AGRICULTURAL AND FOOD SYSTEM TRANSFORMATION FOR BETTER FOOD AND NUTRITION SECURITY (FNS) IN EURASIA

ECFS/WB Report Presentation

Johan Swinnen
KU Leuven
CEPS
FSE, Stanford University
Mercator, Gottingen University

Washington DC Nov 2018

Agricultural and Food Systems Transformation for Better Food Security and Nutrition in Eurasia

FOCUS COUNTRIES & Background Study Reports

Country	Author
Russia	Vitaly Nagornov
Kazakhstan	Gulzhan Nurtazina
Kyrgyz Republic	Kanat Tilekeev
Uzbekistan	Botir Dosov, Inna Rudenko, Davron Niyazmetov
Tajikistan	Christine Oriol
Armenia	Naira Harutyunyan
The Role of Russia in Eurasian Food Security	Evgeny Tsvetnov et al.

A Heterogenous Region

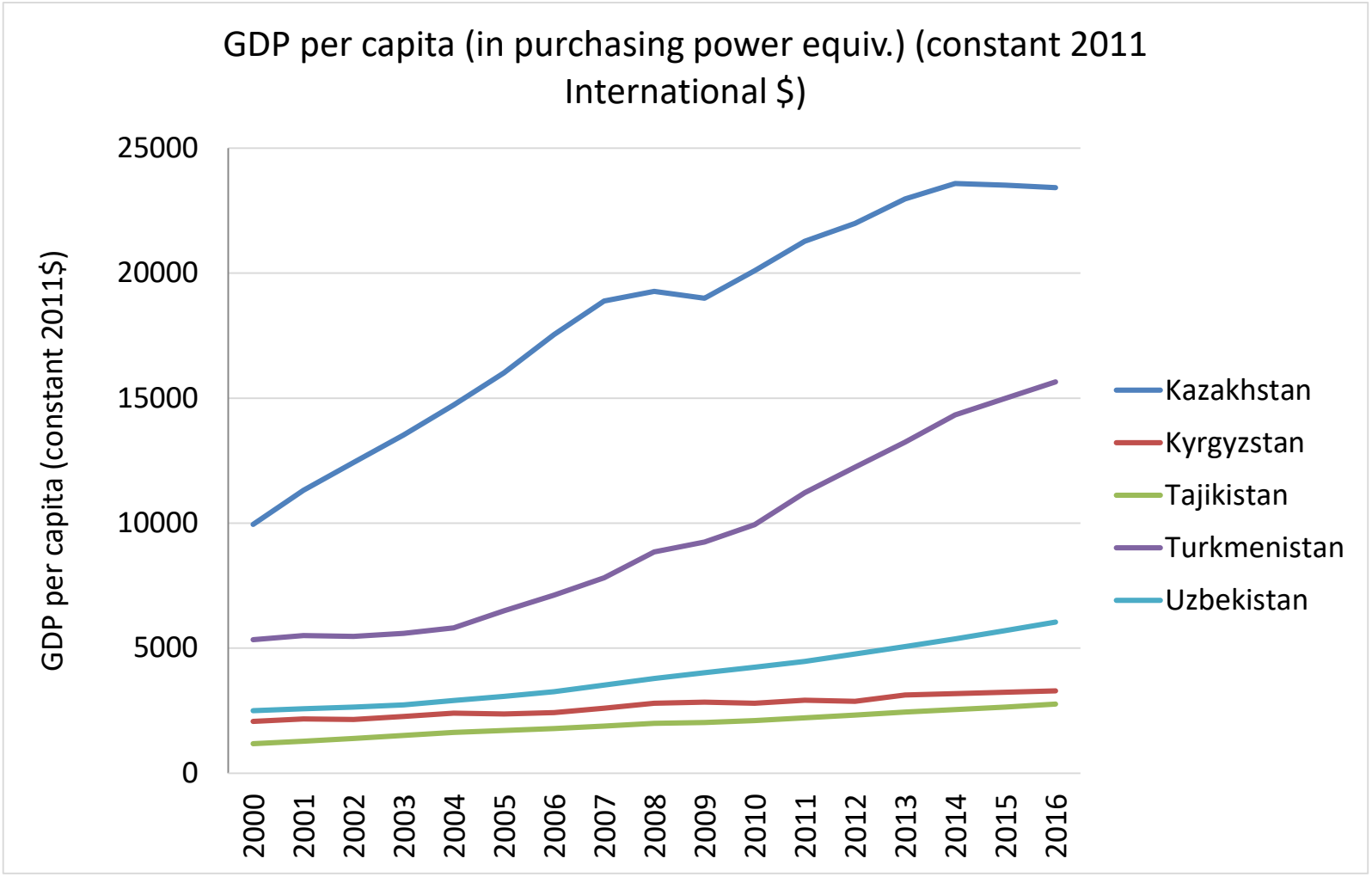
- Size (geographic, population, economic)
- Income, poverty, and food security
- Economic and political transitions
- Natural resources
- Farm structures
- Trade in agri-food products
- …

Linked through geography and institutional history

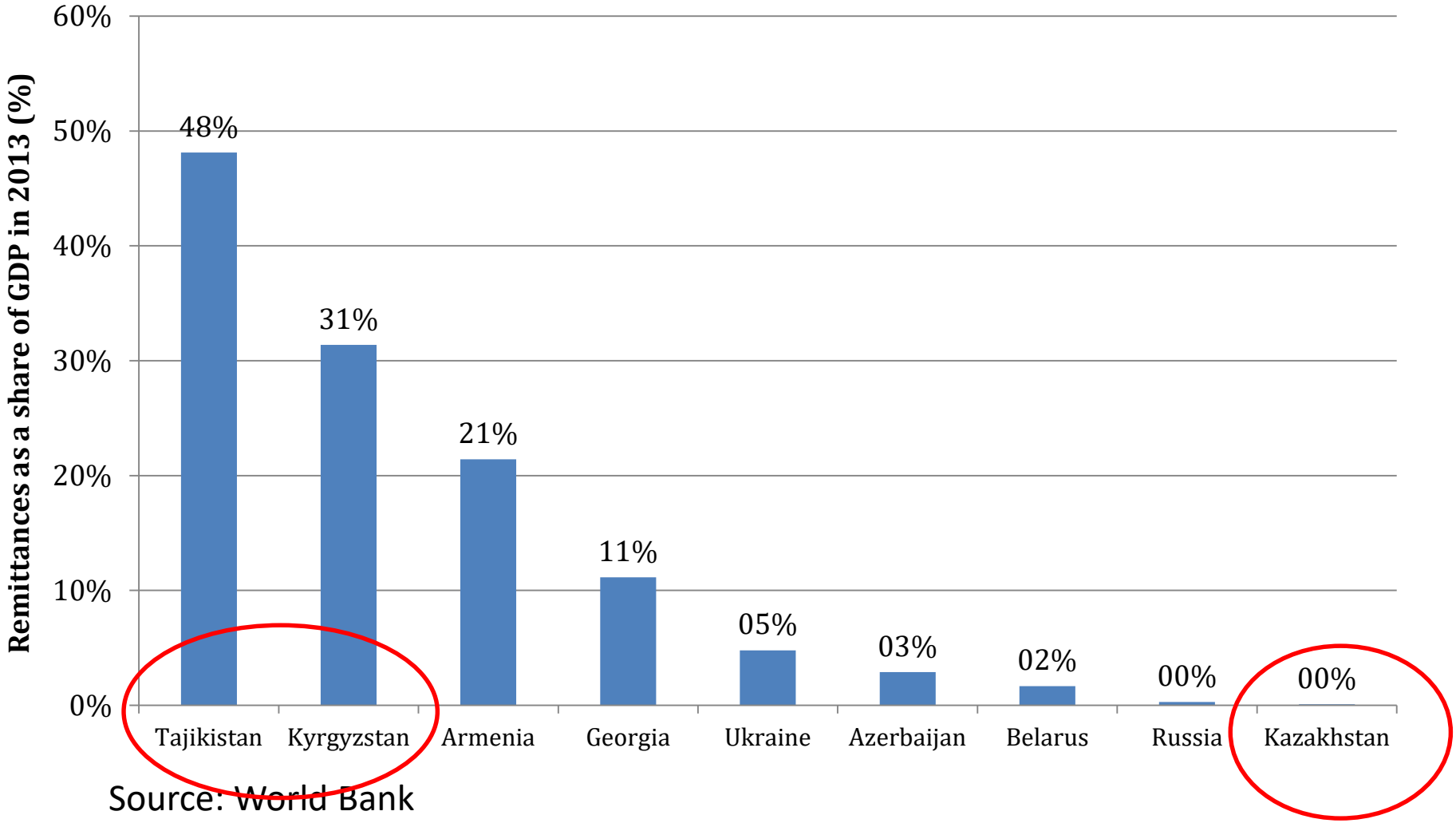
COMPLICATES DRAWING GENERAL INSIGHTS, CONCLUSIONS AND IMPLICATIONS

Incomes in Central Asia 2000-16

(constant GDP/capita 2011 USD)

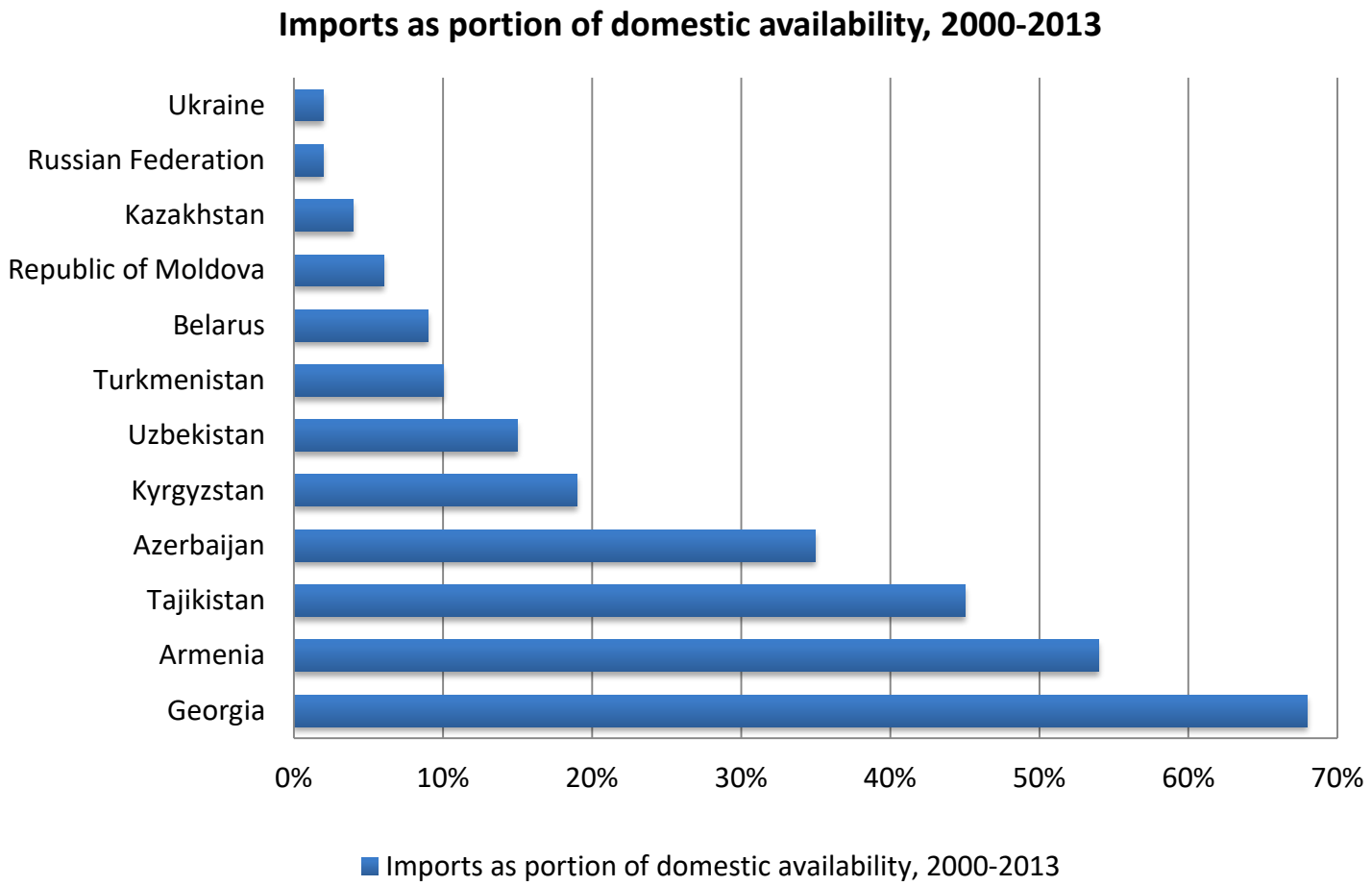


Importance of Remittances (% in GDP)



Source: World Bank

Import Dependency for Staple Foods (Cereals)

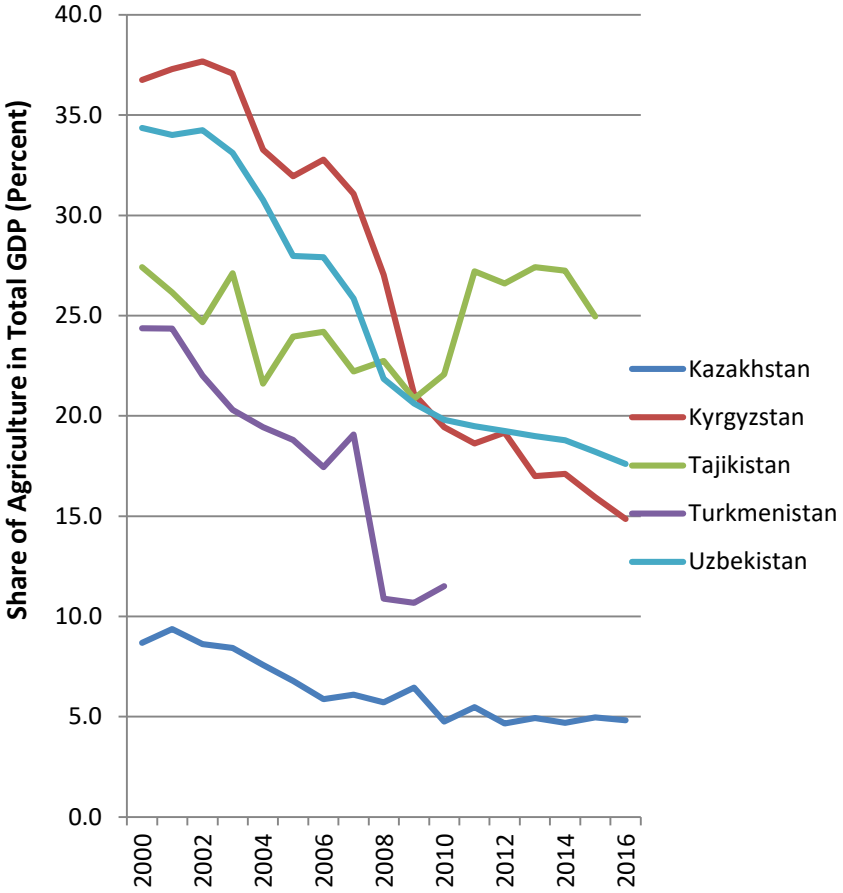


Source: FAOstat

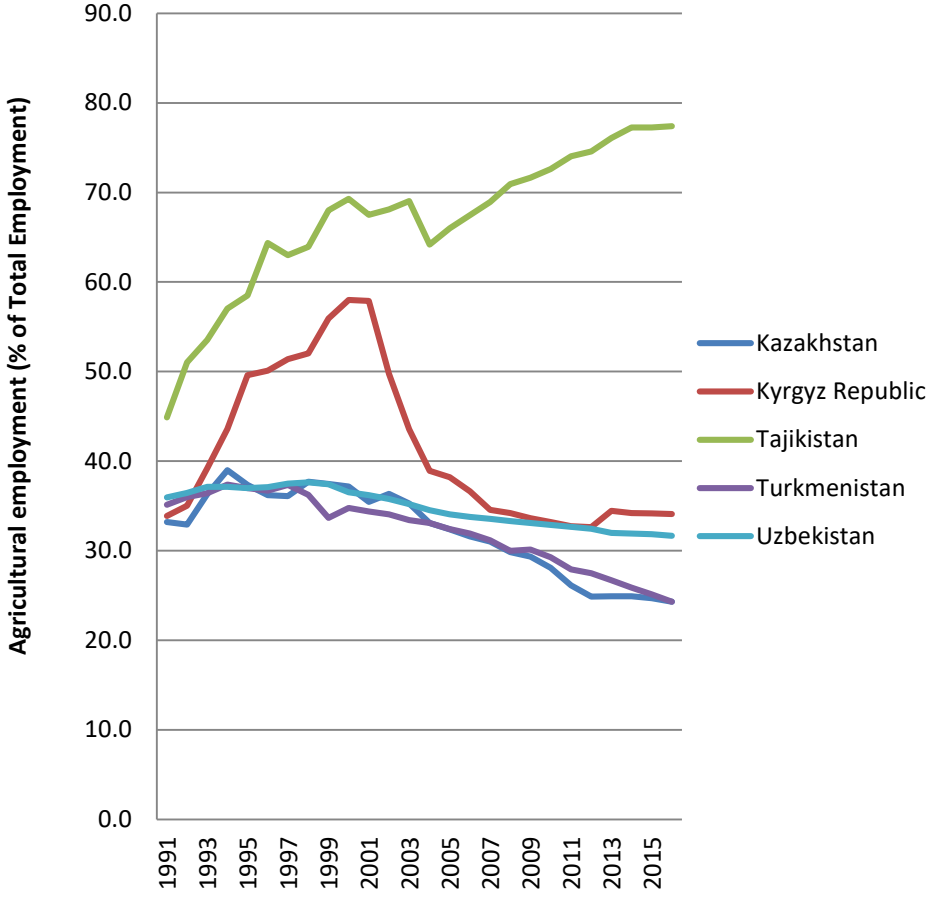
TRANSFORMATION OF THE AGRI-FOOD SYSTEM

Share of Agriculture in the Economy

% GDP



% Employment

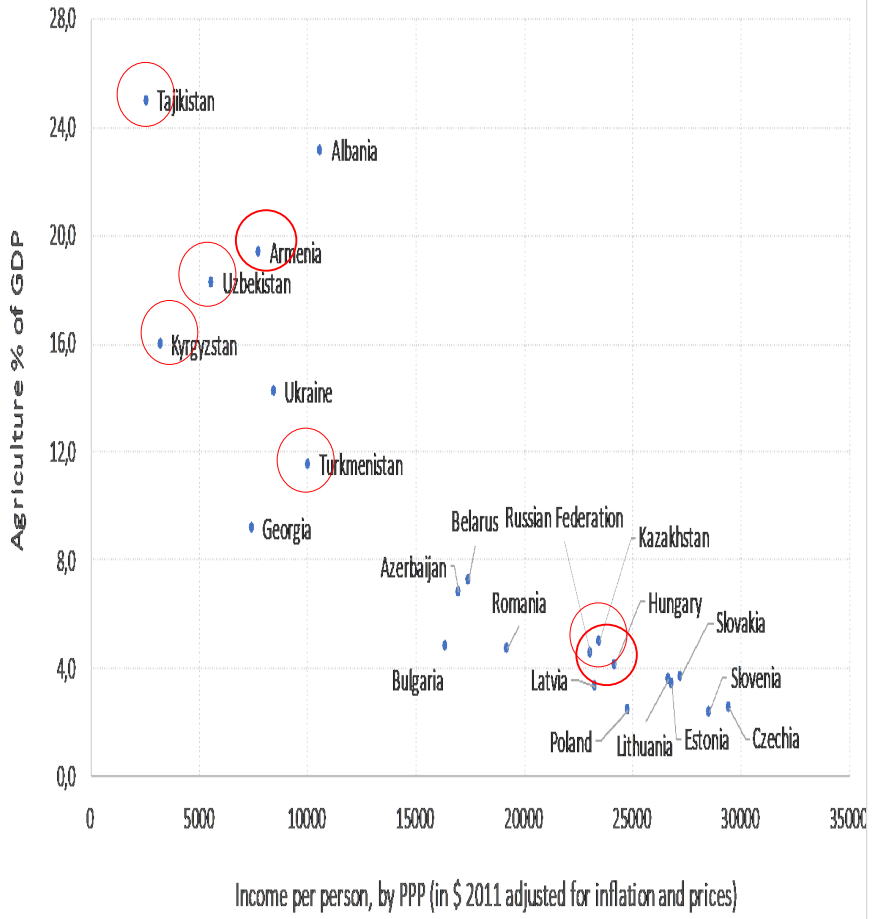


Source: ILO and National Statistics

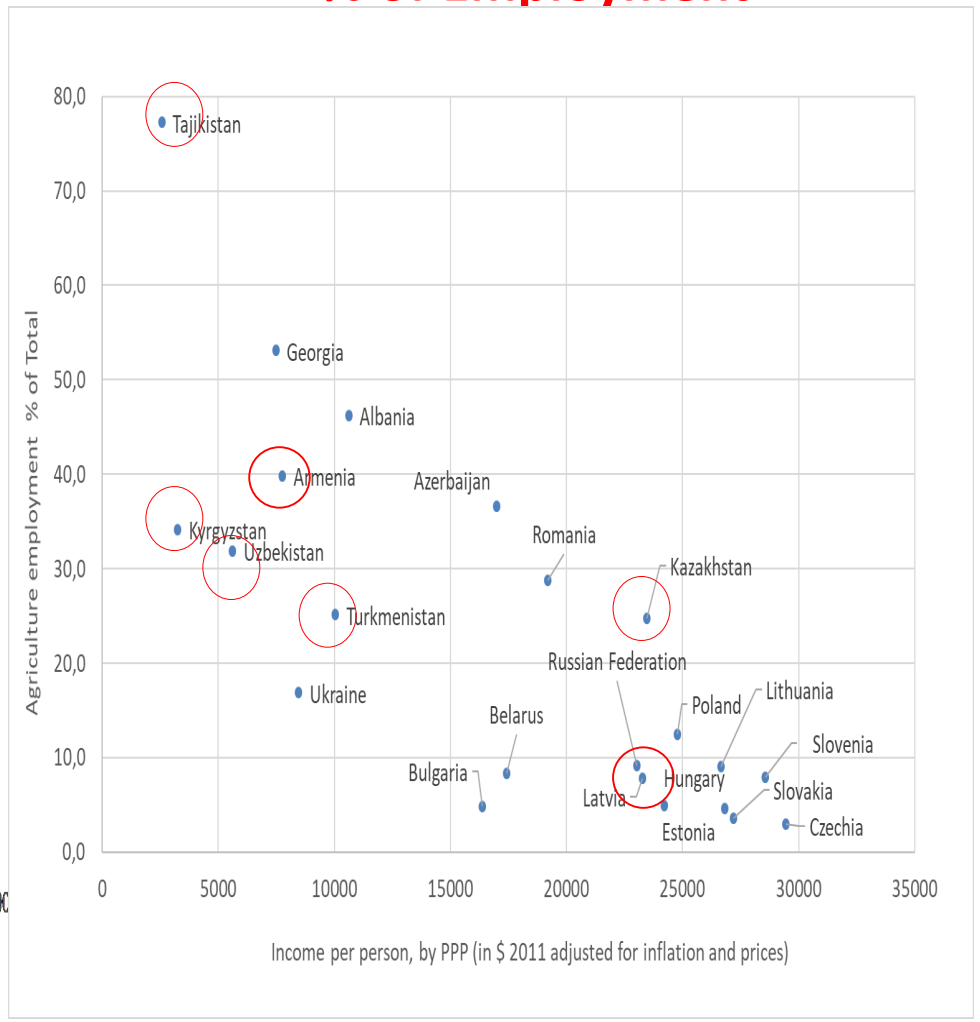
Agricultural Transformation with Economic Growth

(Focus Countries & Transition Countries)

% of GDP

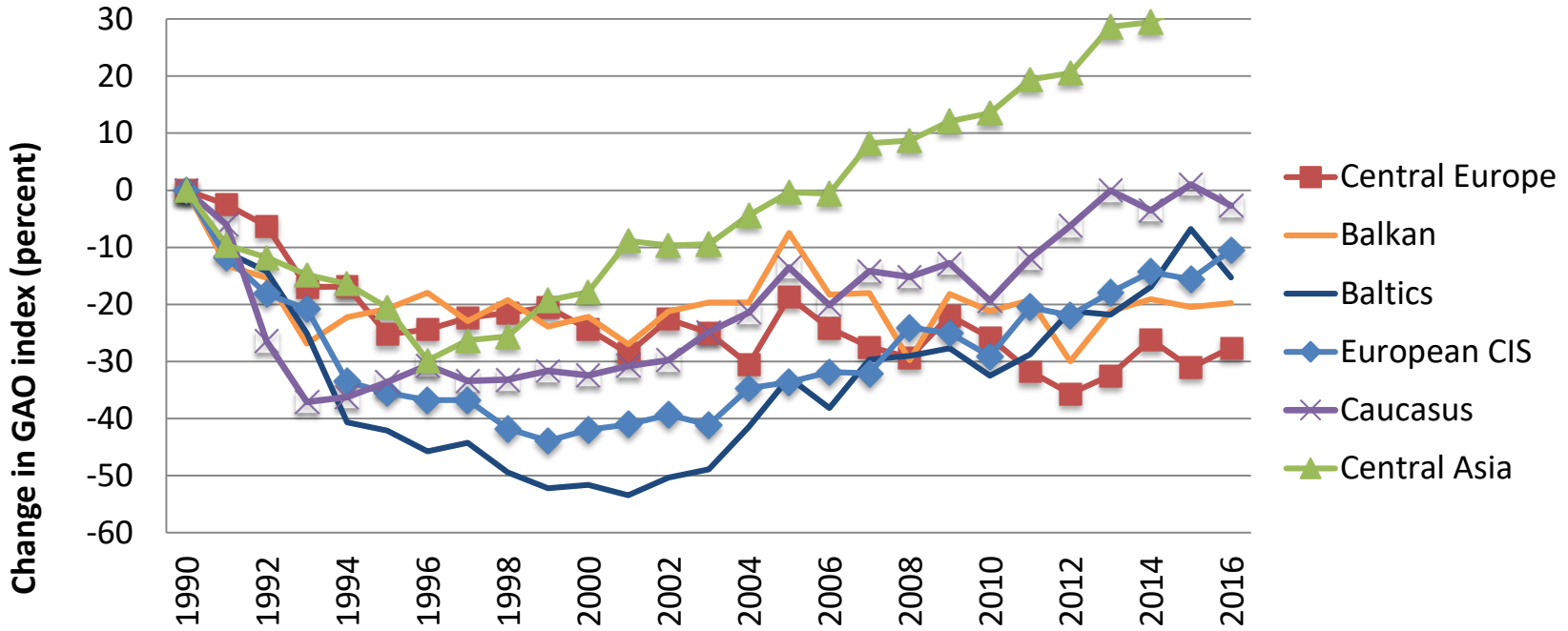


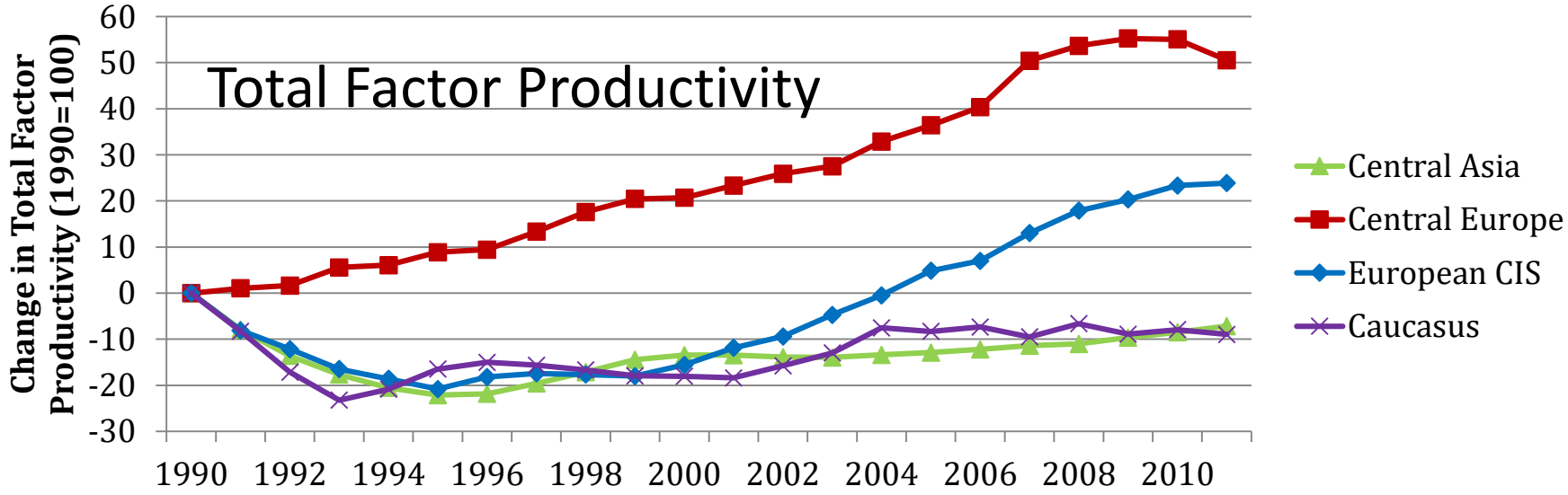
% of Employment



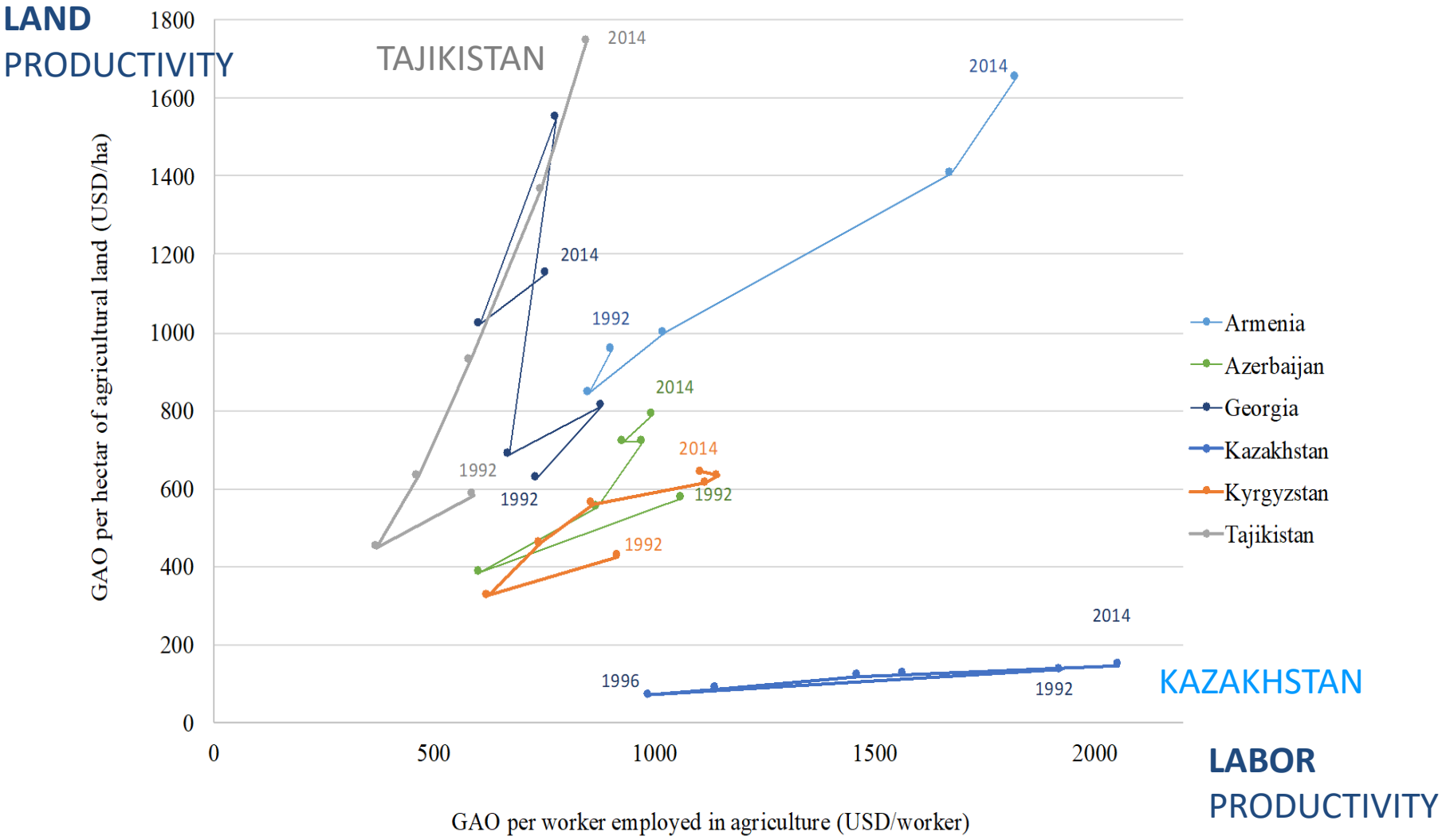
Sources: World Bank, Gapminder

Agricultural Production





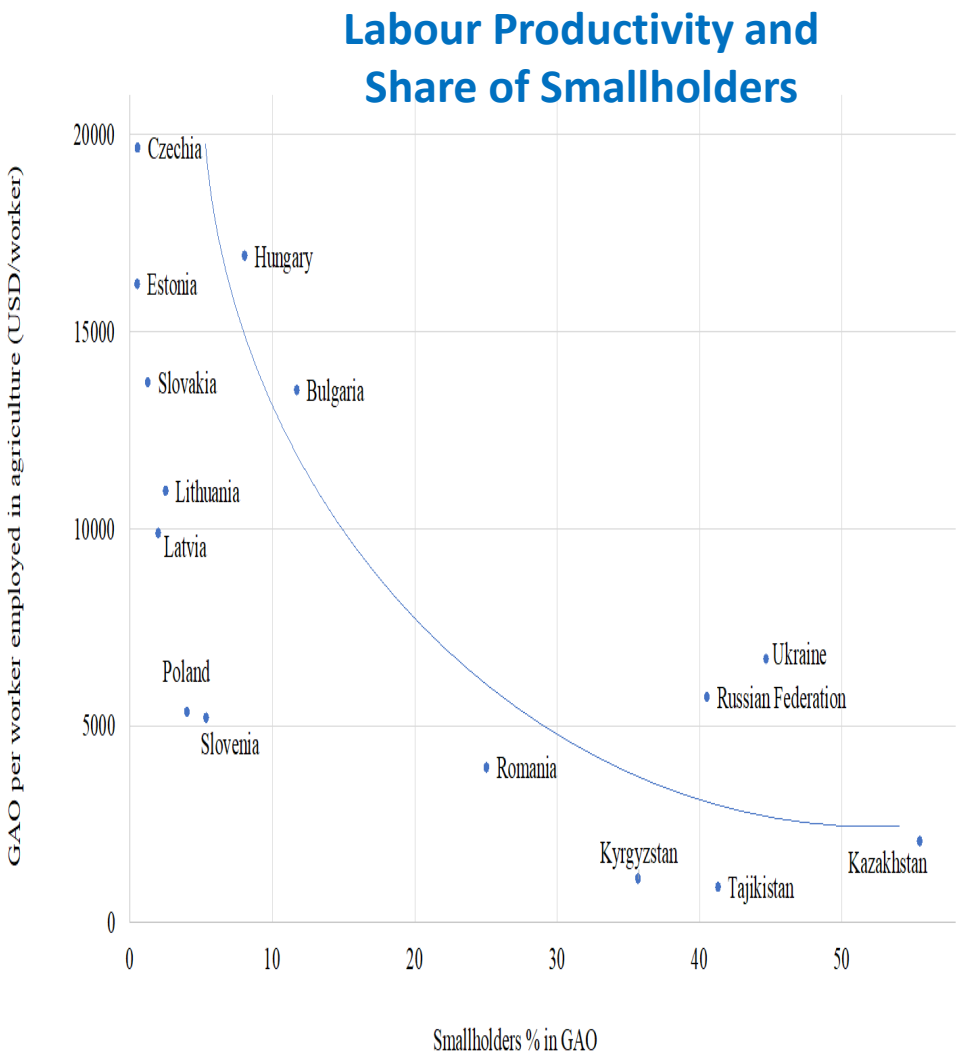
Patterns of productivity change



Note: Agricultural land refers to arable land and permanent crops. Gross production value is measured in constant 2004-2006 million US$.
Source: FAOstat (2015), ILO (2014).

Farm Structures and Productivity

- Strong DIVERSITY
  - among transition countries
  - within some countries
- Smallholders:
  - High land productivity
  - Low labour productivity



FOOD AND NUTRITION SECURITY

State of Food Security – Summary

- Over the past 15 years, on **average**: **poverty**, **undernourishment**, and **micronutrient deficiency** have strongly **improved**.

- **Micronutrient** deficiencies ("hidden hunger") remain serious problems: Anemia, vitamin A and zinc deficiency.
  - Especially : **anemia for women**. In Russia, Kyrgyzstan and Armenia, anemia among woman have increased since 2002.

- Large **regional** differences in food and nutrition security within the countries.

- Increasing challenge : **over-nutrition**

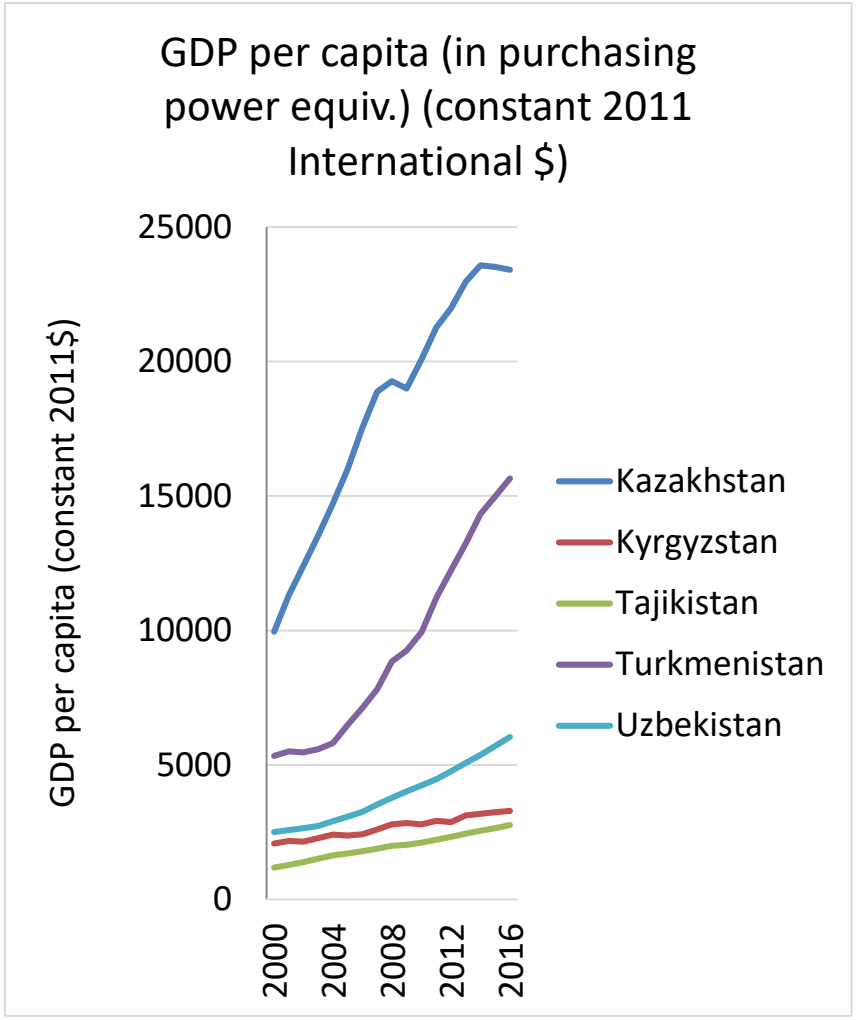
Causes of FNS changes

In Central Asia, food accounts for 60% or more for many poor households' expenditures; in Russia and Armenia 30-40 %.

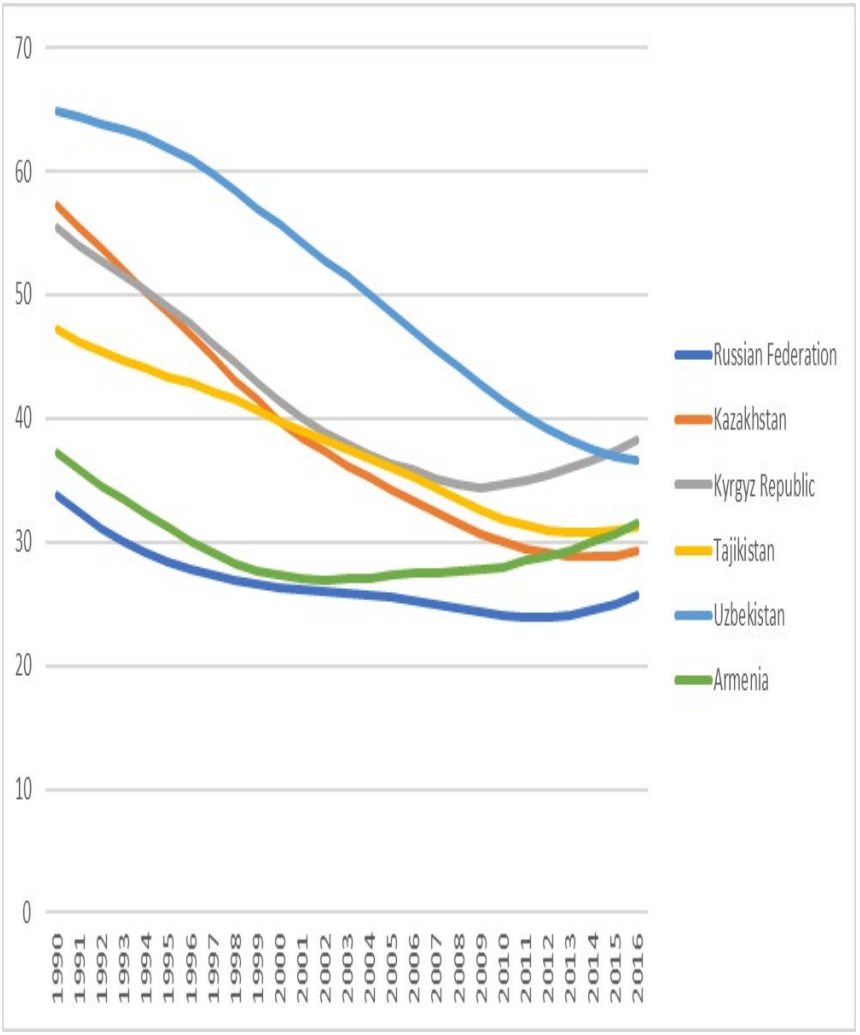
- Economic development (**income** change)
  - Growth (direct and remittances)
  - Oil prices & international trade conflicts (sanctions …)
- **Price** changes
  - Food price fluctuations
- Public **policies**
- …

Effects are often complex and difficult to identify precise (causal) effects

Incomes in Central Asia 2000-16
(constant GDP/capita 2011 USD)



Childhood anaemia prevalence 1990-2016 (% children below 5)

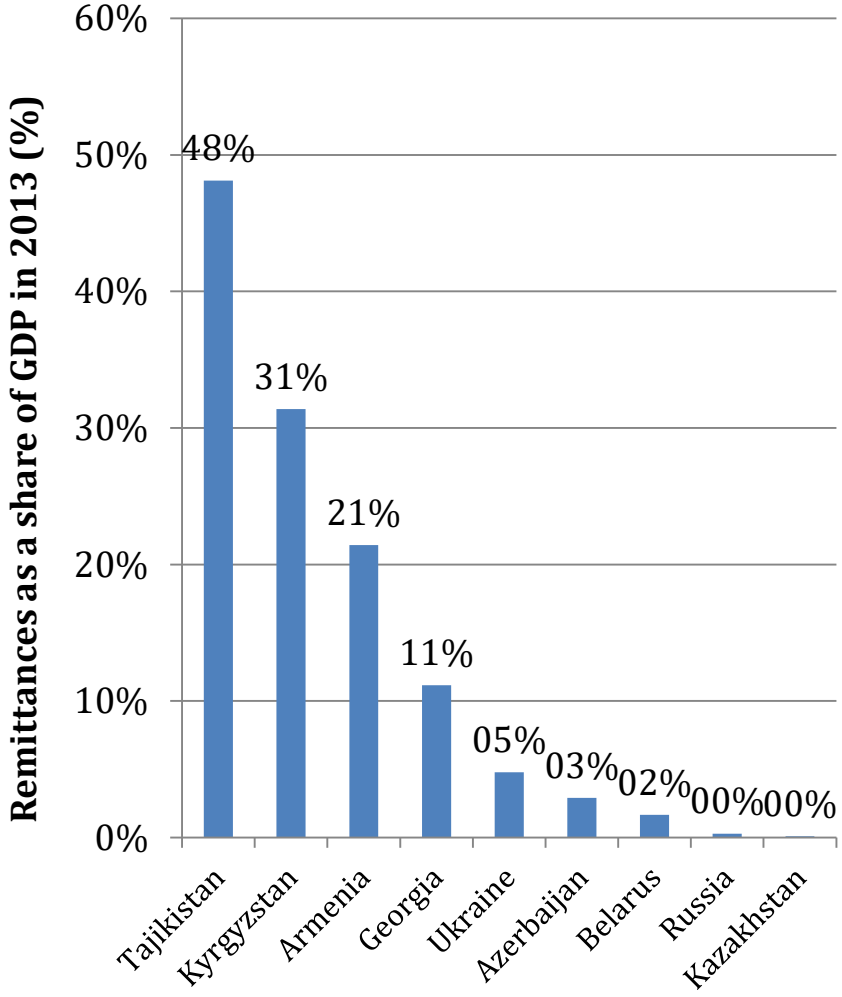


Food and nutrition security indicators

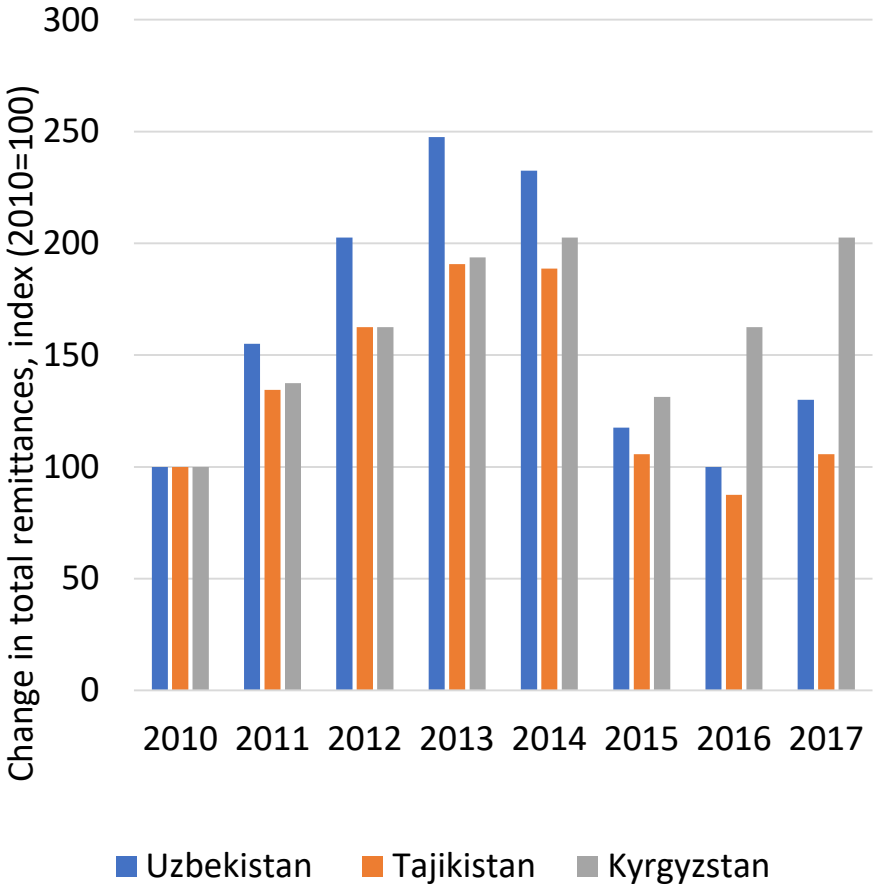
	Poverty ratio at $1.90 a day (2011 PPP) (%)		Prevalence of undernourishment (%)		Stunting (% of children <5 y.o.)	Wasting (% of children <5 y.o.)	Prevalence of anemia (% of children <5 y.o.)	
	in 2016	change from 2002	in 2016	change from 2002	latest years available*	latest years available*	in 2016	change from 2002
Russian Federation	0.0	-0.7	<2.5	-1.9			25.7	-0.3
Kazakhstan	0.0	-6.9	<2.5	-3.2	8.0	4.1	29.3	-8.0
Kyrgyzstan	1.4	-32.8	6.4	-9.4	12.9	2.8	38.3	-0.6
Tajikistan	4.8	-28.1	30.1	-13.1	26.8	9.9	31.3	-6.9
Uzbekistan	27.1	-39.5	6.3	-12.6	19.6	4.5	36.6	-16.2
Armenia	1.8	-13.3	4.4	-19.2	9.4	4.2	31.5	4.5

Note: Poverty data for Uzbekistan is for 2012; Data for stunting: Kazakhstan 2015, Kyrgyzstan 2014, Tajikistan 2012, Uzbekistan 2006, Armenia 2016; Data for wasting: Kazakhstan 2010, Kyrgyzstan 2014, Tajikistan 2012, Uzbekistan 2006, Armenia 2010.
Source: FAOstat: Food Security Indicators, FAO (2016), World Bank: World Development Indicators.

Dependence on Remittances (% of GDP)

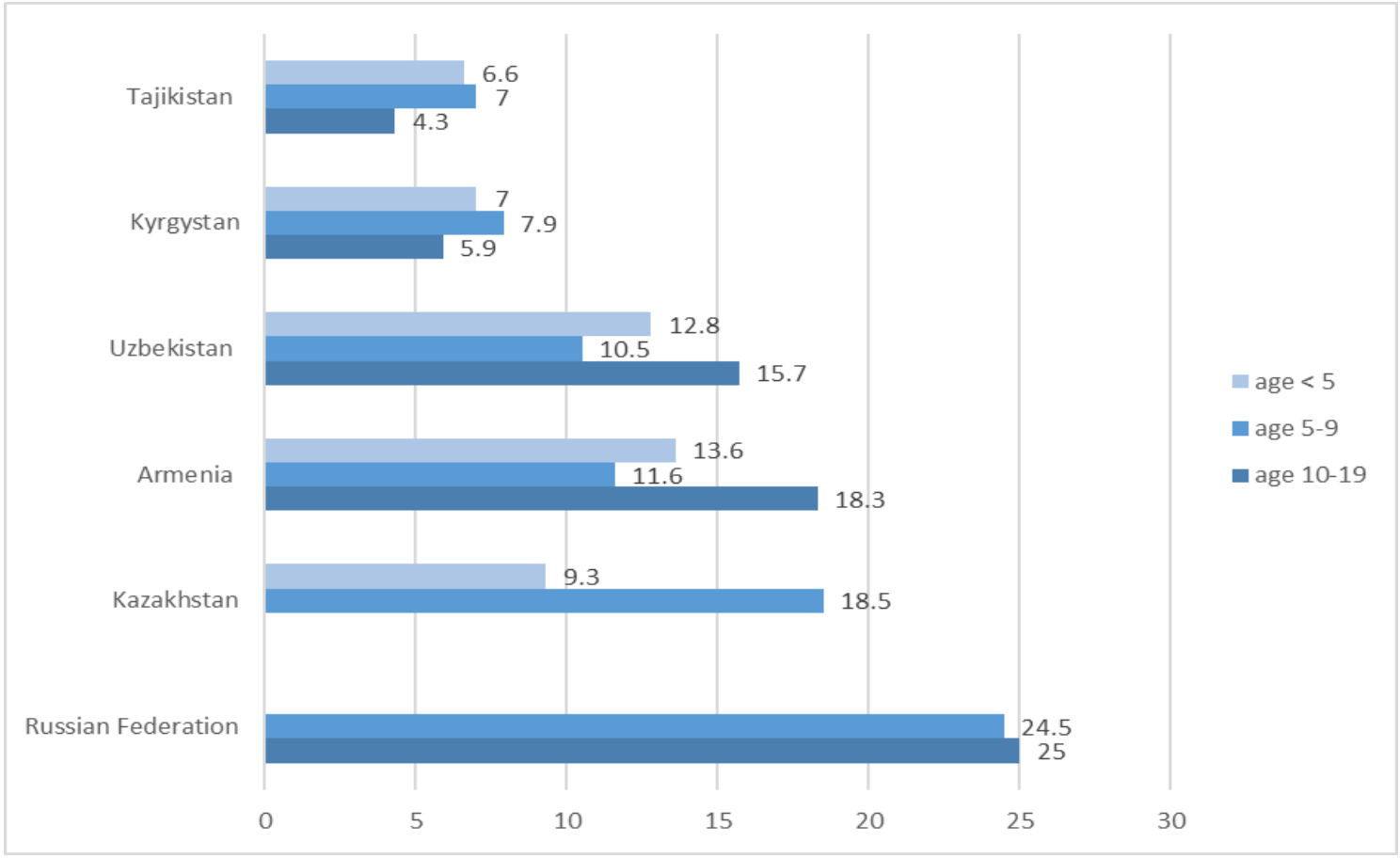


Remittances from Russia 2010-2017 (index 2010=100)



Source: Akramov et al 2017

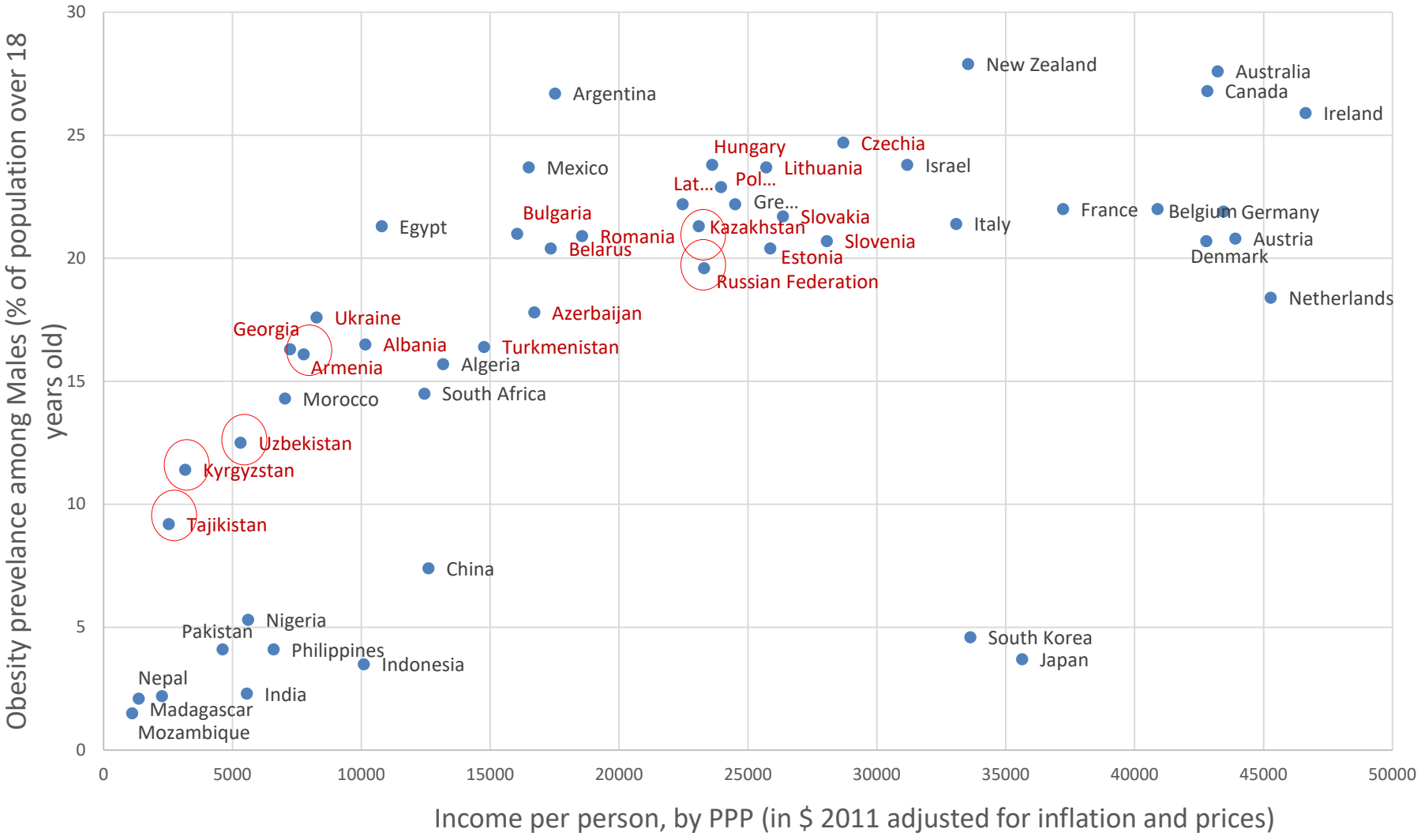
Prevalence of Overweight among Children below the age of 5 and Children of School-Going Age



Source: WHO 2017, Nutrition Landscape Information System (NLiS), Childhood Obesity Surveillance System

Income Growth and Obesity

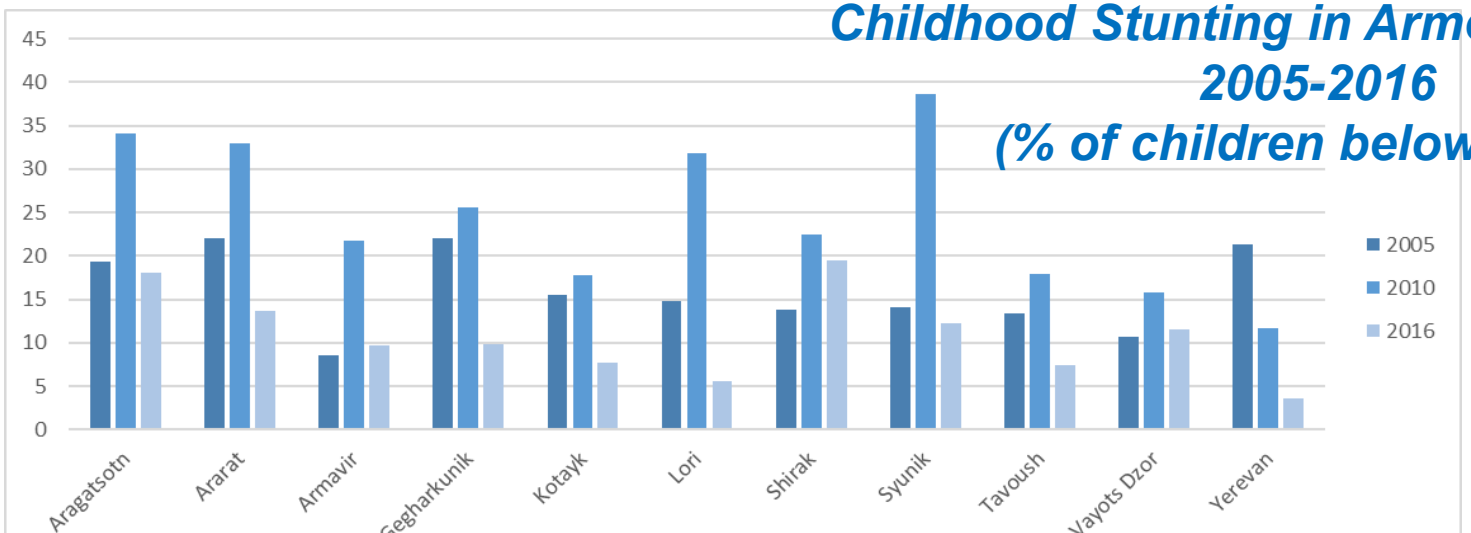
Eurasia in a Global Perspective



Food Prices & Food Security

- **"Mixed messages"**
  - (Swinnen and Squicciarini, Science, 2012)

- **Nuanced effects : on average high prices reduce poverty, but major differences between households and regions**
  - (Heady, 2017; Heady and Martin, 2016)



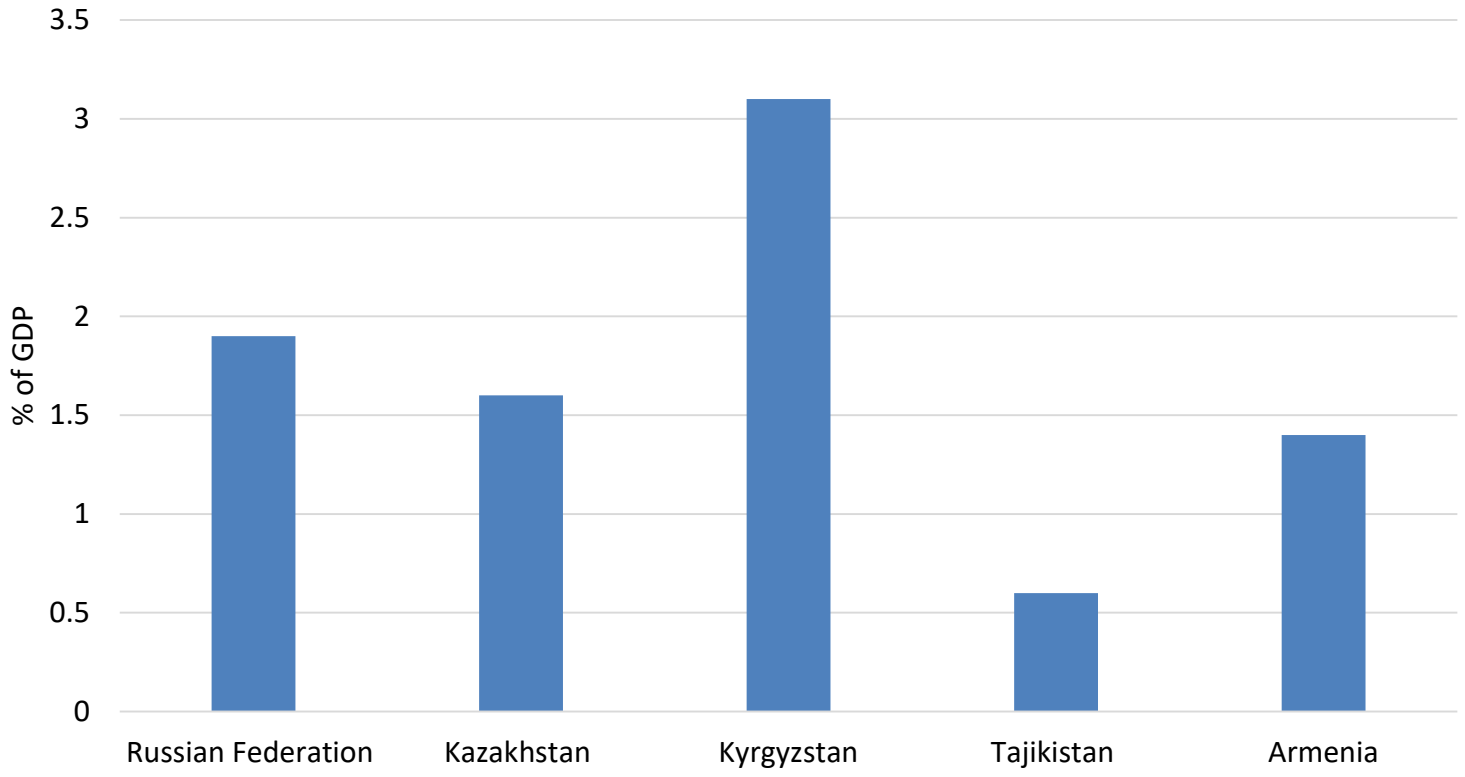
FOOD AND NUTRITION SECURITY POLICIES

What are "Food and Nutrition Security" Policies ?

- Many types of public policies have a direct and/or indirect effect on FNS
  - Macro-economic policies
  - Trade policies
  - Agric subsidies
  - Social security & pensions
  - Nutrition programs
  - ….

- **Limited quantitative indicators** available

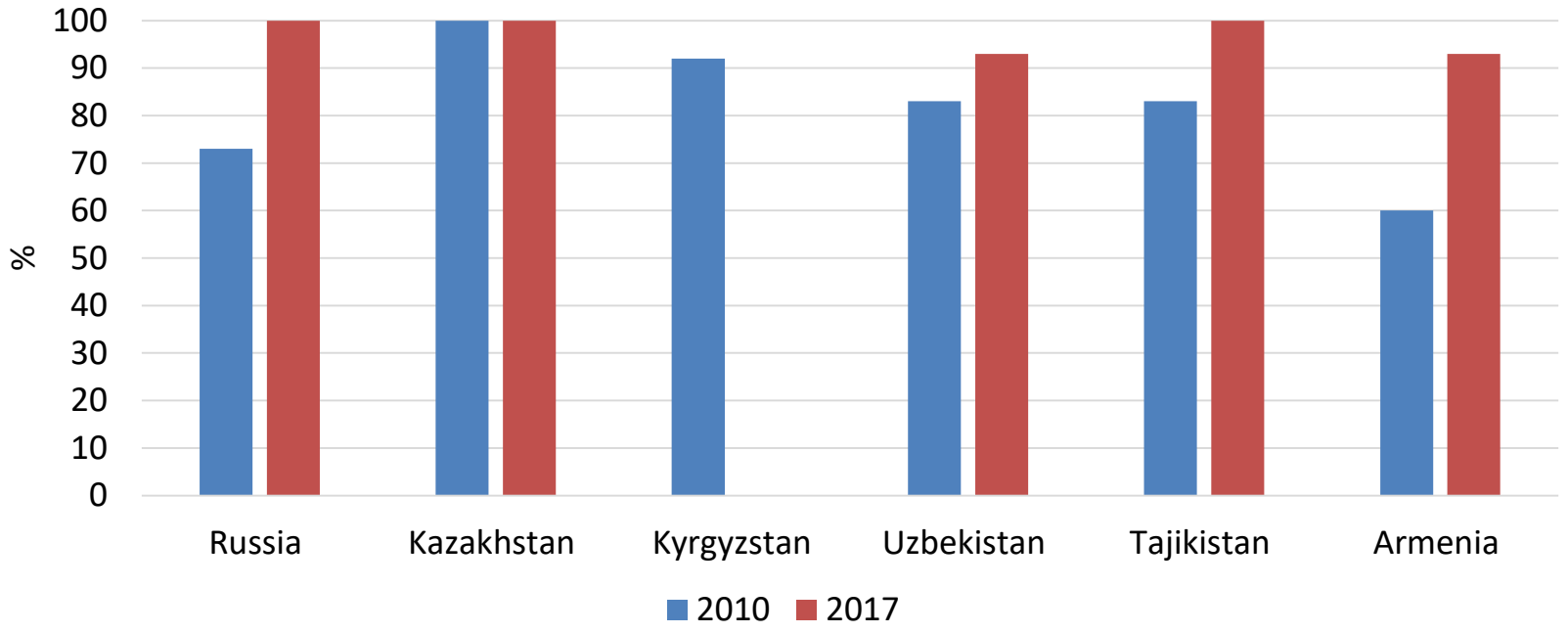
Public Spending on Social Assistance Programs (% of GDP, 2014-15)



Note: no data for Uzbekistan; data for Russia and Tajikistan is for 2015; the other countries for 2014.

Source: World Bank: ASPIRE database.

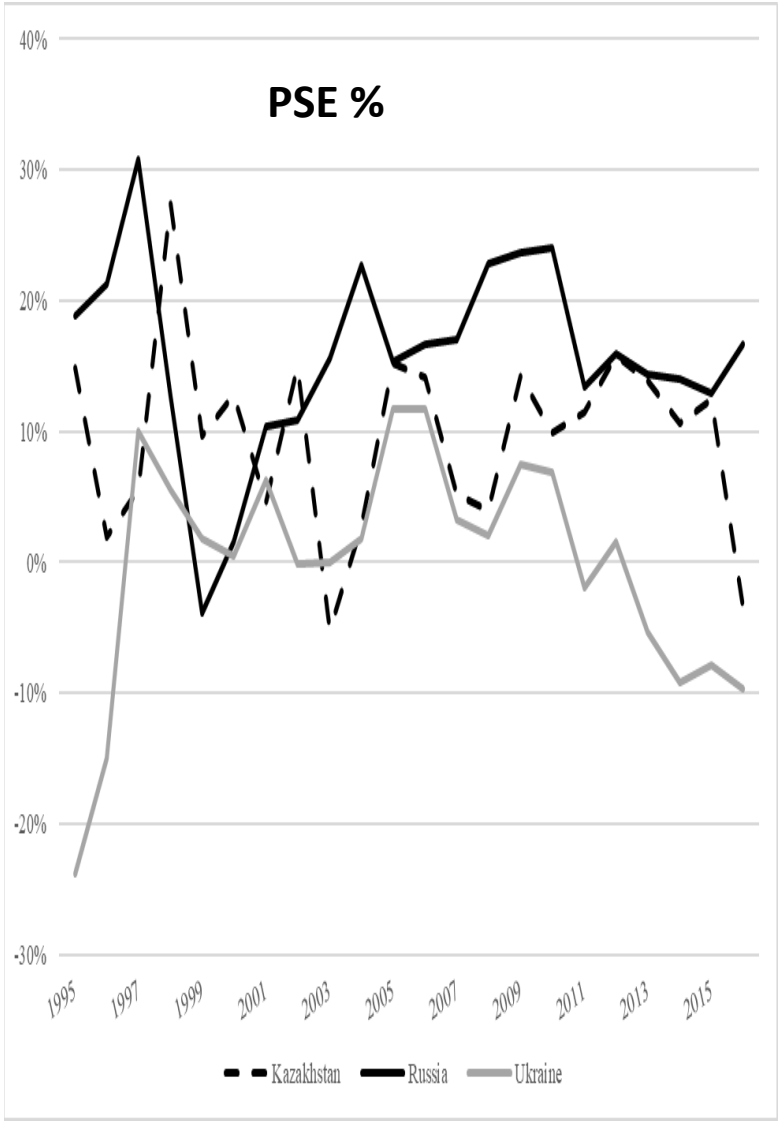
Food Safety Policies in Eurasia (WHO implementation indicators)



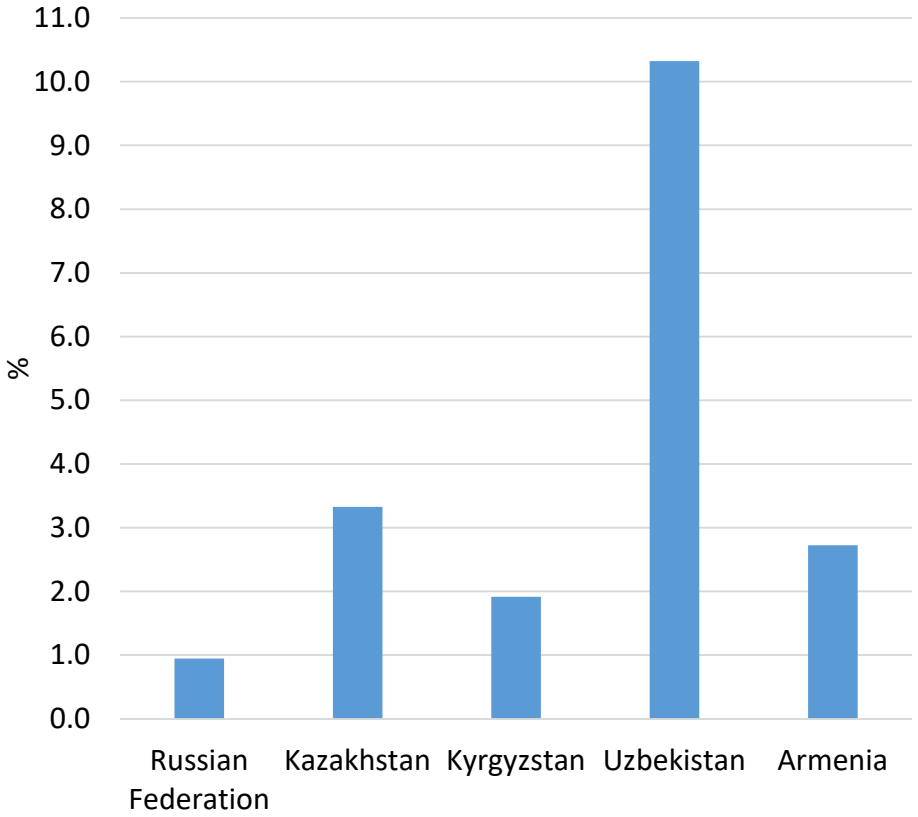
"the proportion/percentage of attribute (a set of specific elements or functions which reflect the level of performance or achievement of IHR potential hazards: Food Safety) that have been attained"
Source: WHO database

Agricultural Support Policies

(large differences between subsectors)



Agriculture in Total Government Expenditures (average 2010-15)



FNS Policies & Nutrition

- The countries have introduced a **variety of food security policies and programs** to reduce micro-nutrition deficiencies,
  - often in collaboration with international organizations.

- The country reports document both **success** stories and **problems** of implementation.
  - E.g: iron deficiency reduction through flour or salt fortification measures.

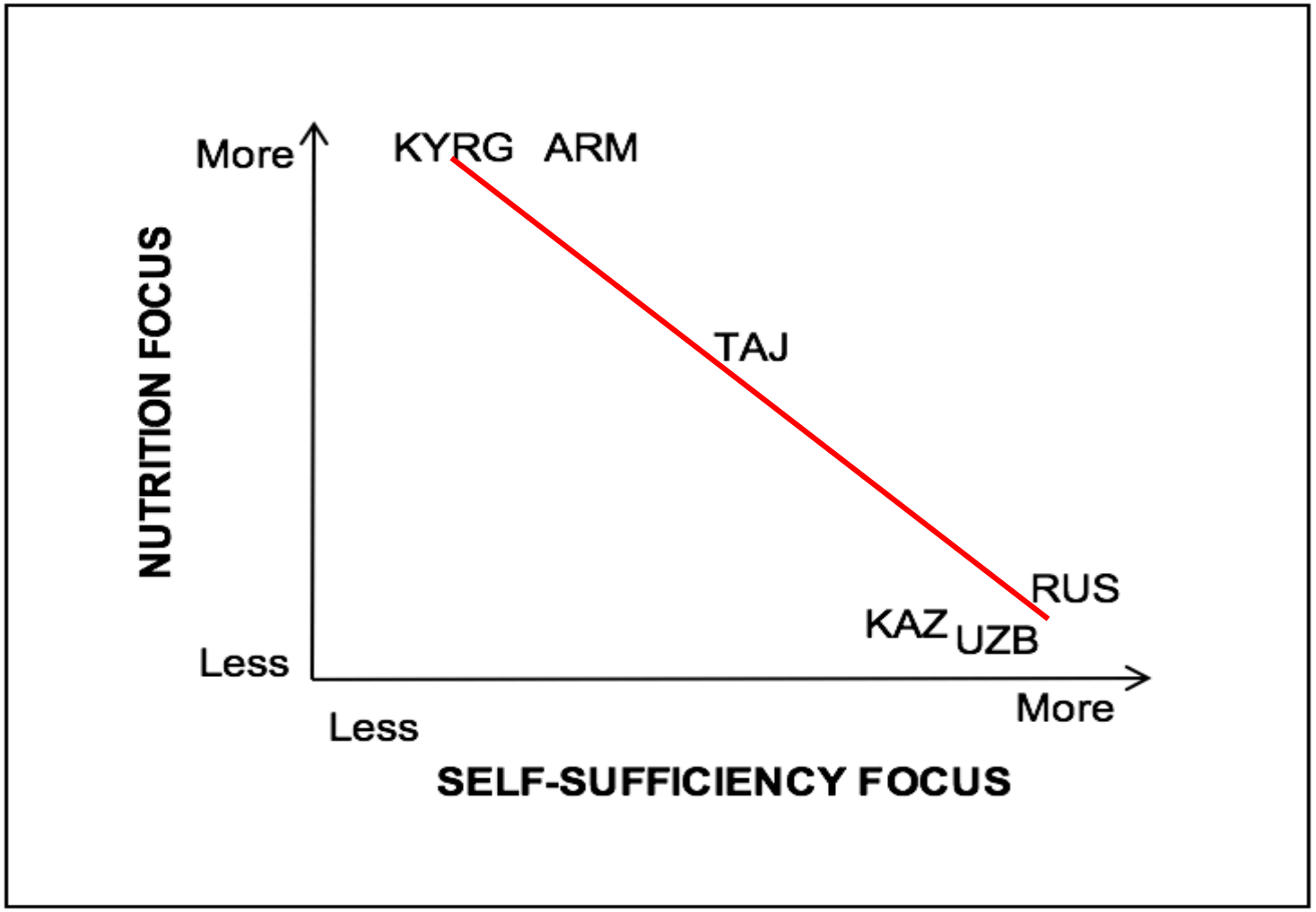
- **Implementation problems**
  - significant share of food commodities not passing through official channels
  - lack of capacity and expertise in the implementing bodies.

- International programs and organizations try to address some of the capacity and expertise constraints.

FNS-related policies in focus countries

	Name of the policy document (year adopted)	Is self-sufficiency part of food security concept?	Is nutrition part of the food security concept?
Russian Federation	Food Security Doctrine (2010)	**Yes**	**No**
Kazakhstan	No stand-alone law on Food security. Food security is mentioned in the Law About Grain (2001). Since then in various other laws.	**Part of agric development strategy**	**No**
Kyrgyzstan	The Law of the Kyrgyz Republic "On Food Security of the Kyrgyz Republic" (2008) Amendment to the Law "On Food Security of the Kyrgyz Republic" to include "healthy nutrition" as part of the food security issues (2017)	**No**	**Yes**
Tajikistan	Law on Food Security (2010)	**Yes**	**No**
Uzbekistan	No stand-alone law on Food security. Food security is mentioned as part of the Concept of National Security (1997).	**Part of agric development strategy**	**No**
Armenia	Law on Ensuring Food Security (2002) National Food Security Concept (2011).	**Part of agric development strategy**	**Yes**

Self-sufficiency and Nutrition Focus in Food Security Policy



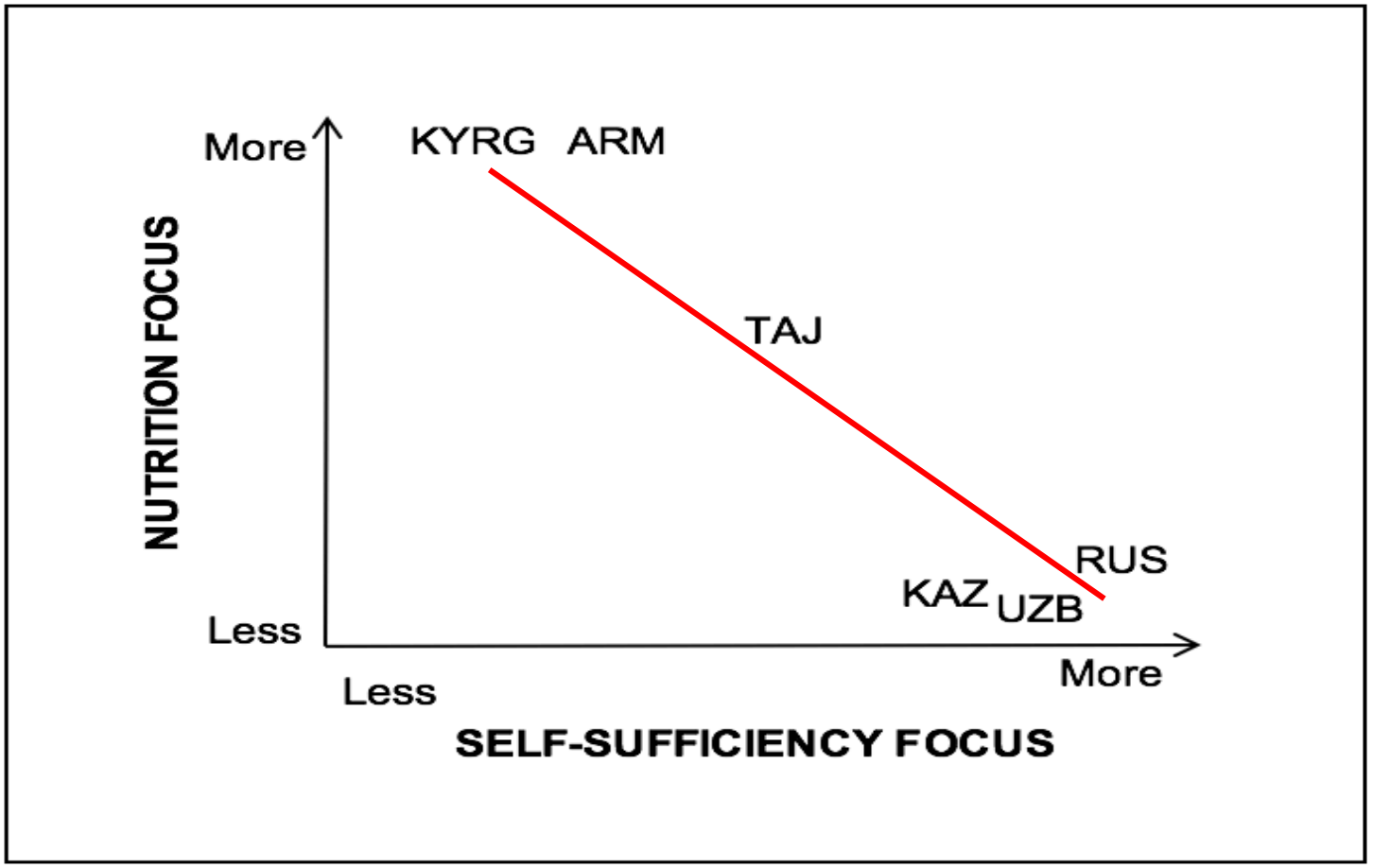
Is this policy distribution "fake" or "real" ?

- Is nutrition less a policy concern if its policies are in the health ministry rather than the ag/food ministry ?

POLITICAL ECONOMY OF FOOD AND NUTRITION POLICIES IN EURASIA

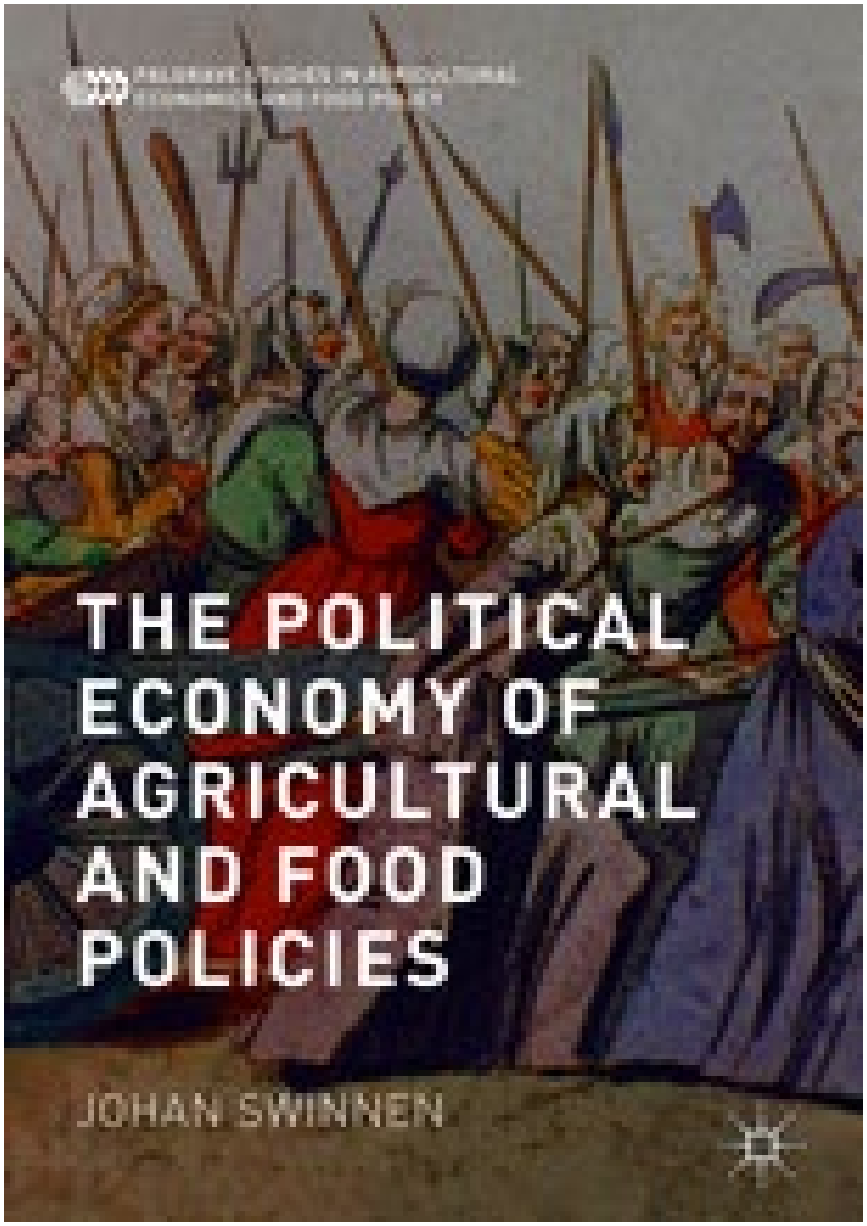
Can we explain these patterns ?

Self-sufficiency and Nutrition Focus in Food Security Policy



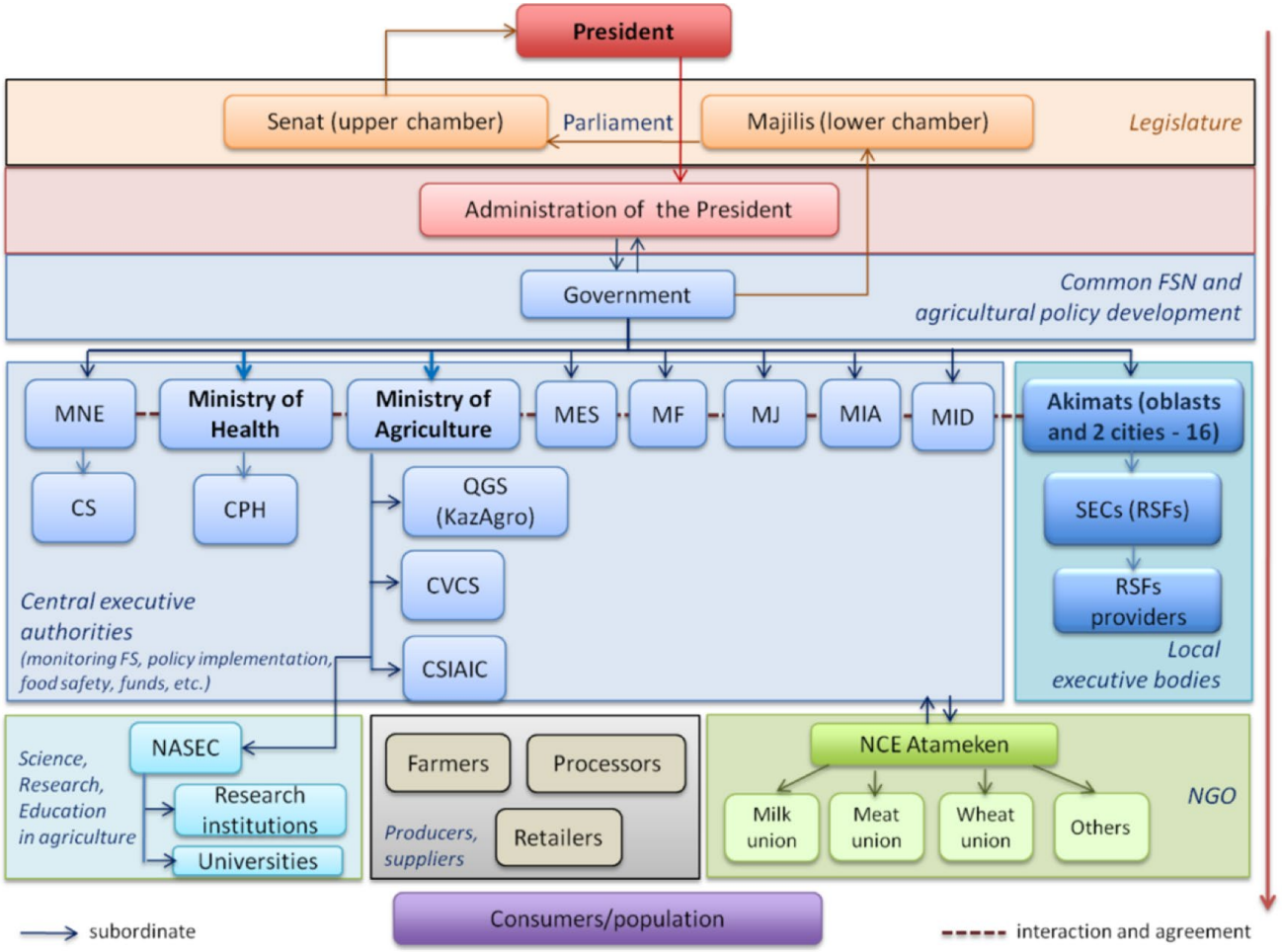
Political Economy of Policy Choices

- Political incentives and effectiveness of collective action
- Structural characteristics of stakeholders (vested interests) affect influence
- External “shocks” and influences
- Decision-making structures / institutions
- Role of information / media



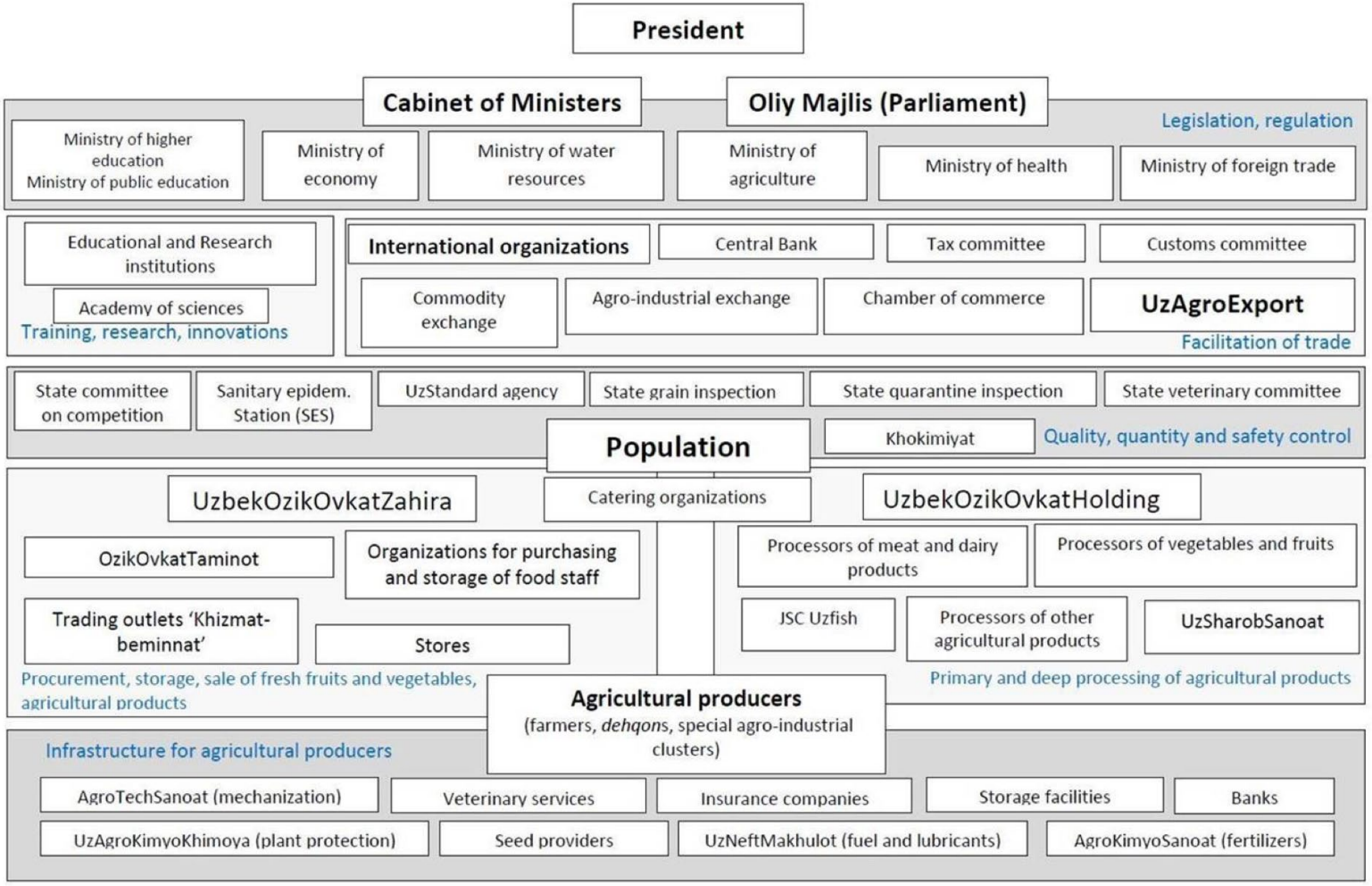
Who are the key agents/structures in decision-making ?

Stakeholders and Decision-Making Structure in Kazakhstan



Source: Nurtazina 2018

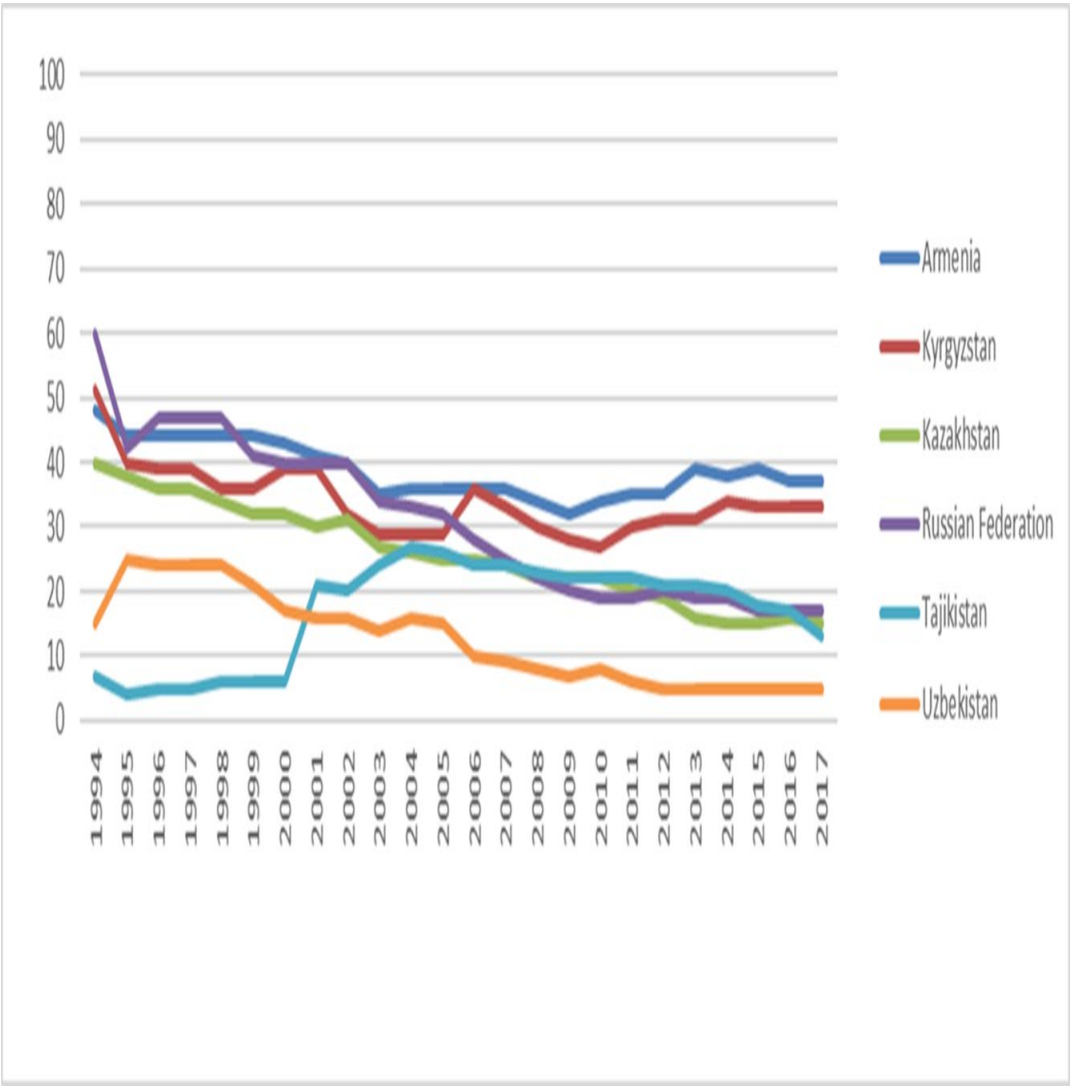
Stakeholders and Decision-Making Structure in Uzbekistan



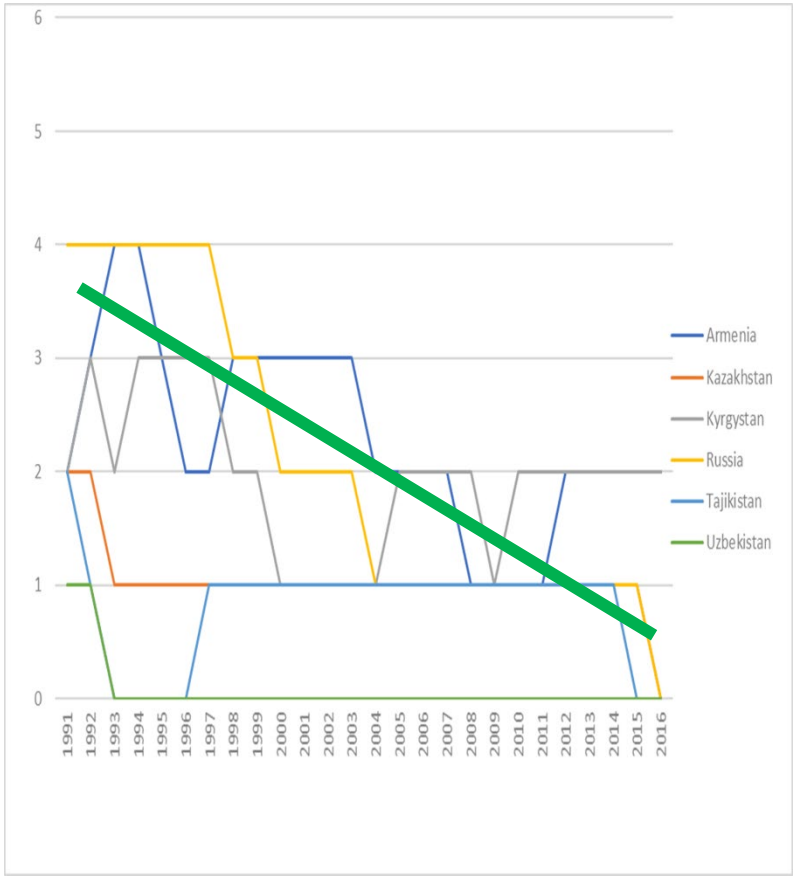
Source: Dosov et al 2018

Political and media freedom

MEDIA FREEDOM



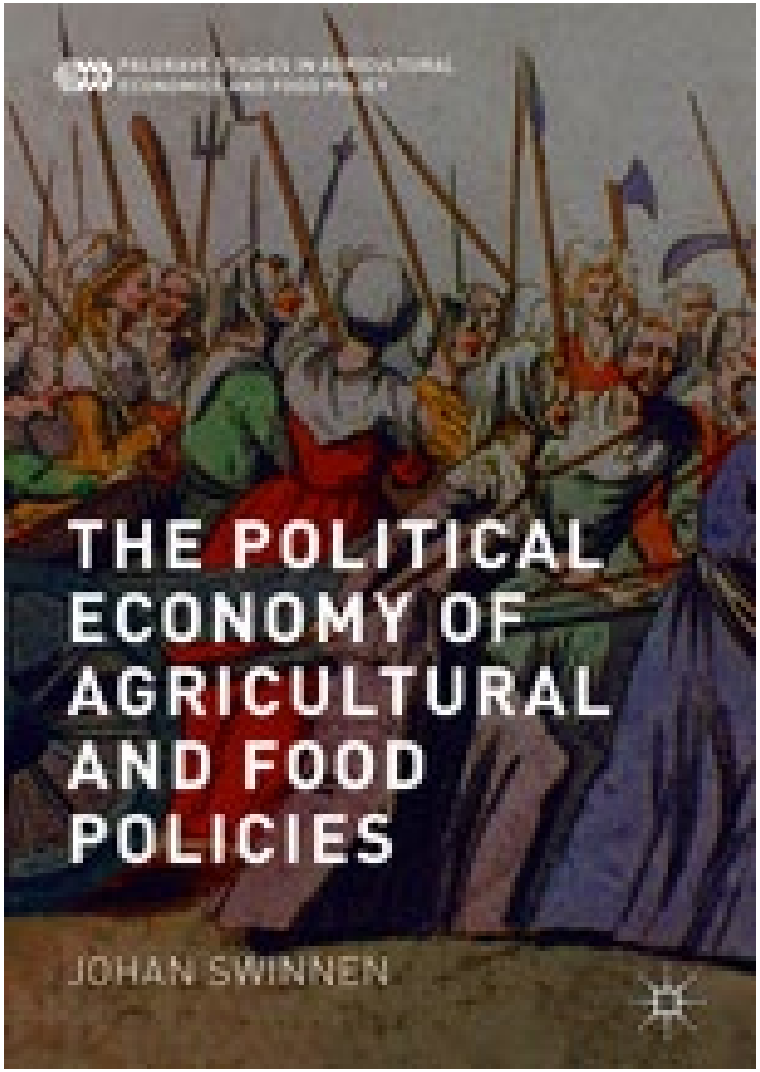
POLITICAL FREEDOM



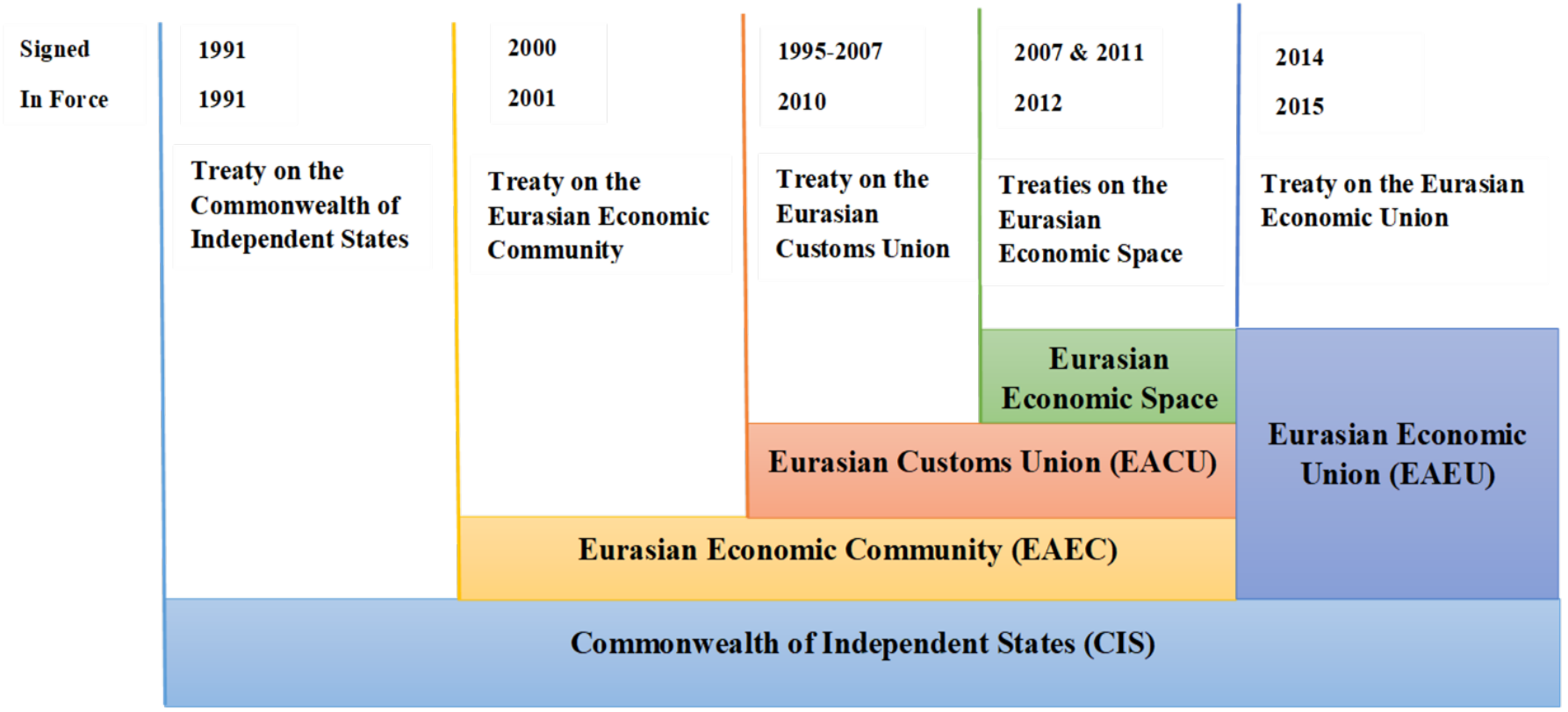
Back to structural political economy

- **Historical policy changes**
  - Falling apart of the Soviet Union (1991)
  - Food crisis (2007)
  - Russian sanctions (2014)

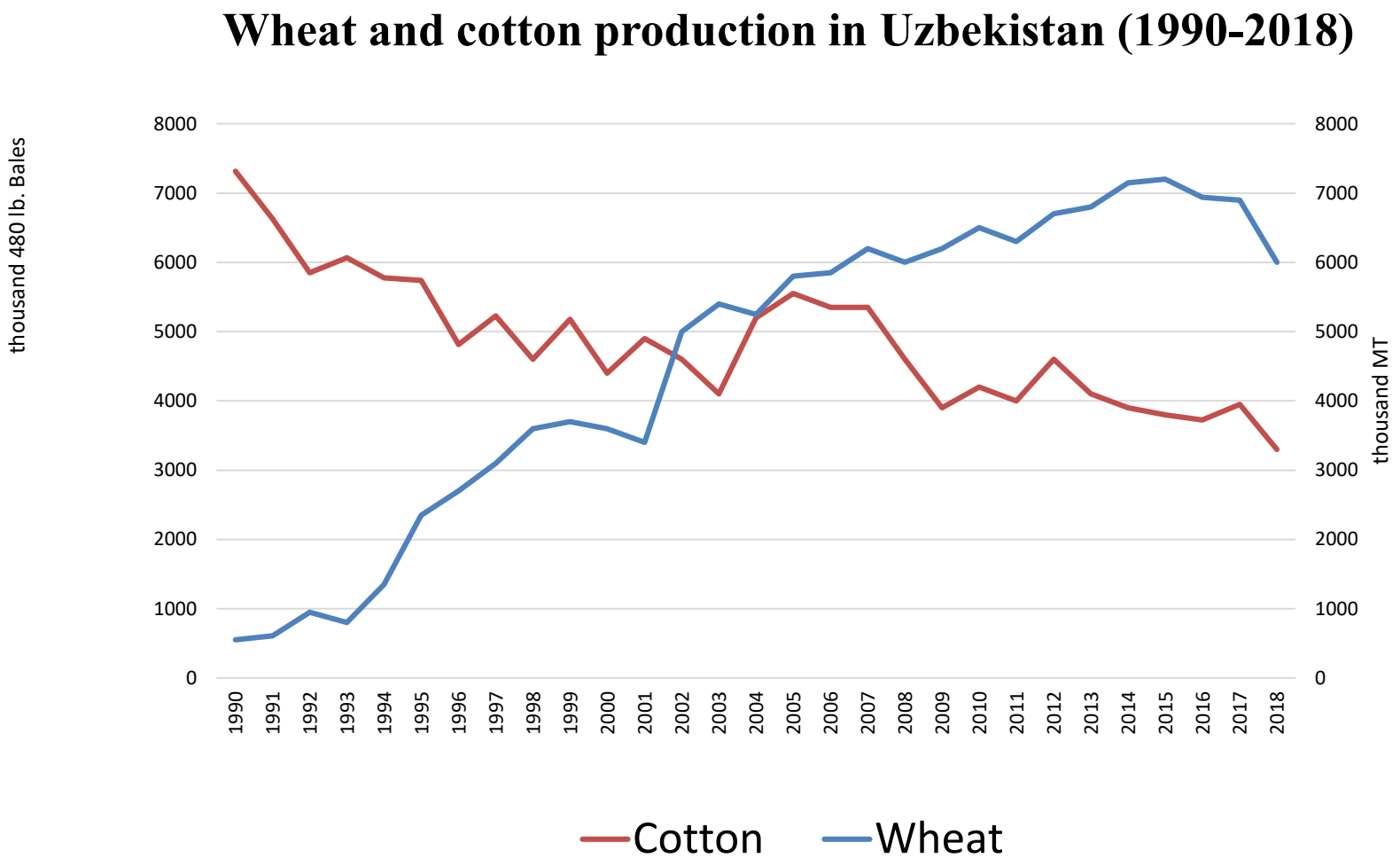
- **Current (Cross-section) policy variation**



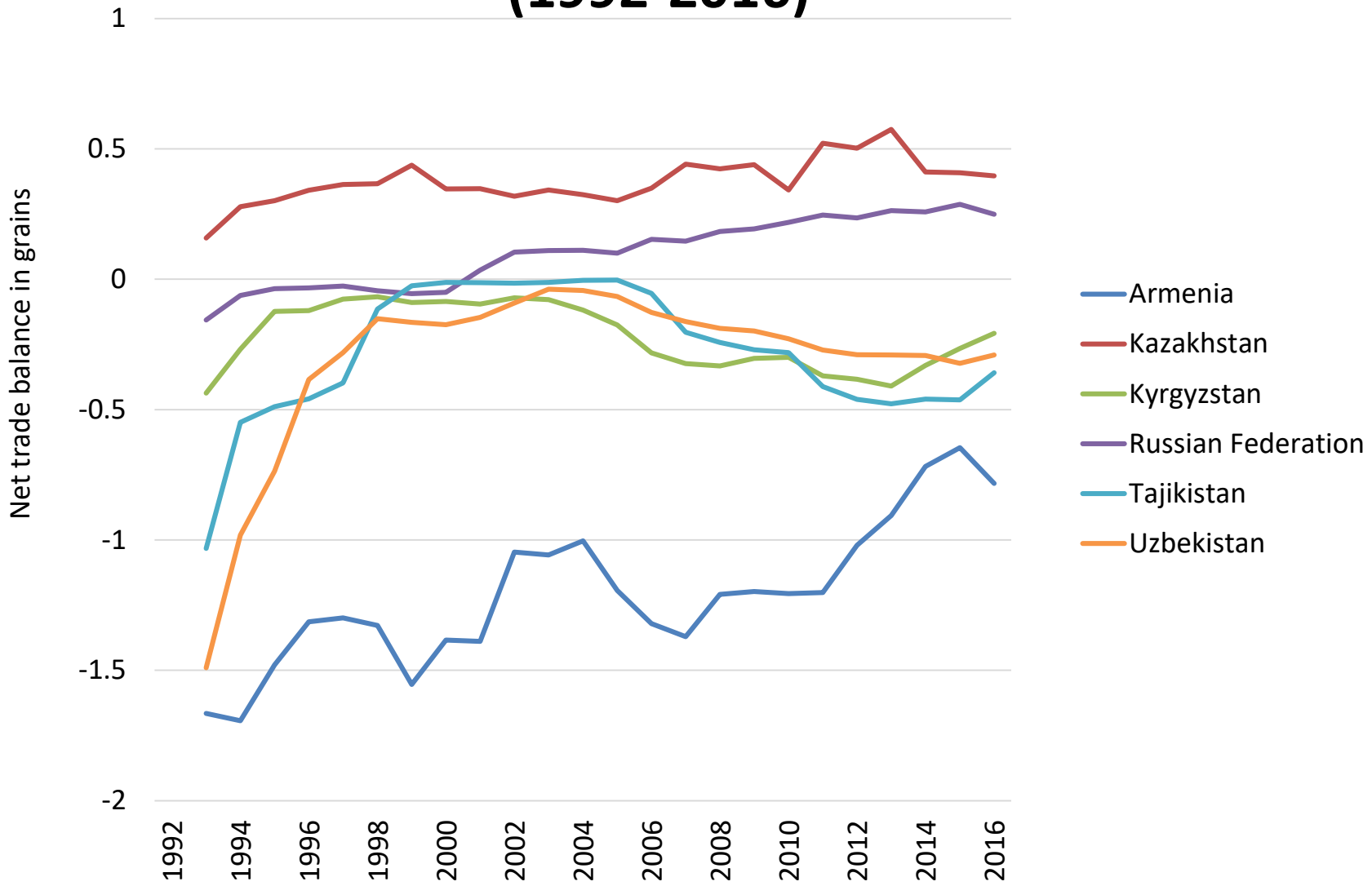
Political and Regional (Dis-&Re-)Integration



Self-sufficiency policies and agri-food trade in Uzbekistan

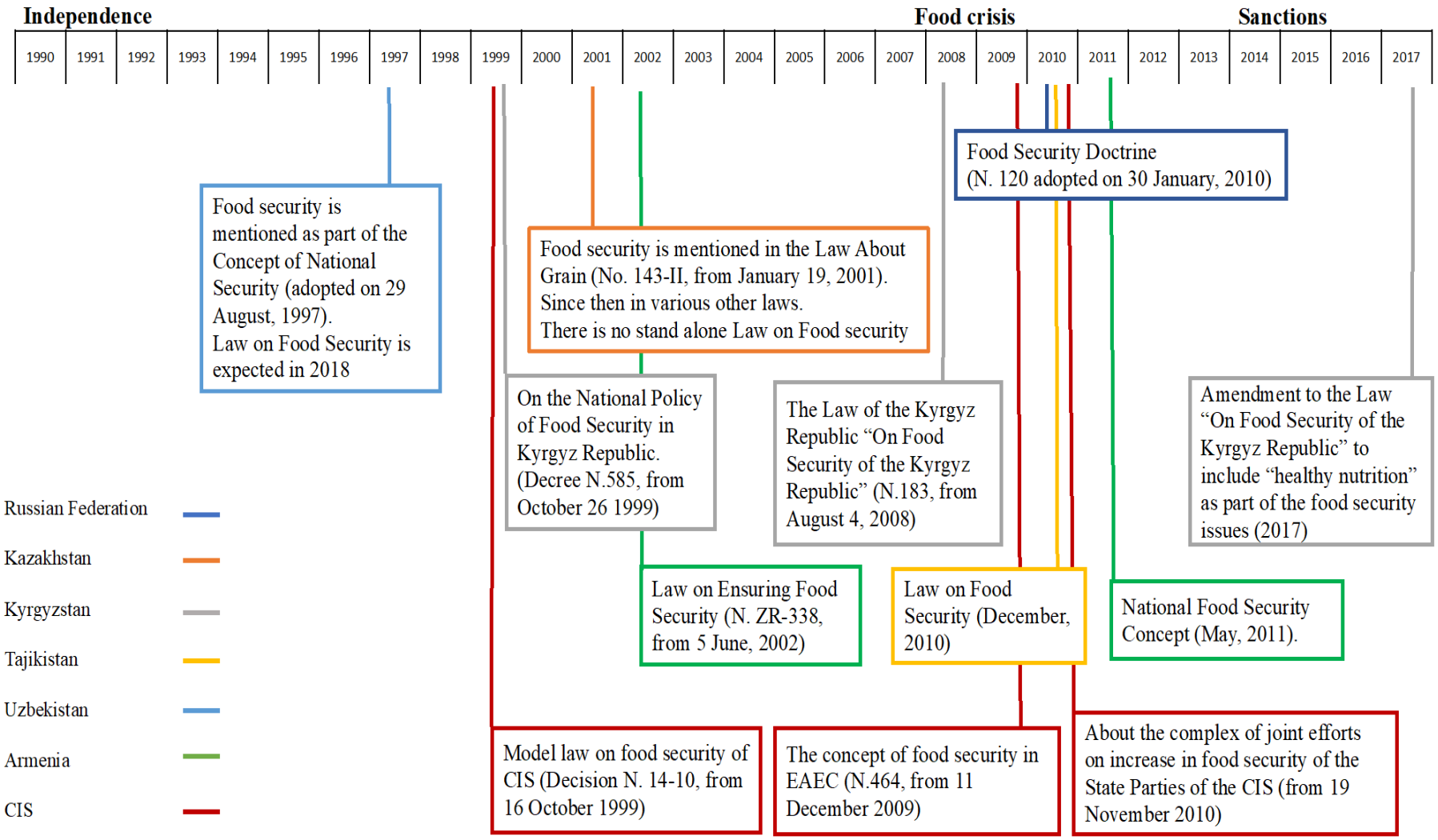


Evolution of the net cereal trade balance (1992-2016)

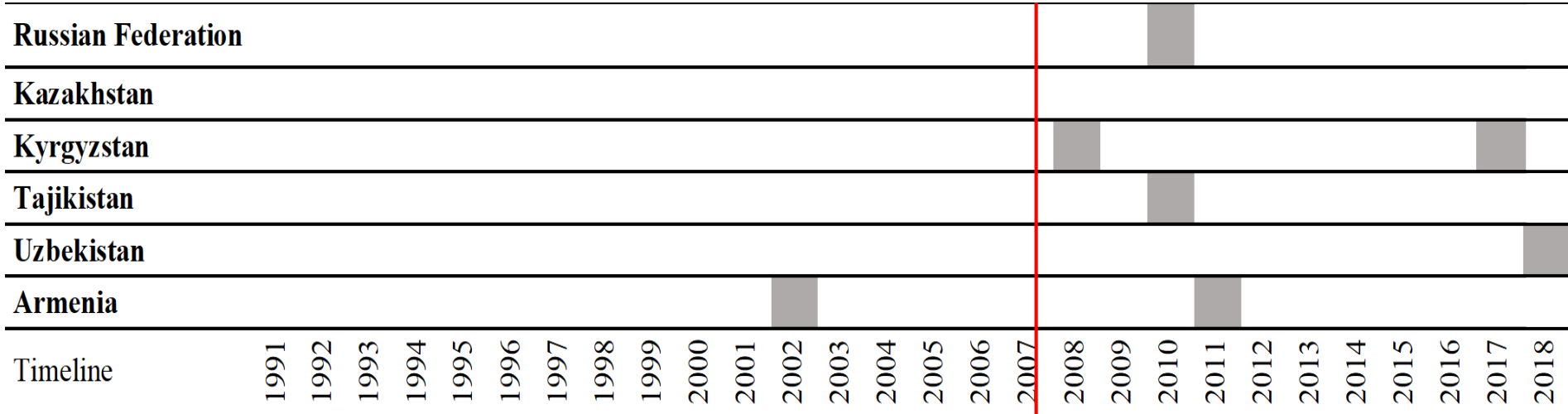


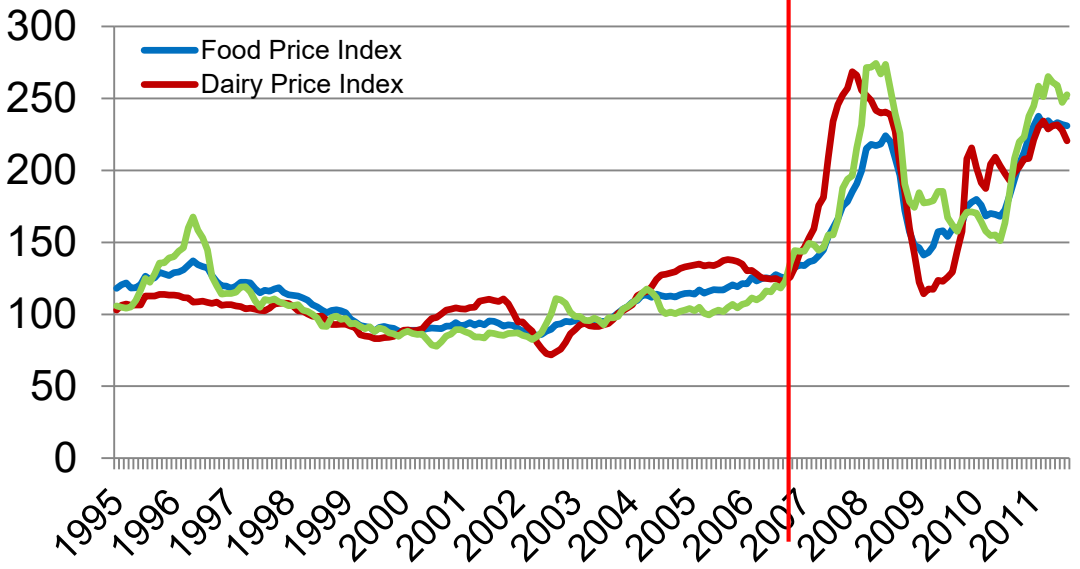
Note: net trade balance in grains = (export-import)/production). Three year moving average
Source: FAOstat

History of "Food Security" Policies in Focus Countries



The Introduction of "Food Security Policies" in Eurasia & The Food Price Crisis





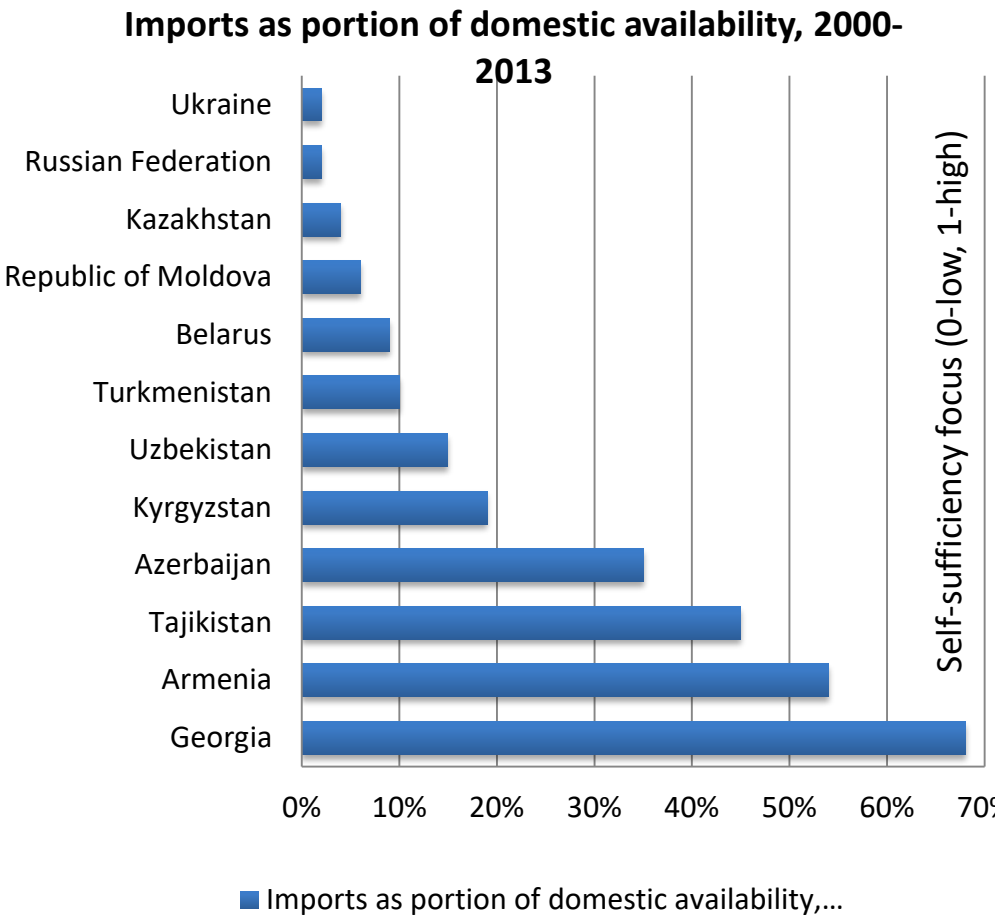
The 2014 Russian Sanctions (& Oil price decline)

- In **2012** Russia joined **WTO**. WTO accession implied significant market access conditions for other countries on the Russian market, and thus were to create increased competition for Russian producers of commodities such as meat, dairy and fruit and vegetables production.
- In **2014** western **sanctions** were imposed on Russia and Russia reacted with countersanctions
- The international sanctions, provided argumentation to the Russian government to implement **import bans of agricultural products** under its "**food security doctrine**".
- Domestic producers incomes increased; consumers faced the cost of the embargo as food inflation decreased disposable incomes and hence worsened food security.
- These trade policies may **expand regionally** through the Eurasian Economic Union

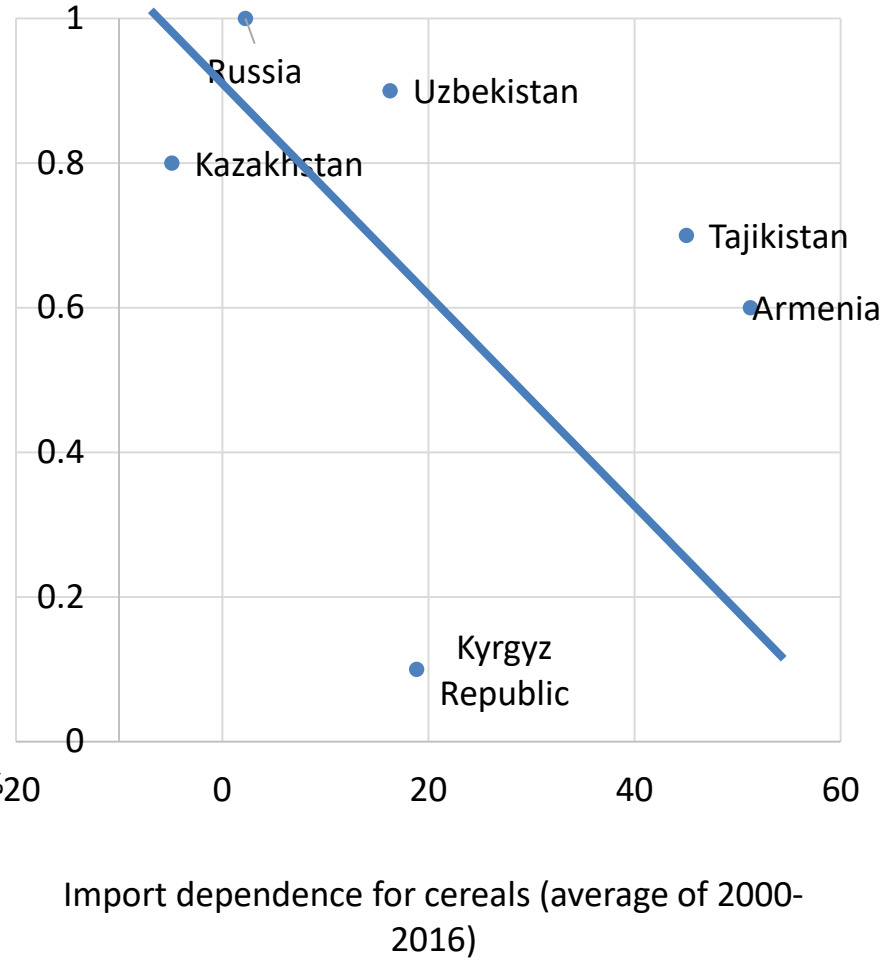
Cross section

The Puzzling Relation with Import Dependency

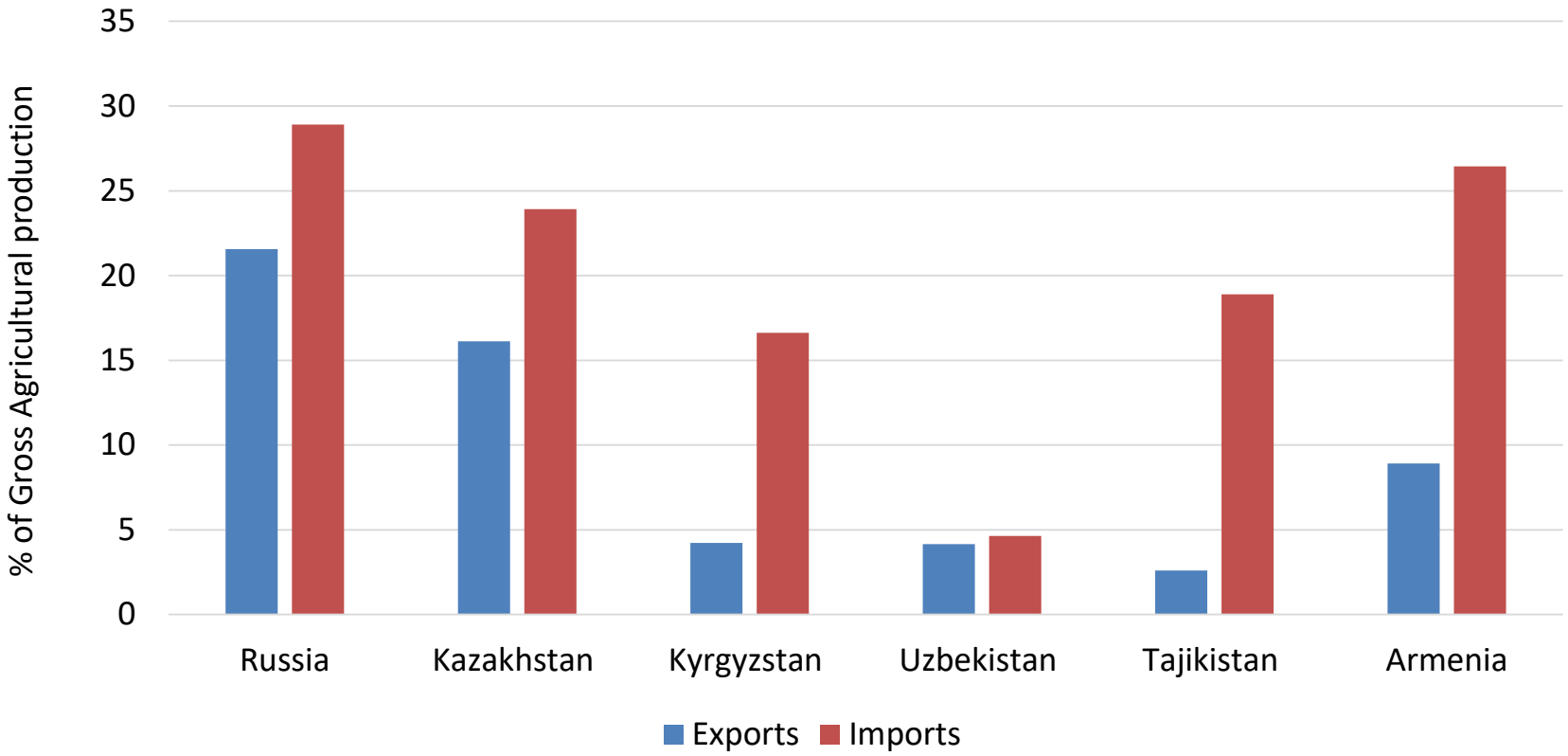
Dependence on cereal imports



Self-sufficiency policy focus and import dependence (cereals)

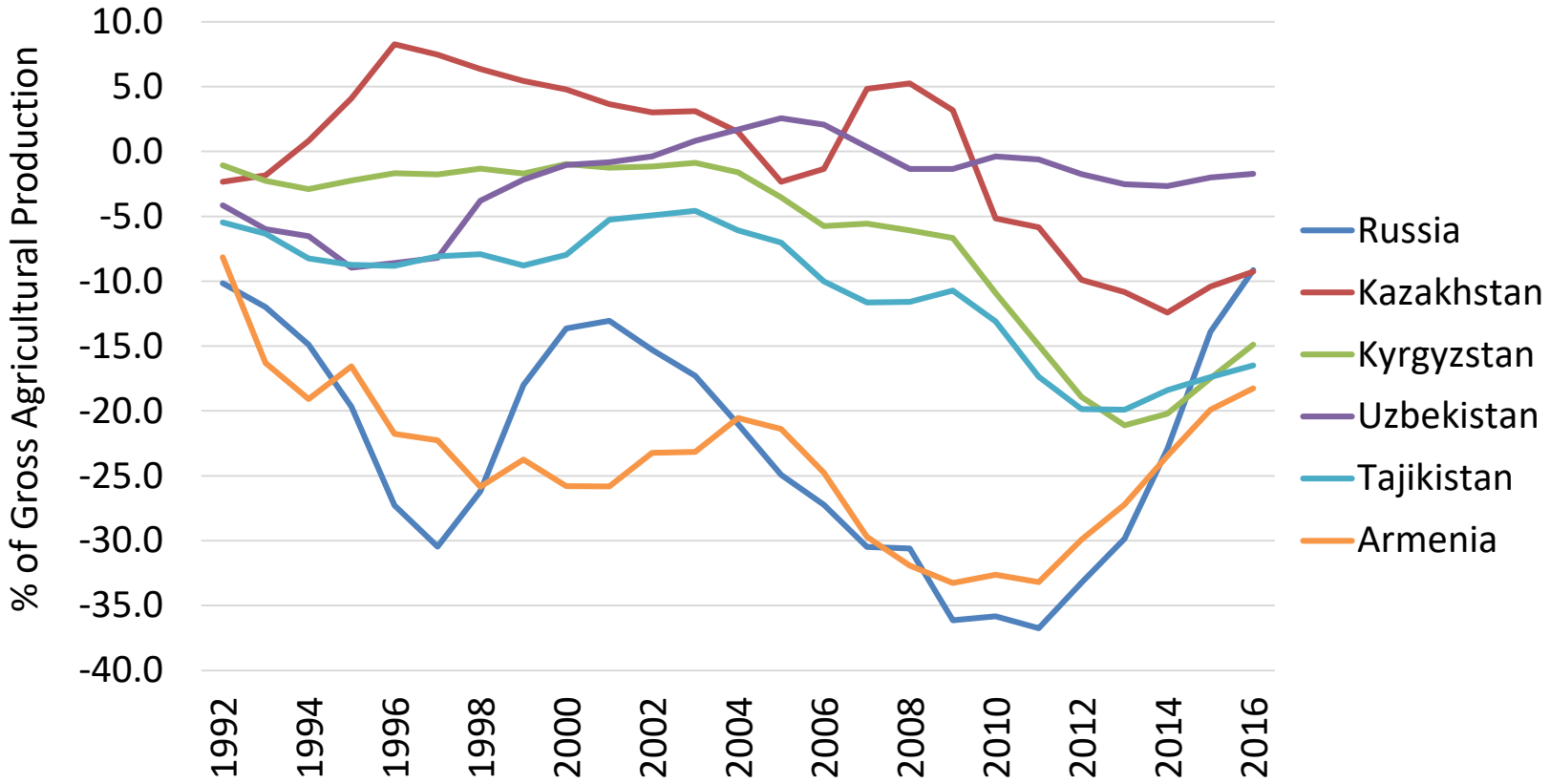


Imports and Exports of Food and Agricultural Products (2016 -- % of Agric Prod)



Note: Food and Live animals for food trade
Source: FAOstat, Atlas, Harvard University

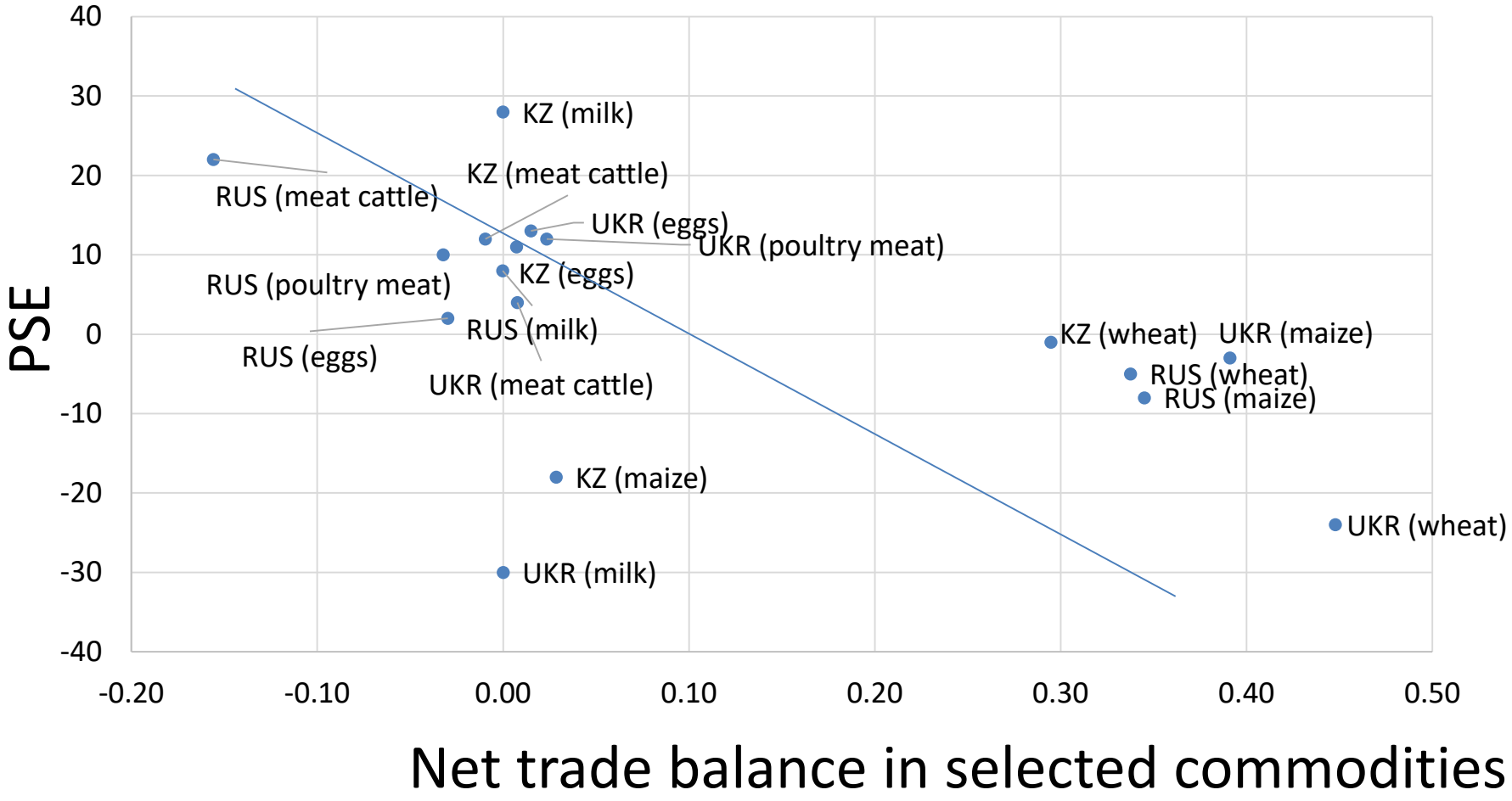
Net Food Trade Balance, 1992-2016 (Exports-Imports as % of Ag GDP)



Note: Food and Live animals for
Source: FAOSTAT, Atlas, Harvard University

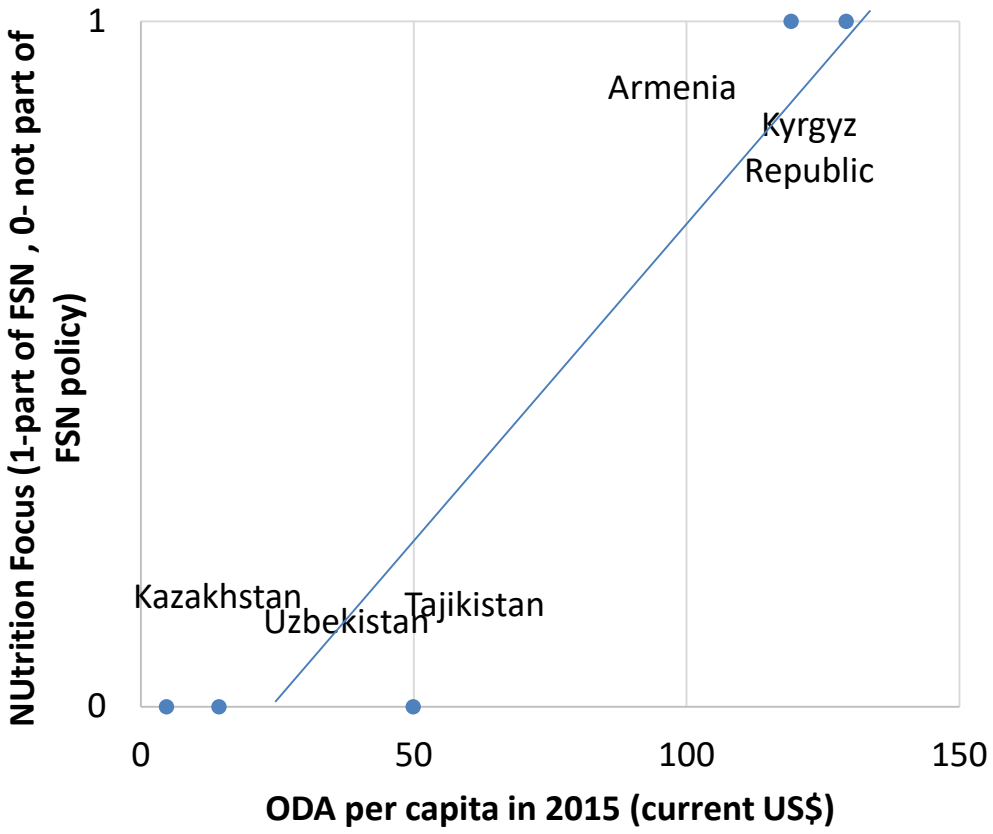
“Anti-Trade Bias” of Agricultural Policy

Government Support (PSE %) and Net Trade by Commodity in 2017



Note: Net trade balance=(export-import)/production
Source: OECD and FAOstat

Nutrition focus in FNS and international donor influence (ODA per capita)



Impact ?
Is this “fake” (nominal) or “real” improvement ?

Sources: Authors and World Bank

Value Chains and Food Security

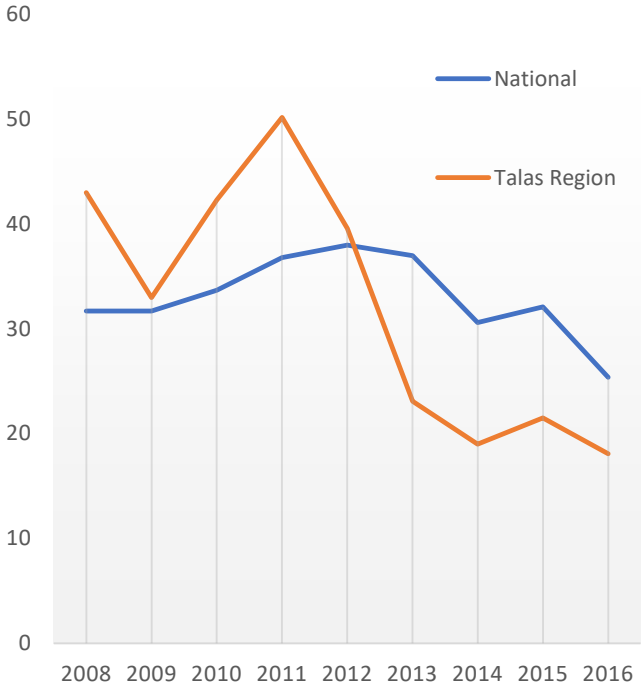
- Value chains are very important elements of the transformation of agri-food chains
- Extensive documentations of changes and effects in the 1995-2005 period (eg WB 2005 Report)
- Relatively little recent evidence – a few interesting case studies.
- Very uneven development: policy matters !

Case Study: Kyrgyzstan Kidney Bean Value Chain

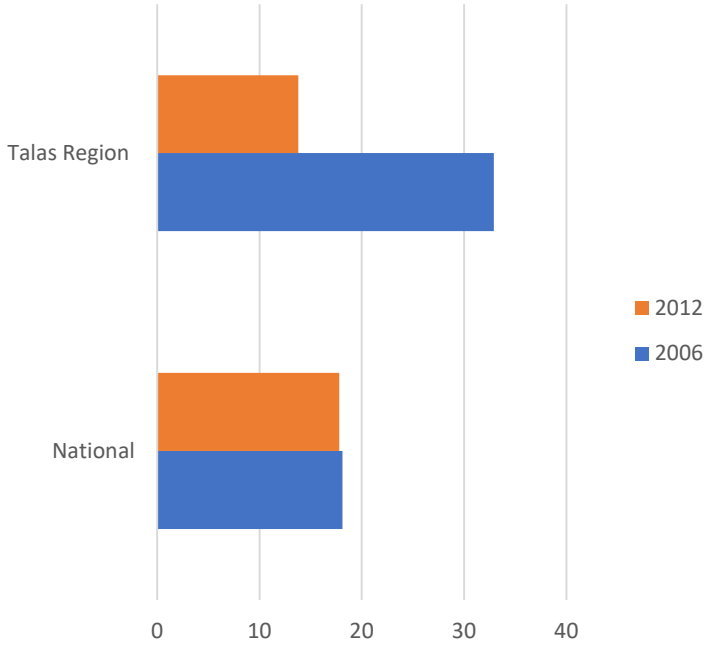
Development, Nutrition and Food security outcomes

From the **mid-90s, bean production started** to develop for commercial purposes in the Central part of the Talas Valley due to sustainable demand from Turkish trading firms and an increase in the prices for kidney beans. Currently, **the share of beans exports of total export of the Talas region is 92-96%**, and as a result kidney beans are the region's main export commodity bringing in around 55 million USD in export value in 2016.

Prevalence of poverty

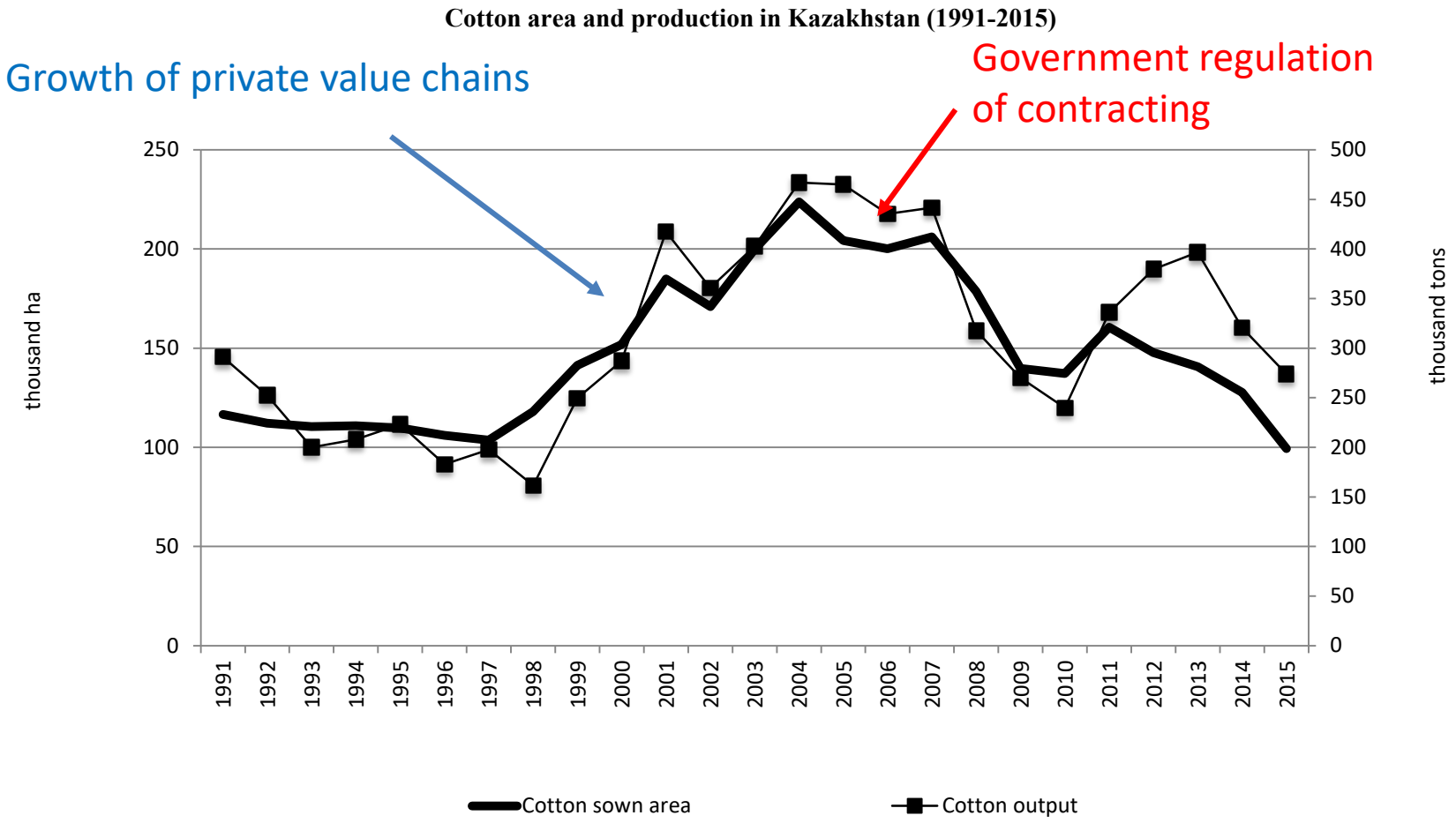


Prevalence of stunting below age 5



Source: Tilekeyev 2018

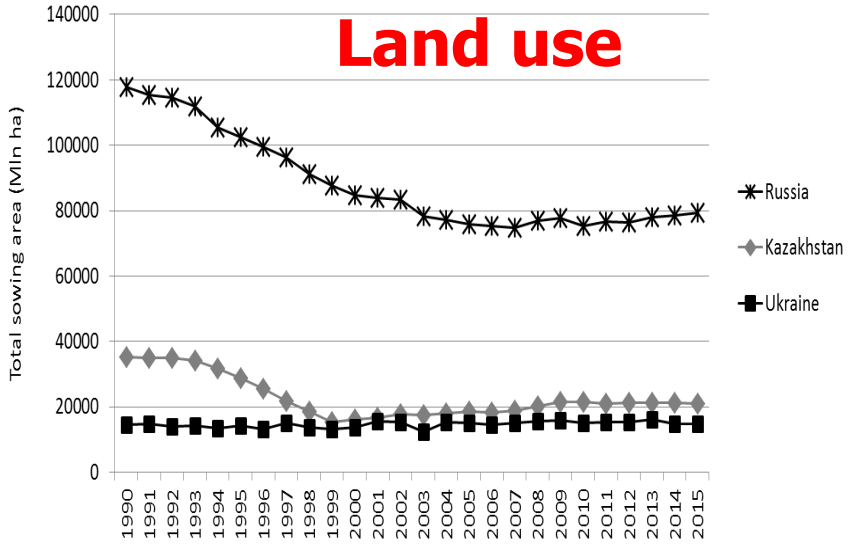
Rise and Fall of Value Chains: Cotton in Kazakhstan



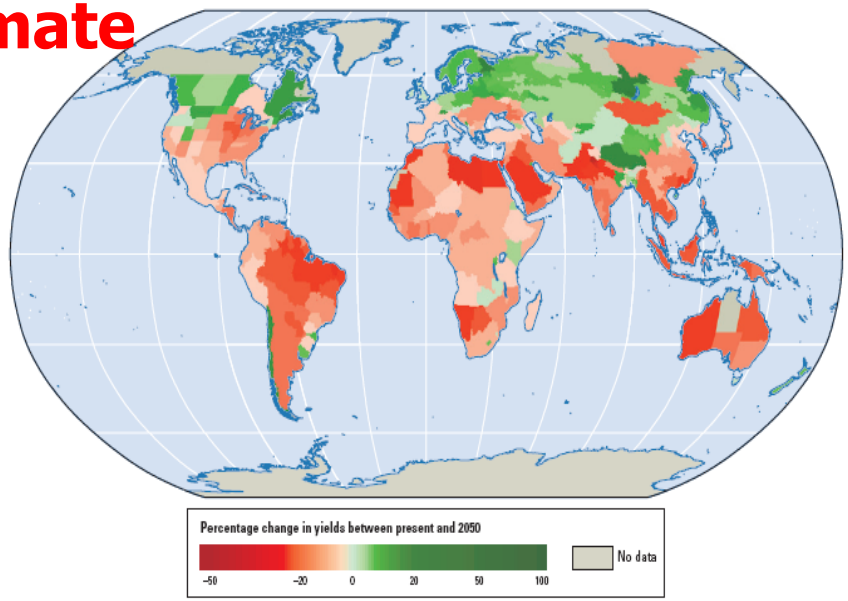
Source: official statistics

Bread Basket for the Future ?

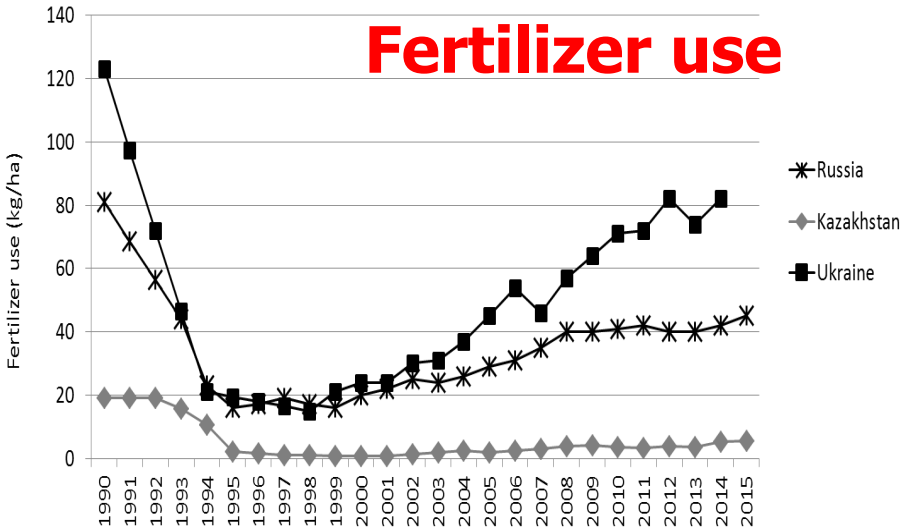
Land use



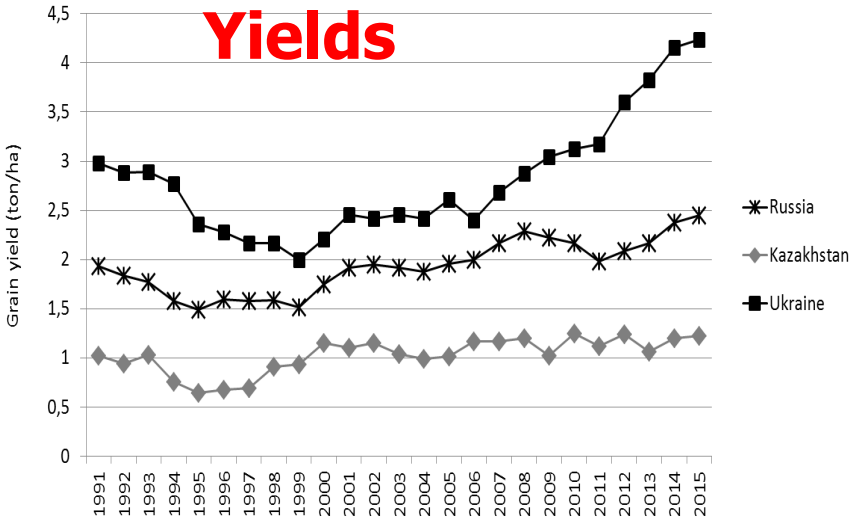
Climate



Fertilizer use



Yields



Bread Basket for the Future ?

Potential for wheat production

INTENSIFICATION @ 60% of the Yield Potential	Base line	INTENSIFICATION		RECULTIVATION		CLIMATE CHANGE + INTENSIFICATION		INTENSIFICATION + RECULTIVATION + CLIMATE CHANGE	
AREA (Mha)	*2013*			Total	Extra Land				
Russia	46,2	46,2		51,5	5,3	47,2		52,5	
Ukraine	16,1	16,1		16,9	0,9	16,4		17,3	
Kazakhstan	**15,4**	**15,4**		**17,8**	**2,4**	**15,5**		**17,8**	
Total	77,6	77,6		86,2	8,5	79,1		87,6	
YIELDS (t/ha)	*2008-2013*	60% of Yp		80% of actual yields		60% of Yp		60% of Yp	
Russia	2,1	2,3		2,0	1,6	2,3		2,3	
Ukraine	3,2	3,6		3,0	2,0	3,5		3,5	
Kazakhstan	**1,2**	**1,4**		**1,1**	**0,9**	**1,4**		**1,3**	
PRODUCTION (Mt)		TOTAL	GROWTH	TOTAL	GROWTH	TOTAL	GROWTH	TOTAL	GROWTH
Russia	95,0	107,2	12,2	103,5	8,6	110,1	15,2	120,0	25,1
Ukraine	49,3	57,0	7,7	51,0	1,7	58,1	8,8	60,0	10,7
Kazakhstan	**17,2**	**21,2**	**4,0**	**19,4**	**2,2**	**21,3**	**4,1**	**23,8**	**6,6**
Total	**161,5**	**185,4**	**23,9**	**174,0**	**12,5**	**189,5**	**28,0**	**203,8**	**42,3**

Source: Swinnen et al (2017) in *Global Food Security*

Policy Recommendations

1. Strenghten inclusive economic development
2. Raise awareness on healthy diets
3. Improve consistency of government programs
4. Involve stakeholders
5. Strengthen capacity
6. Create policy framework for VC innovations
7. Harmonize standards and improve trade infrastructure
8. Natural resource management for future challenges
9. Monitor FNS policies
10. Assess effective impact of FNS policies

1. Strengthen Inclusive Economic Development

- Governmental commitment to **strengthen inclusive income growth**, invest in human capital
- Further diversify existing economies is key to ensure stability of the food and nutrition situation in the region.
- Overall economic development may also improve food security in the region through its impact on agricultural productivity.
- **Targeted social security spending** can complement food and nutrition security for the most vulnerable groups.

2. Raising Awareness on the Importance of Healthy Diets

- **Information and media campaigns** organized in partnership with the government and relevant stakeholders could provide the population with relevant information about the importance of nutritionally balanced diets.

- **School-based educational programs** could be introduced to inform school-going aged children about the importance of healthy diets.

- **Better infrastructure and food labelling** can enhance consumers information on the nutritional content of food.

3. Improving Consistency of Budget Commitments with FSN Policy

- Better matching between government plans to develop food and nutrition security related programs and policies and **budgetary** support for effective implementation

- Including more realistic **time** frames for sound budget planning, capacity building and preparation.

4. Integrated Policy Strategy for FNS and Involve Stakeholders

- Despite recent efforts, there is still a need to integrate health and nutrition objectives and policy targets into the government agencies responsible for ensuring food and nutrition security.

- It is important to include different stakeholders in the policy formulation and implementation processes.

5. Strengthen Capacity

- A constraint to effective implementation of FSN policies is the low knowledge base.

- Reliance on external expertise and organizational capacity from development agencies is a threat to the long-term sustainability of FNS policies and programs.

6. Stimulate value chain innovations

- Value chain innovations have been uneven across the Eurasian countries due to the **policy** and **regulatory** framework.

- Reforms of obstacles for investments, including a better environment for private sector investments as well as the removal of public policies can play a very important role in value chain development and its implications for food and nutrition security.

7. Effective implementation and international harmonization of food (safety) standards & improve trade infrastructure

- Exporters continue to struggle to achieve compliance with SPS and TBT requirements not only within the regional trade but also in international markets.

- Harmonizing the regulations related to food safety will allow processes and products along the value chain to conform to international standards and regulations, therefore removing trade barriers and allowing SME's (small and medium enterprises) to integrate into global value chains.

8. Natural resource management to address future challenges

- Various factors, including climate change, will impose additional stress on natural resources.

- Introduction and implementation of integrated policies for land and water resource management taking into account climate change projections to secure the food and nutrition status of future generations.

9. Better Monitoring and Data Collection on Policies

- Information and insights on the impact and implementation of policies is weak.
- This obviously hampers the policy analysis and improvement.
- The collection of health and nutrition indicators should be organized at the national level in order to provide monitoring and assessment of implemented FSN programs and policies.
- This will aid in moving towards more evidence-based policy-making framework for food and nutrition security in the focus countries.

10. Assessment & Research on Policy Effectiveness

- Information and insights on the impact and implementation of policies is weak.
- This obviously hampers the policy analysis and improvement.
- Research on policy impact and effectiveness of FSN programs and policies.
- This will aid in moving towards more evidence-based policy-making framework for food and nutrition security in the focus countries.

Agricultural and Food Systems Transformation for Better Food Security and Nutrition in Eurasia

FOCUS COUNTRIES & Background Study Reports

Country	Author
Russia	Vitaly Nagornov
Kazakhstan	Gulzhan Nurtazina
Kyrgyz Republic	Kanat Tilekeev
Uzbekistan	Botir Dosov, Inna Rudenko, Davron Niyazmetov
Tajikistan	Christine Oriol
Armenia	Naira Harutyunyan
The Role of Russia in Eurasian Food Security	Evgeny Tsvetnov et al.

Additional references

- Swinnen, Burkitbayeva and Liefert, 2018, "***Agricultural Development and Food Security in ECA***" in Fan and Otsuka, *Agricultural Development: A Global Perspective, IFPRI*

- *Swinnen, 2018,* ***The Political Economy of Agricultural and Food Policies****, PalgraveMcMillan*

- Swinnen, J. & S. Burkitbayeva, 2018, "***Smallholders in Transition Agriculture***", *Journal of Agrarian Change.*

- Swinnen, Burkitbayeva et al, 2017, "***Production Potential in the 'Bread Basket' of Eastern Europe and Central Asia***", *Global Food Security*.