

10. Calculate forecasts for August 2018, taking into account sample till July, 31, 2018 by all models. Calculate RMSPE for all cases.

11. Provide analysis with real proposals for shop owners.

Combine all fulfilled tasks into one separate file (MS Word or Acrobat file is preferable), which consists estimation outputs of analysed (best) models, essay (task 11), conclusions of the work and references. The first title page must contain your name. Send your file via email a.stavytsky@gmail.com before taking the exam.

Variants

Variant	Main shop	Shops for task 8
1.	1	1, 5, 7
2.	2	2, 6, 8
3.	3	3, 4, 5
4.	4	4, 9, 10
5.	6	6, 7, 10
6.	7	7, 8, 9
7.	8	8, 10, 2
8.	9	9, 1, 3
9.	10	10, 5, 3
10.	1	1, 4, 6
11.	2	2, 7, 9
12.	3	3, 5, 8
13.	4	4, 5, 10
14.	6	6, 2, 10
15.	7	7, 5, 1
16.	8	8, 5, 2
17.	9	9, 1, 4
18.	10	10, 2, 5