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PRICING-TO-MARKET AT FIRM LEVEL: EVIDENCE FROM THE RUSSIAN WHEAT EXPORT MARKET

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Motivation

- Major shifts in global wheat markets occurred in recent years
- Supply side: Russia, Ukraine and Kazakhstan emerged as important exporters
- Demand side: Population and income growth in developing countries boost wheat trade
- Food security concerns due to high and volatile wheat prices
- Oligopolistic structure in international wheat trade
- Prior research focused on traditional wheat exporters based on aggregated national data

Our research focus

- Are wheat exporters able to exert market power and thereby influence price level and volatility?
- Are Russian wheat exporting firms able to price discriminate across destinations?

Methodology

Fixed effects panel estimation based on clustered variance estimators (cluster variable: country):

$$\ln p_{ijt} = \lambda_i + \theta_t + \beta_i \ln e_{it} + u_{ijt} \quad \forall i = 1, \dots, N; t = 1, \dots, T \text{ and } j = 1, \dots, J$$

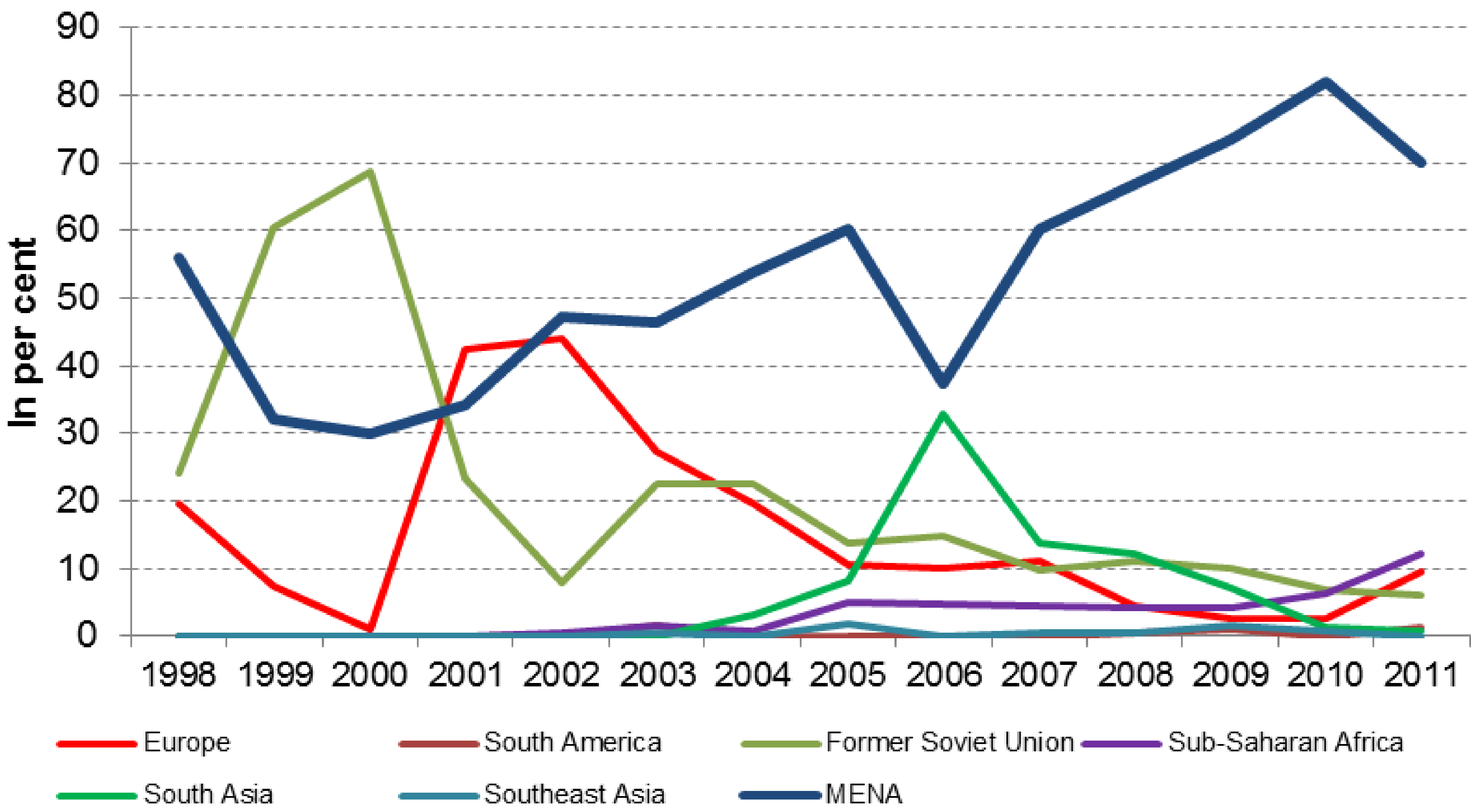
where p_{ijt} is the wheat export price (fob price) in RUB, by plant j to destination i in period t . e_{it} refers to the exchange rate (domestic currency per RUB). λ_i and θ_t measure the country and time effect. β_i is the PTM-elasticity and u_{ijt} denotes the error term.

Market scenarios		λ	β
I	Perfect competition or Imperfect competition with common markup	$\lambda = 0$	$\beta = 0$
II	Constant elasticity of demand → constant markup which may differ across destinations	$\lambda \neq 0$	$\beta = 0$
III	Non-constant elasticity of demand → varying markup which may differ across destinations	$\lambda = 0$ or $\lambda \neq 0$	$\beta \neq 0$
IV	Amplification of the exchange rate effect → PTM	$\lambda = 0$ or $\lambda \neq 0$	$\beta > 0$
V	Local currency price stability (LCPS) → PTM	$\lambda = 0$ or $\lambda \neq 0$	$\beta < 0$

Data

- Firm-level data of Russian wheat exporting firms
- Sample period: 1998-2011
- 7511 observations
- 59 destination countries

Composition of Russian wheat exports by region



Selected results of fixed effects panel estimations

Country name (ISO code)	λ	β
Armenia (ARM)	-1.460***	0.345*
Egypt (EGY)	-0.820***	-0.091
Jordan (JOR)	0.667*	0.357***
Kyrgyzstan (KGZ)	-1.501***	1.994***
Lithuania (LTU)	0.330	0.518***
Moldova (MDA)	1.029	1.628*
India (IND)	-2.075***	2.831***
Saudi Arabia (SAU)	3.156***	1.941***
Uganda (UGA)	-2.328***	0.394***

Notes: Those countries with a PTM elasticity significantly different from zero are displayed in bold (see country codes below). * indicates the ten per cent, ** the five per cent and *** the one per cent significance level.

AFG, ALB, ARE, DZA, **ARM**, AUT, AZE, **BGD**, **BGR**, **CHE**, CYP, DNK, EGY, **EST**, **ETH**, **FIN**, GEO, **DEU**, GRC, **IND**, **IDN**, **IRN**, **IRQ**, ISR, ITA, **JOR**, KAZ, KEN, **KGZ**, **KOR**, **LBY**, **LVA**, **LTU**, **MYS**, **MDA**, MNG, MAR, **MOZ**, **NLD**, **NGA**, **NOR**, **OMN**, **PAK**, PER, POL, **ROU**, **RWA**, **SAU**, **ESP**, **SDN**, **SYR**, **TJK**, **TZA**, **TUN**, **TUR**, **UGA**, **UKR**, **YEM**

Conclusion

- For 22 countries hypothesis of competitive pricing not rejected
- Evidence for PTM in 37 out of 59 export destinations
- Country effects reveal unequal wheat export prices among destinations