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IN CENTRAL AND EASTERN EUROPE

Structural Challenges for the Farm Sector in Central and Eastern Europe

Alfons Balmann

IAEI
Innovation and competitiveness of the agrarian sector of the EU
Prague, September 17, 2012

Structure of presentation

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- Market trends
  - Implications of recent price booms
- Sectoral trends
  - Increasing vertical integration and globalization
  - Tendency towards biological manufacturing
- Agriculture and the society
  - CAP after 2013
  - Public perception of farming
- Conclusions

Market trends

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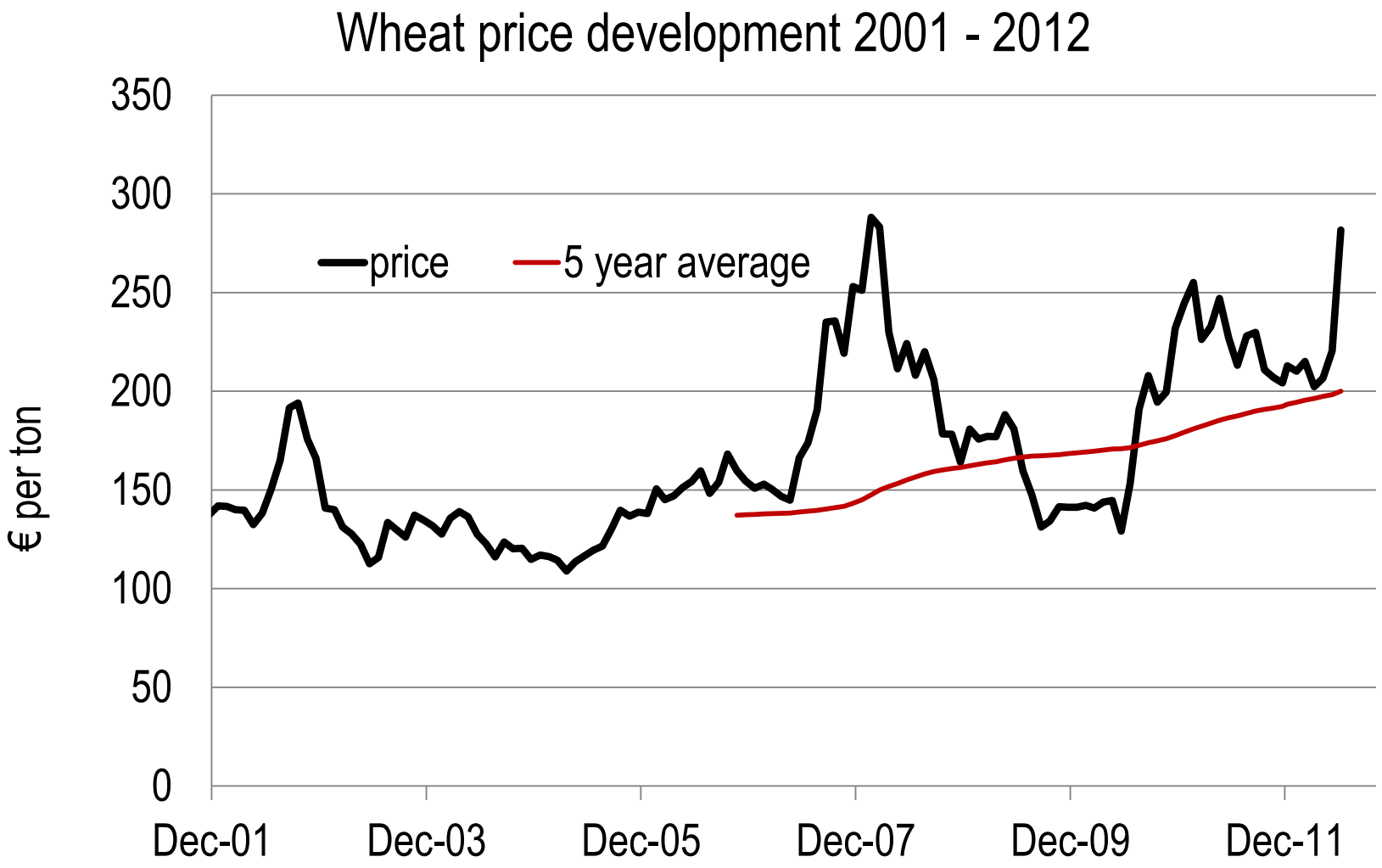

Source: http://www.indexmundi.com/commodities/?commodity=wheat&months=120&currency=eur, own caculations

Market trends

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- World demand for agricultural outputs strongly increased!
  - Increasing world population
  - Changing food patterns (more meat, more high-value and convenience products)
  - Increasing demand for bioenergy (driven by policies and energy prices)

- World production did not follow!
  - reduced growth rates of yields
  - limited land and water resources
  - still huge yield gaps and land abandonment, e.g. in Eastern Europe

Market trends

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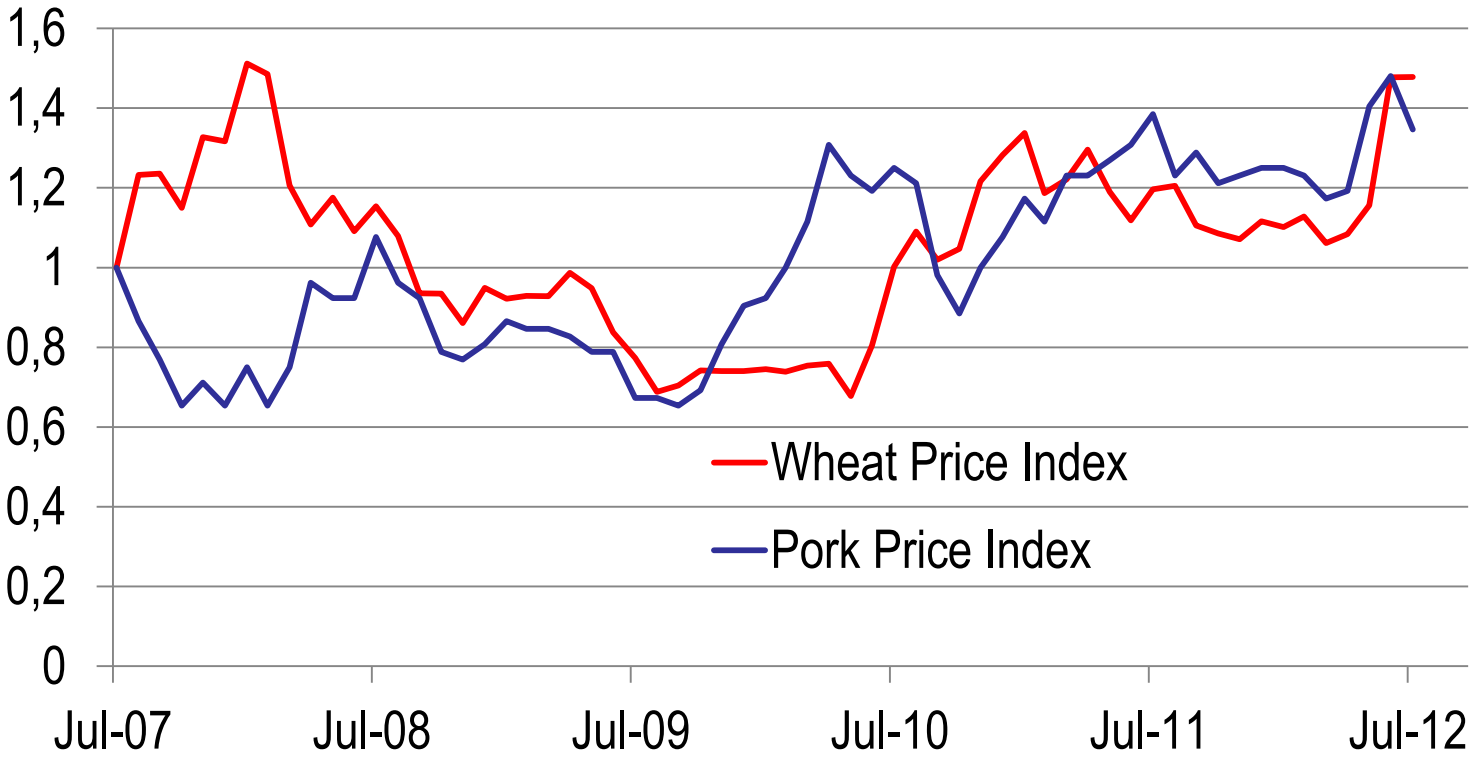
Are there now fantastic perspectives for the agricultural sector?

- high volatility of prices, also of inputs



Market trends

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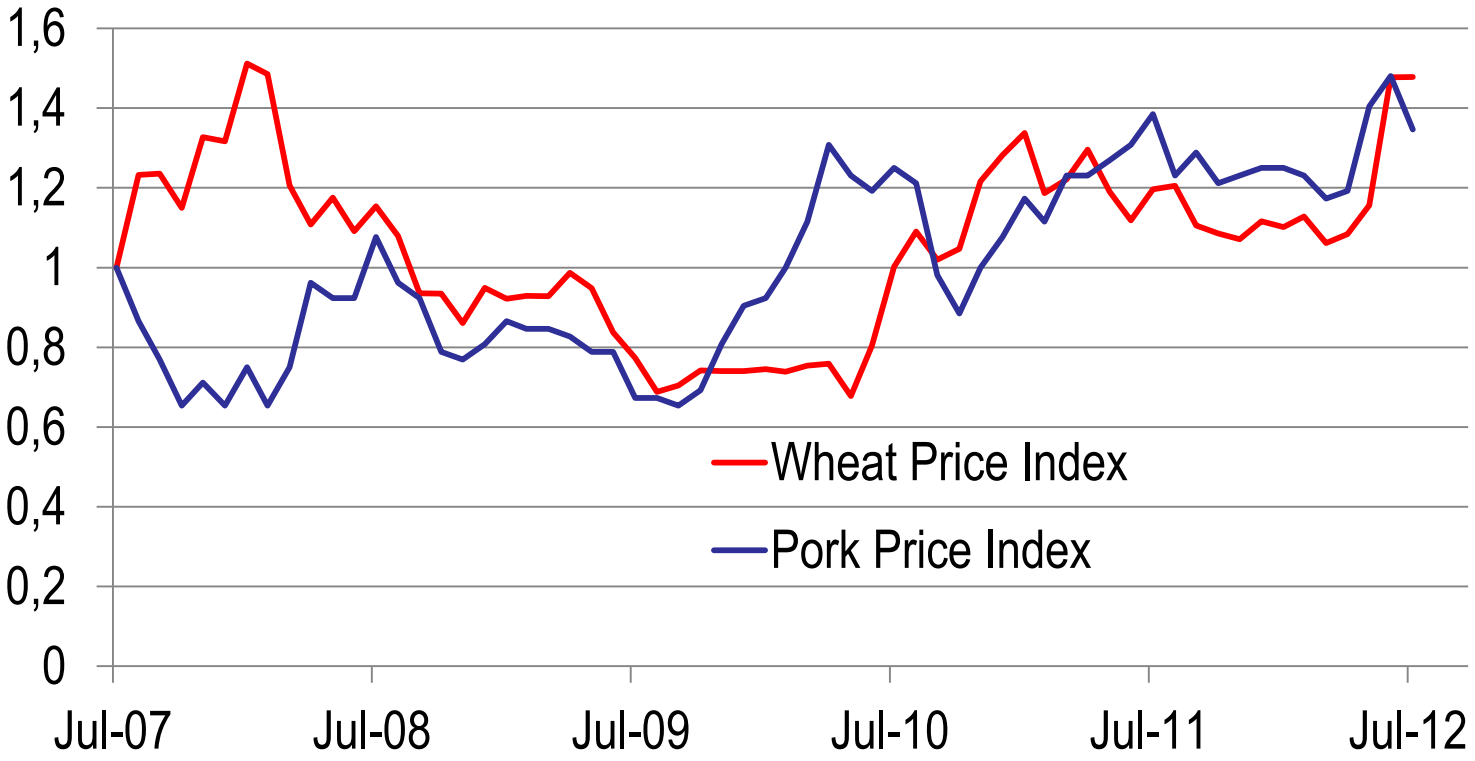
Are there now fantastic perspectives for the agricultural sector?

- high volatility of prices, also of inputs
- price frictions within the food chain (e.g. bullwhip effects)



Market trends

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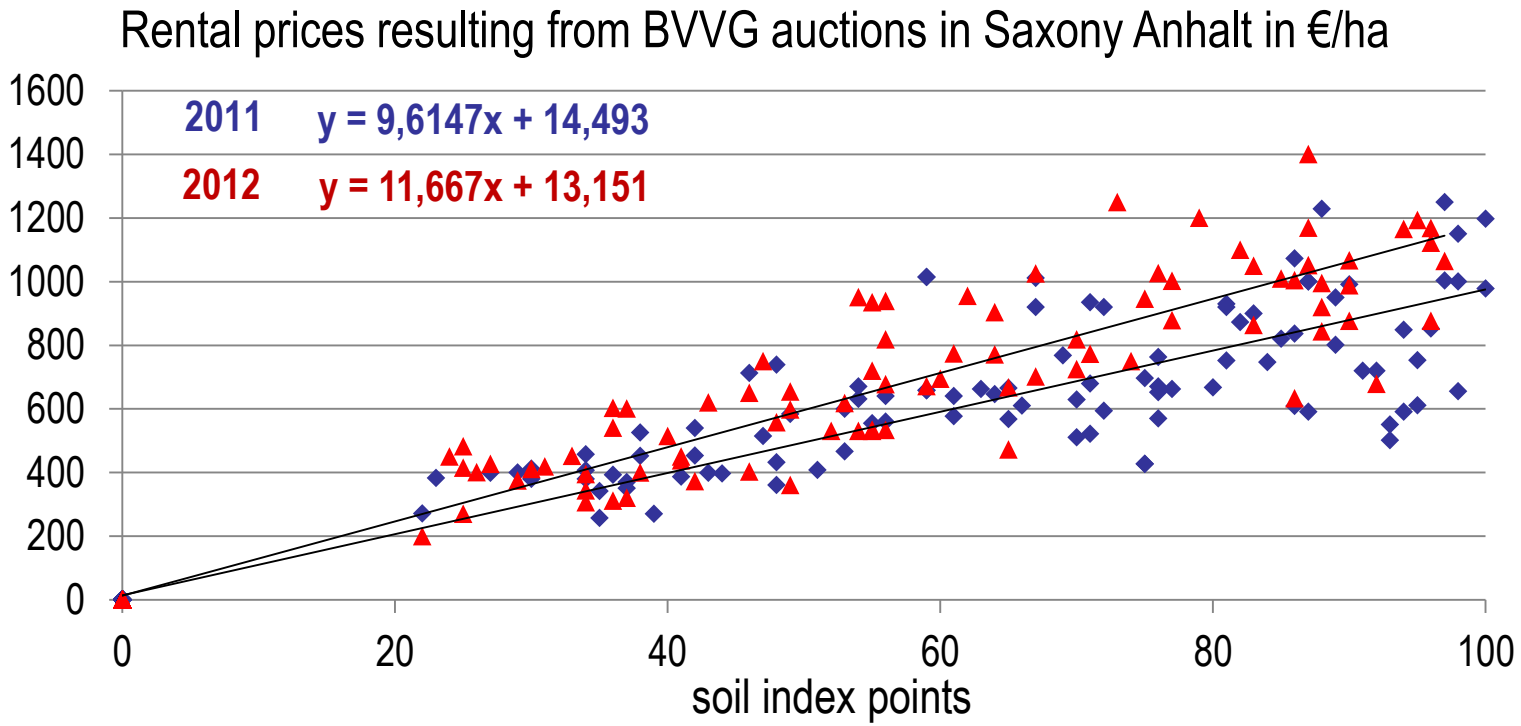
Are there now fantastic perspectives for the agricultural sector?

- high volatility of prices, also of inputs
- price frictions within the food chain (e.g. bullwhip effects)
- in the end, economic rents are capitalized in land prices



Sectoral trends

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- Boehlje (1999)
  New dimensions of structural change in agriculture:
  - Vertical value chains (verticalization) in global dimension
  - Biological manufacturing

Verticalization and globalization

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- Enormous and fast expansion of supermarkets worldwide (also in transitional, emerging and developing countries)
- Retail brands replace producer brands
  - trust of consumers in retailers

➢ Not companies compete but networks
  - vertical cooperation to realize efficiency gains
    - strict quality management via private standards (e.g. GLOBALGAP)
    - homogenous product qualities and quantities

  ➢ In general, in favor of larger farms

Verticalization and globalization

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International structural change in the pork chain

- Denmark (2007)
  - 34 % of all pigs in facilities with more the 5000 pigs
  - 20 % of all pigs in facilities with more the 10000 pigs
- US pork production
  - ~ 50 % of all hogs grown under contract
  - > 60 % of all pigs in facilities with more the 5000 pigs

Verticalization and globalization

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- US pork production
  - ~ 50 % of all hogs grown under contract
  - > 60 % of all pigs in facilities with more the 5000 pigs
  - ~ 20 % of all sows held by the 10 largest enterprises
- Smithfield Foods
  - USA: ~ 1 mill. sows
  - Poland: about 83.000 sows, >1 mill. hogs in 2008 produced
  - Romania: investments in pork chain with capacity for 4 mill. hogs

Verticalization and globalization

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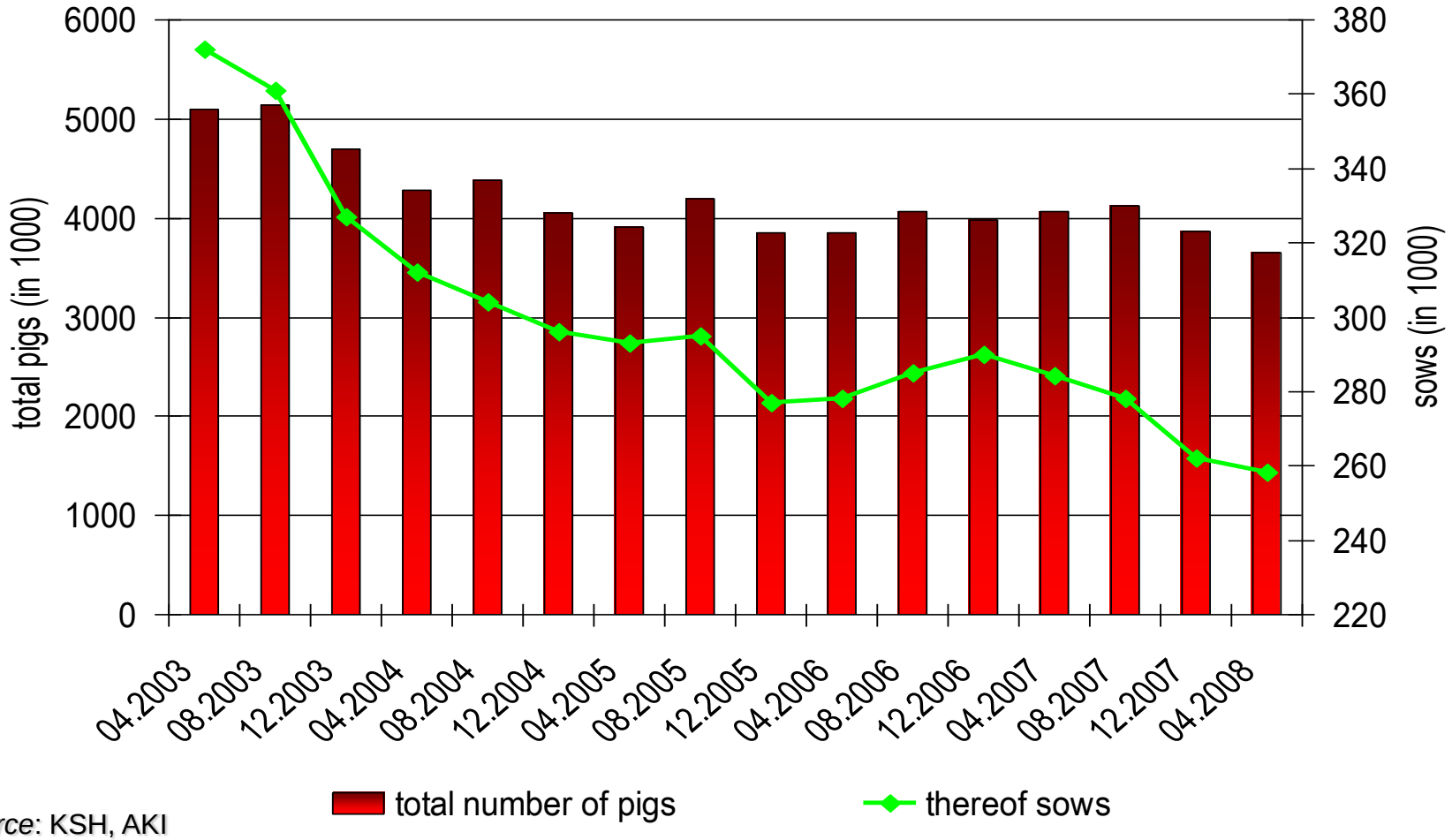
Development of pork production in Hungary (2003-2008)



Source: KSH, AKI

Verticalization and globalization

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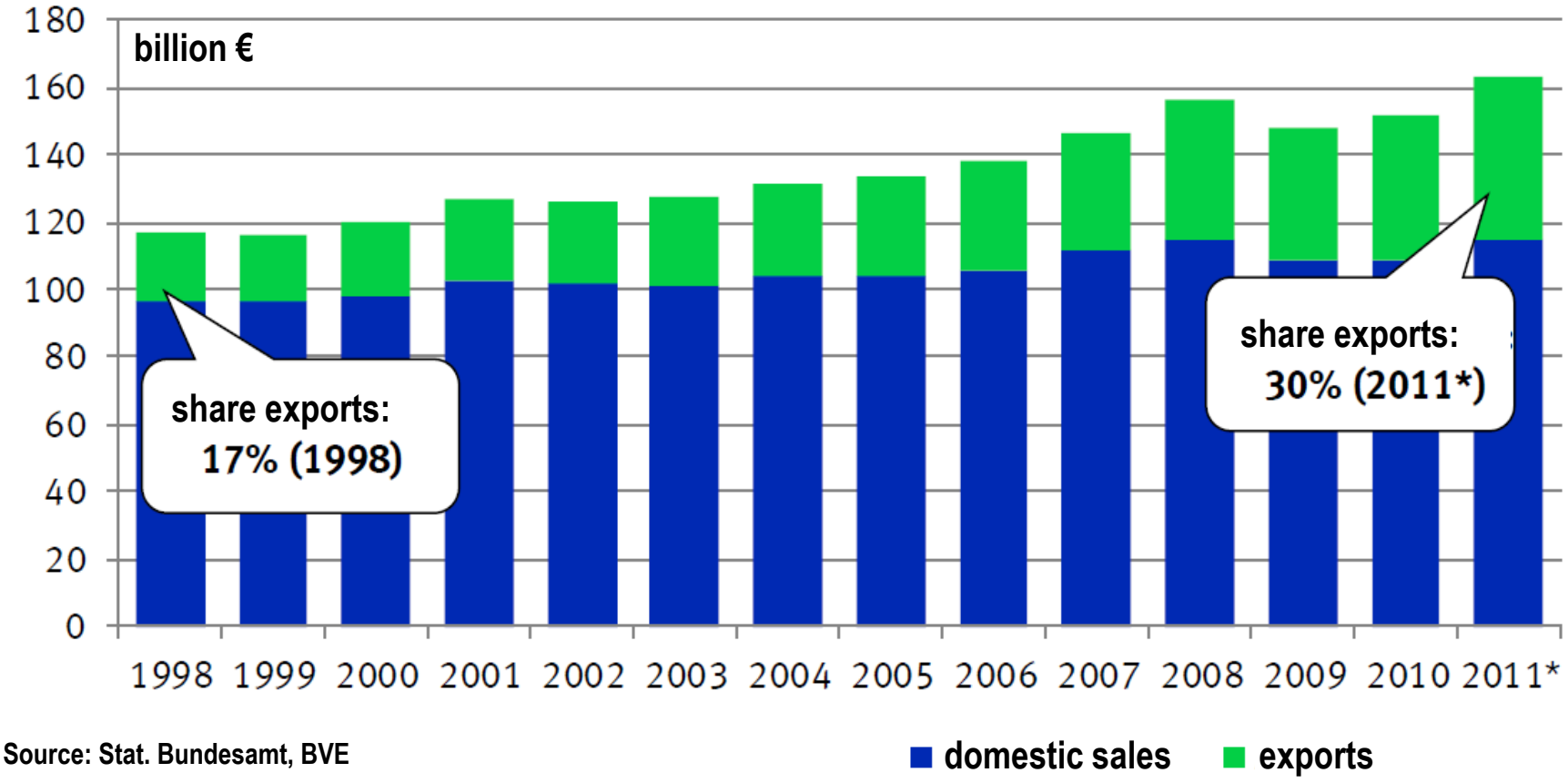
Total revenues of German food industry (550 000 employees)



Source: Stat. Bundesamt, BVE

Sectoral trends

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- Boehlje (1999)
  New dimensions of structural change in agriculture:
  - Vertical value chains (verticalization) in global dimension
  - Biological manufacturing
    - "In essence, agricultural production is becoming more a science and less an art."

Biological manufacturing

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Increasing knowledge intensity of modern agriculture

- Example: farrowing / piglet production in Saxony
  - In 2006, average profit per sow 300 € higher for farms with more than 1000 sows compared to farms with less than 600 sows
  - Success factors
    - lower costs + higher revenues
    - strong positive correlation of number of sows and piglets per sow

Biological manufacturing

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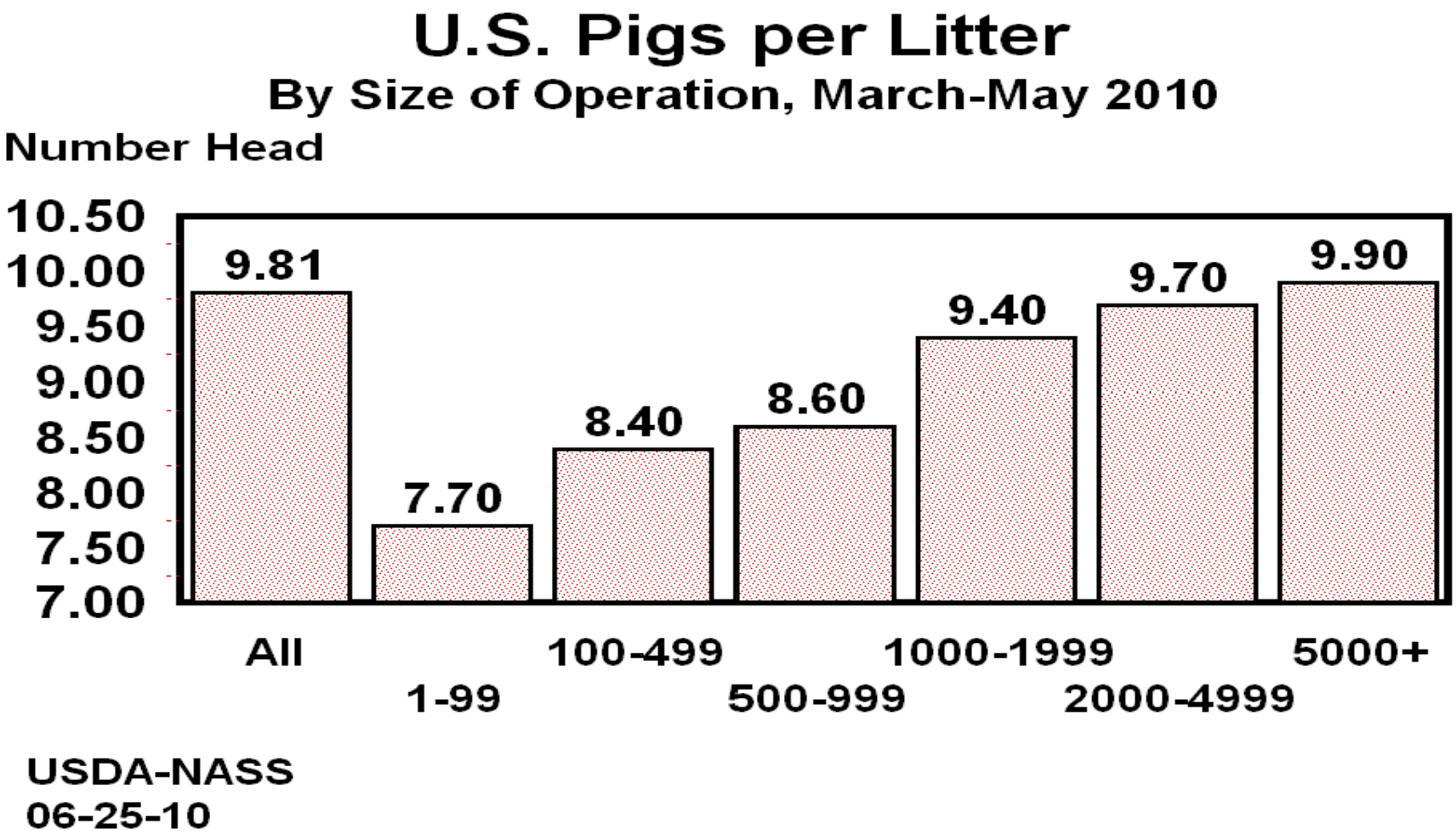
German Farm Accountancy Data 2005/06-2009/2010

	Size	Land*	Labour	Wheat yield *	Milk yield *	piglets *
	ESU	ha	AWU/100ha	Dt/ha	Kg/cow	Per sow
Full-time Farms West	80	55	3,6	71	6 906	23
Full-time Farms East	148	192	1,6	63	7 456	25
Legal Persons (corporate farms)	1 805	1 240	1,9	65	8 615	26,5
> 2000 ESU	3 059	2 684	2,3	70,3	8 976	26,9

BMVEL Buchführungsergebnisse der Testbetriebe, weighted averages, several years, own calculations
1 ESU: 1.200€ Standard Gross Margin; *2009/2010

- High productivity of large corporate farms

Biological manufacturing



Biological manufacturing

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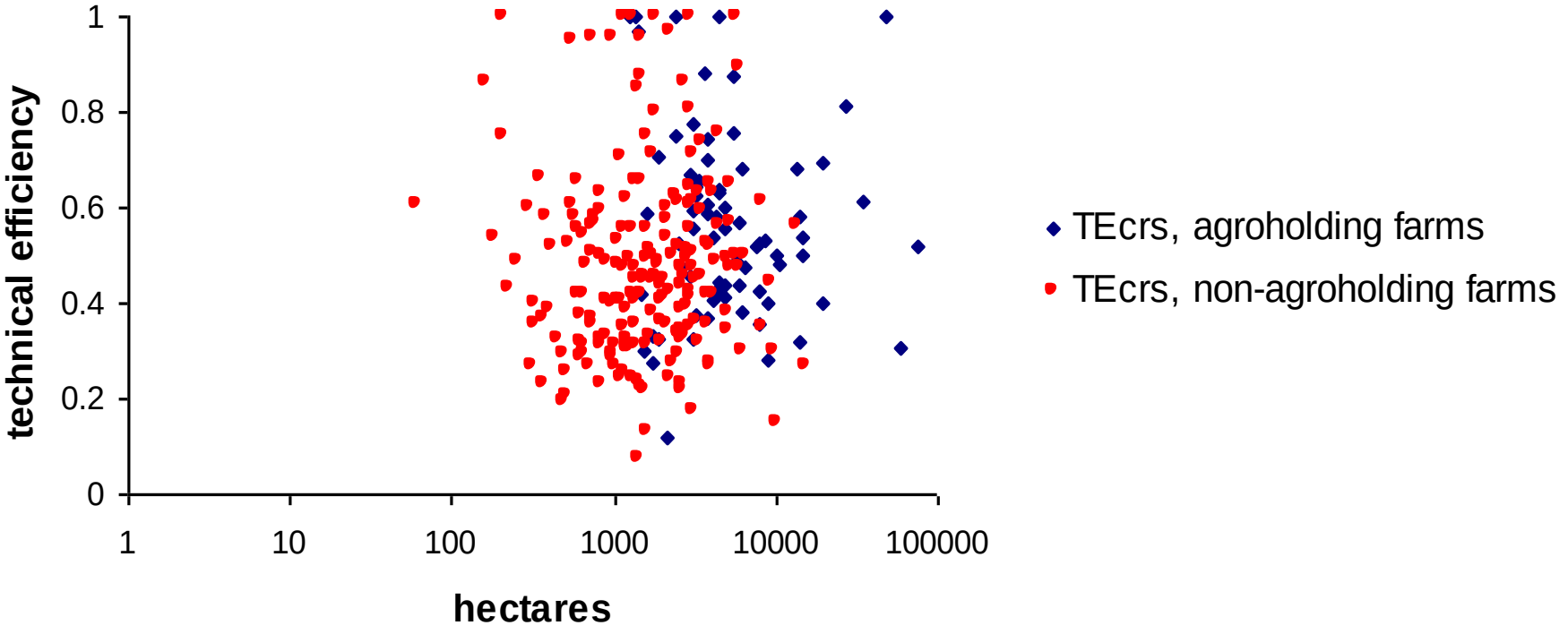
Efficiency of crop farms in Ukraine
2010



➢Efficiency not just a matter of size!

Biological manufacturing

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Modern farming is knowledge-based

- Thesis: Economies of size
  result from better managing human capital and know how
  rather than from decreasing average costs for larger facilities
  - competent managers
  - high skilled employees
  - knowledge transfer through supply chain

Biological manufacturing

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Modern farming is capital-based

- Financial demands to create one job in livestock production in Germany
  - hog feeding: 1 125 000 €
    - facility per 2500 places at 350 € each, current assets 100 € per place
  - farrowing: 675 000 €
    - facility per 250 sows at 2300 € each, current assets 400 € per place
  - dairy farming: 300 000 €
    - facility per 50 cows at 4000 € each, current assets 2000 € per place

Biological manufacturing

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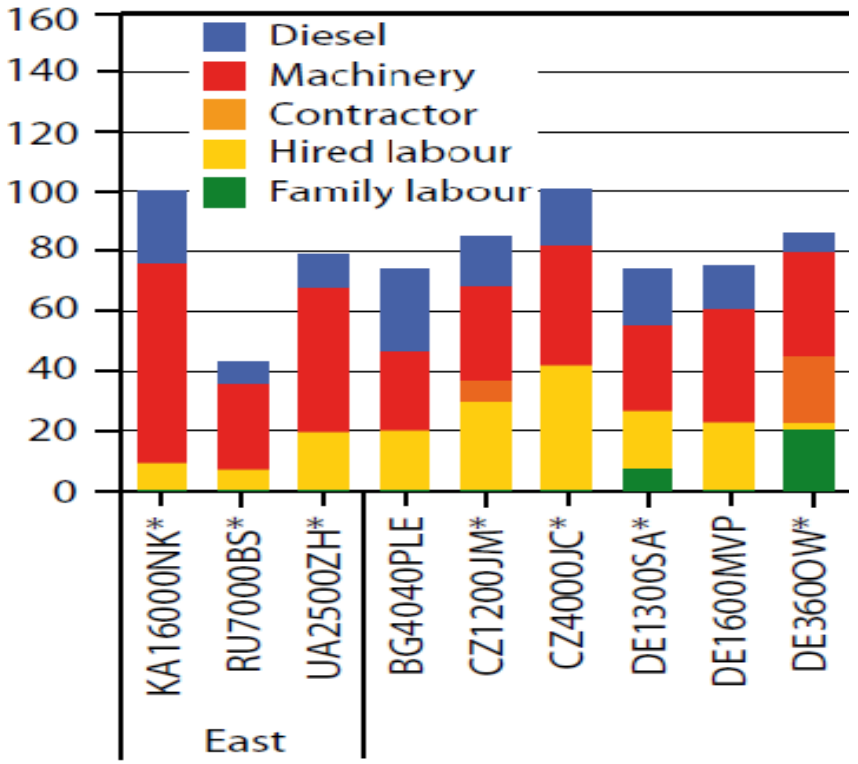
Modern farming is capital-based

- Machine costs often higher than labor costs

➢ High labor quality more important than wage level!

➢ Importance of investments in human capital!

Labor and machine costs wheat $/t



Quelle: Zimmer et al. (2010)

Biological manufacturing

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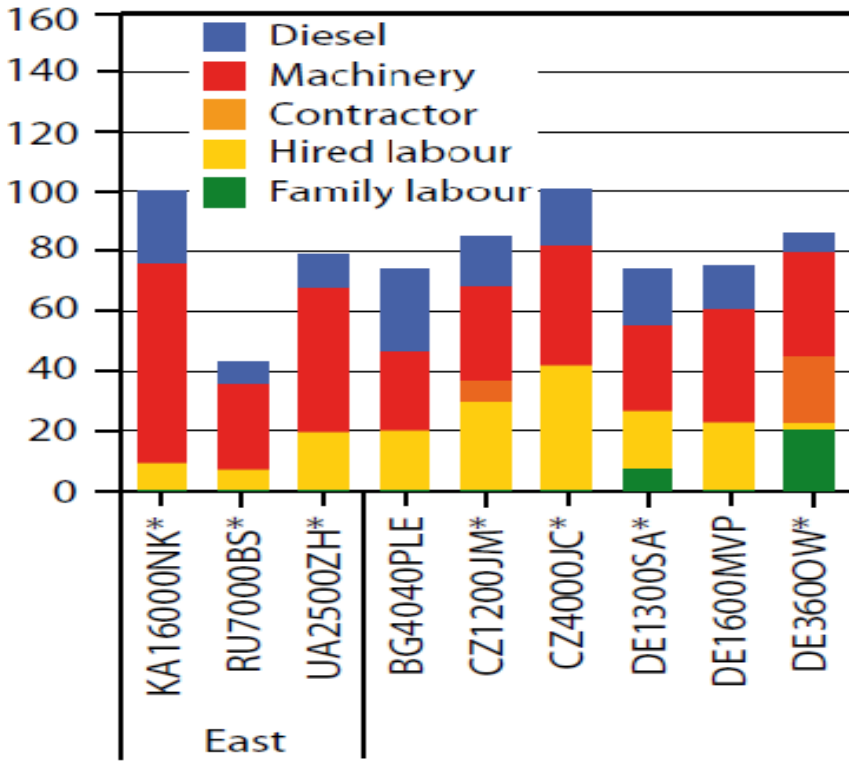
Modern farming is capital-based

- Machine costs often higher than labor costs
- High financial demands!

➢ Venture capital necessary!

➢ Agro-holdings an option!?

Labor and machine costs wheat $/t



Quelle: Zimmer et al. (2010)

Biological manufacturing

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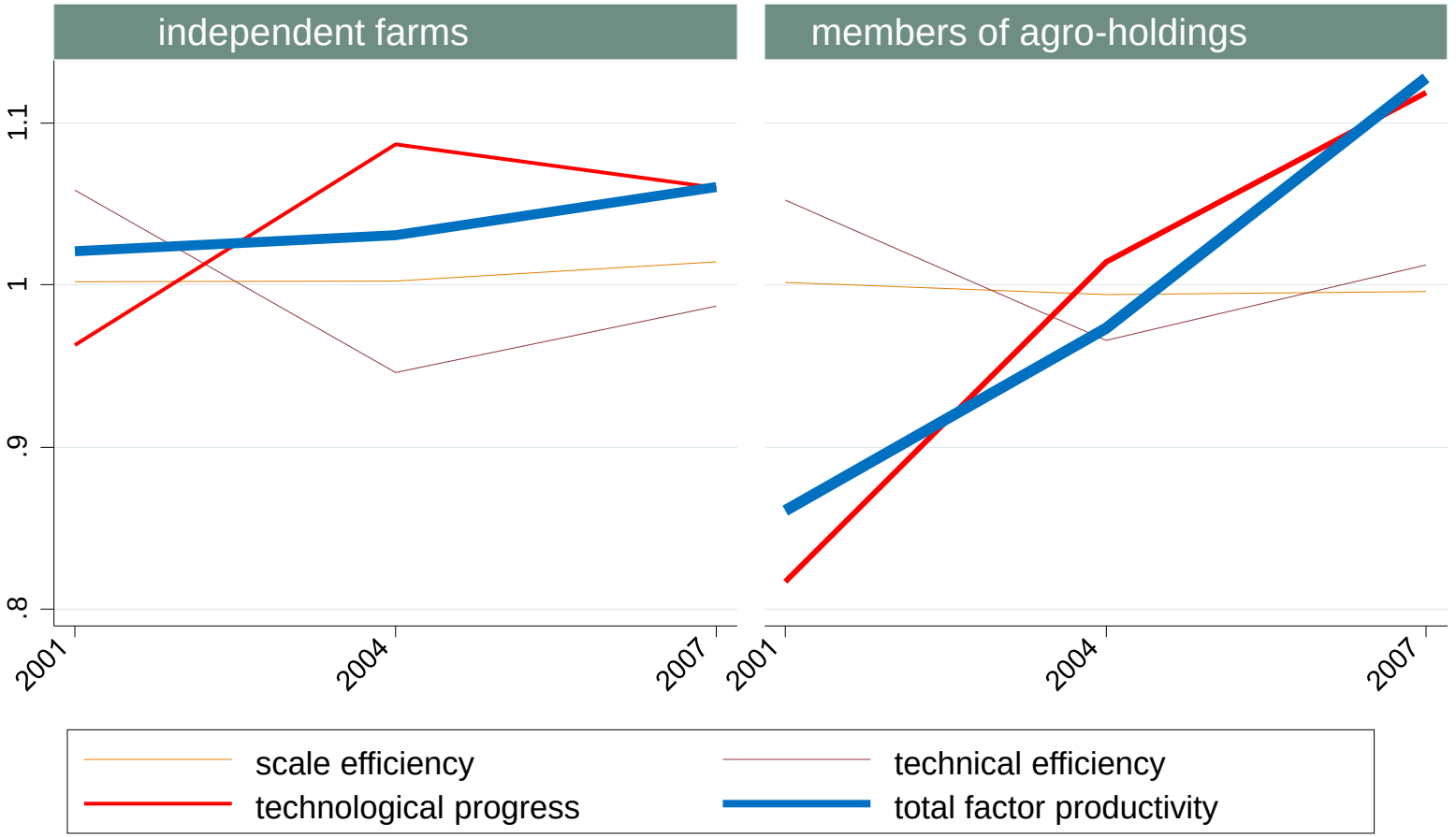
Independent farms versus agro-holding members (Russia)



Source: Hahlbrock et al. (2011, 2012)

Agriculture and the society

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EC proposal for CAP after 2013

- Indirect reduction of direct payments (if greening is taken serious)
- Switch towards social goals
  - support of small **farmers**
  - capping of direct payments for large recipients

Agriculture and the society

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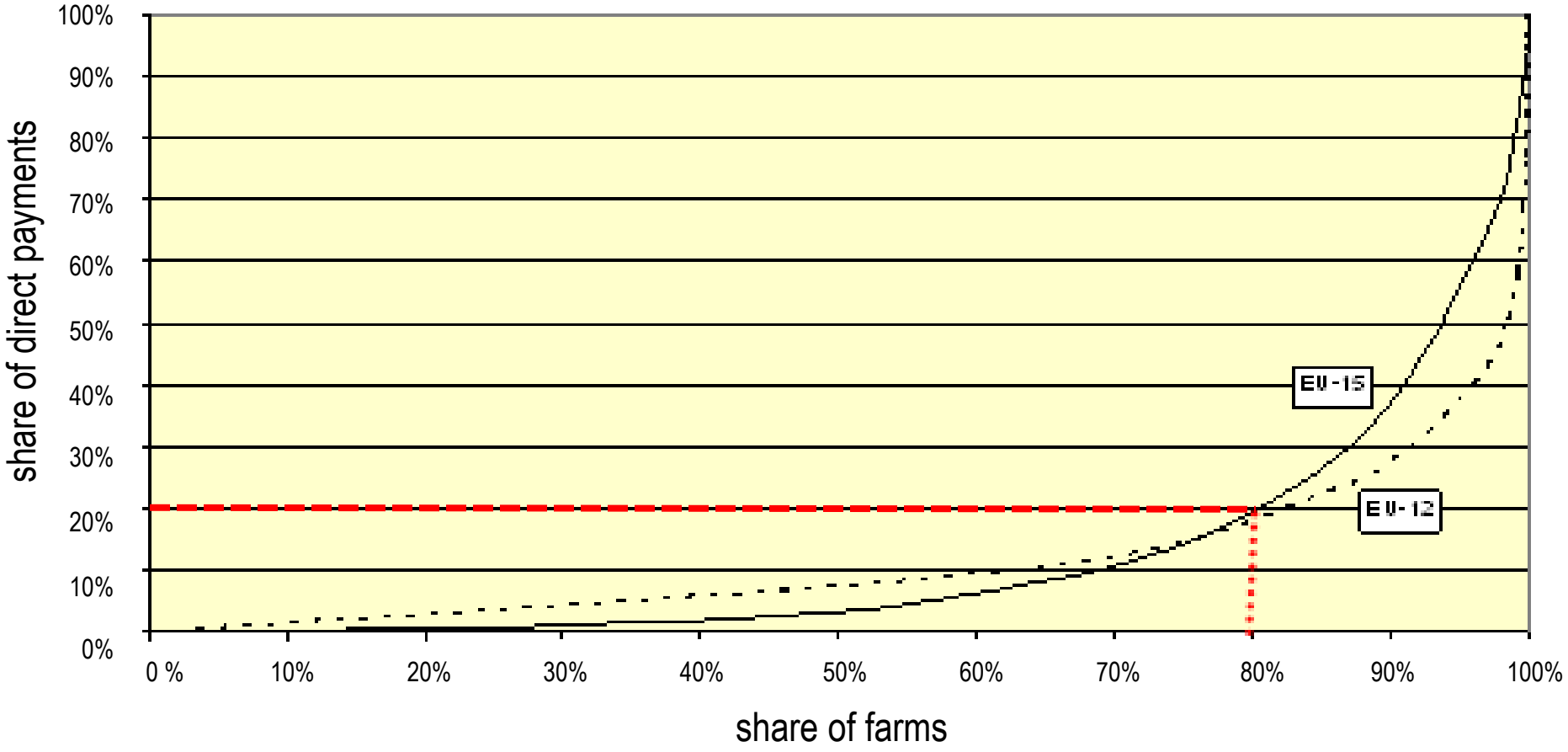
"20 % of the farms receive 80 % of subsidies!"



Source: EU Commission (2011) "CAP post 2013 Impact Assessment - Annex3: Direct Payments"

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"20 % of the farms receive 80 % of subsidies!"

http://www.ricardam.com/ricardam_community/uploads/20100901120934_BeautyQueen.jpg

http://www.gametheory.net/dictionary/People/VilfredoPareto.html

Agriculture and the society

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"20 % of the farms receive 80 % of subsidies!"

- "Pareto-principle"
  - 20 % richest own 80 % of the wealth almost everywhere and everytime
  - some kind of "natural law"

http://www.gametheory.net/dictionary/People/VilfredoPareto.html

Agriculture and the society

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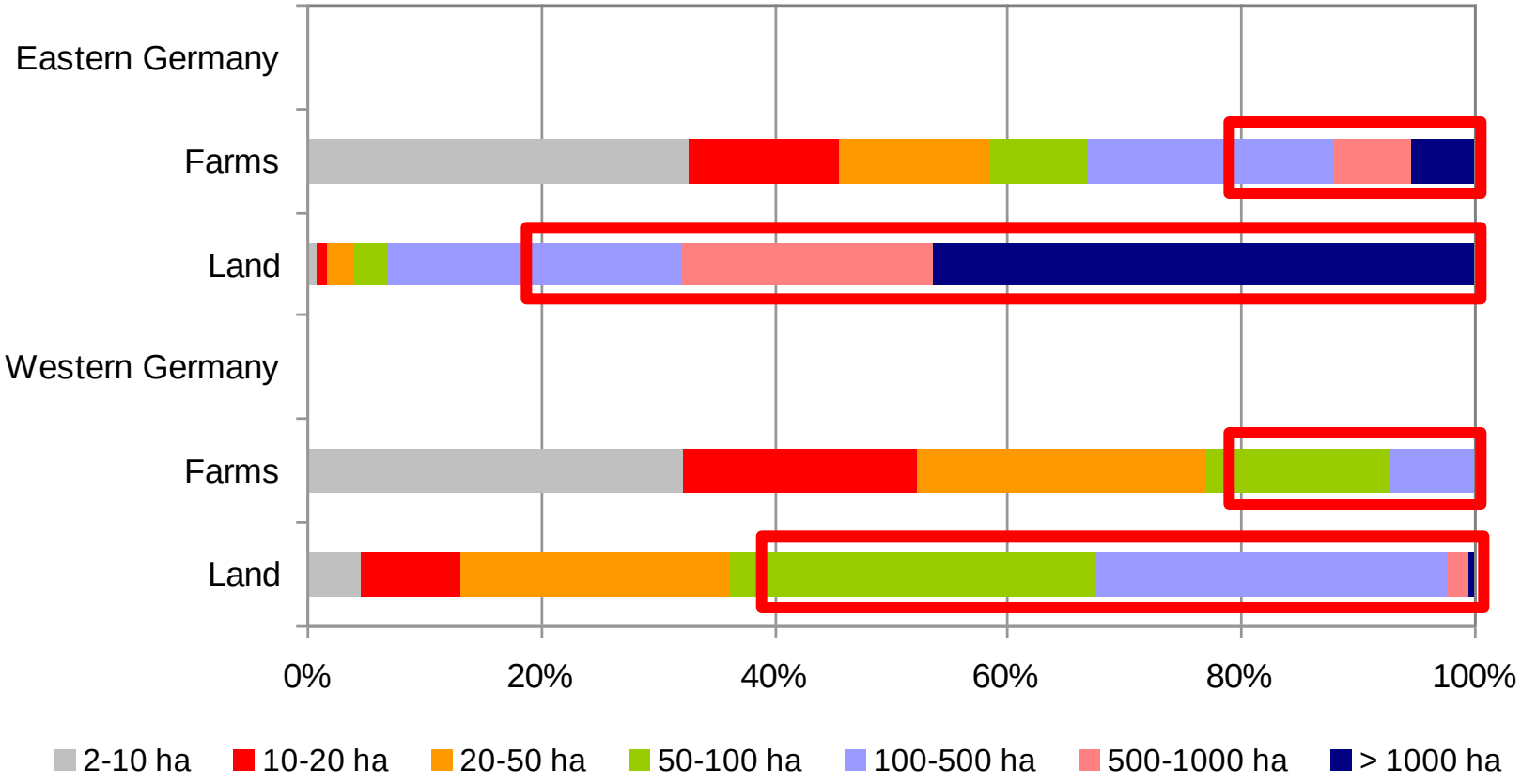
Agricultural land shares of farm size classes in Germany (2007)



Source: BMELV, own calculations

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"20 % of farms receive
80 % of subsidies!"

or should one argue:

"20 % of the farms provide
80 % of value!"

- Who/what wants policy to address?
  - The farmers?
  - The farming sector?

Agriculture and the society

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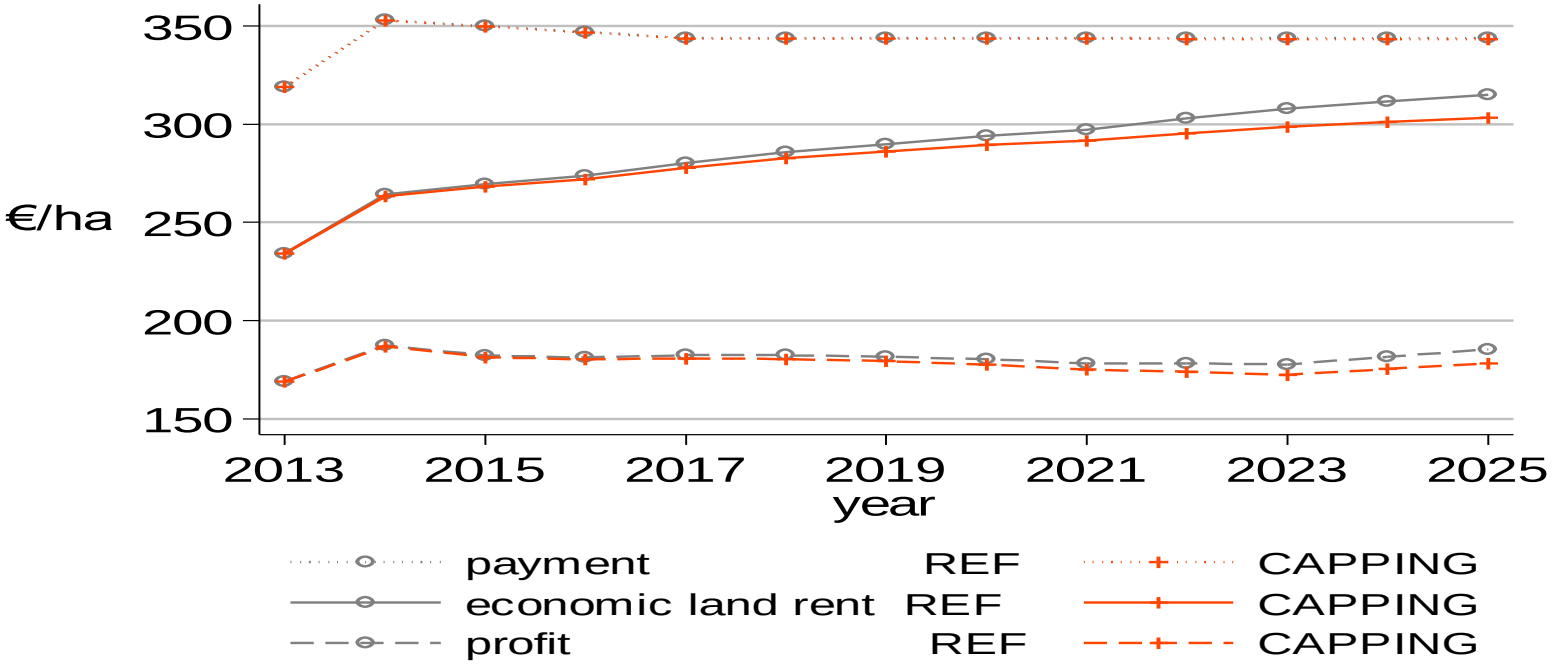
Impacts of capping proposal on the Altmark region in East Germany



Source:Sahrbacher et al. (2012), Analysis based on simulations with AgriPoliS

- Almost no impact on payments (because of farm adjustments)
- Higher impact on profits of large farms
- Highest impact on economics land rents (factor price distortions)
- Effects increase over time! (inefficient structural adjustments)

Agriculture and the society

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Public perception of farming

- Some stylized facts
  - romantic view: "natural" farming
  - little knowledge of farming practices and technologies
  - concerns against large farms
  - concerns against international farms
  - concerns against investments in facilities for intensive livestock production
  - assumptions that farmers need subsidies and suffer from low income

  (broad coalition between environmental groups and small farmers associations)

➢ C.-A. Bartmer (President of DLG) (05.09.2012):

- "The agricultural sector did not include the public in its modernization process."
- "(The public) is not aware that we can contribute with modern technology and newest scientific and practical insights to increase the productivity of scarce resources to its benefit and to the benefit of landscapes and biodiversity."

Agriculture and the society

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Public perception of farming

- What are the reasons for divergence
  - Agriculture and agribusiness supported idealistic views
    - Heterogeneity within the sector (80/20 problem)
    - … but all wanted a positive image!
    - … and all wanted subsidies!
  - No serious interest of the public in real production (particularly not in meat production)
  - Lack of communication
    - by farmers
    - by agribusiness
    - by scientists

➢ Public discussion rather ideological than analysis and fact-based!

Conclusions

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- Structural change will continue internationally at high speed
  - Verticalization and globalization: consumer driven
  - Biological manufacturing: producer driven, resource driven
    - need for venture capital
    - need for know how transfer and human resource development

  ➢ New role for economies of size

Conclusions

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- Question:
  - How to achieve a proper institutional environment?
    - Policies which are able to support production needs while considering environmental, animal-welfare and health issues!
    - Complementary policies which address social needs!
    - ➢ Angela Merkel (04.09.2012): "The primary goal of the CAP is an effective and sustainable agriculture!"
    - ➢ Need to de-ideologize political debate!