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# **Russian Crisis and its Impact on Agriculture and the Food Industry in Latvia**

**Dr.oec. Irina Pilvere, Dr.oec. Aleksejs Nipers**  
**Latvia University of Agriculture**





# Latvia University of Agriculture

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It is the fourth largest higher education institution in Latvia with 8 faculties implementing unique study programs in **agriculture, forestry science, veterinary medicine, food technology and landscaping**

and offering studies in widespread study areas such as **information technologies, economics and social sciences, agricultural engineering, construction and pedagogy.**





# The research aim and tasks

**The research aim** is to examine agricultural and food export indicators to identify the groups of goods impacted by Russia's embargo and their relation to the industry indicators.

**The following specific research tasks were set:**

- 1) to analyse the agricultural and food export indicators for Latvia;
- 2) to examine milk and milk product export indicators for Latvia and their relation to the key industry indicators.







# The importance of the research

- ✓ The economic crisis affected many countries in a different way – companies bankrupted, incomes, demand and output decreased, capital, including investment, flows shrank and negatively influenced the output, world trade declined, in a number of world countries GDPs contracted etc.
- ✓ The sanctions imposed on Russia in 2014 by the European Union – and also by the United States, Australia and Norway – have led Russia to impose their own embargo in return - on European agricultural and food produce.
- ✓ In total, Latvia's exports account for approximately 60% of its GDP. The exports of goods to CIS countries, especially to Russia was very important.





# Methodological approach

The information analysis was based on two levels of detail according to the Combined Nomenclature (CN) groups of goods in the range of 1-24:

- 1) *at 2-digit level* (01-live animals; 02-meat and edible meat offal; 03-fish and crustaceans, molluscs and other aquatic invertebrates; 04-dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included ....)
- 2) *at 4-digit level* (0401-milk and cream, not concentrated nor containing added sugar or other sweetening matter; 0402-milk and cream, concentrated or containing added sugar or other sweetening matter....)



# Food security goals (FAO)

- ✓ Strengthening national food control regulatory frameworks, and enhancing member country participation in Codex
- ✓ Providing independent scientific advice through expert bodies to support the standard setting work of Codex
- ✓ Enhancing food safety management along food chains to prevent diseases and trade disruptions
- ✓ Promoting food safety emergency preparedness to build resilient agri-food chains
- ✓ Developing online platforms for global networking, databases for information sharing and tools to support food safety management





# Research Results

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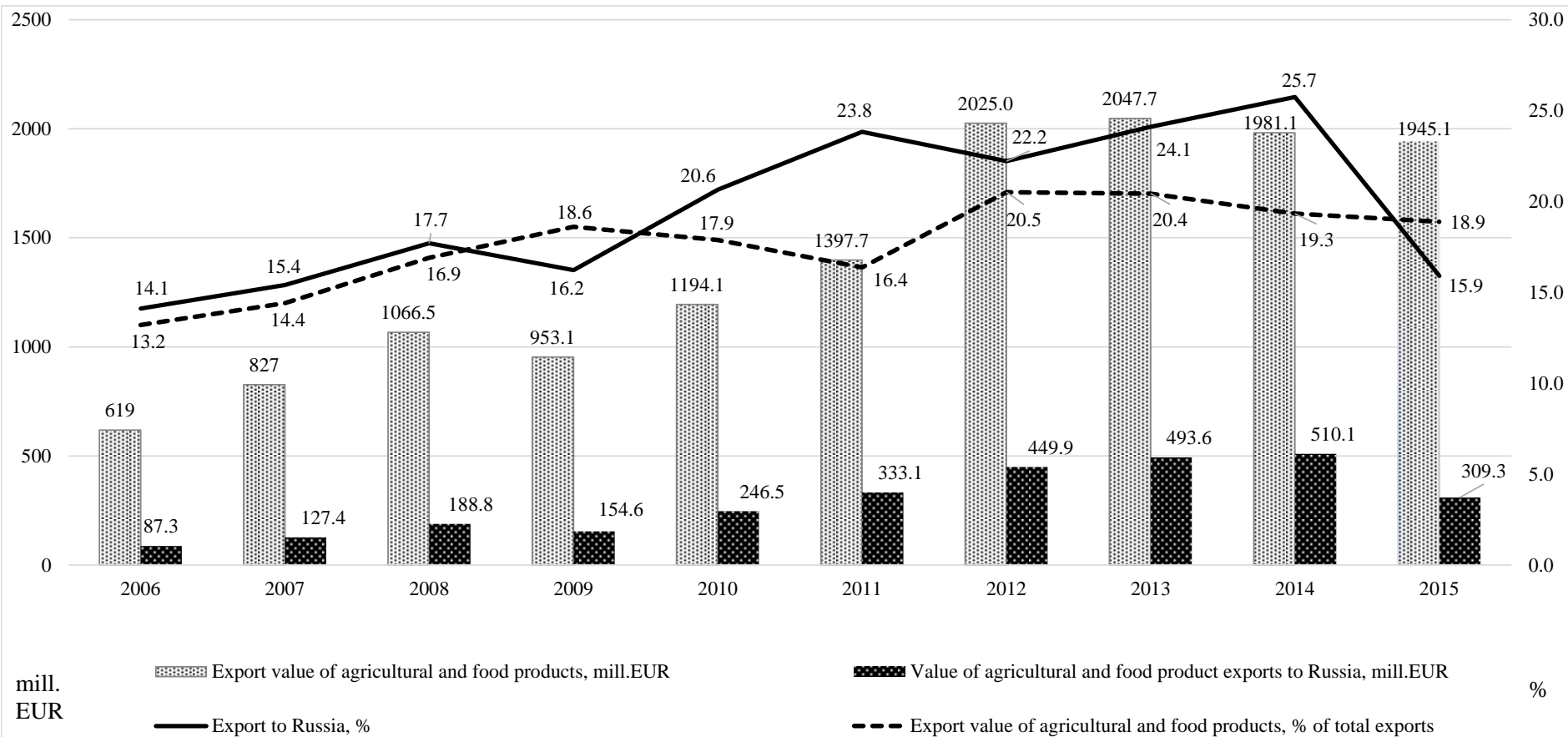
## 1. Agricultural and food exports of Latvia







# Latvia's total agricultural and food exports and exports to Russia





# Characteristics of the total agricultural and food exports of Latvia

CN at 2-digit level	Percentage			+/- 2014/2013		+/- 2015/2014		+/- 2015/2013	
	2013	2014	2015	mill.EUR	Percentage	mill.EUR	Percentage	mill.EUR	Percentage
22	24.4	26.3	20.3	21.7	1.9	-125.9	-6.0	-104.3	-4.1
10	14.7	15.9	20.9	12.8	1.1	91.4	5.0	104.3	6.1
04	12.7	12.3	10.1	-17.0	-0.4	-46.8	-2.2	-63.8	-2.6
03	6.3	4.5	4.5	-39.8	-1.8	-2.2	0.0	-42.0	-1.8
16	5.9	5.9	5.4	-4.0	0.0	-11.5	-0.5	-15.5	-0.5
12	5.4	3.5	5.6	-40.5	-1.9	38.2	2.0	-2.2	0.2
02	3.5	3.2	3.0	-8.3	-0.3	-6.3	-0.3	-14.6	-0.6
19	3.5	4.0	4.4	8.1	0.5	5.0	0.3	13.2	0.9
23	3.5	3.9	3.2	6.3	0.4	-15.5	-0.7	-9.1	-0.3
08	2.8	2.8	4.0	-1.1	0.0	22.3	1.2	21.2	1.2
21	2.2	2.4	2.3	3.1	0.2	-2.5	-0.1	0.6	0.1
20	2.1	2.1	2.0	-1.2	0.0	-3.5	-0.1	-4.7	-0.1
17	2.0	1.0	0.8	-20.5	-1.0	-4.1	-0.2	-24.6	-1.2
15	1.7	1.7	1.3	-1.3	0.0	-9.0	-0.4	-10.3	-0.4
01	1.7	1.8	2.2	2.5	0.2	5.4	0.3	7.8	0.5
11	1.4	1.5	1.8	0.2	0.1	6.0	0.3	6.2	0.4
06	1.3	1.2	1.5	-2.2	-0.1	5.8	0.3	3.7	0.3
09	1.2	1.7	1.8	8.3	0.5	0.4	0.1	8.7	0.5
18	1.2	1.2	1.3	-0.5	0.0	2.7	0.2	2.2	0.2
07	1.1	1.3	1.8	1.5	0.1	10.2	0.5	11.7	0.7
24	1.0	1.1	1.5	0.3	0.1	8.2	0.4	8.5	0.5
05	0.1	0.2	0.1	2.0	0.1	-2.1	-0.1	-0.1	0.0
13	0.1	0.2	0.1	2.8	0.1	-2.4	-0.1	0.4	0.0



# Characteristics of Latvia's agricultural and food exports to Russia

CN at 2-digit level	Percentage			+/- 2014/2013		+/- 2015/2014		+/- 2015/2013	
	2013	2014	2015	mill.EUR	Percentage	mill.EUR	Percentage	mill.EUR	Percentage
22	72.4	73.8	80.8	19.3	1.5	-126.7	7.0	-107.3	8.4
10	7.5	6.0	3.0	-6.3	-1.5	-21.3	-3.0	-27.7	-4.5
04	5.4	5.6	0.1	2.0	0.2	-28.4	-5.5	-26.4	-5.3
03	4.5	3.9	8.0	-2.1	-0.6	4.8	4.1	2.7	3.5
16	2.5	2.4	1.9	-0.3	-0.1	-6.3	-0.5	-6.7	-0.6
12	2.1	3.8	1.8	8.9	1.7	-13.9	-2.0	-5.0	-0.3
02	1.1	1.1	1.3	0.0	0.0	-1.3	0.3	-1.3	0.2
19	1.0	0.8	0.9	-0.9	-0.2	-1.2	0.1	-2.1	-0.1
23	0.7	0.8	0.2	0.5	0.1	-3.4	-0.6	-2.9	-0.5
08	0.6	0.1	0.0	-2.2	-0.4	-0.7	-0.1	-2.8	-0.6
21	0.5	0.2	0.2	-1.4	-0.3	-0.3	0.0	-1.7	-0.3
20	0.4	0.2	0.0	-0.6	-0.1	-1.2	-0.2	-1.9	-0.4
17	0.4	0.4	0.3	0.2	0.0	-0.9	0.0	-0.7	0.0
15	0.2	0.3	0.3	0.0	0.0	-0.4	0.0	-0.4	0.0
01	0.2	0.0	0.0	-0.8	-0.2	-0.1	0.0	-1.0	-0.2
11	0.2	0.2	0.1	0.0	0.0	-0.4	0.0	-0.4	0.0
06	0.2	0.1	0.4	0.0	0.0	0.5	0.2	0.5	0.2
09	0.1	0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.1
18	0.1	0.1	0.1	0.1	0.0	-0.1	0.0	-0.2	0.0
07	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0
24	0.0	0.1	0.3	0.2	0.0	0.7	0.2	0.8	0.3



# Research Results

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## 2. Milk and milk product exports of Latvia





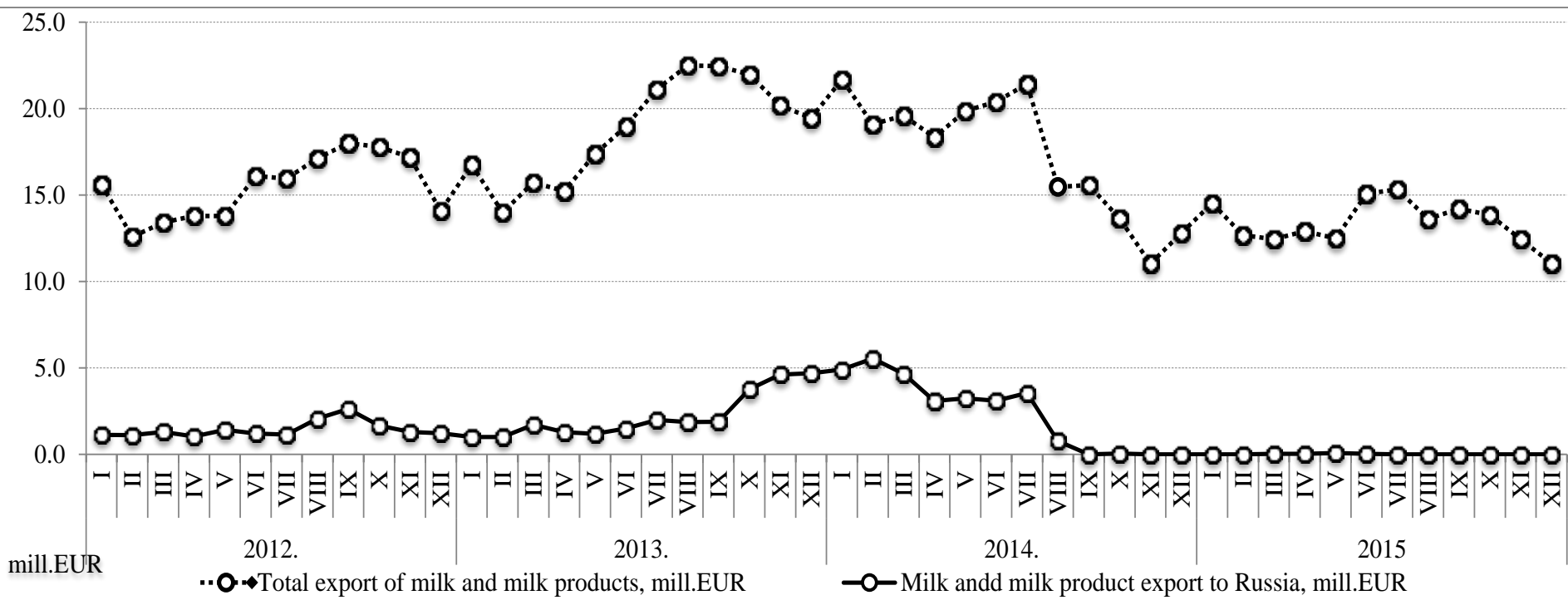
# Characteristics of the milk and milk product exports of Latvia

CN at 4-digit level	Percentage			+/- 2014/2013		+/- 2015/2014		+/- 2015/2013	
	2013	2014	2015	thou.EUR	Percentage	thou.EUR	Percentage	thou.EUR	Percentage
<b>Total exports</b>									
<b>0401</b>	47.7	47.7	44.7	-5837	0.0	-30086	-3.0	-35923	-3.0
<b>0402</b>	13.2	15.3	10.1	2758	2.1	-16299	-5.1	-13541	-3.1
<b>0403</b>	5.6	6.0	6.2	64	0.4	-2839	0.2	-2776	0.6
<b>0404</b>	2.5	2.3	3.9	-638	-0.2	1333	1.6	696	1.4
<b>0405</b>	7.5	6.6	4.9	-2810	-0.9	-6226	-1.7	-9036	-2.6
<b>0406</b>	23.5	22.1	30.2	-5931	-1.4	1341	8.1	-4590	6.7
<b>Total</b>	100	100	100	-12395	0.0	-52776	0.0	-65171	0.0
<b>Exports to Russia</b>									
<b>0401</b>	4.7	16.0	95.2	3325	11.3	-4383	79.2	-1058	90.5
<b>0402</b>	15.4	16.2	0.0	538	0.8	-4636	-16.2	-4098	-15.4
<b>0403</b>	2.8	2.0	4.0	-153	-0.7	-572	1.9	-725	1.2
<b>0404</b>	0.4	0.3	0.0	-18	-0.1	-77	-0.3	-96	-0.4
<b>0405</b>	18.9	27.4	0.0	2814	8.5	-7819	-27.4	-5005	-18.9
<b>0406</b>	57.9	38.1	0.8	-4504	-19.8	-10861	-37.2	-15365	-57.1
<b>Total</b>	100	100	100	2002	0.0	-28348	0.0	-26346	0.0





# Monthly changes in the value of milk and milk product exports from Latvia





# Export destinations for dairy produce (group 04) in Latvia

Countries/indicators	mill.EUR			Percentage			+/- 2015/2013
	2013	2014	2015	2013	2014	2015	mill.EUR
<b>LT - Lithuania</b>	112.0	106.0	75.8	42.9	43.4	38.4	-36.2
<b>DE - Germany</b>	39.1	24.1	23.8	15.0	9.9	12.1	-15.3
<b>RU - Russia</b>	26.5	28.5	0.2	10.2	11.7	0.1	-26.3
<b>EE - Estonia</b>	21.1	18.9	21.9	8.1	7.7	11.1	0.8
<b>NL - Netherlands</b>	10.9	7.9	13.7	4.2	3.2	6.9	2.7
<b>BE - Belgium</b>	9.4	3.7	0.4	3.6	1.5	0.2	-9.1
<b>PL - Poland</b>	7.2	15.9	17.9	2.8	6.5	9.1	10.7
<b>AZ - Azerbaijan</b>	7.0	7.6	6.0	2.7	3.1	3.0	-1.0
<b>CZ - Czech Republic</b>	6.2	5.7	5.4	2.4	2.3	2.7	-0.9
<b>SK - Slovakia</b>	2.7	1.0	0.9	1.0	0.4	0.5	-1.8
<b>Other countries</b>	18.9	24.8	31.2	7.2	10.2	15.9	12.3
<b>Total</b>	261.0	244.1	197.2	100.0	100.0	100.0	-63.8
<b>Number of export countries</b>	45	57	58	x	x	x	x
<b>Number of new export countries</b>	x	16	9	x	x	x	x



## Research Results

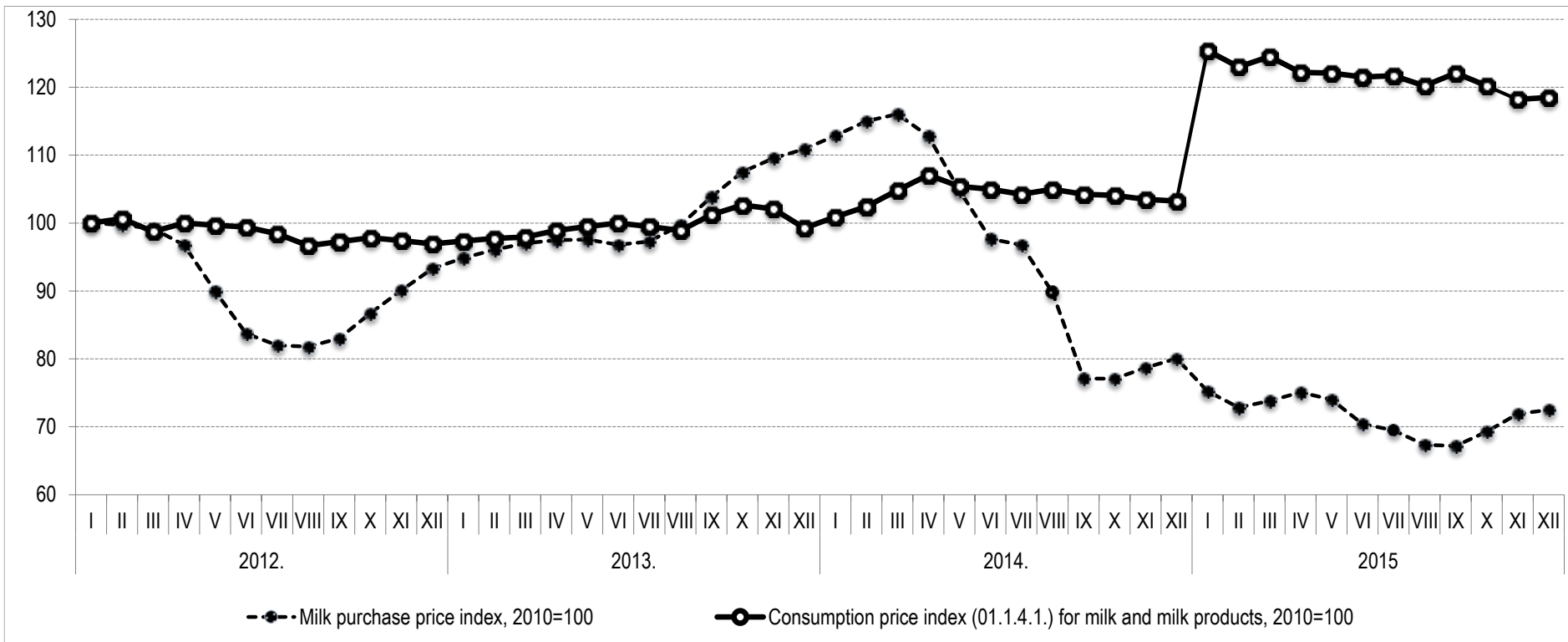
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### **3. Effects of milk and milk product exports on the other indicators of the dairy industry in Latvia**





# Monthly changes in the index of purchase and consumption prices for milk and milk products in Latvia





# Strong and medium-strong relationships between the various indicators of foreign trade in Latvia in the months of 2012-2015

Indicators		Foreign trade indicators/ correlation coefficient value <b>r</b>	
		Total export value of milk and milk products, mill.EUR	Value of milk and milk product exports to Russia, mill.EUR
		$Y_1$	$Y_2$
<b>Total export value, mill.EUR</b>	$X_1$	x	0.78
<b>0401 export value, mill.EUR</b>	$X_2$	0.32	0.74
<b>0401 export price EUR per 1 kg</b>	$X_3$	0.72	0.82
<b>0402 export value, mill.EUR</b>	$X_4$	0.76	0.57
<b>0402 export price EUR per 1 kg</b>	$X_5$	0.65	0.56
<b>0403 export value, mill.EUR</b>	$X_6$	0.61	0.74
<b>0403 export amount, kg</b>	$X_7$	0.66	0.70
<b>0405 export value, mill.EUR</b>	$X_8$	0.82	-0.35
<b>0405 export amount, kg</b>	$X_9$	0.78	0.71
<b>0405 export price EUR per 1 kg</b>	$X_{10}$	0.43	0.51
<b>Milk purchase, EUR per 1 t</b>	$X_{11}$	0.70	0.85
<b>Value of purchased milk, mill.EUR</b>	$X_{12}$	0.86	0.69





# Conclusions (I)

- ✓ Agricultural and food products play a significant role in the foreign trade of Latvia, as the exports of the products rose 3.1 times in the period 2006-2015, reaching the highest export value in 2013, more than EUR 2 billion, which accounted for almost a fifth of the total value of the country's exports
- ✓ In the period 2006-2014, the agricultural and food exports to Russia rose 5.8 times, reaching EUR 510 mill. and accounting for 26% of the total exports.
- ✓ Owing to Russia's embargo, the export value of agricultural and food products decreased by 39% in 2015.
- ✓ In the total value of Latvia's exports, three groups of goods – 22-beverages, spirits and vinegar, 10-cereals and 04-dairy produce; birds' eggs; natural honey – made up half of the total export value, while the determinant role in trade with Russia was played by goods group 22- beverages, spirits and vinegar, comprising 81% of the total exports in 2015.
- ✓ Due to Russia's embargo policy, the largest decline in the total exports in 2015 compared with 2013 was in goods group 04, EUR 64 mill., of which a decrease of EUR 26 mill. or 41% related to the milk and milk product exports to Russia.



## Conclusions (II)

- ✓ In the composition of milk and milk product exports to Russia in 2013, goods groups 0402, 0405 and 0406 were the most significant, accounting for 92% of the total export value.
- ✓ The diversification of the market takes place – new export markets are sought for in African and Middle East countries and exports are increased to some European Union Member States and other traditional markets.
- ✓ In 2016 the prices are still the lowest in the European Union, causing a long crisis in the dairy industry in Latvia, which resulted in a decrease in the number of dairy herds and dairy cows in Latvia.
- ✓ The total export value of milk and milk products has a strong correlation with the export value of goods group 0405 and the value of purchased milk, while the value of milk and milk product exports to Russia has a strong correlation with the export price of goods group 0401 and the milk purchase price.



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**Thank you!**

