

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Ekonometrija panelnih podatkov
Course title:	Panel data econometrics

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
Doktorski program ekonomskih in poslovnih ved, tretjestopenjski program	Usmeritev Ekonomija in usmeritev Poslovne vede	1.	2.
Doctoral Program in Economics and Business	Economics and Business track	1.	2.

Vrsta predmeta / Course type

Metodološke osnove / Methodological foundations

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje Laboratory work	Druge oblike dela	Samost. delo Individ. work	ECTS
25				35	60	4

Nosilec predmeta / Lecturer:

Prof.dr. Sašo Polanec

**Jeziki /
Languages:**

**Predavanja /
Lectures:** Angleški/English; Slovenski/Slovenian
Vaje / Tutorial: Angleški/English; Slovenski/Slovenian

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

Opravljena Ekonometrija 2 na magistrskem programu Ekonomije na Ekonomski fakulteta v Ljubljani.
Orientacija za predhodno znanje. Učbenika:
Amemiya, T. (1994), Introduction to Statistics and Econometrics
Simon, C. P. in L. Blume (1994), Mathematics for Economists

Prerequisites:

Econometrics 2, MSc Economics, Faculty of Economics, Ljubljana, or equivalent.
Prerequisite textbooks:
Amemiya, T. (1994), Introduction to Statistics and Econometrics
Simon, C. P. and L. Blume (1994), Mathematics for Economists

Vsebina:

1. Metode ocenjevanja modelov za linearne panelne podatke
1.a. Problem izpuščenih spremenljivk
1.b. Predpostavke modela izpuščenih spremenljivk in pojasnjevalnih spremenljivk
1.c. Model fiksnih učinkov

Content (Syllabus outline):

1. Static linear panel data models
1.a. Omitted variable problem
1.b. Assumptions about the unobserved effects and explanatory variables
1.c. Fixed effects model
1.d. First-difference and least squares dummy

1.d. Model prvih diferenc in cenilka z
indikatorskimi spremenljivkami

1.e. Model slučajnih učinkov

1.f. Primerjava cenilk

1.g. Razširitve z metodami instrumentalnih
spremenljivk

1.h. Visokodimenzionalni fiksni učinki

2. Dinamični linearni panelni modeli

2.a. Nekonsistentnost modela s fiksnimi učinki

2.b. Nekonsistentnost modela v prvih
diferencah

2.c. Rešitve problema nekonsistentnosti
dinamičnih linearnih panelov s fiksnimi učinki

2.d. Andersona-Hsiao (1982) pristop k
ocenjevanju

2.e. Posplošena metoda momentov

2.f. Arellano-Bond (1991) pristop k
ocenjevanju

2.g. Blundel-Bond (1998) k ocenjevanju

3. Modeli z binarnimi izbirami

3.a. Linearni verjetnostni model

3.b. Indeksni model za binarne spremenljivke:
probit in logit

3.c. Metoda največjega verjetja

3.d. Testiranje v modelih z binarnimi
spremenljivkami

3.e. Ocenjevanje v panelnih modelih brez v
času nespremenljivih učinkov

3.f. Panelne metode za nelinearne modele

3.g. Dinamični modeli z neopaženimi
spremenljivkami in druge razširitve

4. Modeliranje odvisnih spremenljivk z več
diskretnimi vrednostmi

4.a. Logit model z več izbirami

4.b. Mešan logit model z več izbirami

4.c. Panelni logit model z več izbirami

variables estimator

1.e. Random effects estimator

1.f. Comparison of estimators

1.g. Extensions with IV

1.h. Two-way high-dimensional fixed effects

2. Dynamic linear panel data models

2.a. Nickel's bias of fixed effects estimator

2.b. Inconsistency of first-differenced model

2.c. Solutions to the problem

2.d. Anderson-Hsiao (1982) estimator

2.e. Generalized method of moment

2.f. Arellano-Bond (1991) estimator

2.g. Blundel-Bond (1998) estimator

3. Binary choice models

3.a. Linear probability model

3.b. Index models for binary response: Probit
and logit

3.c. Maximum likelihood estimation

3.d. Testing in binary response index models

3.e. Pooled probit and logit model in panel

3.f. Unobserved effects in panel data

3.g. Dynamic unobserved effects models and
other extensions

4. Multinomial and ordered response models

4.a. Multinomial logit,

4.b. Mixed logit

4.c. Multinomial panel data methods

4.d. Ordered logit and probit models

5. Selection models and estimation of average
treatment effects

5.a. Tobit model

5.b. Heckman selection model

5.c. Dynamic Heckman

5.d. Propensity score methods

5.e. Matching methods and treatment effects

5.f. Regression discontinuity design

- 4.d. Razvrstilni logit in probit modeli
- 5. Seleksijski modeli in ocenjevanje povprečnih učinkov intervencij/ukrepov
 - 5.a. Tobit model
 - 5.b. Heckmanov (1979) seleksijski model
 - 5.c. Dinamičen Heckmanov model
 - 5.d. Metode ujemanja s oceno verjetnosti predselekcije
 - 5.e. Metode ujemanja in učinkov intervencij
 - 5.f. Regresijske metode z nezveznimi skoki

Temeljni literatura in viri / Readings:

Greene, W. (2011), *Econometric Analysis*, 7th Edition.
 Cameron, A.C. in P.K. Trivedi (2009), *Microeconometrics using Stata*, Stata Corp Press.
 Wooldridge, J. (2010), *Econometric Analysis of Cross-Section and Panel Data*, MIT Press.
 Davidson and MacKinnon (1993), *Estimation and Inference in Econometrics*.

Cilji in kompetence:

Cilj predmeta je nuditi osnovno znanje statistike in ekonometrije na naprednem nivoju za samostojno delo na področju ekonomije

Objectives and competences:

The objective of the course is to provide necessary training in statistic and econometrics at advanced level for independent research in economics.

Predvideni študijski rezultati:

Znanje in razumevanje:

- Poznavanje osnov verjetnosti, matematične statistike in ekonometrije na napredni ravni. Predmet bo nudil trdno osnovo za absorbcijo specializiranih ekonometričnih orodij, ki so potrebne za znanstveno raziskovalno delo tako na področju mikroekonomije kot makroekonomije.
- Aplikativno delo na področju ekonomije, financ in poslovnih ved. Osnova za nadaljnjo raziskovalno delo na področju ekonomije.
- Makroekonomske modeliranje, dinamična optimizacija, numerične metode v ekonomiji

Intended learning outcomes:

Knowledge and understanding:

- Knowledge of basic probability theory, mathematical statistics and econometrics at advanced level. Solid basis for absorption of specialized econometric tools necessary to conduct scientific level empirical research both in microeconomics and macroeconomics.
- Applied work in economics, finance and business studies. Foundation for econometrics.
- Macroeconomic modelling, dynamic optimization, numerical methods in economics

Metode poučevanja in učenja:

Learning and teaching methods:

Predavanja, samostojno delo na podlago rednih domačih nalog, seminarska naloga	Lectures, independent work based on regular assignments, empirical applications
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		Delež (v %) / Weight (in %)	Assessment:
Načini ocenjevanja:			
Način (pisni izpit, ustno izpraševanje, naloge, projekt) 50 % pisni izpit, 50% seminarska naloga A – D (D predstavlja neuspešno opravljen izpit)			Type (examination, oral, coursework, project): 50 % written exam, 50% term paper A – D (D represents a fail)

Reference nosilca / Lecturer's references:

Prof.dr.Sašo Polanec

Melitz, Marc, Polanec, Sašo. Dynamic Olley-Pakes Decomposition with Entry and Exit, *RAND Journal of Economics*, 2015(2).

Damijan, Jože, Kostevc, Črt, Polanec, Sašo. Access to finance, exporting and a non-monotonic firm expansion. *Empirica*, 2014.

Damijan, Jože, Konings, Jozef, Polanec, Sašo. Import churning and export performance of multi-product firms. *World economy*, 2014.

Nishida, Mitsukuni, Petrin, Amil, Polanec, Sašo. Exploring reallocations apparent weak contribution to growth. *Journal of productivity analysis*, 2014.

Polanec, Sašo, Ahčan, Aleš, Verbič, Miroslav. Retirement decisions in transition : microeconomic evidence from Slovenia. *Post-communist economies*, 2013, vol. 25, no. 1, pp. 99-118.

Bartolj, Tjaša, Ahčan, Aleš, Feldin, Aljoša, Polanec, Sašo. Evolution of private returns to tertiary education during transition : evidence from Slovenia. *Post-communist economies*, 2013, vol. 25, no. 3, pp. 407-424.

Damijan, Jože, Konings, Jozef, Polanec, Sašo. Pass-on trade : why do firms simultaneously engage in two way trade in the same varieties?. *Review of World Economics*, Mar. 2013, vol. 149, iss. 1, pp. 85-11.

Bartolj, Tjaša, Polanec, Sašo. College major choice and ability : why is general ability not enough? *Economics of Education Review*, Dec. 2012, let. 31, iss. 6, pp. 998-1016.

Burger, Anže, Kostevc, Črt, Polanec, Sašo. Productivity measurement for international firms. *Economic and business review*, 2011, vol. 13, no. 1/2, str. 51-75.

Ahčan, Aleš, Masten, Igor, Polanec, Sašo, Perman, Mihael. Quantile approximations in auto-regressive portfolio models. *Journal of Computational and Applied Mathematics*, Feb 2011, vol. 235, iss. 8, pp. 1976-1983.

Gregorič, Aleksandra, Polanec, Sašo, Slapničar, Sergeja. Pay me right : reference values and executive compensation. *European financial management*, Nov. 2010, vol. 16, no. 5, pp. 778-804.

Damijan, Jože, Kostevc, Črt, Polanec, Sašo. From innovation to exporting or vice versa?. *World economy*,

Mar. 2010, vol. 33, no. 3, pp. 374-398.

Damijan, Jože, Kostevc, Črt, Polanec, Sašo, et al. Understanding cross-country differences in exporter premia: comparable evidence for 14 countries. *Review of World Economics*, 2008, vol. 144, no. 4, pp. 596-635.

Damijan, Jože, Polanec, Sašo, Prašnikar, Janez. Outward FDI and productivity : micro-evidence from Slovenia. *World economy*, 2007, vol. 30, no. 1, str. 135-155.

Damijan, Jože, Polanec, Sašo. Prestrukturiranje in rast produktivnosti slovenskih podjetij. *Bančni vestnik*, ISSN 0005-4631, 2004, vol. 53, no. 5, pp. 51-59.

Polanec, Sašo. Convergence at last?. *Eastern European economics*, 2004, vol. 42, no. 4, pp. 55-80.

Fries, Steven, Lysenko, Tatiana, Polanec, Sašo. Environnement des affaires et performance de l'entreprise dans les économies en transition : enseignements tirés d'une enquête représentative. *Revue d'économie du développement*, 2004, vol. 18, no. 3/4, pp. 155-195.

Polanec, Sašo. Is neoclassical growth theory relevant to the transition experience?. *Economic and business review*, June 2001, vol. 3, no.2, pp. 89-112.