



Joining the European Union and input-output flows in the case of East-Central European countries

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Plan

- Motivation
- Data
- Input-Output Tables
- Results
- Conclusions



Motivation

- Element of Multi-Annual Programme 2015-2019
- Effective tool to measure changes in agriculture on a macro-scale
- The presence of globalization processes in agricultural and agri-food sectors
- World Input-Output Database publication (43 countries + ROW; 56 industries; years: 2000-2014)



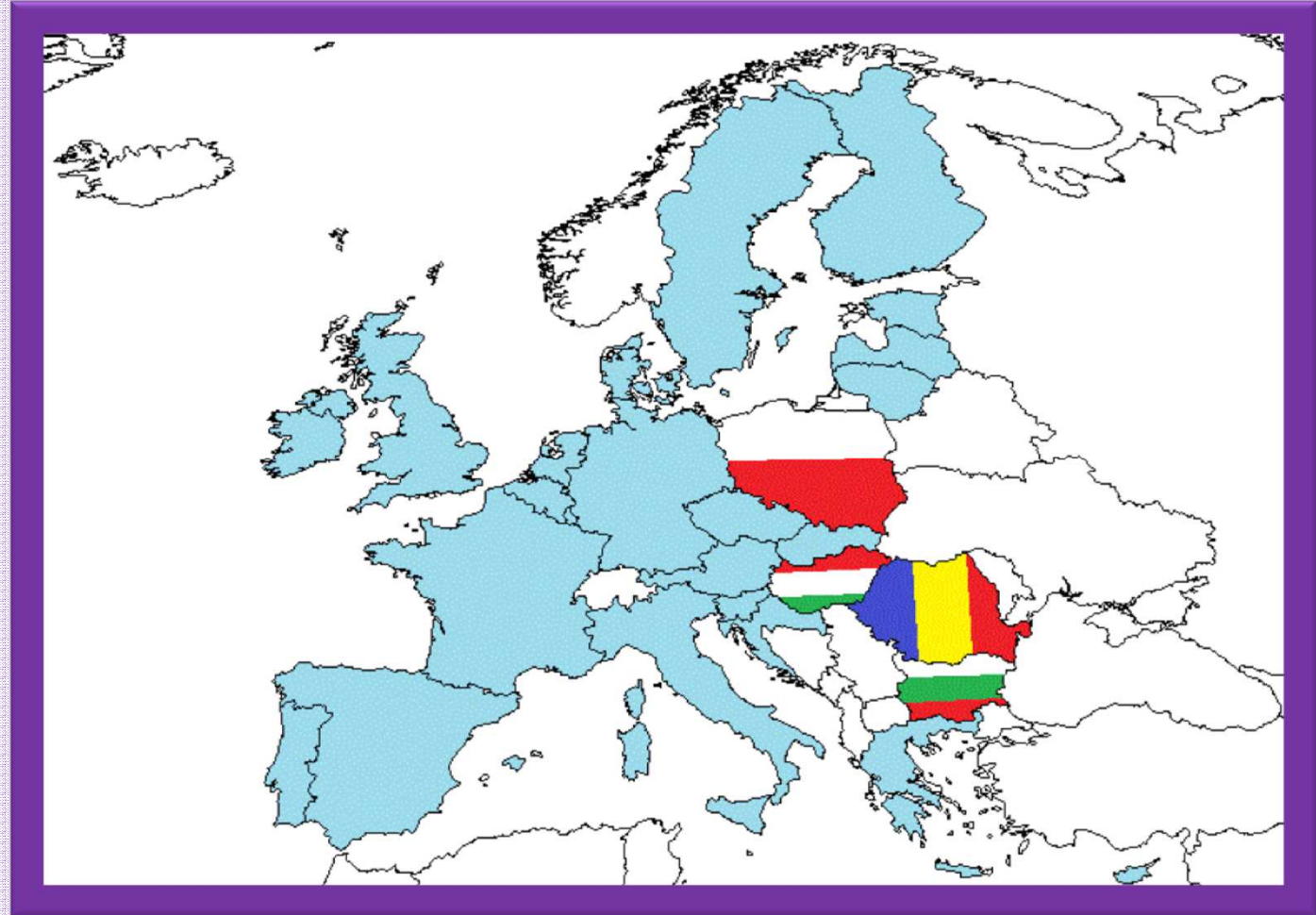
Questions

- It there were any structural changes in flows to and from agriculture during the period of EU accession?
- What kinds of structural changes occurred?
- Are there any differences among four analyzed countries?
- Do these processes decelerate or accelerate in the following years?



Data

- **Countries:**
Poland, Hungary
Bulgaria, Romania
- **Sector:**
Agriculture
A01 „Crop and animal production,
hunting and related service activities”
- **Period:**
 - Pre-accession
(2000-2002): POL, HUN
(2003-2005): BUL, ROM
 - Post-accession
(2006-2008): POL, HUN
(2008-2010): BUL, ROM
 - Most up-to-date
(2012-2014)





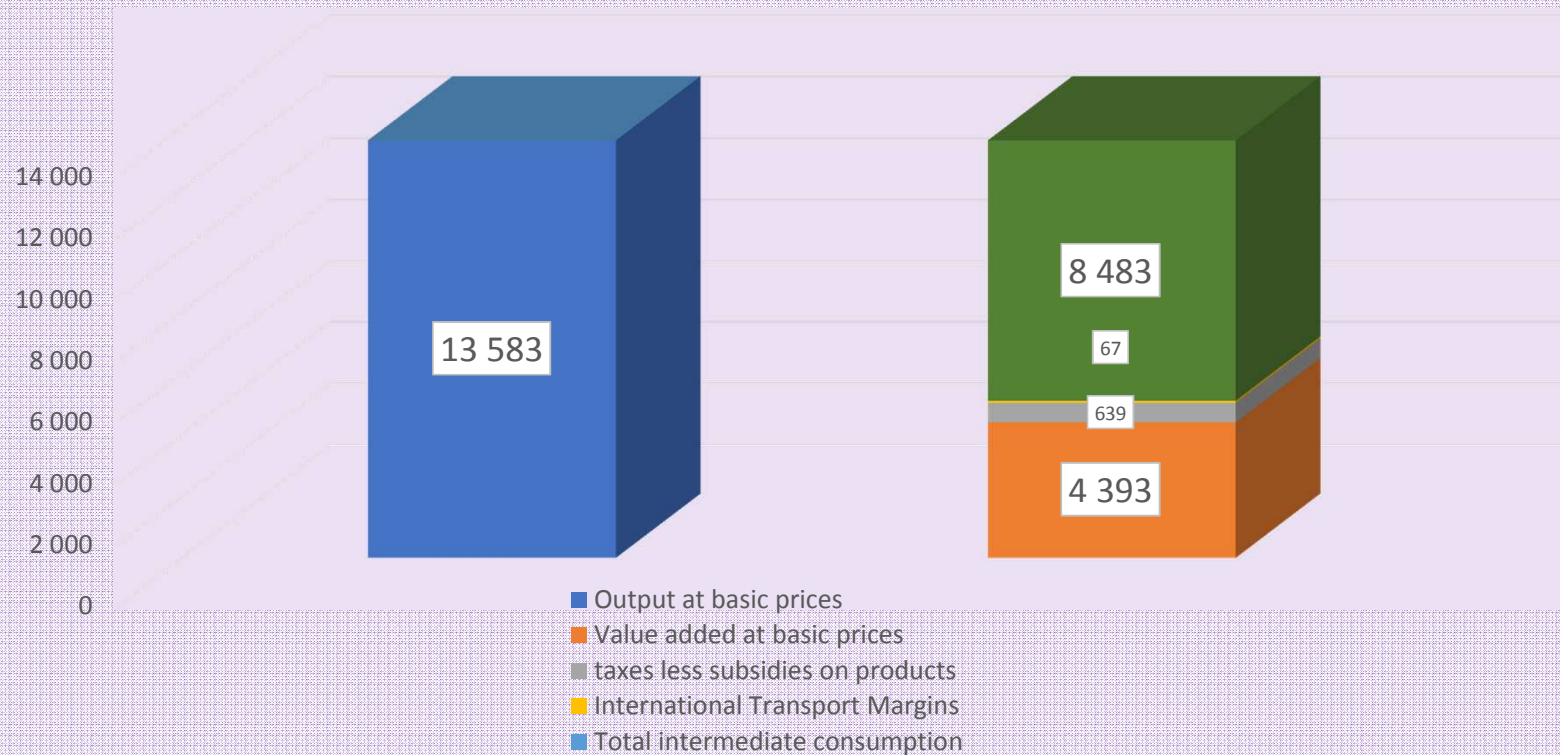
Input-output tablet – inflows

Output at basic prices	=
Value added at basic prices	+
International Transport Margins	+
taxes less subsidies on products	+
Total intermediate consumption	

Country	Industry
Home Country	Agri-food industry
	Chemical industry
	...
	Financial services
Country A	Agri-food industry
	Chemical industry
	...
	Financial services
...	...
Country N	Agri-food industry
	Chemical industry
	...
	Financial services

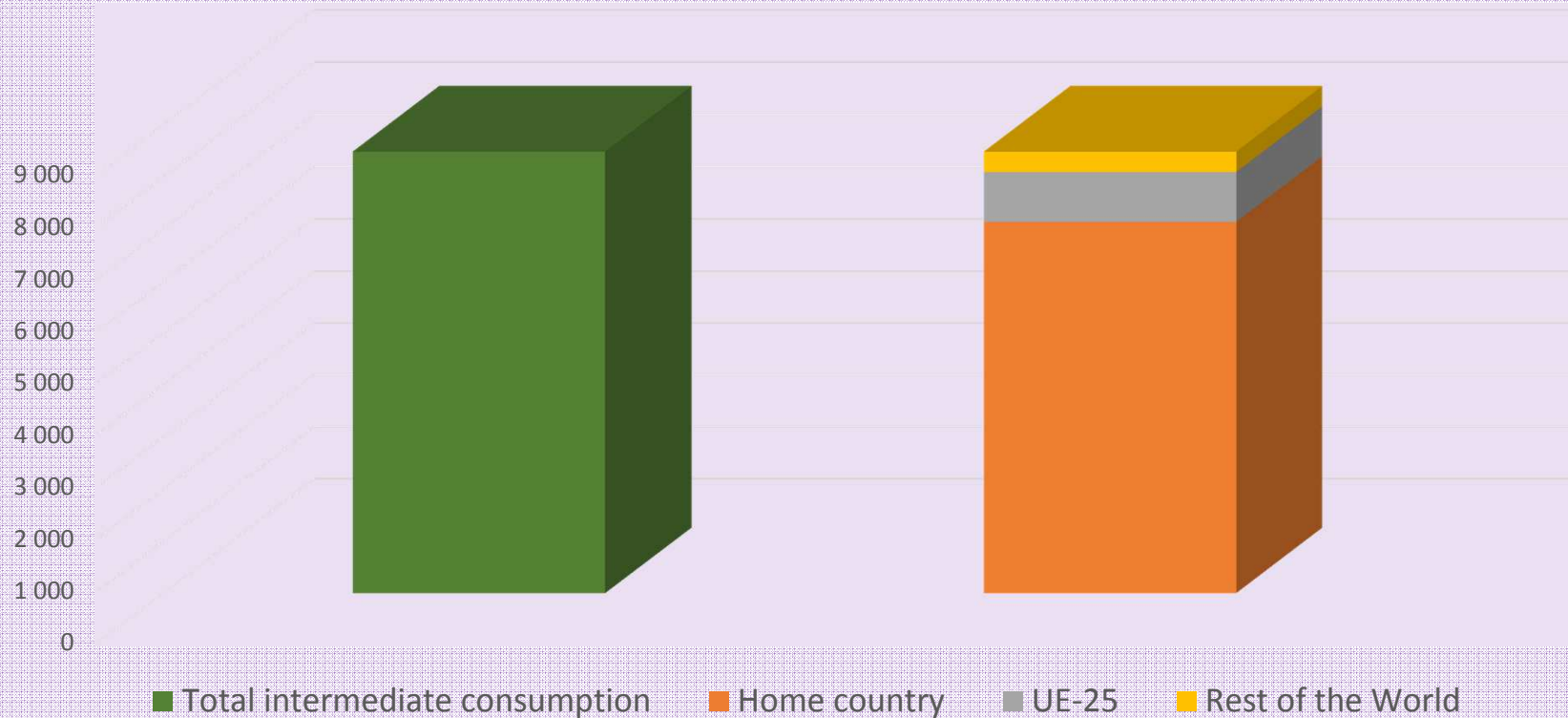


Polish agriculture in year 2000



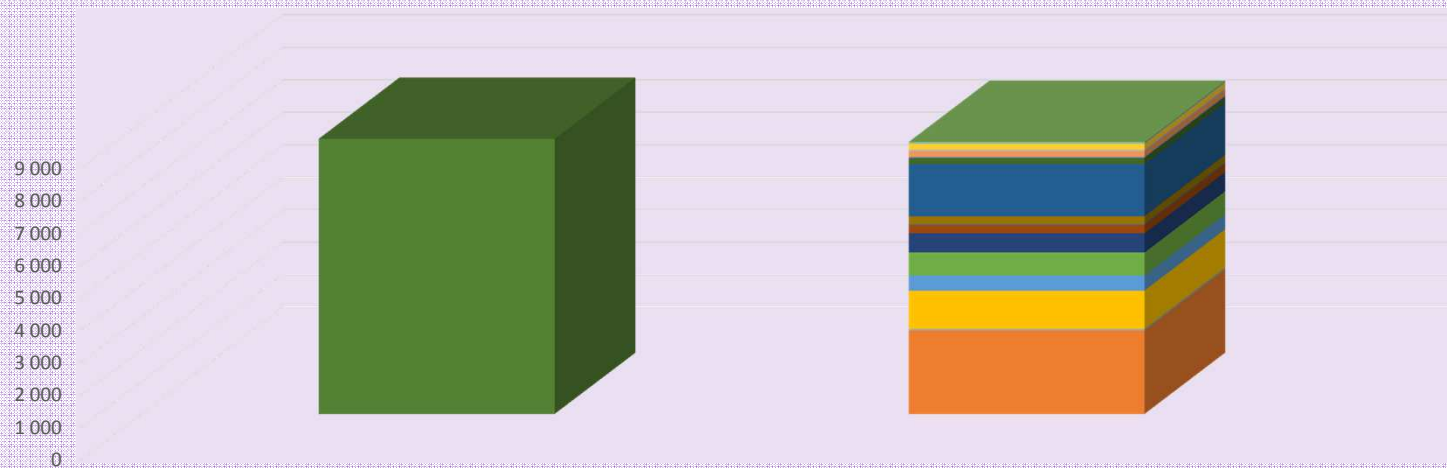


Polish agriculture in year 2000





Polish agriculture in year 2000



■ Total intermediate consumption

■ Agri-food

■ Other manufactures

■ Cars - trade and repair

■ Telecommunications

■ Veterinary services

■ Agriculture

■ Coke and refined petroleum

■ Electricity and gas

■ Other trade and repair

■ Financial services

■ Administrative and support service

■ Mining

■ Chemical products

■ Construction

■ Transport

■ Services (accounting, engineering etc)

■ Public administration and social security



Flows to the agricultural sector (I)

POLAND	Before UE (2000-2002)	After UE (2006-2008)	Direction
Total Intermediate Consumption (TIC)	62,3%	58,7%	↓
Share of domestic TIC	84,8%	81,8%	↓
Share of EU-25 TIC	10,9%	13,2%	↑
Share of Rest of the World TIC	4,4%	5,1%	↑

HUNGARY	Before UE (2000-2002)	After UE (2006-2008)	Direction
Total Intermediate Consumption (TIC)	60,4%	58,5%	↓
Share of domestic TIC	82,5%	76,3%	↓
Share of EU-25 TIC	11,6%	17,4%	↑
Share of Rest of the World TIC	5,9%	6,3%	↑



Flows to the agricultural sector (II)

BULGARIA	Before UE (2003-2005)	After UE (2008-2010)	Direction
Total Intermediate Consumption (TIC)	51,1%	60,1%	↑
Share of domestic TIC	84,5%	79,7%	↓
Share of EU-25 TIC	8,7%	12,2%	↑
Share of Rest of the World TIC	6,8%	8,1%	↑

ROMANIA	Before UE (2003-2005)	After UE (2008-2010)	Direction
Total Intermediate Consumption (TIC)	46,7%	53,0%	↑
Share of domestic TIC	84,7%	83,0%	↓
Share of EU-25 TIC	8,6%	12,0%	↑
Share of Rest of the World TIC	6,7%	5,0%	↓



Foreign flows to Polish agricultural sector

POLAND	Before UE (2000-2002)	After UE (2006-2008)	Direction
Agriculture	2,28%	2,39%	↑
Agri-food	1,48%	1,74%	↑
Coke and refined petroleum	0,80%	1,67%	↑
Chemical products	5,37%	5,95%	↑
Other manufactures	2,77%	3,52%	↑
Transport	0,39%	0,46%	↑
Financial services	0,39%	0,41%	↑



Domestic flows to Polish agricultural sector

POLAND	Before UE (2000-2002)	After UE (2006-2008)	Direction
Agriculture	27,27%	24,46%	↓
Agri-food	12,93%	13,20%	↑
Coke and refined petroleum	3,84%	4,52%	↑
Chemical products	2,74%	2,41%	↓
Other manufactures	4,09%	4,31%	↑
Electricity and gas	3,15%	3,34%	↑
Other trade and repair	18,66%	15,91%	↓



Foreign flows to Hungarian agricultural sector

HUNGARY	Before UE (2000-2002)	After UE (2006-2008)	Direction
Agriculture	1,9%	2,8%	↑
Mining	0,5%	0,9%	↑
Agri-food	1,7%	2,0%	↑
Coke and refined petroleum	0,7%	1,8%	↑
Chemical products	5,7%	7,2%	↑
Other manufactures	3,9%	4,9%	↑
Other trade and repair	1,0%	1,4%	↑



Domestic flows to Hungarian agricultural sector

HUNGARY	Before UE (2000-2002)	After UE (2006-2008)	Direction
Agriculture	41,4%	35,6%	↓
Agri-food	13,4%	12,0%	↓
Coke and refined petroleum	2,3%	3,0%	↑
Chemical products	3,5%	2,2%	↓
Other manufactures	4,5%	2,6%	↓
Other trade and repair	7,0%	7,7%	↑
Financial services	1,7%	2,3%	↑



Foreign flows to Bulgarian agricultural sector

BULGARIA	Before UE (2003-2005)	After UE (2008-2010)	Direction
Agriculture	3,8%	4,9%	↑
Mining	1,0%	1,1%	↑
Agri-food	1,5%	1,3%	↓
Coke and refined petroleum	1,4%	2,3%	↑
Chemical products	4,6%	6,5%	↑
Other manufactures	1,4%	1,9%	↑
Transport	0,4%	0,6%	↑



Domestic flows to Bulgarian agricultural sector

BULGARIA	Before UE (2003-2005)	After UE (2008-2010)	Direction
Agriculture	44,6%	32,1%	↓
Agri-food	2,4%	3,8%	↑
Coke and refined petroleum	3,1%	2,7%	↓
Other manufactures	2,9%	3,2%	↑
Construction	1,6%	3,0%	↑
Other trade and repair	15,9%	17,8%	↑
Veterinary services	2,0%	3,6%	↑



Foreign flows to Romanian agricultural sector

ROMANIA	Before UE (2003-2005)	After UE (2008-2010)	Direction
Agriculture	3,9%	4,3%	↑
Agri-food	0,7%	0,8%	↑
Coke and refined petroleum	4,1%	4,3%	↑
Chemical products	4,1%	4,5%	↑
Other manufactures	1,3%	1,4%	↑
Other trade and repair	0,6%	1,0%	↑



Domestic flows to Romanian agricultural sector

ROMANIA	Before UE (2003-2005)	After UE (2008-2010)	Direction
Agriculture	58,4%	45,7%	↓
Agri-food	3,8%	4,1%	↑
Other manufactures	2,9%	4,7%	↑
Electricity and gas	2,8%	3,2%	↑
Construction	0,6%	1,6%	↑
Other trade and repair	8,8%	14,8%	↑
Transport	0,9%	1,3%	↑



Flows from agriculture (I)

POLAND	Final consumption	To industries	Share of domestic cons.	Share of domestic indus.
Before UE (2000-2002)	43,8%	56,2%	95,5%	95,6%
After UE (2006-2008)	43,1%	56,9%	90,1%	93,2%
HUNGARY	Final consumption	To industries	Share of domestic cons.	Share of domestic indus.
Before UE (2000-2002)	26,9%	73,1%	91,1%	89,7%
After UE (2006-2008)	25,7%	74,3%	87,4%	77,8%
BULGARIA	Final consumption	To industries	Share of domestic cons.	Share of domestic indus.
Before UE (2003-2005)	44,1%	55,9%	96,5%	87,2%
After UE (2008-2010)	35,0%	65,0%	92,0%	65,2%
ROMANIA	Final consumption	To industries	Share of domestic cons.	Share of domestic indus.
Before UE (2003-2005)	36,1%	63,9%	97,6%	94,0%
After UE (2008-2010)	36,4%	63,6%	98,0%	87,8%



Flows from agriculture (II)

POLAND	Final consumption	To industries	Share of domestic cons.	Share of domestic indus.
Before UE (2000-2002)	43,8%	56,2%	95,5%	95,6%
After UE (2006-2008)	43,1%	56,9%	90,1%	93,2%
Most recent (2012-2014)	32,8%	67,2%	84,7%	89,6%

Mostly: agriculture (16,9%) and agri-food (37,5%)

HUNGARY	Final consumption	To industries	Share of domestic cons.	Share of domestic indus.
Before UE (2000-2002)	26,9%	73,1%	91,1%	89,7%
After UE (2006-2008)	25,7%	74,3%	87,4%	77,8%
Most recent (2012-2014)	20,9%	79,1%	77,7%	73,0%

Mostly: agriculture (25,4%) and agri-food (40,3%) and hotels&restaurants (1,5%)



Flows from agriculture (III)

BULGARIA	Final consumption	To industries	Share of domestic cons.	Share of domestic indus.
Before UE (2003-2005)	44,1%	55,9%	96,5%	87,2%
After UE (2008-2010)	35,0%	65,0%	92,0%	65,2%
Most recent (2012-2014)	31,1%	68,9%	88,1%	52,4%

Mostly: agriculture (23,9%) and agri-food (28,4%) and textiles (2,0%)

ROMANIA	Final consumption	To industries	Share of domestic cons.	Share of domestic indus.
Before UE (2003-2005)	36,1%	63,9%	97,6%	94,0%
After UE (2008-2010)	36,4%	63,6%	98,0%	87,8%
Most recent (2012-2014)	37,3%	62,7%	97,0%	80,6%

Mostly: agriculture (25,0%) and agri-food (33,2%) and textiles (1,1%)



Flows from agriculture (IV)

2014	Final consumption	To industries	Share of domestic cons.	Share of domestic indus.
Poland	31,9%	68,1%	82,7%	88,2%
Hungary	22,1%	77,9%	76,7%	76,2%
Bulgaria	32,6%	67,4%	87,3%	55,2%
Romania	37,4%	62,6%	96,9%	79,9%
Germany	19,1%	80,9%	71,4%	81,6%



Flows to the agricultural sector (I)

POLAND	(2000-2002)	(2006-2008)	(2012-2014)	Direction
Total Intermediate Consumption (TIC)	62,3%	58,7%	58,4%	↓
Share of domestic TIC	84,8%	81,8%	80,3%	↓
Share of EU-25 TIC	10,9%	13,2%	13,9%	↑
Share of Rest of the World TIC	4,4%	5,1%	5,8%	↑

HUNGARY	(2000-2002)	(2006-2008)	(2012-2014)	Direction
Total Intermediate Consumption (TIC)	60,4%	58,5%	56,5%	↓
Share of domestic TIC	82,5%	76,3%	71,5%	↓
Share of EU-25 TIC	11,6%	17,4%	21,2%	↑
Share of Rest of the World TIC	5,9%	6,3%	7,3%	↑



Flows to the agricultural sector (II)

BULGARIA	(2003-2005)	(2008-2010)	(2012-2014)	Direction
Total Intermediate Consumption (TIC)	51,1%	60,1%	57,9%	-
Share of domestic TIC	84,5%	79,7%	75,1%	↓
Share of EU-25 TIC	8,7%	12,2%	14,4%	↑
Share of Rest of the World TIC	6,8%	8,1%	10,4%	↑

ROMANIA	(2003-2005)	(2008-2010)	(2012-2014)	Direction
Total Intermediate Consumption (TIC)	46,7%	53,0%	50,5%	-
Share of domestic TIC	84,7%	83,0%	85,0%	-
Share of EU-25 TIC	8,6%	12,0%	10,7%	-
Share of Rest of the World TIC	6,7%	5,0%	4,2%	↓



Conclusions

- Significant changes in the structure of Total Intermediate Consumption in every analyzed country
- Lowering value of TIC comparing to Total Output after joining EU
- Declining share of domestic TIC, increasing role of input from EU and ROW (ex. Romania)
- Declining share of input from agricultural sector
- Growth of value of input from agri-food sector and from other manufacturing sectors
- Declining role of final consumption
- Fall in the share of domestic consumption as well as flows to domestic industries
- Significant similarities among 4 analyzed countries with some small differences in the case of Romania



Thank you