UNIVERSITÄT OSNABRÜCK

FACHBEREICH WIRTSCHAFTSWISSENSCHAFTEN

Cover page

(Klausurdeckblatt)

Exam in subject **(Prüfung im Fach)**	Empirical Economic Policy
Examiner **(Prüfer)**	Prof. Frank Westermann, Ph.D.
Date **(Datum)**	06.03.2025

Participant

(Klausurteilnehmer/in)

Course of studies **(Studiengang)**	
Surname, given name **(Name, Vorname)**	
Matriculation number **(Matrikel-Nr.)**	

Gained points

(Erreichte Punkte)

*** All tasks are to be processed ***
(Es sind alle Aufgaben zu bearbeiten)

Points **(Punkte)**			
A1	**A2**	**A3**	**A4**

Grading

(Benotung)

Total score **(Gesamtpunktzahl)**	
Grade **(Modulnote)**	
Examiner signature **(Prüferunterschrift)**	

Chair of International Economic Policy
Prof. Frank Westermann, Ph.D.

Exam "Empirical Economic Policy"

Winter term 2024/25

Total points: 60 points

For all questions:
Please label all graphs and provide definitions for all variables (graphs and formulas)!

Question 1. Forecasting GDP (12 points)

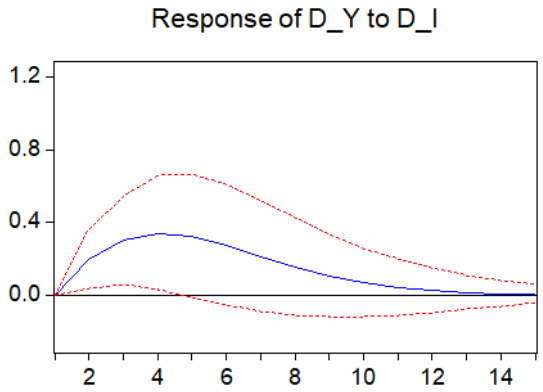
a) Name the four steps in the Box-Jenkins procedure. (4 points)

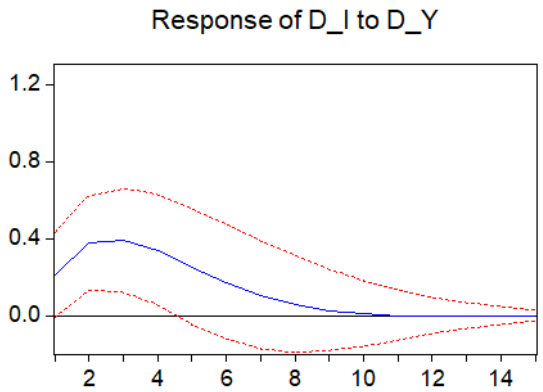
b) Write down the equation of an MA(q) and AR(p) process, and discuss the relationship between these two time series processes. (6 points)

C) Which process does empirically better describe GDP growth rates? (2 points)

Question 2. Monetary policy (16 points)

a) The following E-views output shows the impulse response functions derived from a VAR with the variables (D_Y) for GDP growth and (D_I) for the real interest rate in quarterly data. Interpret these results economically and with regard to the statistical significance and timing of the effects. (6 points)





b) Write down the formula for an impulse response function and verbally explain the meaning. (4 points)

c) Explain the problem of contemporaneous correlations in an impulse response analysis, and how it has been solved in the previous graphs under (a). (6 points)

Question 3. Debt sustainability (14 points)

a) Starting with the variables D=Debt level, Y=GDP, and α= Deficit, derive the Domar formula for the steady state debt level of a country. Define any further variables you introduce. (6 points)

b) Graphically illustrate the result. (4 points)

c) Illustrate the relevance of this formula using the EU Maastricht Criteria as an example. (4 points)

Question 4. Long-term economic growth (18 points)

a) Formally, write down two different definitions of convergence. (4 points)

b) The following E-views output shows the results of a unit root test on the difference in GDP per capita between Germany and France. For which definition of convergence is this the appropriate test? Interpret the results of the output. (4 points)

Null Hypothesis: DY has a unit root
Exogenous: Constant
Lag Length: 12 (Automatic - based on SIC, maxlag=12)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.015519	0.0369
Test critical values:	1% level	-3.498439	
	5% level	-2.891234	
	10% level	-2.582678	

*MacKinnon (1996) one-sided p-values.

c) Write down the basic Barro-growth regression. For which definition of convergence is this the appropriate test? Name an additional control variable that is typically added to capture the long-term effects of economic policy and discuss which theoretical model motivates the use of this variable. (4 points)

d) Name three possible criticisms of a Barro growth regressions. (6 points)

The Chair of International Economic Policy wishes you best success!

Please sign the exam on the last page before handing it in.