

*Pilot Study on Agricultural Policy Monitoring in
Six post-Soviet Countries:*

Data collection and methodology

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in Six post-Soviet Countries

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Presentation outline

- **FAO pilot study:** analyzed countries and key aims
- **Methodology:**
 - Agricultural price incentives/disincentives (policy indicator: NRP)
 - Budgetary and other transfers to agriculture
 - Data requirements and data collection
- **Key pilot study results**
- **Conclusions:** limitations and further research

FAO's pilot study: analyzed countries and key aims

- **Analysed post-Soviet countries: Armenia (AM), Azerbaijan (AZ), Belarus (BY), Georgia (GE), Kyrgyz Republic (KY) and Moldova (MD)**
- **Background:** these countries not covered in systematic & continuous international agricultural policy monitoring following the significant policy changes after the dissolution of Soviet Union
- **Key aims of pilot study:**
 - contribute to systematic monitoring of agricultural policy distortions by assessing feasibility of **calculation of agricultural policy indicators:** nominal rates of protection (NRP) and nominal rates of assistance (NRA)
 - **analyse budgetary and other support to agriculture** (following OECD PSE/CSE classification; OECD, 2016)

Why measure agricultural policy distortions?

- To help analyze political economy causes and economic and welfare effects of past policies & prospective alternatives (policy scenarios)
- To evaluate incentives/disincentives to production, processing and marketing for key food/agricultural value chains; **who is benefiting - producers, processors, traders, consumers?**
- **Price distortions due to:**
 - own country price-distorting policies (domestically or at national borders)
 - large countries' policies
 - rest of the world's policies
 - market failures and underdevelopment
- **FAO-MAFAP (2015):** tool for monitoring & analyzing policies and their effects on producers and other value chain agents in developing countries
- **Pilot study used MAFAP's basic methodological approach in data collection and calculation of agricultural policy indicators**

Agricultural policy indicator: NRP

- **Agricultural policy indicators calculated:**
 - **Nominal rate of protection (NRP)** – observed, at farm gate only!
 - **Nominal rate of assistance (NRA)** – observed, at farm gate only!
- Observed = based on actual market and policy situation in a country
- **NRP: domestic-to-border-price ratio; gap between (possibly) distorted domestic farm gate price and international reference price** (without influence of domestic policies or markets):

$$NRP_{ofg} = \frac{P_{fg} - RP_{ofg}}{RP_{ofg}} * 100$$

P_{fg} = observed domestic price at farm gate

RP_{ofg} = observed reference price at farm gate

- NRP is a measure of the **direct effect** (in relative terms) of **domestic market and trade policies** and **overall market performance** on prices received by agents in the value chain (MAFAP, 2015);
- **Conceptually equivalent to OECD's Producer Nominal Protection Coefficient (NPC) and to NRP's collected by Ag Incentives Consortium**

Agricultural policy indicator: NRA

- **NRA**: extension of NRP by including commodity specific public expenditures (budgetary and other support - BOT)

$$NRA_o = \frac{(P_{fg} - RP_{ofg}) + \mathbf{BOT}}{RP_{ofg}} * 100$$

P_{fg} = observed domestic price at farm gate

RP_{ofg} = observed reference price at farm gate

- NRA calculated same as NRP, only the **public expenditure** directly allocated to the commodity is added to the price gap at the farm gate (MAFAP, 2015)
- Thus, NRA a measure of price incentives/disincentives - effect (in relative terms) of domestic market and trade policies, overall market performance **and public expenditure** in support of the agricultural sector (MAFAP, 2015)
- **NRA conceptually equivalent to OECD's Producer Nominal Assistance Coefficient (NAC)!**

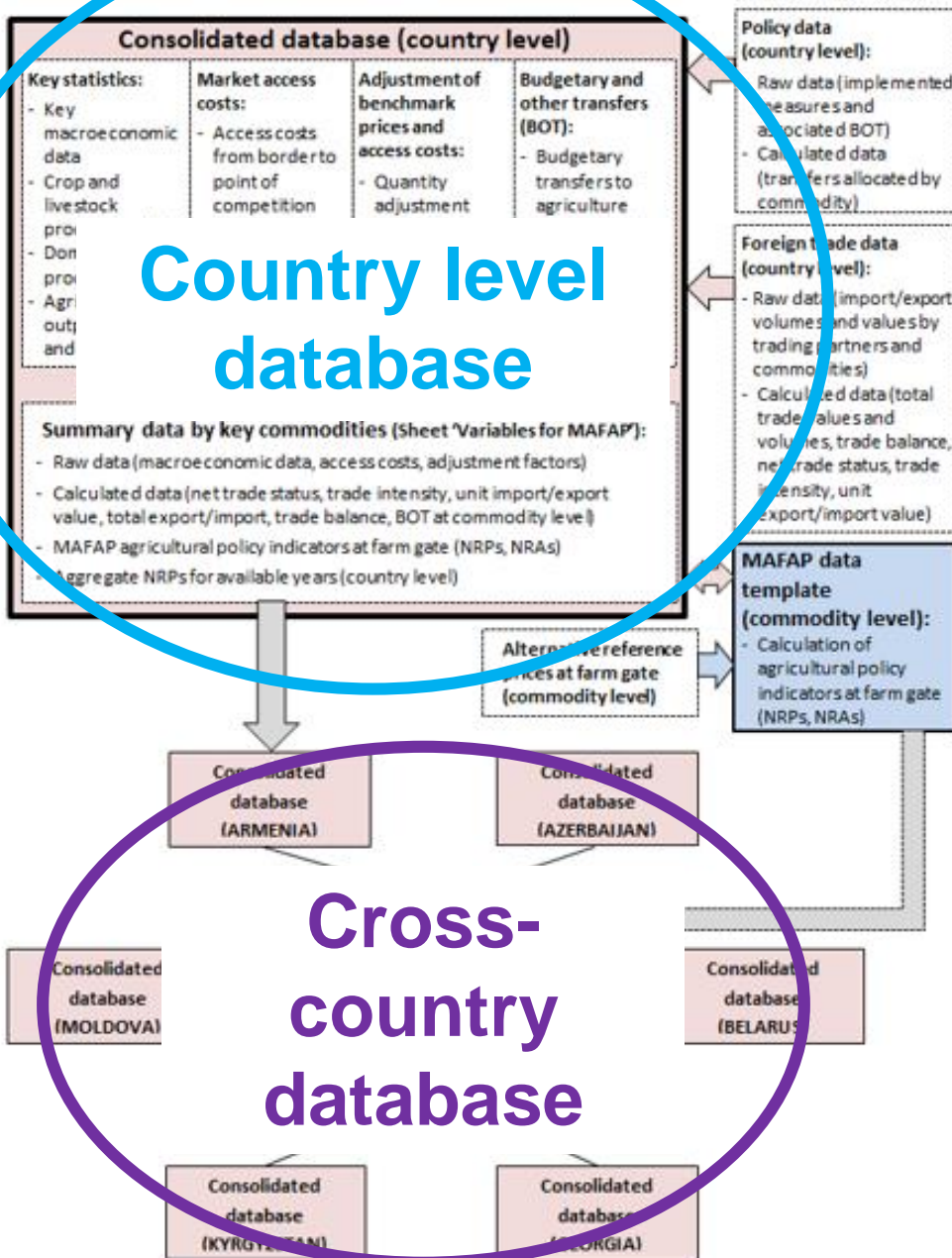
Data required to calculate NRPs and NRAs

By key commodities, national level, by individual years in period 2005-2016:

- **Trade status and trade intensity** (foreign trade data)
- **Benchmark prices:** prices at a border of a country
- **Domestic prices:** at farm gate level (producer prices) and at point of competition (wholesale level)
- **Exchange rates**
- **Market access costs:** from border to point of competition and from farm gate to point of competition
- **Budgetary and other transfers (BOT) to agriculture**
- **Quality and quantity adjustment parameters:** for production and foreign trade
- **Additionally: Description of key value chains and processing**

Data inputs and architecture of data files

- Combination of own data templates and MAFAP commodity files
- Data primarily collected by country experts
- Description of key value chains for specific commodities: additional (narrative) background information, done by country experts



Methodology: Steps

- 1. Selection of key commodities:** initial aim to analyze commodities that cumulatively account for at least 70% of value of production (à priori analysis of FAO-STAT data); **commodity list later fine-tuned - based on national data and consulted with country experts**; national data used in follow-up calculations (e.g. aggregate NRPs)
- 2. Analysis of trade data:** **net trade status** (net importer/exporter of certain commodity), **trade intensity** (commodity thinly traded or not) – based on aggregate HS codes
- 3. Determining unit import/export values as observed benchmark prices:** for calculating observed reference prices at farm gate
- 4. Consideration of observed access costs and adjustment factors by quantity:** for calculating observed reference prices at farm gate (most comparable to producer prices)

Methodology (pilot study): Steps – cont.

5. **Determining alternative reference prices at farm gate** in case unit export/import value were not used as observed benchmark price (reasons: e.g. level of unit values calculated not realistic for the region in the analyzed period, level of access costs too high)
6. **Alternative reference prices used (20/45 cases):**
 - **Observed domestic price at farm gate**, in case average trade intensity in period <2% (NRP=0.0); non-tradable commodities (e.g. potatoes)
 - **OECD reference prices at farm gate** (EU28, Russian Federation, Turkey, Ukraine)
 - **Moldovan observed reference price at f. g.;** used for grapes in AM, GE)

Methodology: Steps – cont.

- 7. Budget compilation and classification:** as per OECD PSE/CSE classification scheme (same as in AGRICISTRADe approach; Erjavec et al., 2017)

Basic OECD PSE/GSSE/CSE classification scheme (OECD, 2016) of budgetary support (explicit and implicit budgetary transfers):

- a) Budgetary transfers to producers (PSE BOT)**
 - b) Budgetary transfers to general services (GSSE BOT) and**
 - c) Budgetary transfers to consumers (CSE BOT)**
 - d) Total budgetary and other transfers (Total BOT): a)+ b) + c)**
- 8. Allocation of public expenditures to key commodities:** only directly commodity attributable public expenditure considered in this pilot study
 - 9. Calculation of policy indicators: NRPs and case study of NRA**

- 6 countries
- 14 different commodities
- 6-8 commodities/country
- Altogether: **45 commodity cases!**

	Armenia	Azerbaijan	Belarus	Georgia	Kyrgyzstan	Moldova
Crops:						
	Wheat	Wheat	Wheat		Wheat	Wheat
			Maize	Maize		Maize
					Beans	
	Potatoes	Potatoes	Potatoes	Potatoes	Potatoes	Potatoes
						Sunflower
	Tomatoes	Tomatoes				
		Hazelnuts		Hazelnuts		
	Grapes			Grapes		Grapes
Livestock:						
	Cattle meat	Cattle meat	Cattle meat	Cattle meat	Cattle meat	
	Pigmeat		Pigmeat			Pigmeat
					Sheep meat	
		Chicken meat	Chicken meat			Chicken meat
	Cow's milk	Cow's milk	Cow's milk	Cow's milk	Cow's milk	Cow's milk
	Eggs	Eggs	Eggs	Eggs		
Total:	8	8	8	7	6	8

	Armenia	Azerbaijan	Belarus	Georgia	Kyrgyzstan	Moldova
Crops:						
Wheat	Wheat	Wheat	Wheat		Wheat	Wheat
Maize			Maize; OECD Ukraine	Maize		Maize
Beans					Beans	
Potatoes	Potatoes; domestic price at f. g.=reference price at f. g.*	Potatoes; OECD Russian Federation**	Potatoes; domestic price at f. g.=reference price at f. g.*	Potatoes; OECD Turkey	Potatoes	Potatoes
Sunflower						Sunflower
Tomatoes	Tomatoes; domestic price at f. g.=reference price at f. g.*	Tomatoes				
Hazelnuts		Hazelnuts		Hazelnuts		
Grapes	Grapes; Moldovan reference price at farm gate			Grapes; Moldovan reference price at farm gate		Grapes
Livestock:						
Cattle meat (beef and veal)	Cattle meat	Cattle meat	Cattle meat	Cattle meat	Cattle meat	
Pig meat	Pigmeat		Pigmeat			Pig meat; OECD EU28
Sheep meat					Sheep meat; domestic price at f. g.=reference price at f. g.*	
Chicken meat (Poultry meat)		Chicken meat; OECD Russian Federation	Chicken meat			Chicken meat; OECD Russian Federation
Cow's milk	Cow's milk	Cow's milk; OECD Ukraine	Cow's milk; OECD Ukraine	Cow's milk; OECD Ukraine	Cow's milk; OECD Ukraine	Cow's milk; OECD Ukraine
Eggs	Eggs; domestic price at f. g.=reference price at f. g.*	Eggs; OECD Turkey	Eggs	Eggs; OECD Turkey		
Total no. of key commodities:	8	8	8	7	6	8

* Average trade intensity for 2005-2016 below 2%; observed domestic price at farm gate is used for observed reference price at farm gate (NRP=0.0)

** OECD prices: Reference prices at farm gate (Source: <http://www.oecd.org/agriculture/agricultural-policies/producerandconsumersupportestimatesdatabase.htm>)

*** Moldovan observed reference price at farm gate

Access costs and adjustment by quantity

- **Access costs from border to point of competition (POC):** costs incurred for bringing the commodity from the border to the representative POC; main components: port charges, import procedures, transport costs and import costs
- **Access costs from farm gate to POC:** costs incurred for bringing the commodity from farm gate to a representative POC, i.e. the main wholesale market in the country such as capital city or port. Main types of these costs are related to: processing, transportation, and handling
- **Adjustment by quantity:** describe of quantitative „relationship“ (technical coefficients) between domestically produced and exported/imported key commodities; e.g. meat vs. live animals (e.g. pig meat adj. f. 0.78 from live weight to carcass weight)

Pilot study results

Nominal rates of protection (NRPs):

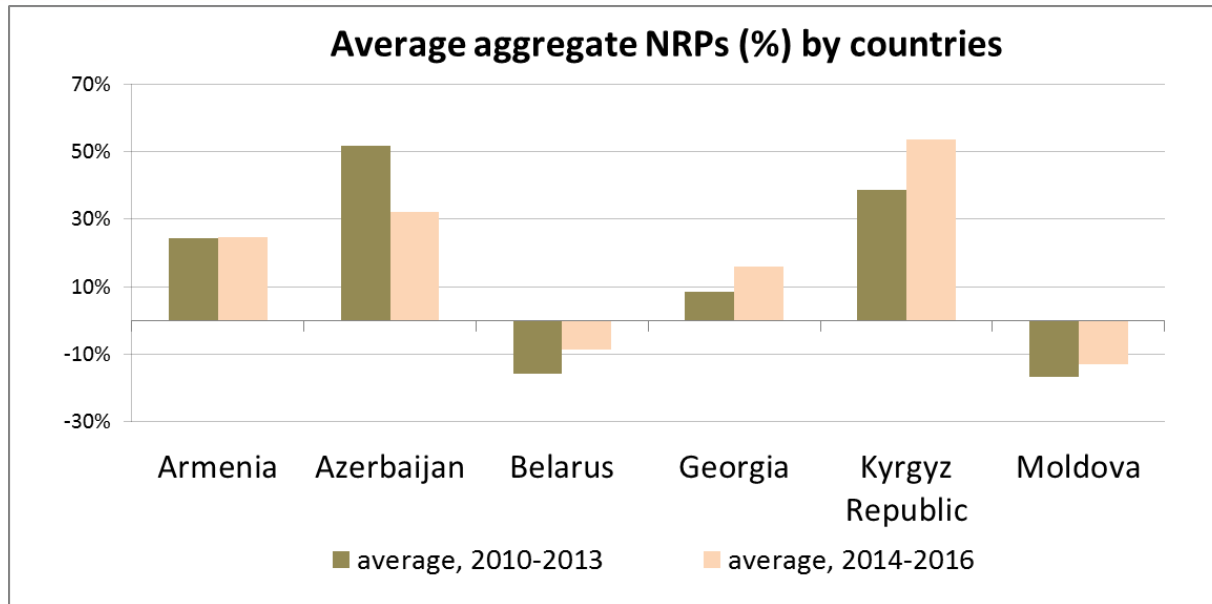
- **Cross-country results: weighted aggregate NRPs for all countries** (average 2010-2013 vs. 2014-2016)
- **One country case (AM): aggregate NRPs by years** (aggregated for all analyzed key commodities in a country – representativeness!) and **NRPs by key commodities**

Budgetary and other transfers (BOT):

- **Cross-country results: average 2015-2016 structure of BOT** (PSE BOT, CSE BOT, GSSE BOT) and **contribution to value of production**
- **One country case (GE): value and structure of BOT for 2005-2016** and **NRA case study**

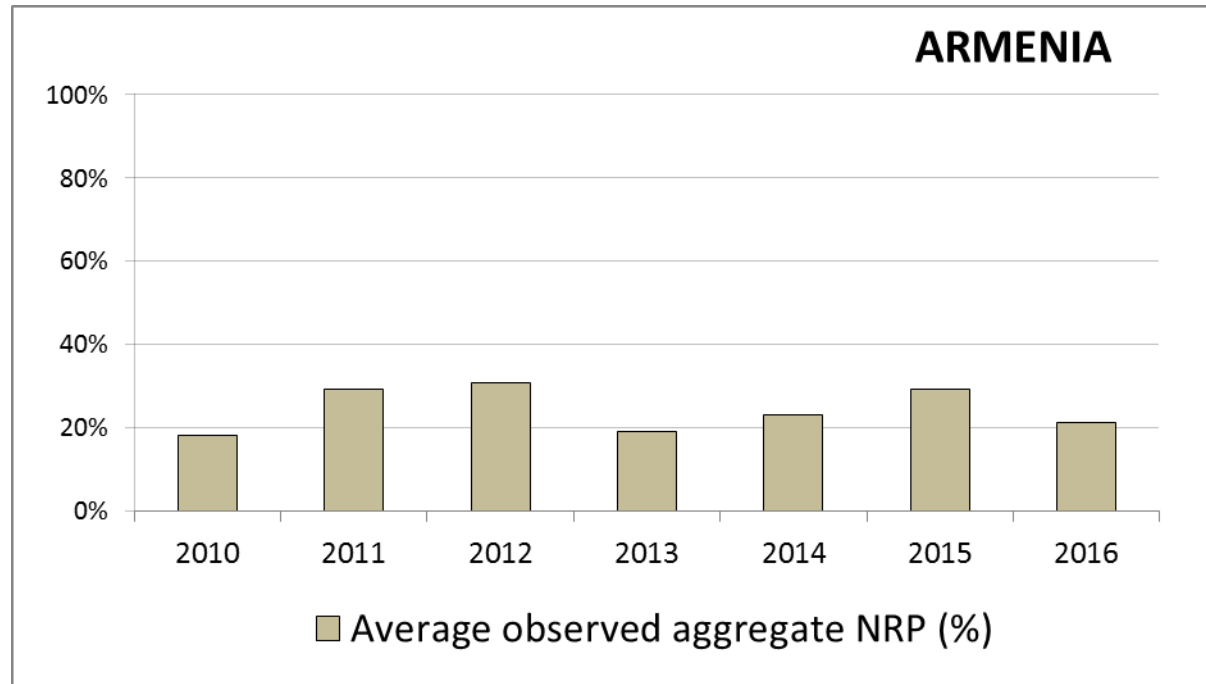
Weighted aggregate NRPs by countries (%)

$$NRP_g = \frac{\sum_{i=1}^{i=n} NRP_i * PROD_i * RP_{fgi}}{\sum_{i=1}^{i=n} PROD_i * RP_{fgi}}$$



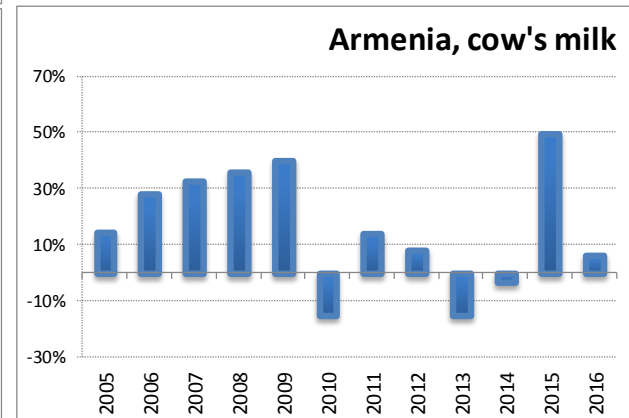
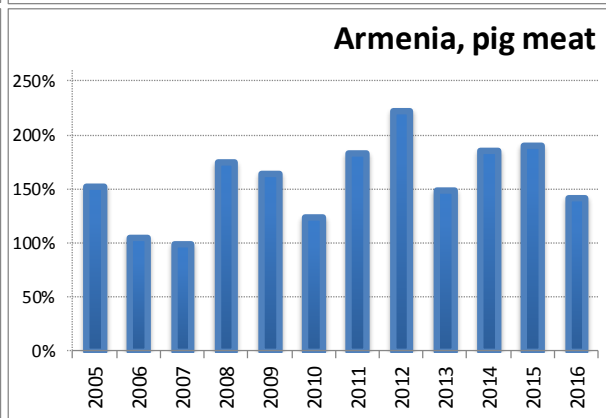
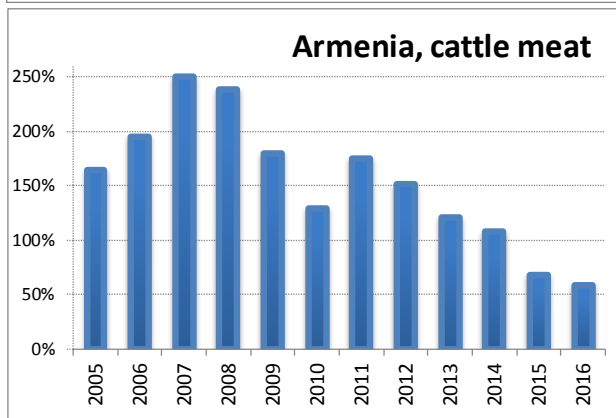
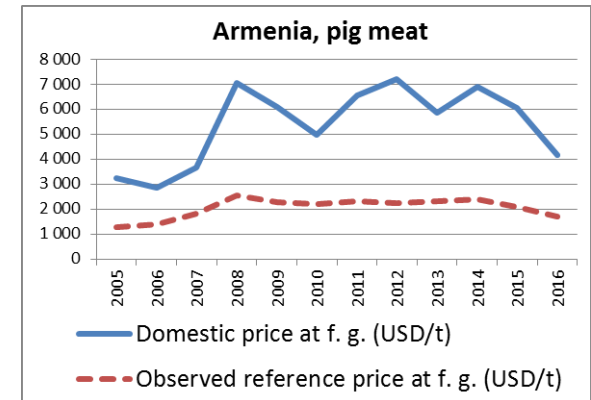
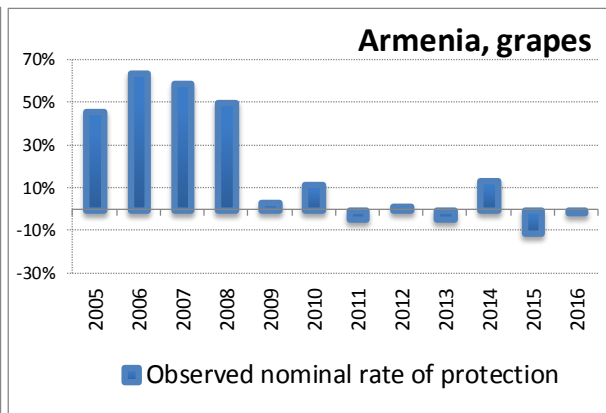
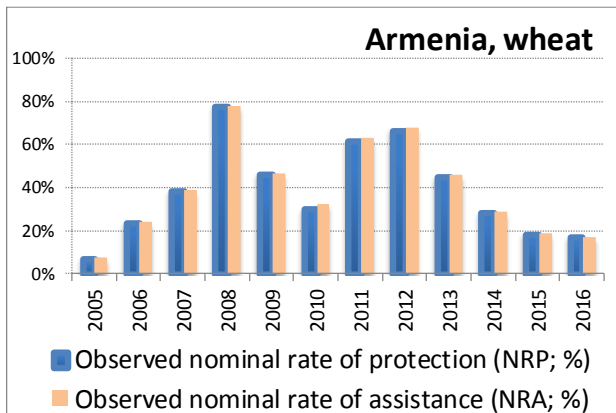
- **Agricultural price incentives** (positive aggregate NRPs): AZ & KY
- **Modest price incentives** (moderately positive NRPs): AM & GE
- **Price disincentives** (negative aggregate NRPs): BY & MD
- **Representativeness of analyzed key commodities:** 45-68 % of VOP (average range for 2005-2016; AM: 2008-2016)

Armenia: Aggregate NRPs (%); 2010-2016

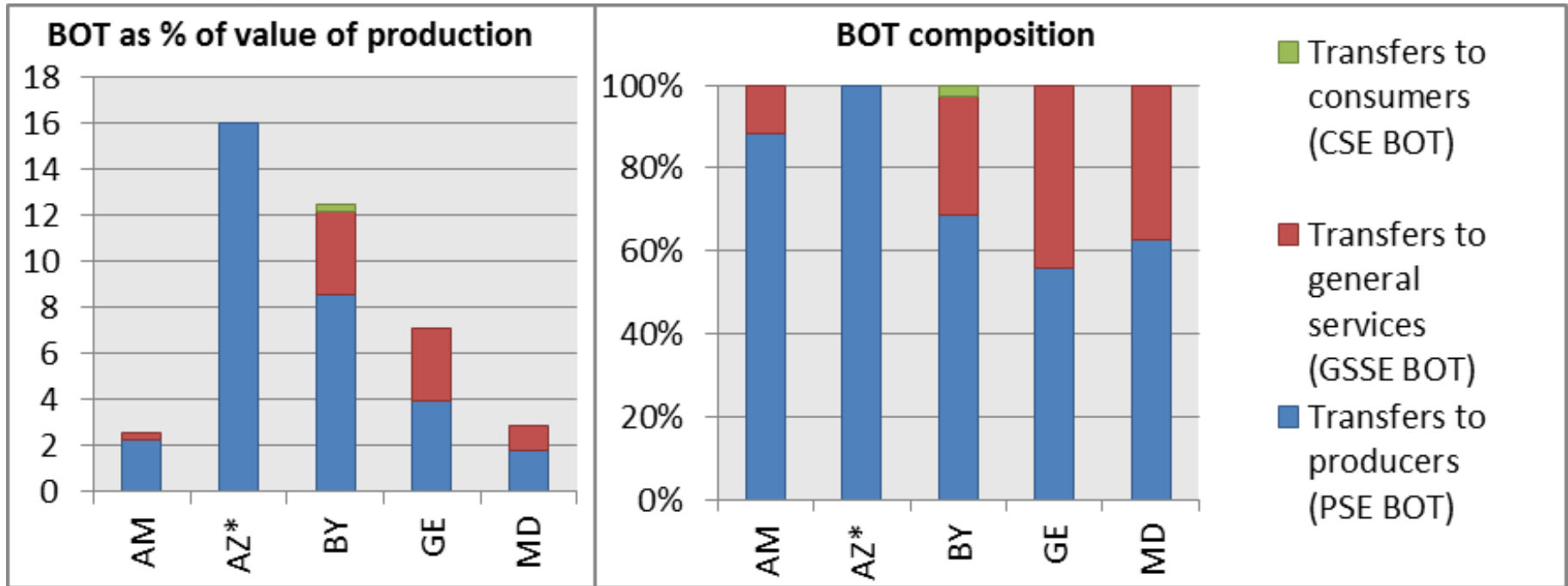


- **Positive aggregate NRPs:** modest price incentives for agricultural producers
- But problem of low representativeness of commodities, data (producer prices)

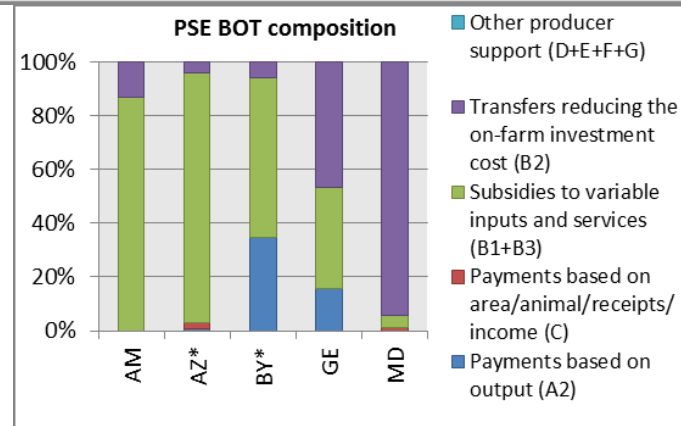
Armenia: NRPs by key commodities (%); 2005-2016



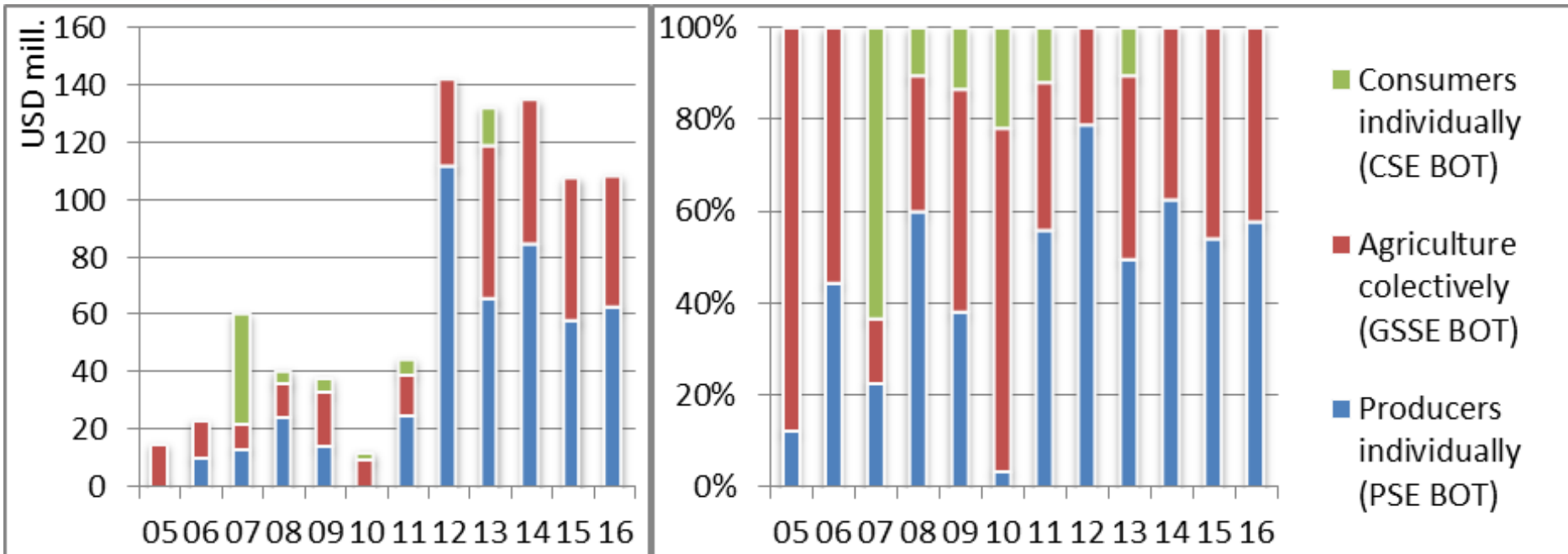
Budgetary and other transfers to agriculture by countries; average 2015-2016



- Relatively strong support (AZ, BY), low support (AM, MD) and GE in between
- Composition of budgetary and other transfers to agriculture varies (100% for PSE in AZ and 56% in GE)



Georgia: Budgetary and other transfers to agriculture; 2005-2016

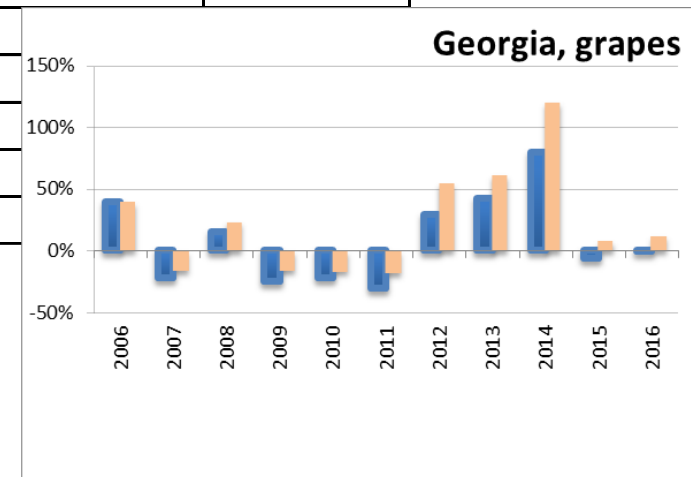


- **Support to agriculture varies significantly;** about 5% of the total value of agricultural production (7% in 2015-16)
- In 2015-16 cca. 56% for budgetary support to prod. and 44% for general services
- In 2015-16 around 9% payments based on output; 21% for subsidies for inputs and 26% for transfers reducing on farm investment costs

Budgetary and other transfers to agriculture, allocated by specific commodities & NRAs

Crops:	AM	AZ	BY	GE	MD
Wheat	2010-2013				
Maize					
Sunflower					
Tomatoes					
Potatoes			2012,2013	2009	
Grapes				2007-2016	
Hazelnuts					
Beans					
Livestock:					
Cattle meat (beef and veal)		2016			
Pig meat					
Sheep meat					
Chicken meat (Poultry meat)					
Cow's milk			2011-2016		
Eggs					

- **Only few measures commodity-specific;** small differences NRPs vs. NRAs (where applicable)
- **Grapes in Georgia;** only case where NRAs can be calculated for the **whole** period



Conclusions: key results and some limitations

- **Three groups of countries by aggregate NRPs:** strong agr. price incentives (AZ, KY), modest price incentives (AM, GE) and price disincentives (BY, MD)
- **Key factors influencing the estimations of NRPs appear to be (further analysis needed!):** besides policy related distortions also **market inefficiencies and imperfections** (limited market integration, asymmetrical distribution of market power, etc.)
- Aggregate pilot study results confirm general aggregate trends in agricultural price incentives/disincentives estimated in an earlier research (AGRICISTRADe project; Erjavec et al., 2017)
- **Budgetary and other transfers to agriculture:** relatively strong support (AZ, BY), low support (AM, MD) and GE in between
- **Some issues with quality and completeness of data; many assumptions**
- **Exact values of policy indicators need to be treated with some caution!**

Recommendations for future research

- Improve **representativeness of analyzed commodities**
- **Further analysis of specific agricultural price distorting factors** (e.g. market structures, weak infrastructure, prevailing subsistence farming)
- **Additional training of partners:** capacity building material, specific for the region
- **Additional validations of results**

Overall conclusions:

- **Feasibility of calculating NRPs (based on MAFAP) and BOT analysis for pilot study countries confirmed**
- **Huge effort done by country experts and research team** (45 commodity cases)!
- **Highly recommended** to further invest in the expert network and building of national capacity for policy monitoring to enhance evidence-based policymaking in the region

Thank you for your attention!