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Trade Diversion and High Food Prices: The Impact of the Russian Pig Meat Import Ban

Ivan Djuric, Linde Götz, and Thomas Glauben

Selected Paper prepared for presentation at the International Agricultural Trade Research Consortium's (IATRC's) 2015 Annual Meeting: Trade and Societal Well-Being, December 13-15, 2015, Clearwater Beach, FL.

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Trade diversion and high food prices

The impact of the Russian pig meat import ban



Ivan Djuric, Linde Götz, and Thomas Glauben

Leibniz Institute of Agricultural Development in Transition Economies
Department Agricultural Markets

Research background

RUSSIAN
FOOD IMPORT

50%

OF DOMESTIC
CONSUMPTION

2.7%

OF THE GLOBAL TRADE
42 BILLION \$

Research background

RUSSIAN FOOD IMPORT

50%

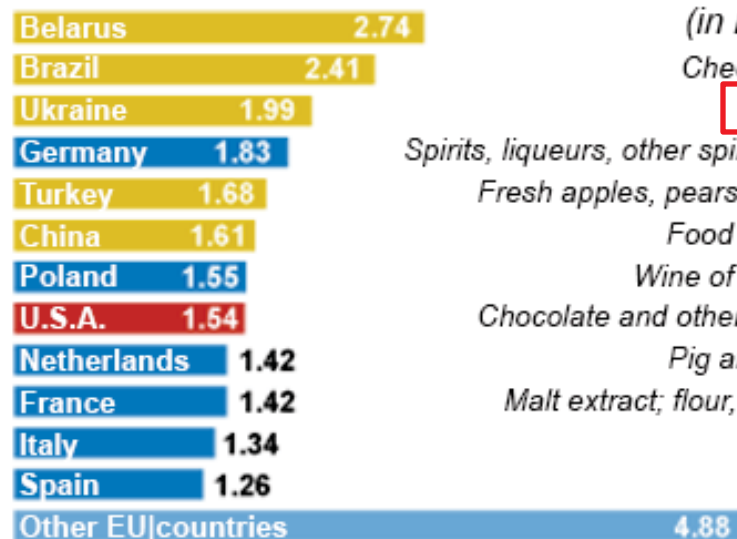
OF DOMESTIC
CONSUMPTION

2.7%

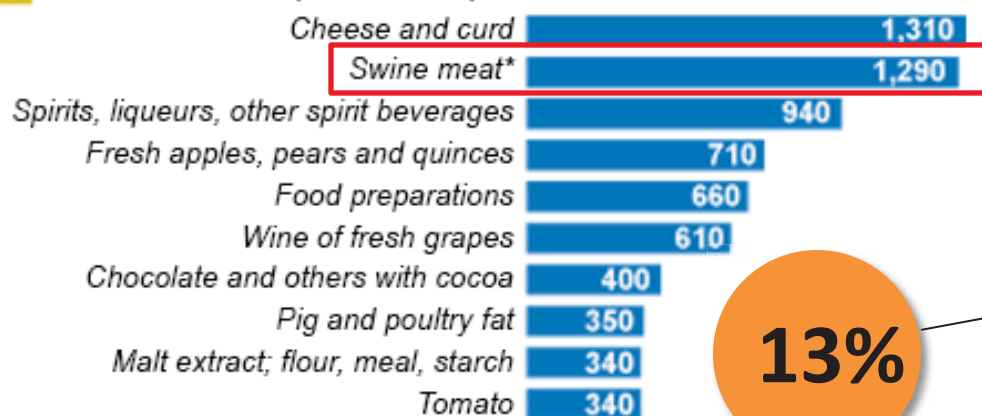
OF THE GLOBAL TRADE
42 BILLION \$

Food exports to Russia

Top suppliers (in billion \$)



Top ten food imports from the EU (in million \$)



13%

OF THE EU EXPORT

*Fresh, chilled or frozen

Source: Data from the International Trade Centre, analysed by Reuters.

VOA

Research background

**RUSSIAN
MEAT IMPORT**

1/4

**OF DOMESTIC
CONSUMPTION**

35%

BEEF



<http://greece.greekreporter.com>

25%

PORK



<http://oldcastlelabs.ie.s205606.gridserver.com>

15%

POULTRY



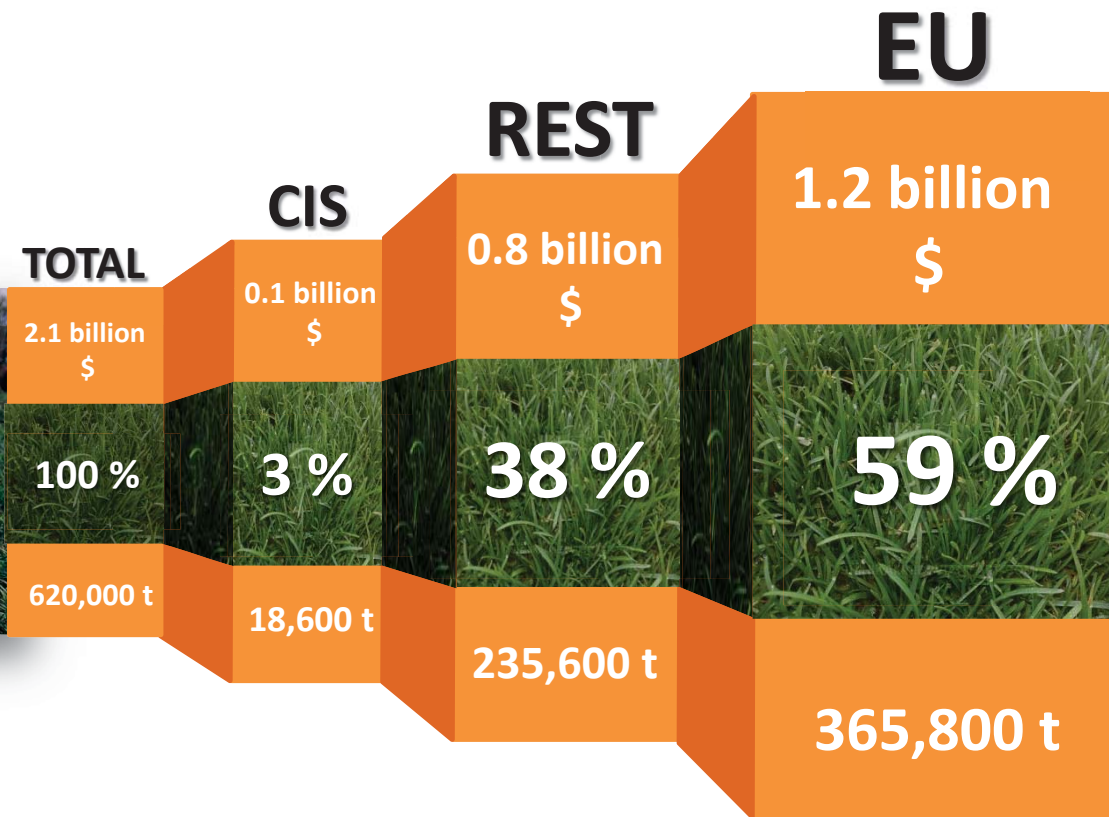
<http://www.scotmas.com>

Research background

RUSSIAN PORK IMPORT

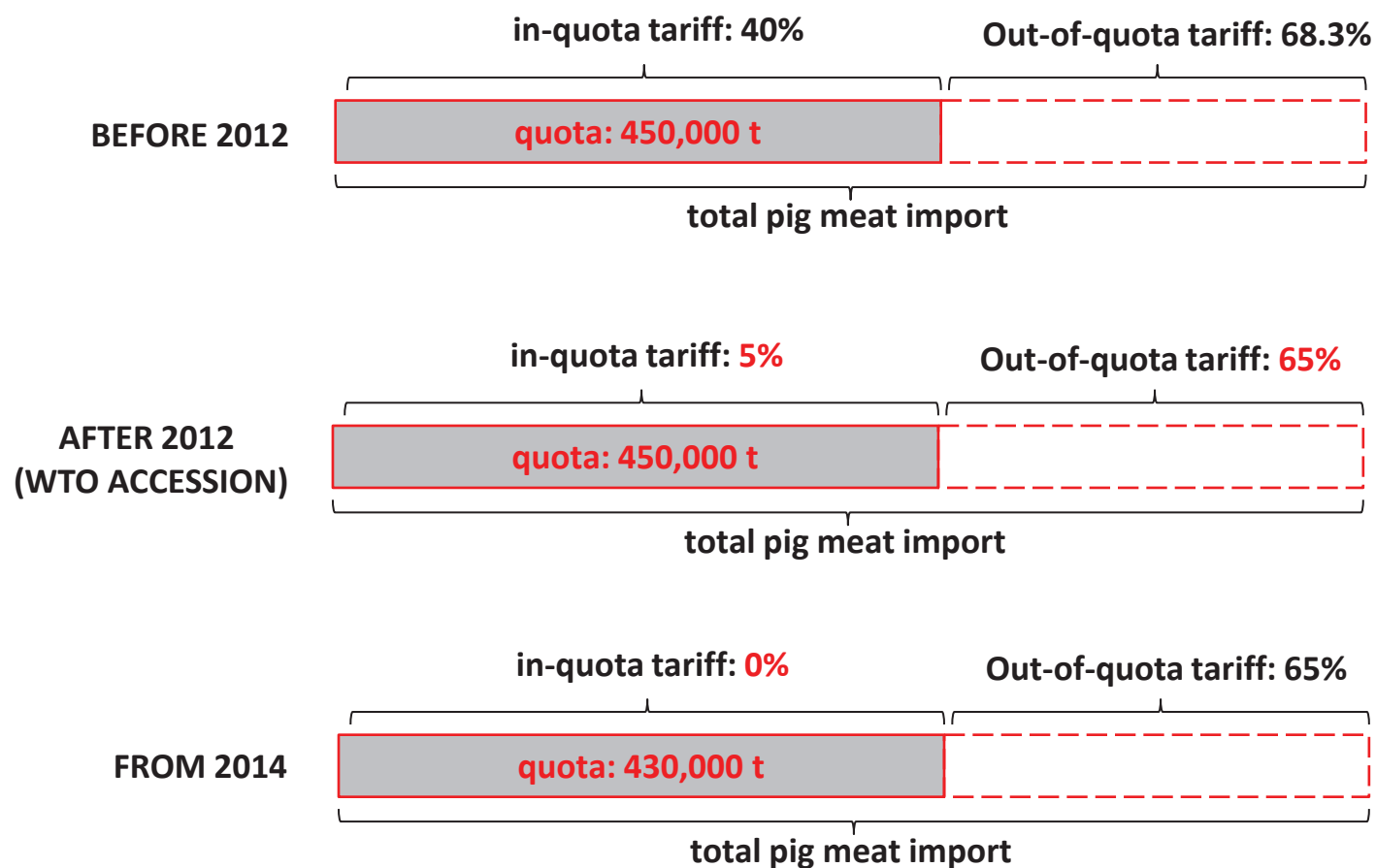


<http://oldcastielabs.ie.s205606.gridserver.com>

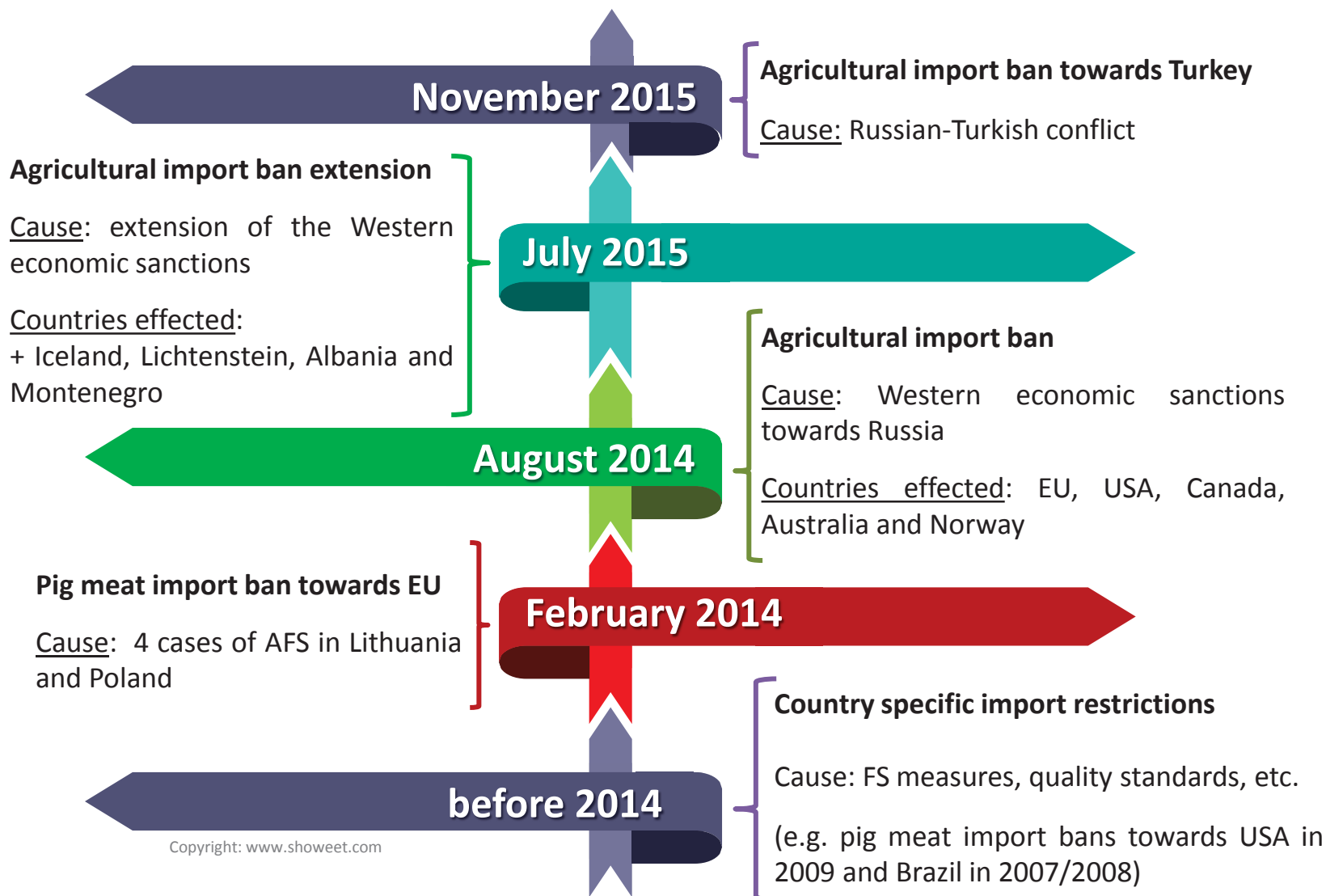


Research background

PIG MEAT IMPORT REGULATION: **TARIFF-RATE QUOTA (TRQ)**

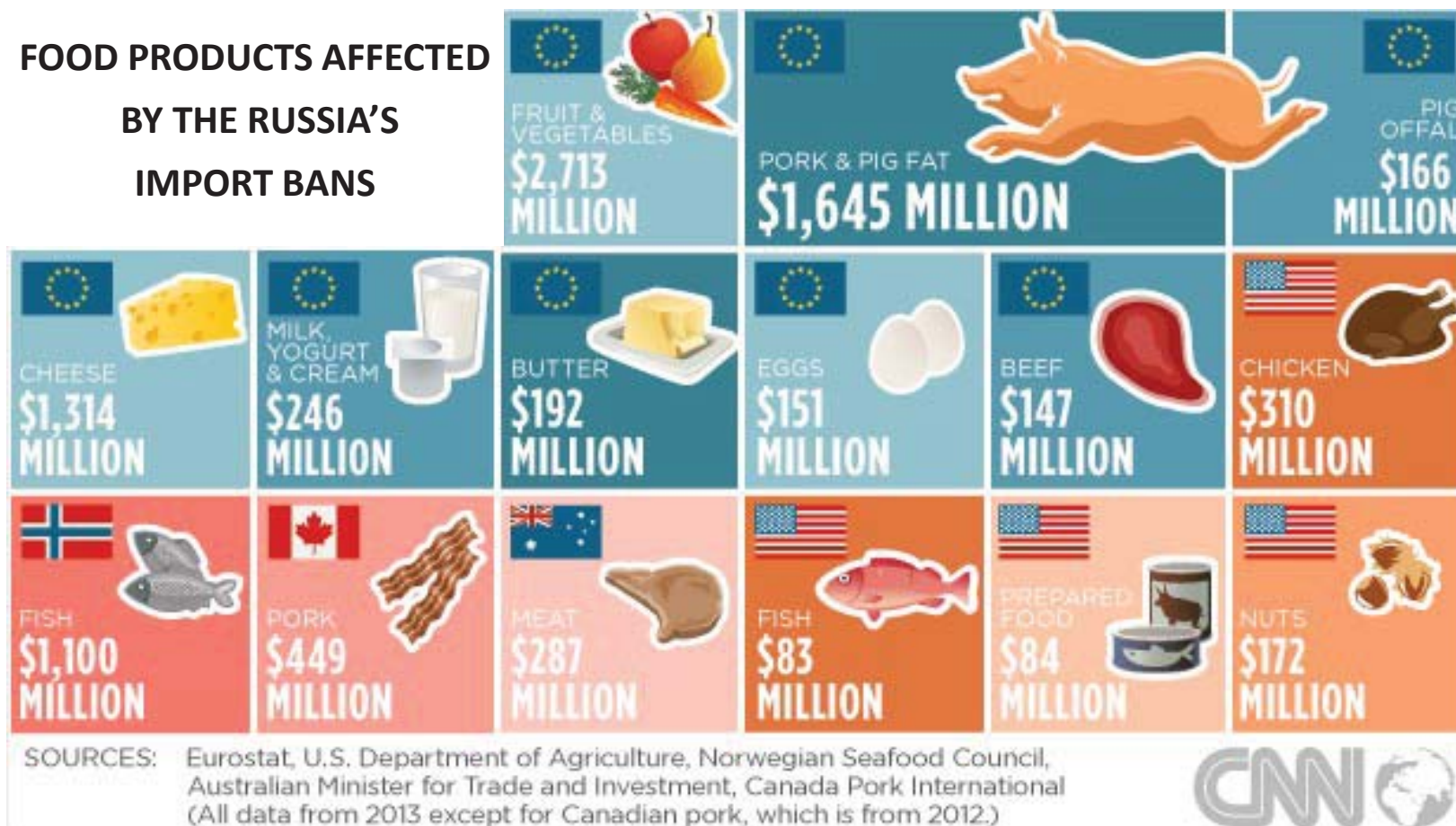


Research background



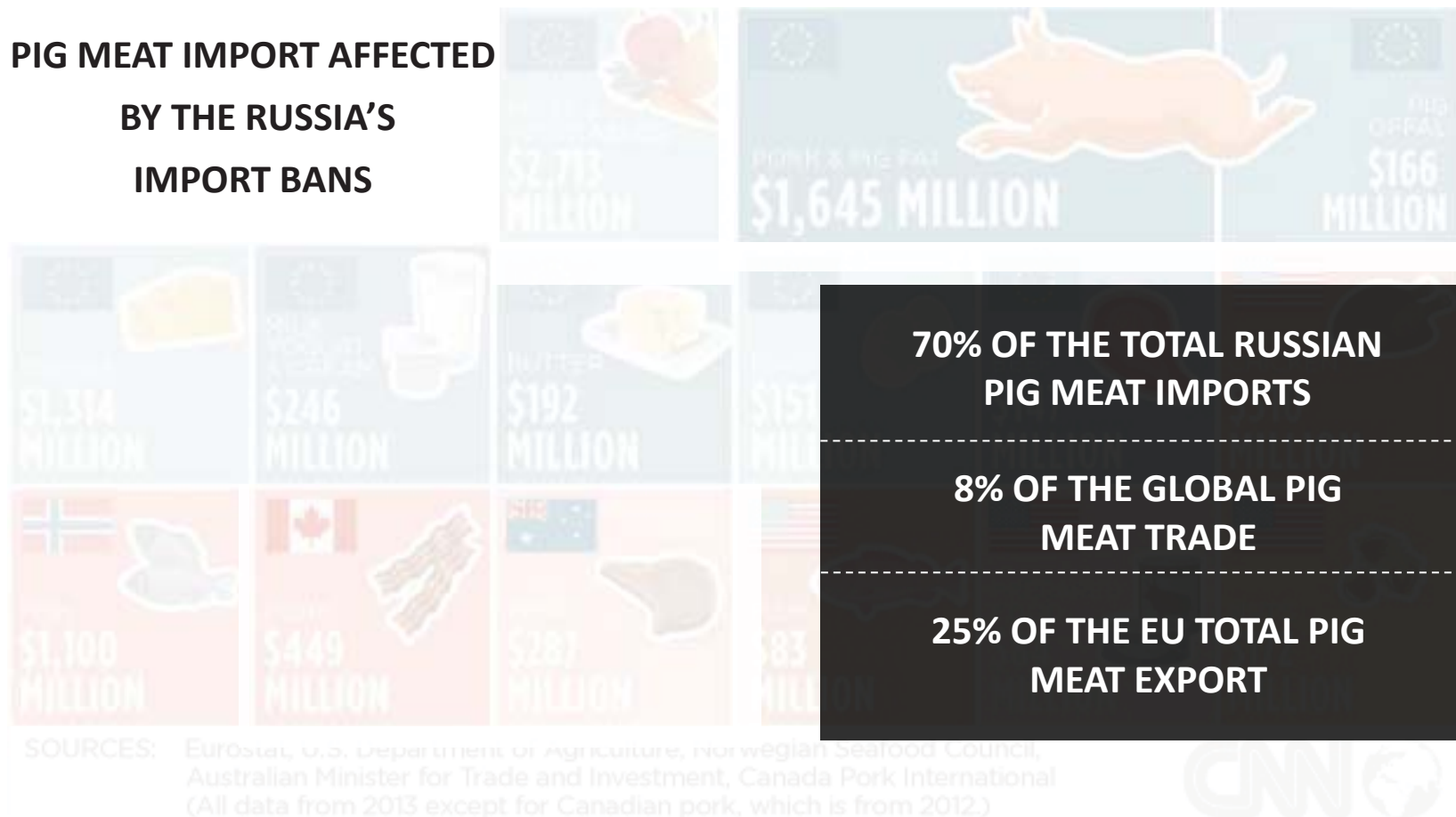
Research background

FOOD PRODUCTS AFFECTED BY THE RUSSIA'S IMPORT BANS



Research background

PIG MEAT IMPORT AFFECTED BY THE RUSSIA'S IMPORT BANS



Research questions

1

How did the composition of Russian pig meat suppliers change due to the import ban?

2

How did the import ban affect price transmission between Russia and its main non-EU trading partners?

3

What are the effects on domestic pig meat prices in Russia?

4

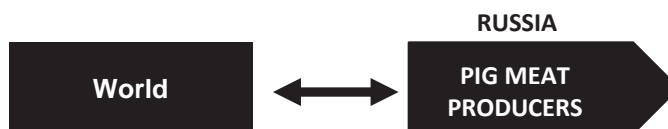
Did the price behavior of actors along the pig meat supply chain changed due to the import ban?

Price transmission approach

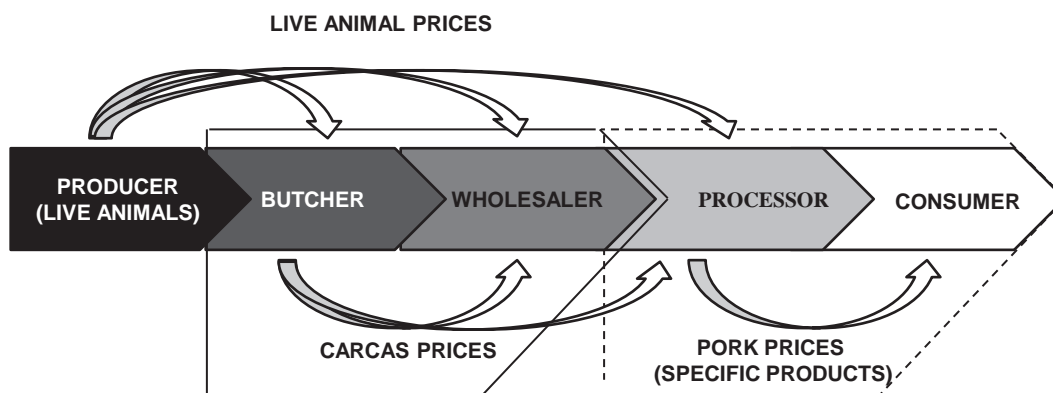
PRICE TRANSMISSION

Changes in one price causes the change in another price

HORIZONTAL PRICE TRANSMISSION



VERTICAL PRICE TRANSMISSION



Price transmission model

NON-LINEAR REGIME-DEPENDANT MODEL:

$$p_t^d = \alpha^f + \gamma_\alpha^r D_t^r + \beta^f * p_t^{rm} + \gamma_\beta^r D_t^r * p_t^{rm} + u_t$$

p_t^d - domestic producer prices (domestic consumer prices in VPT)

p_t^{rm} - reference market prices (domestic wholesale prices in VPT)

α^f - intercept (free trade regime)

β^f - long-run price transmission coefficient (free trade regime)

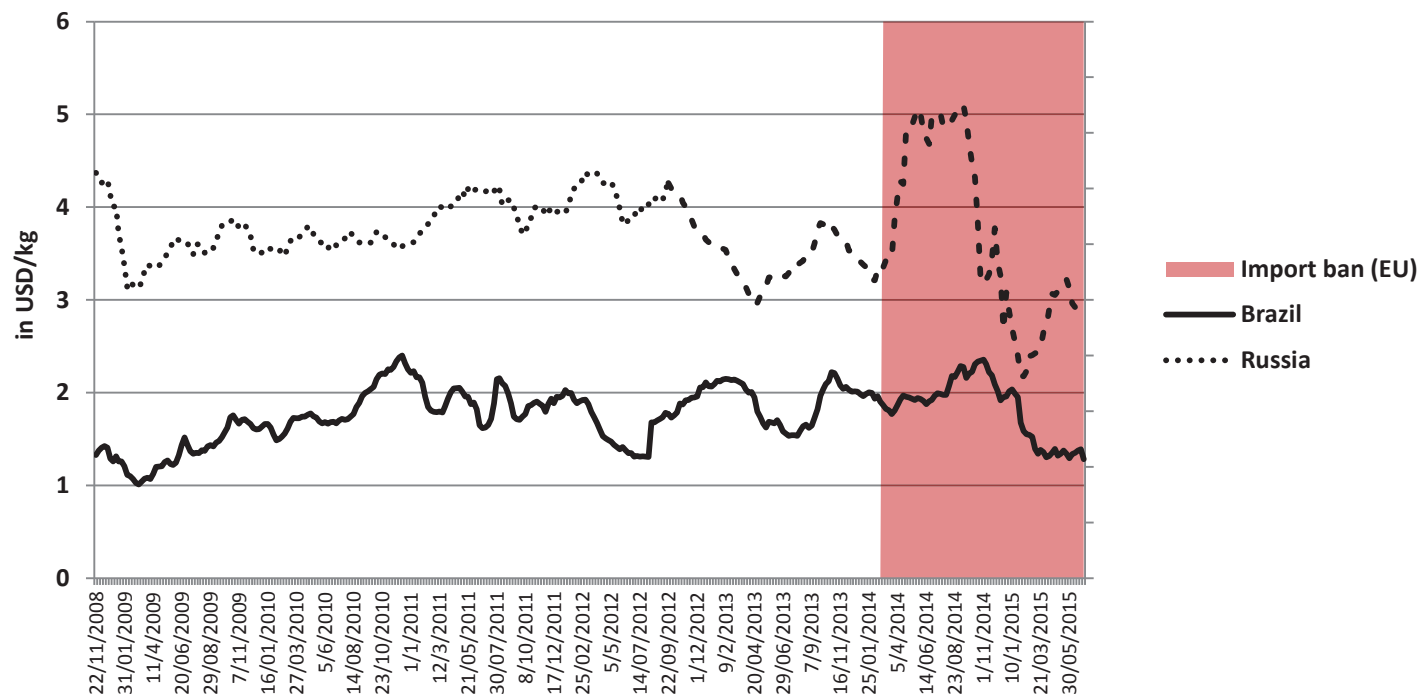
D_t^r - dummy variable indicating the import ban period

u_t - error term

Price transmission model

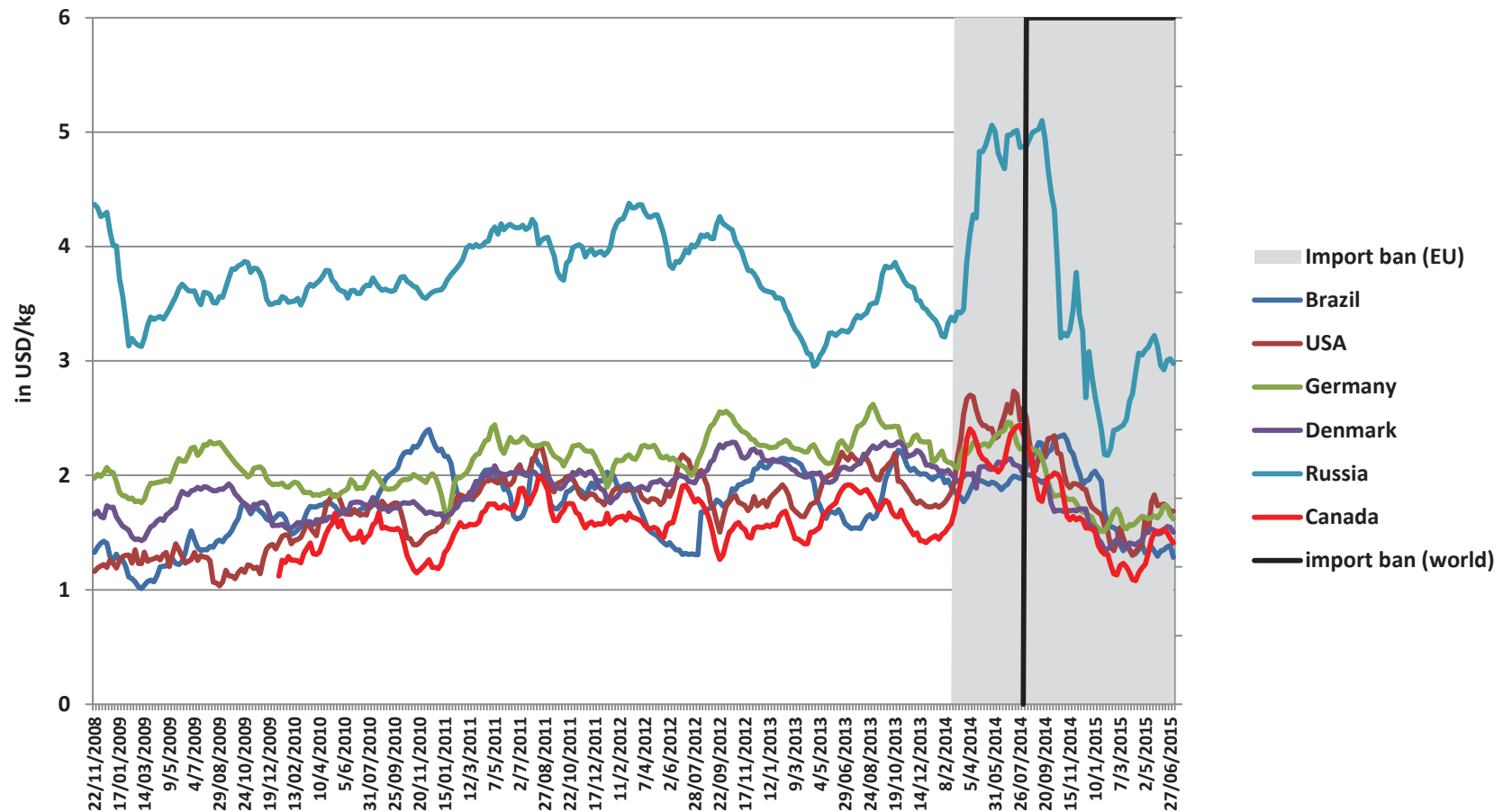
NON-LINEAR REGIME-DEPENDANT MODEL:

$$p_t^d = \alpha^f + \gamma_\alpha^r D_t^r + \beta^f * p_t^{rm} + \gamma_\beta^r D_t^r * p_t^{rm} + u_t$$



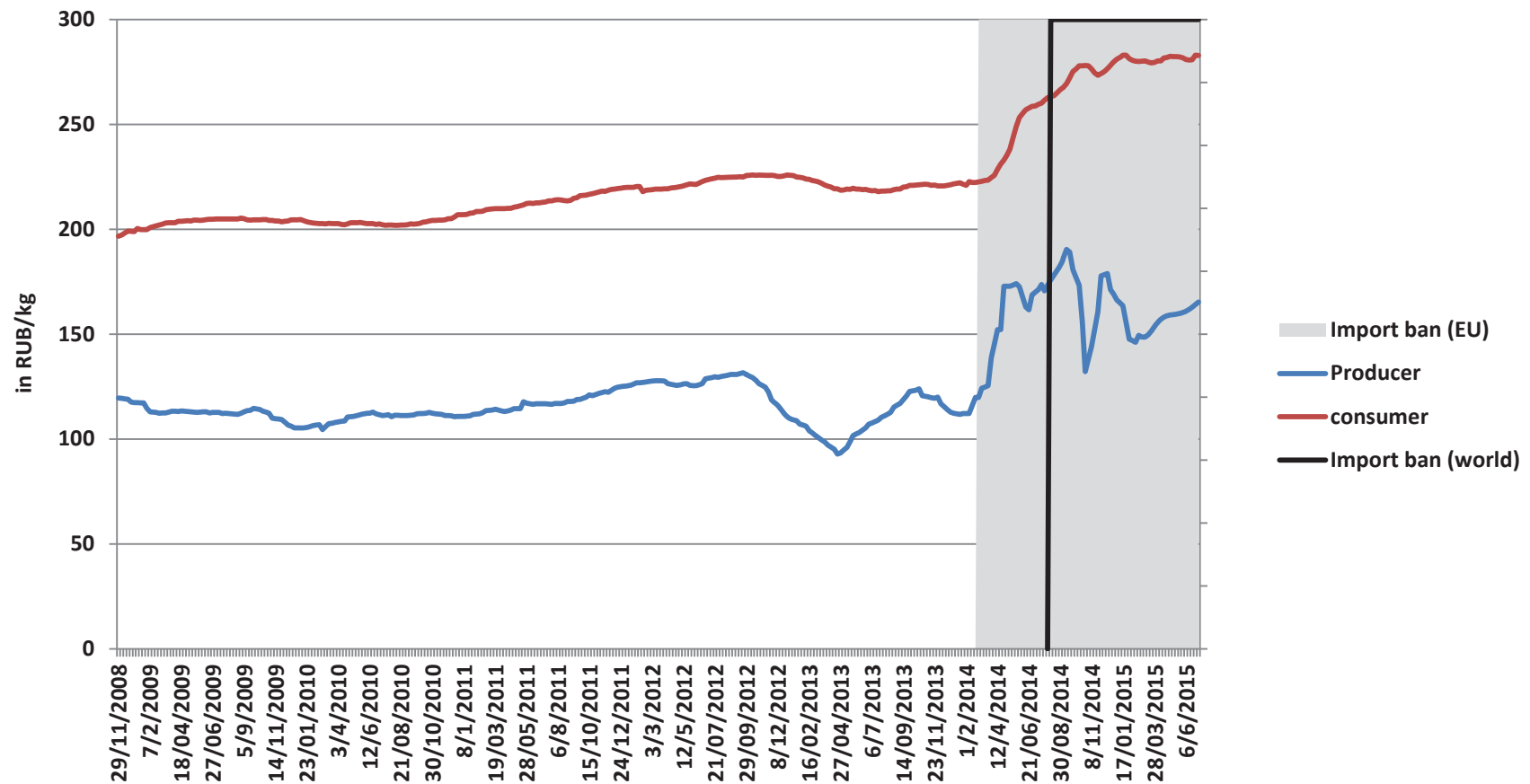
Data

WEEKLY PORK PRICES IN SELECTED COUNTRIES, 2008-2015



Data

WEEKLY PORK PRICES IN RUSSIA, 2008-2015



Price transmission results

PRICE TRANSMISSION RESULTS (1ST IMPORT BAN – FEBRUARY 2014)

Regime		Free trade regime (264 observations)			
Country	EU		World		
	Denmark	Germany	Brazil	Canada	USA
intercept α^f	4.269***	4.044***	5.077***	4.669***	4.572***
slope β^f	0.274***	0.311***	0.112***	0.204***	0.217***
Import ban regime (26 observations)					
intercept α^{ib}	-	-	0.291	2.010***	1.688***
slope β^{ib}	-	-	1.093***	0.737***	0.779***

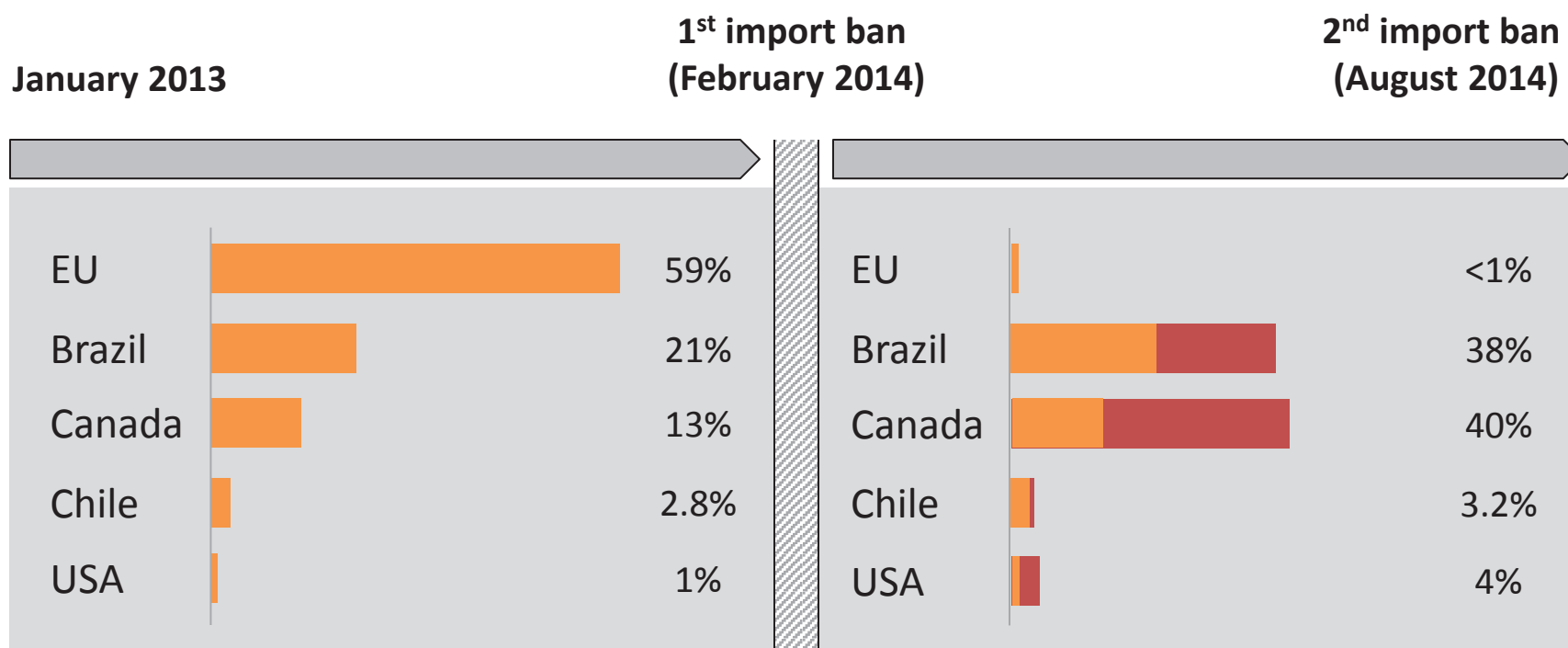
Trade diversion

NUMBER OF COMPANIES LICENSED FOR PIG MEAT IMPORT TO RUSSIA (SELECTED COUNTRIES)

Country	until 2014	Additional number of enterprises		Total
		1 st ban	2 nd ban	
		February – August 2014	After August 2014	
Canada	27	+5	+4	36
USA	169	+9	+1	179
Brazil	3	+5	+20	28
Chile	2	+4	+3	9
Serbia	3	+1	+3	7

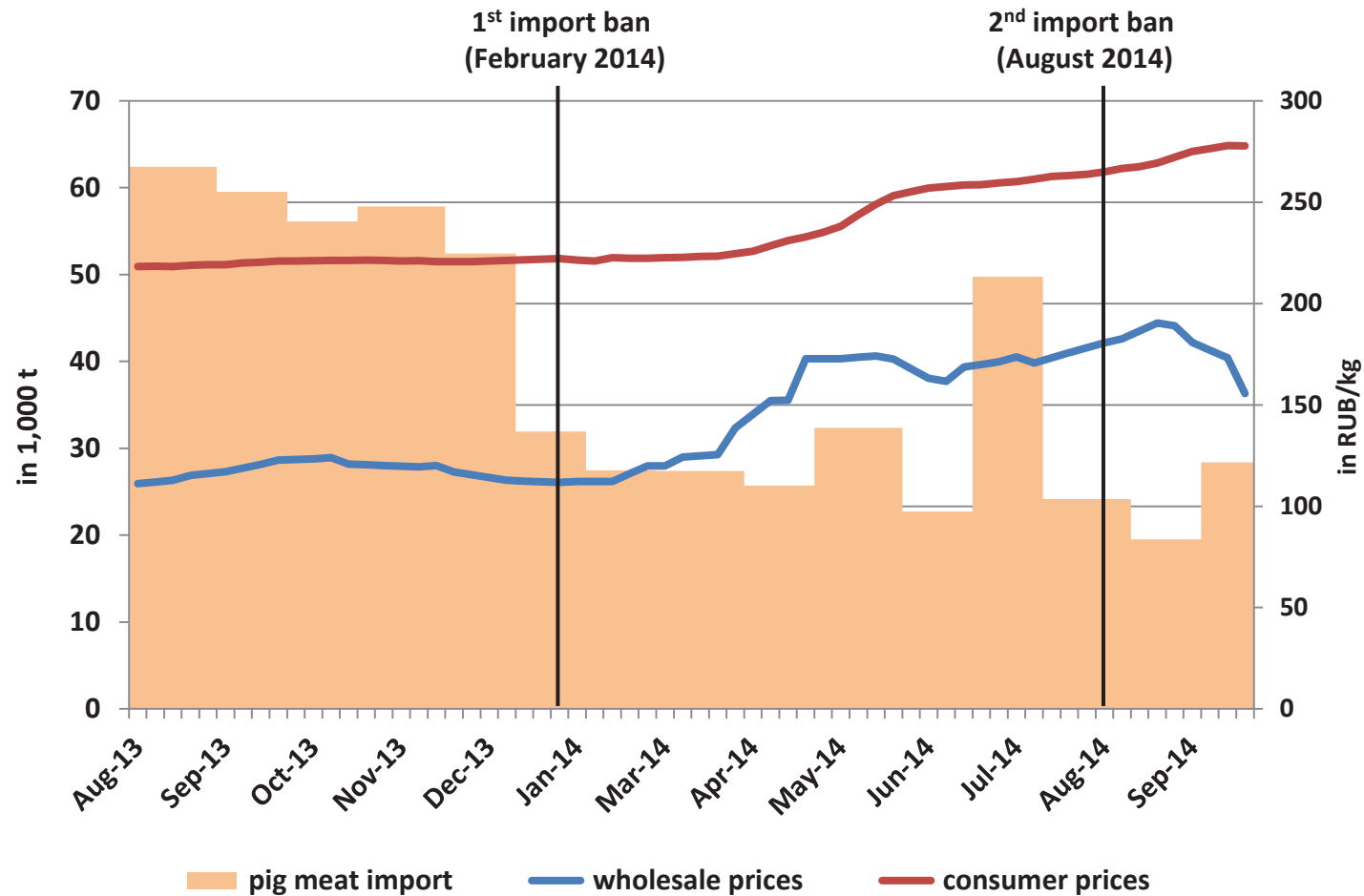
Trade diversion

SHARE OF PIG MEAT IMPORTS TO RUSSIA BY TRADE PARTNERS:



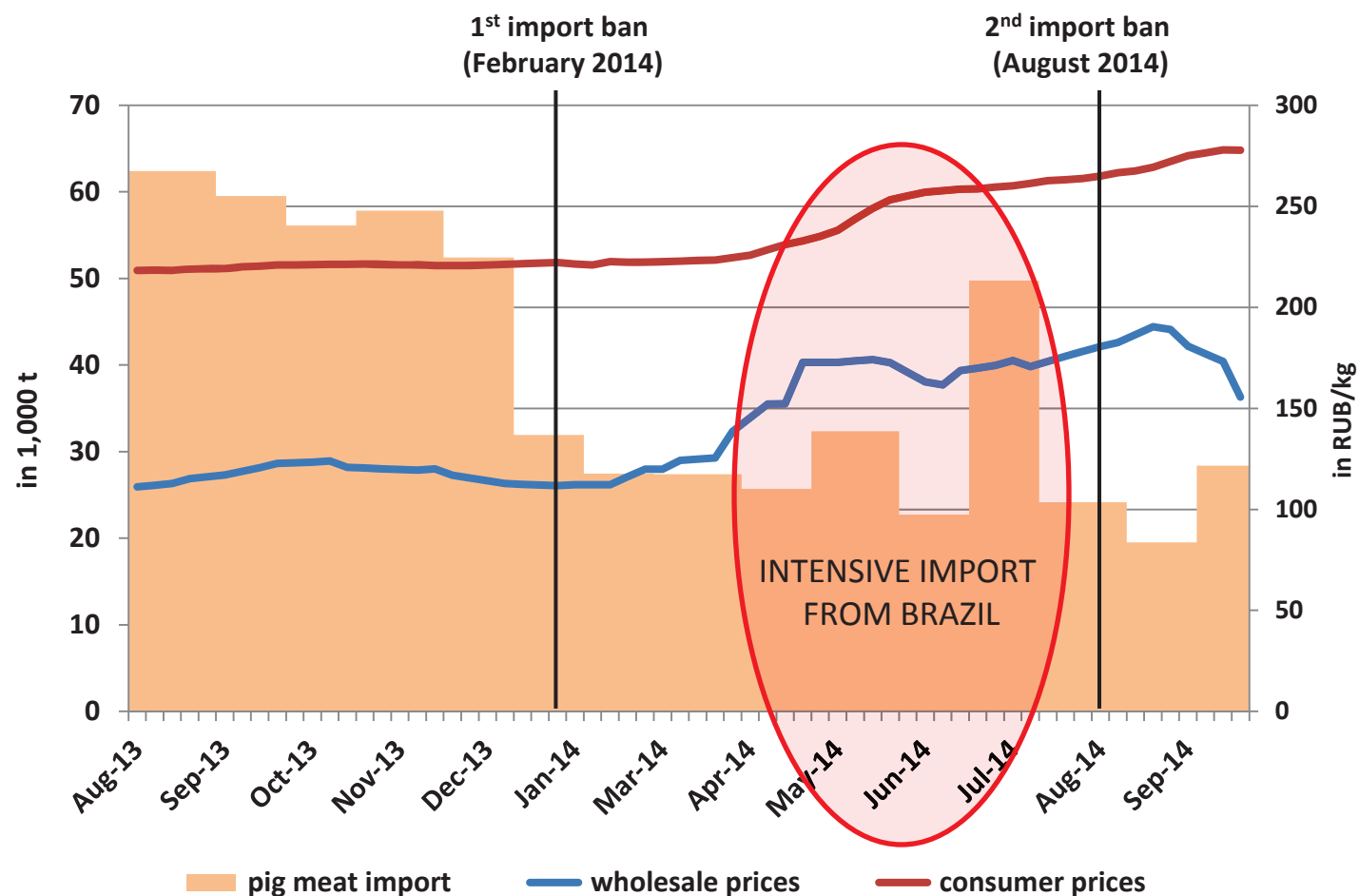
Import substitution

RUSSIAN PORK IMPORT AND PRICES (AUG. 2013 – AUG. 2014)



Import substitution

RUSSIAN PORK IMPORT AND PRICES (AUG. 2013 – AUG. 2014)



Effects on the EU

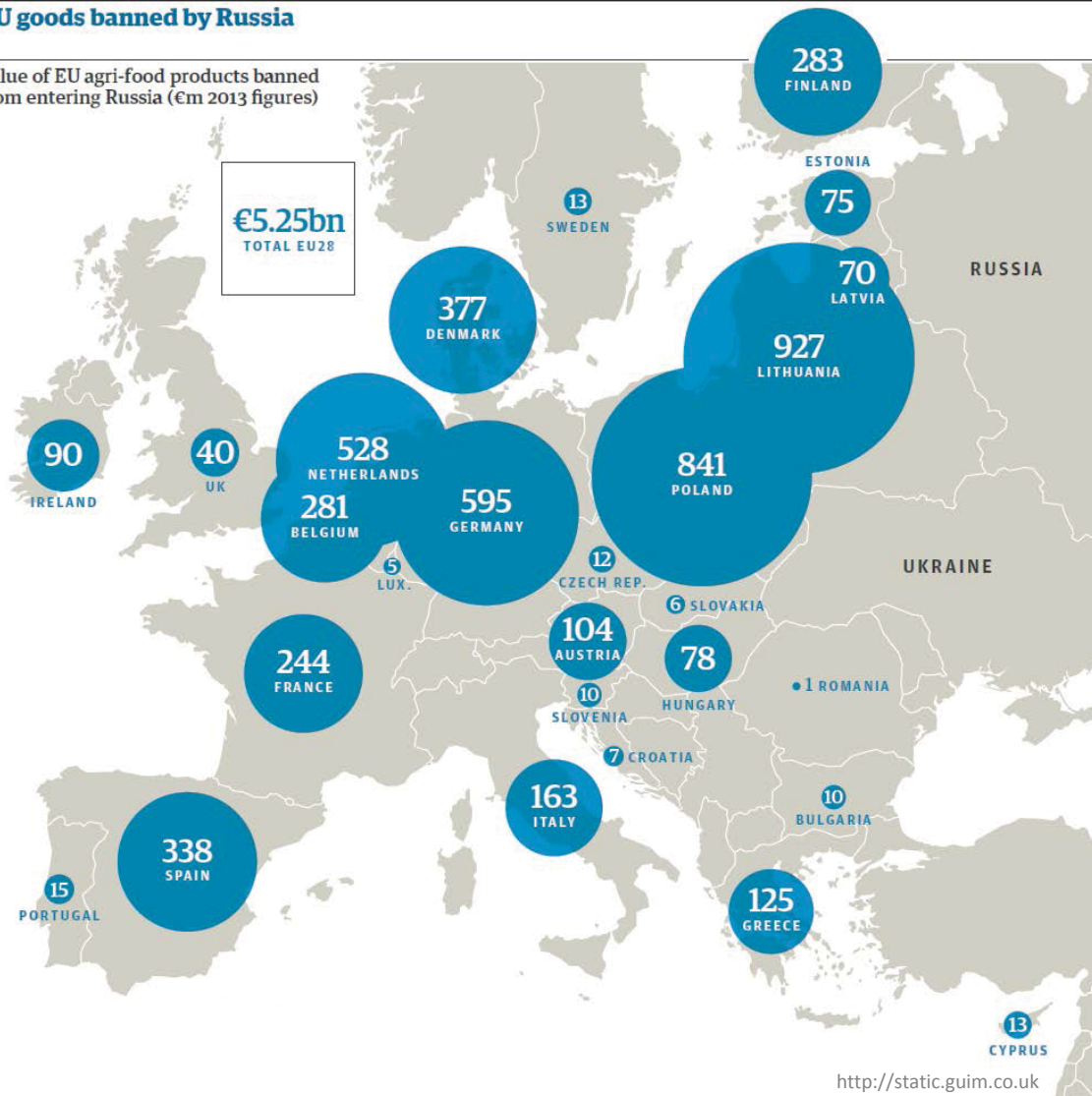
THE EFFECTS ON THE EU AGRICULTURAL EXPORT



Effects on the EU

EU goods banned by Russia

Value of EU agri-food products banned
from entering Russia (€m 2013 figures)



<http://www.foodnavigator.com>



<http://www.freightworld.com.au>



<http://cdn.trend.az>

Effects on the EU

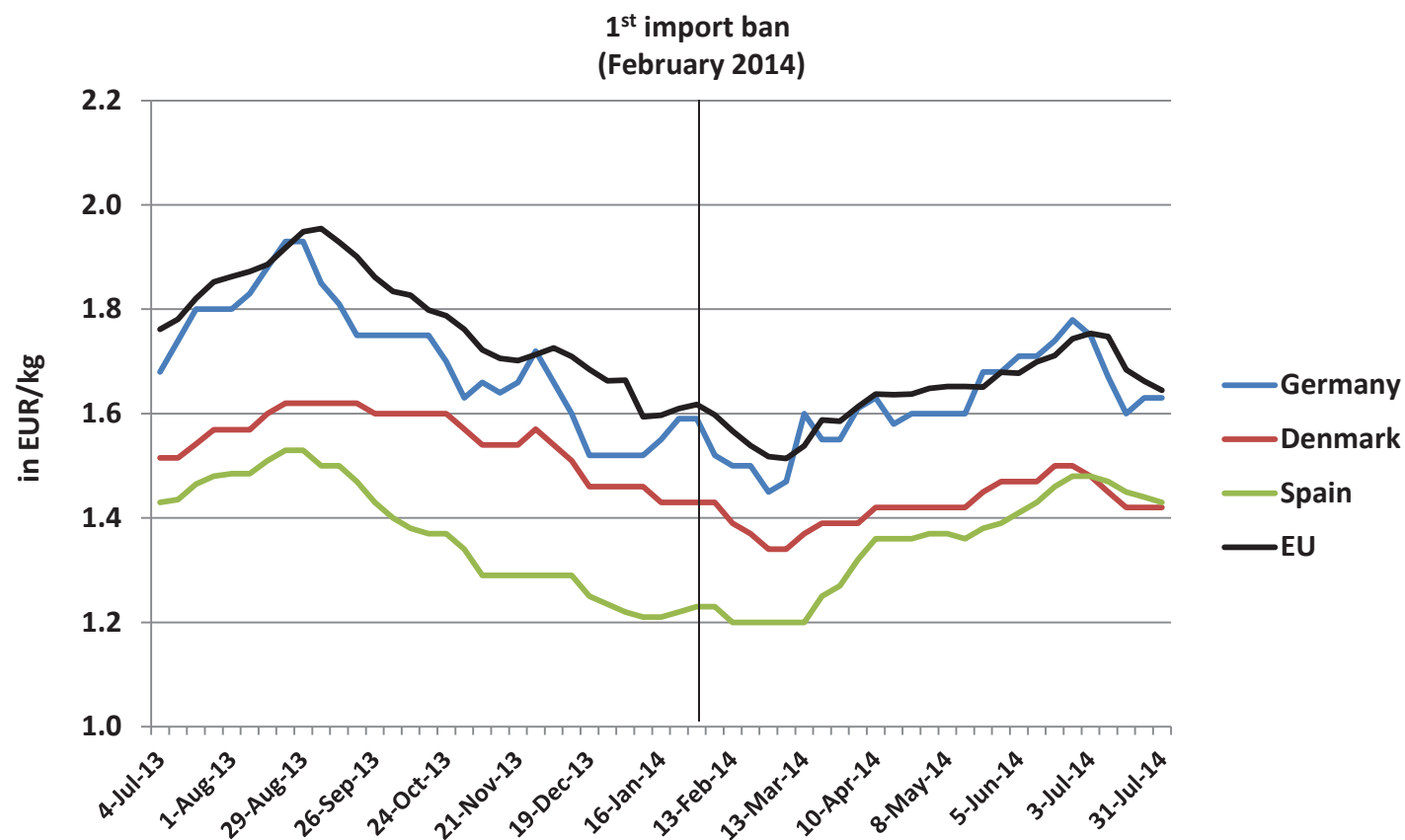
EU28 AGRI-FOOD EXPORTS PER PRODUCT SECTOR

EU28 agri-food exports (in million EUR)	Extra-EU28			Russia		
	Aug. 2013 -July 2014	Aug. 2014 – July 2015	%	Aug. 2013 -July 2014	Aug. 2014 – July 2015	%
Bovine sector (total)	1,374	1,685	23	221	95	-57
Pig sector (total)	5,729	5,753	0	810	42	-95
Poultry sector (total)	2,015	2,121	5	132	44	-67
Butter	653	671	3	164	2	-99
Cheese	3,892	3,346	-14	964	34	-97
Skimmed milk powder	1,825	1,645	-10	58	0	-100
Whole milk powder	1,657	1,259	-24	13	0	-100
Fruit and vegetables	6,991	6,160	-12	1,900	210	-89

Source: European Commission

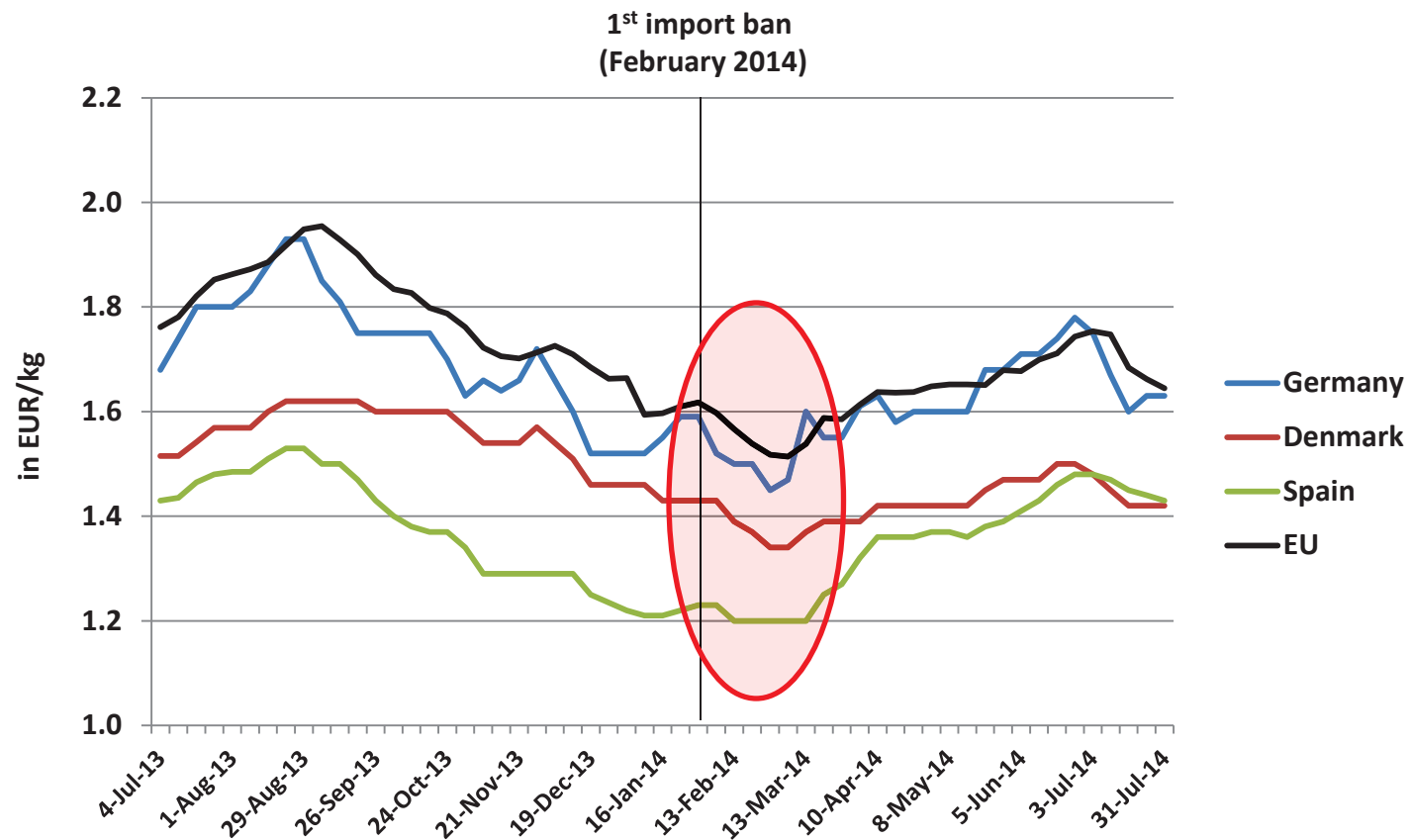
Effects on the EU

EU28 PORK PRODUCER PRICES, JULY 2013 – JULY 2014



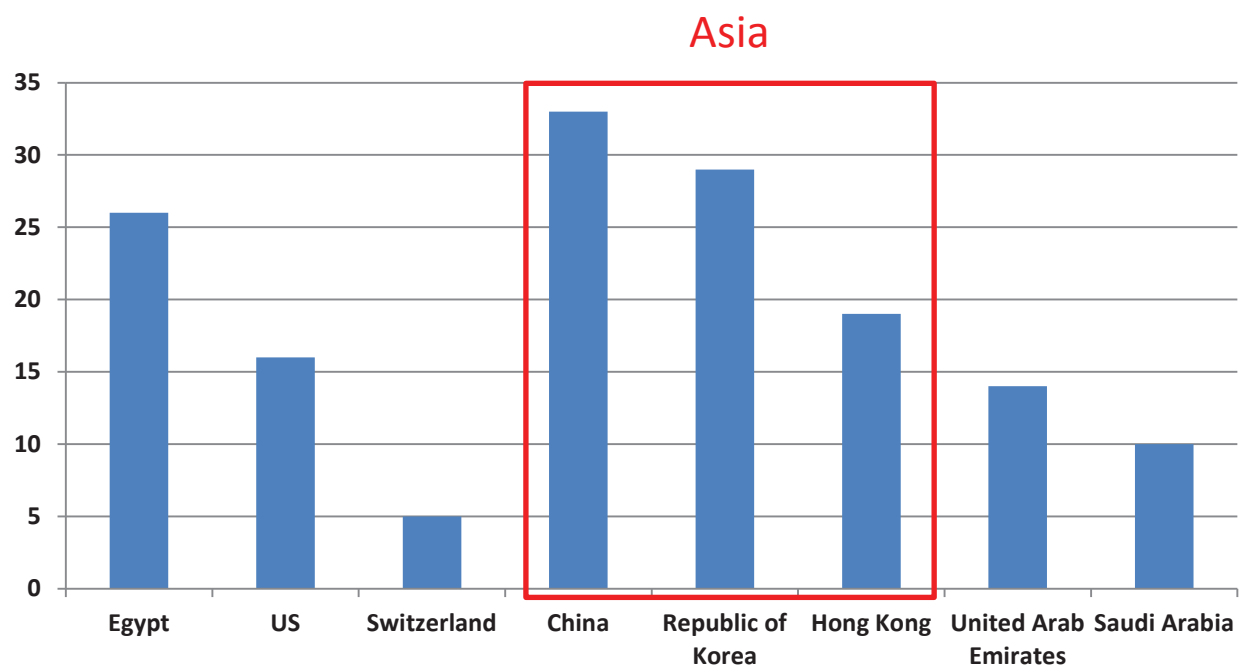
Effects on the EU

EU28 PORK PRODUCER PRICES, JULY 2013 – JULY 2014



Effects on the EU

EU28 GAINS IN EXPORT VALUE, AUG. 2014 – JULY 2015



Source: European Commission

Domestic price effects in Russia

RUSSIAN DOMESTIC PIG MEAT MARKET



Domestic price effects in Russia

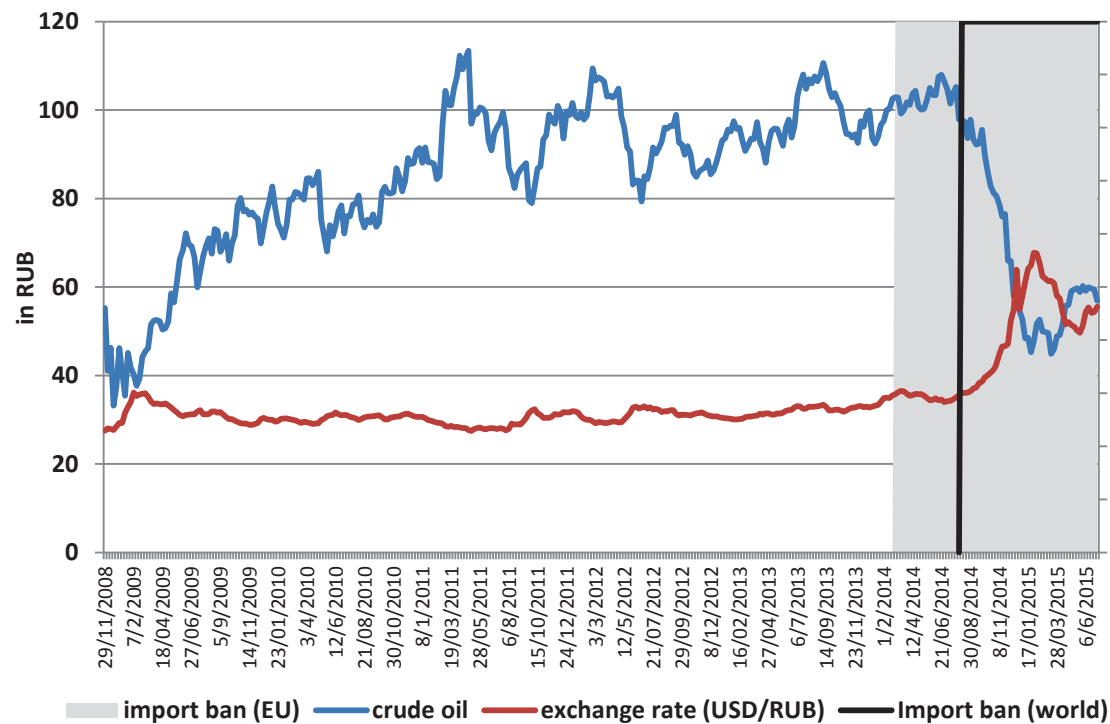
CRUDE OIL PRICES AND DOLLAR/RUBLE EXCHANGE RATE



<http://www.careeranna.com>

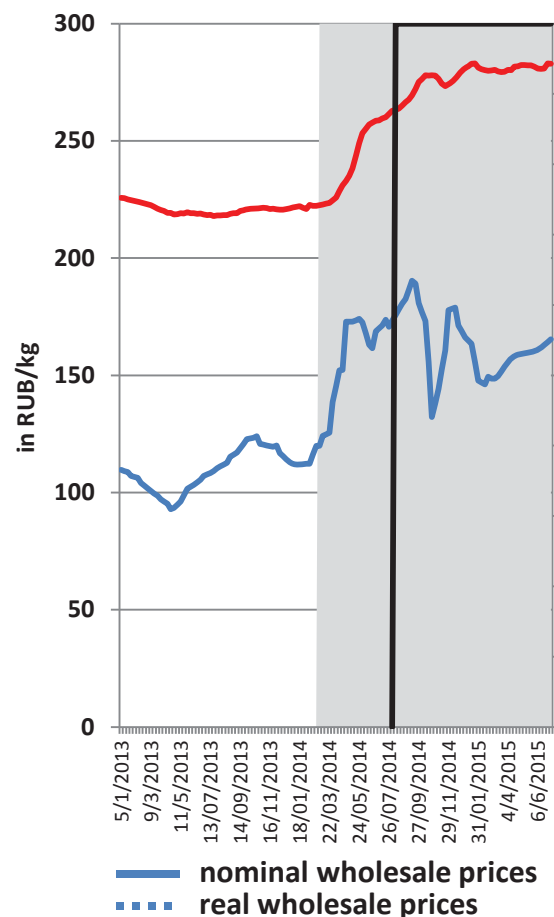


©TASS

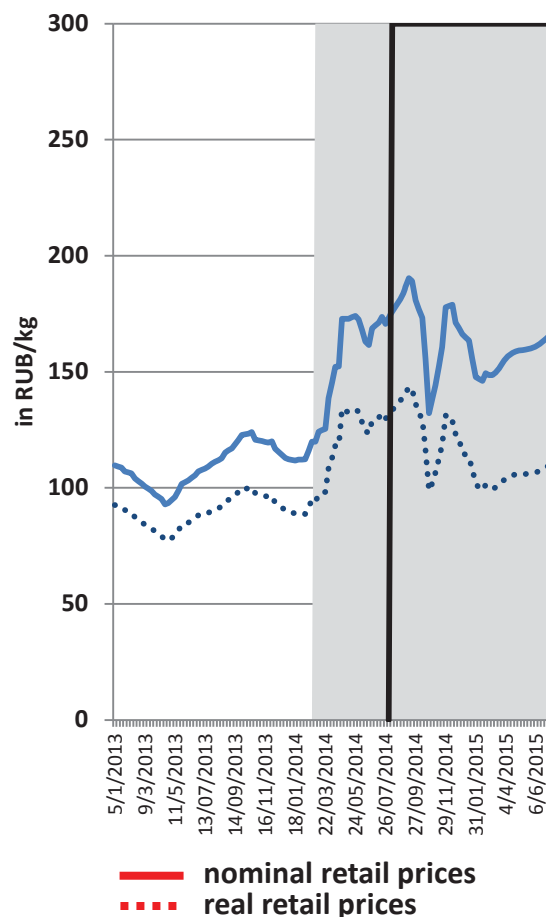


Domestic price effects in Russia

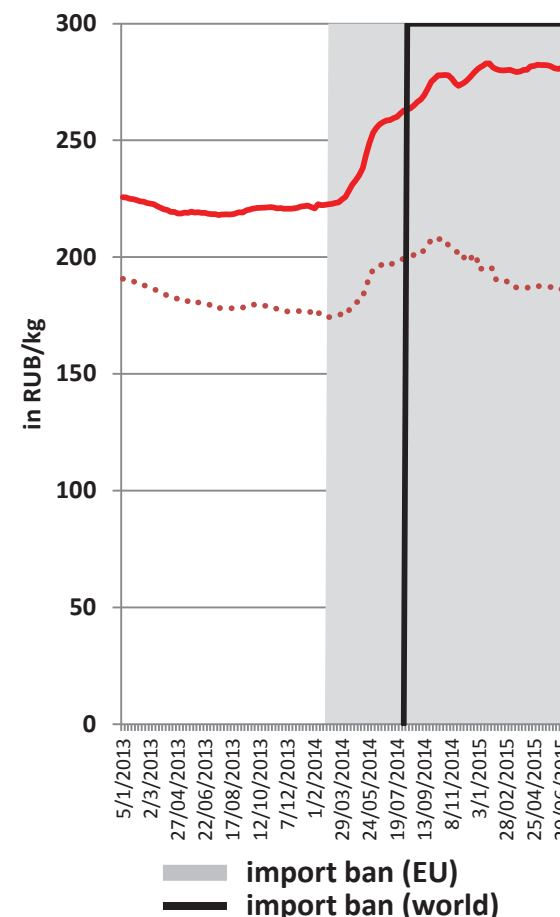
NOMINAL WHOLESALE AND RETAIL PORK PRICES



NOMINAL AND REAL WHOLESALE PORK PRICES

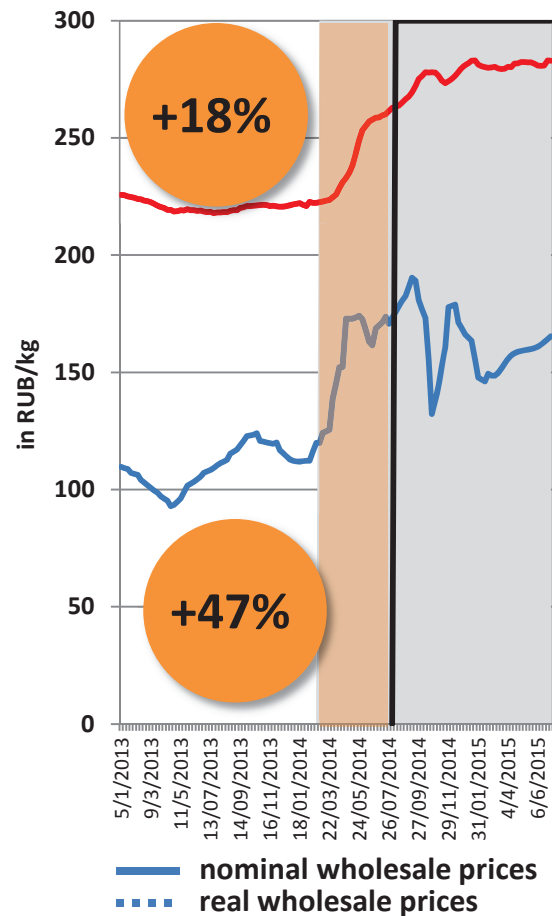


NOMINAL AND REAL RETAIL PORK PRICES

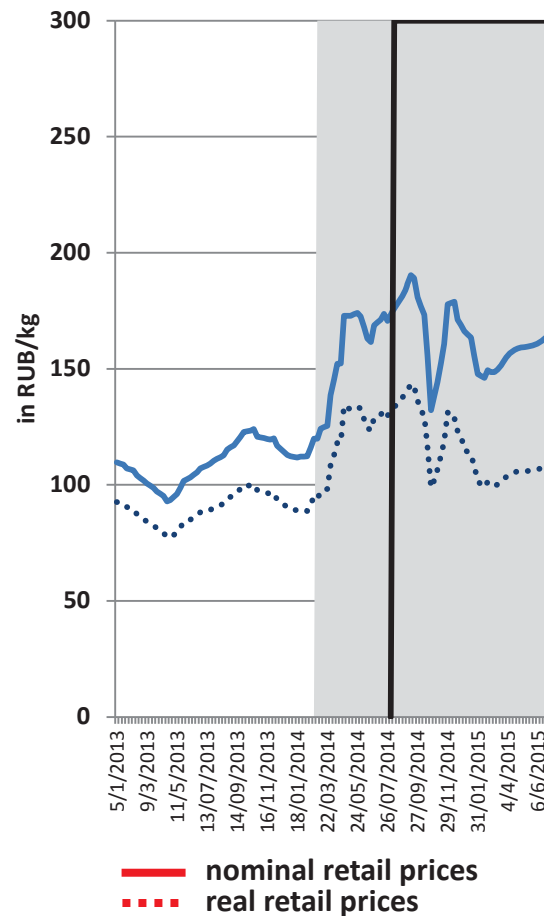


Domestic price effects in Russia

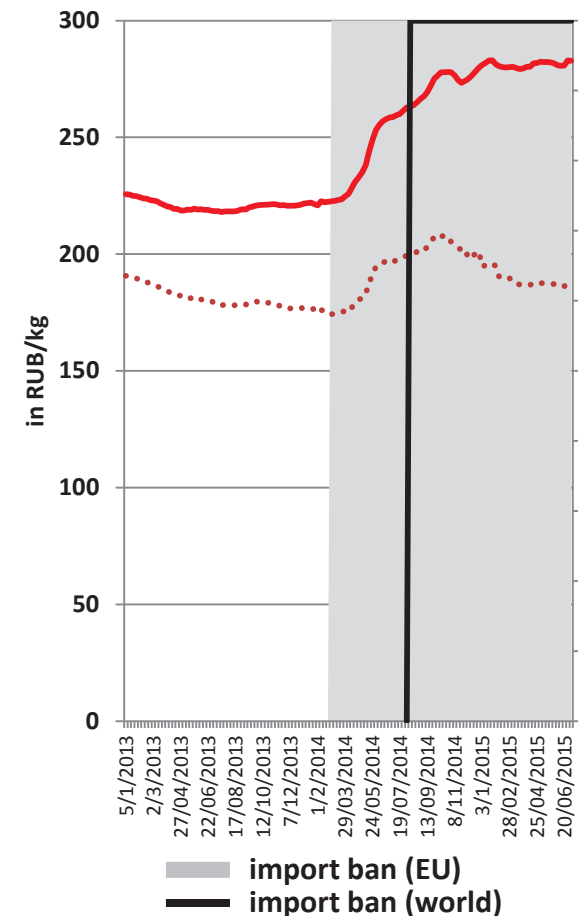
NOMINAL WHOLESALE AND RETAIL PORK PRICES



NOMINAL AND REAL WHOLESALE PORK PRICES

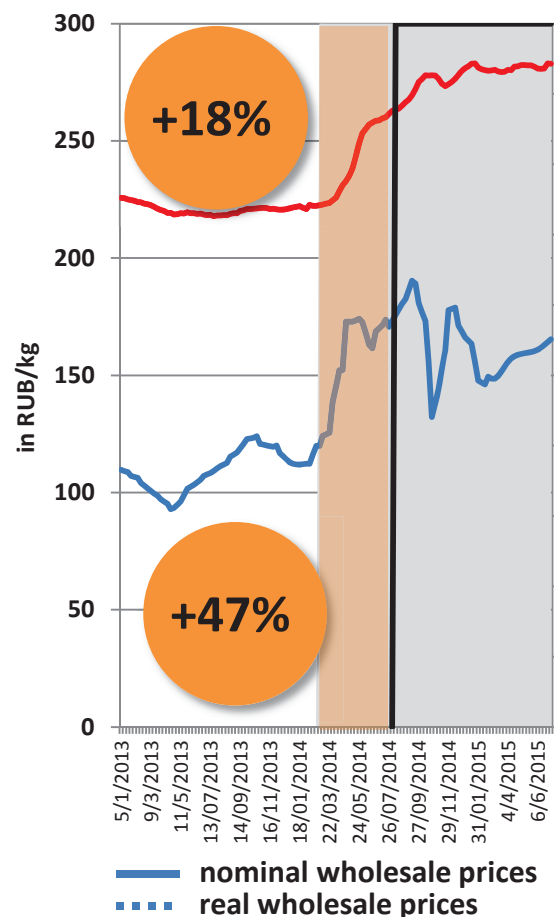


NOMINAL AND REAL RETAIL PORK PRICES

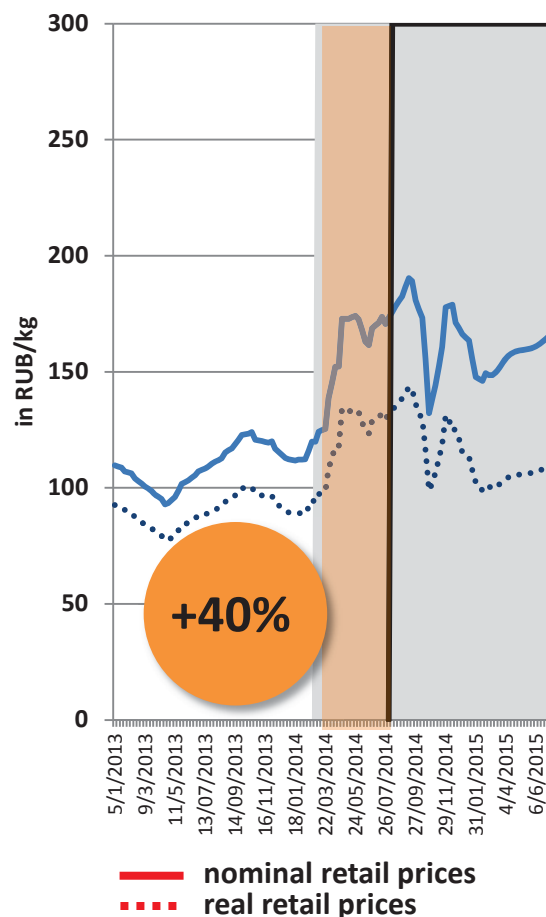


Domestic price effects in Russia

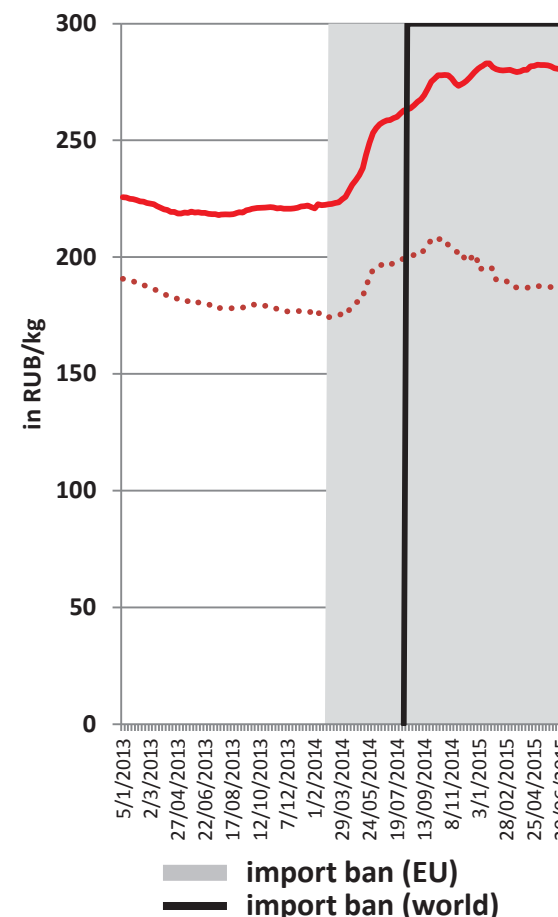
NOMINAL WHOLESALE AND RETAIL PORK PRICES



NOMINAL AND REAL WHOLESALE PORK PRICES

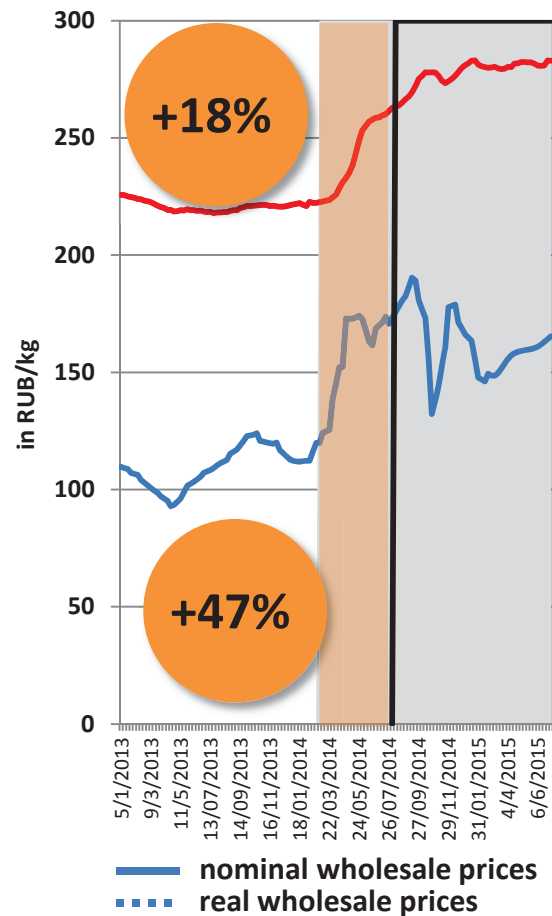


NOMINAL AND REAL RETAIL PORK PRICES

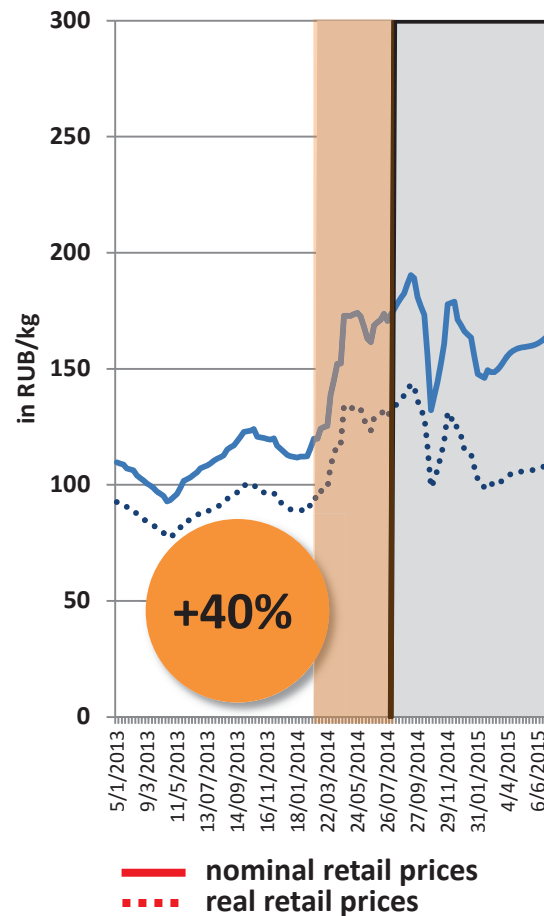


Domestic price effects in Russia

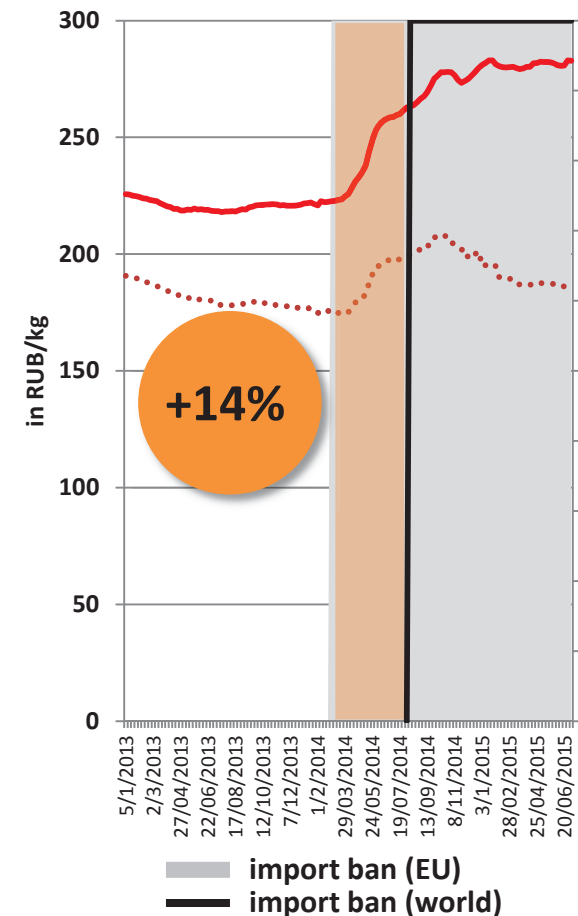
NOMINAL WHOLESALE AND RETAIL PORK PRICES



NOMINAL AND REAL WHOLESALE PORK PRICES



NOMINAL AND REAL RETAIL PORK PRICES



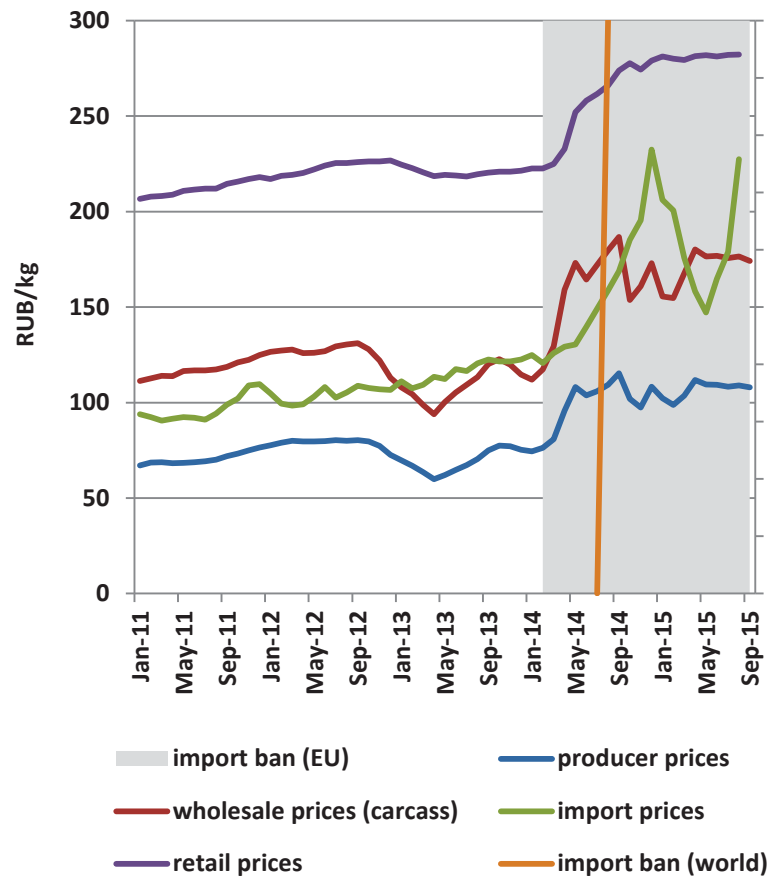
Domestic price effects in Russia

PRICE TRANSMISSION RESULTS (1ST IMPORT BAN)

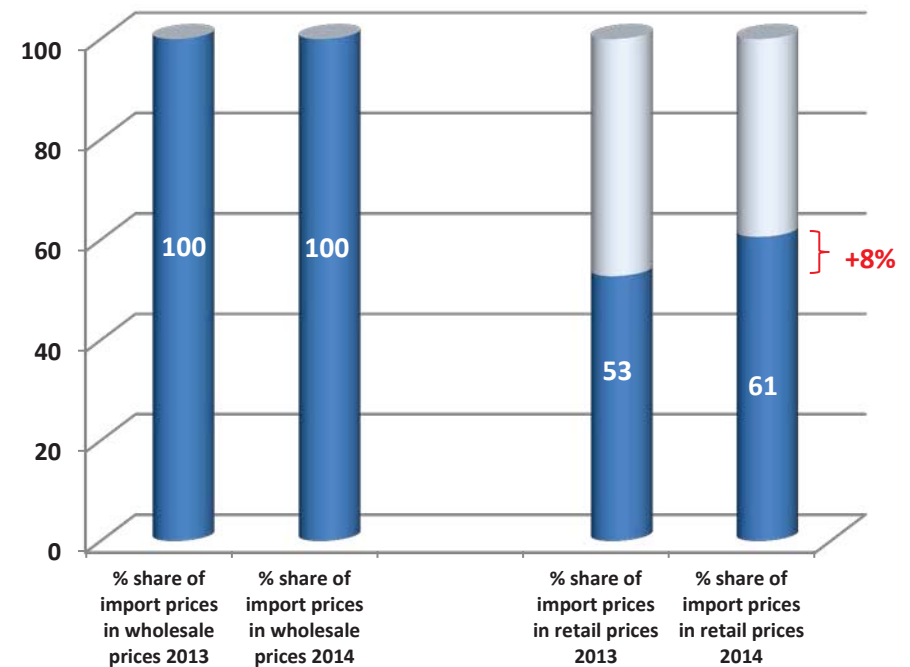
Regime	Free trade regime (264 observations)					
Country	EU		World			Russia
	Denmark	Germany	Brazil	Canada	USA	
intercept α^f	4.269***	4.044***	5.077***	4.669***	4.572***	3.269***
slope β^f	0.274***	0.311***	0.112***	0.204***	0.217***	0.528***
Import ban regime (26 observations)						
intercept α^{ib}	-	-	0.291	2.010***	1.688***	3.616***
slope β^{ib}	-	-	1.093***	0.737***	0.779***	0.455***

Domestic price effects in Russia

DOMESTIC PRODUCER, WHOLESALE, RETAIL AND IMPORT PORK PRICES IN RUSSIA



% SHARE OF PORK IMPORT PRICES IN DOMESTIC WHOLESALE AND RETAIL PRICES



Conclusions

PIG MEAT IMPORTS AFTER THE BAN (FEB.-AUG. 2014):

- Increase in pig meat import volumes from Brazil, Canada and USA;
- Significant reduction in transaction costs;
- Almost complete transmission of price shocks from the Brazilian pig meat markets.

IMPORT BAN EFFECTS (EU):

- Short-run price effects (increased supply → price decrease);
- Medium-run price effects were not identified (trade diversion towards Asia).

Conclusions

IMPORT BAN EFFECTS (RUSSIA):

- Reduced domestic supply (import substitution was not complete);
- Import quota redistribution (existing + new importers);
- Reduced transmission of wholesale price changes to retail prices;
- Weekly increase in pig meat consumer prices.

FURTHER RESEARCH

- Impact of the import ban in August 2014 (SPT and VPT);
- Impact of the exchange rate (devaluation of the Russian Ruble);
- Asymmetry in price transmission (VPT for Russia).

Thank you for your attention !



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