

Implications of productivity
decreases of land in the coarse
grains sector under a US ethanol
mandate

Experiment I

- Ethanol mandate of 2.75BG/a in the US
- Decrease of productivity of land in corn sector in the US by 20%

US Shock: Effects within the US

Production of coarse grains: -10.26%

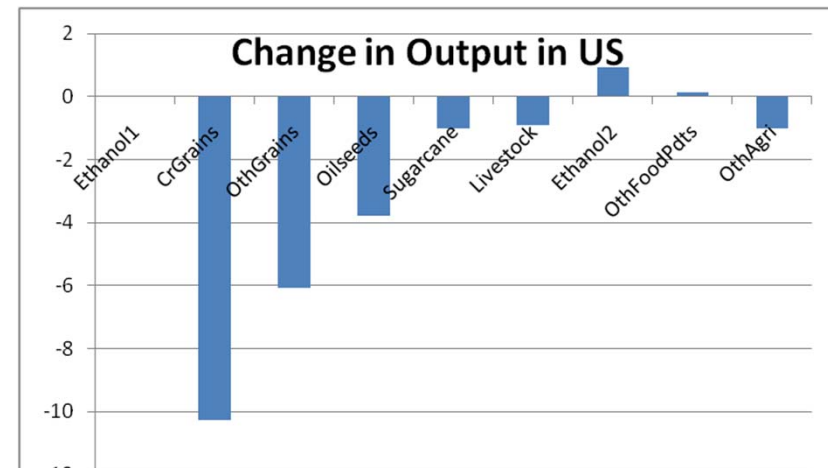
Change in land-use

- Yield: -18.87%
 - Intensive margin: -17.7%
 - Extensive margin: -1.4%
- Area change: 10.59%
 - From forestry and especially livestock, other grains, oilseeds

	change in yield	intensive	extensive
CrGrains	-18.871805	-17.711531	-1.410012
Oilseeds	-0.620502	0.933218	-1.539354
Sugarcane	0.422837	1.271354	-0.837865
OthGrains	-0.142087	0.628495	-0.765769
OthAgri	-0.720216	0.330919	-1.047668

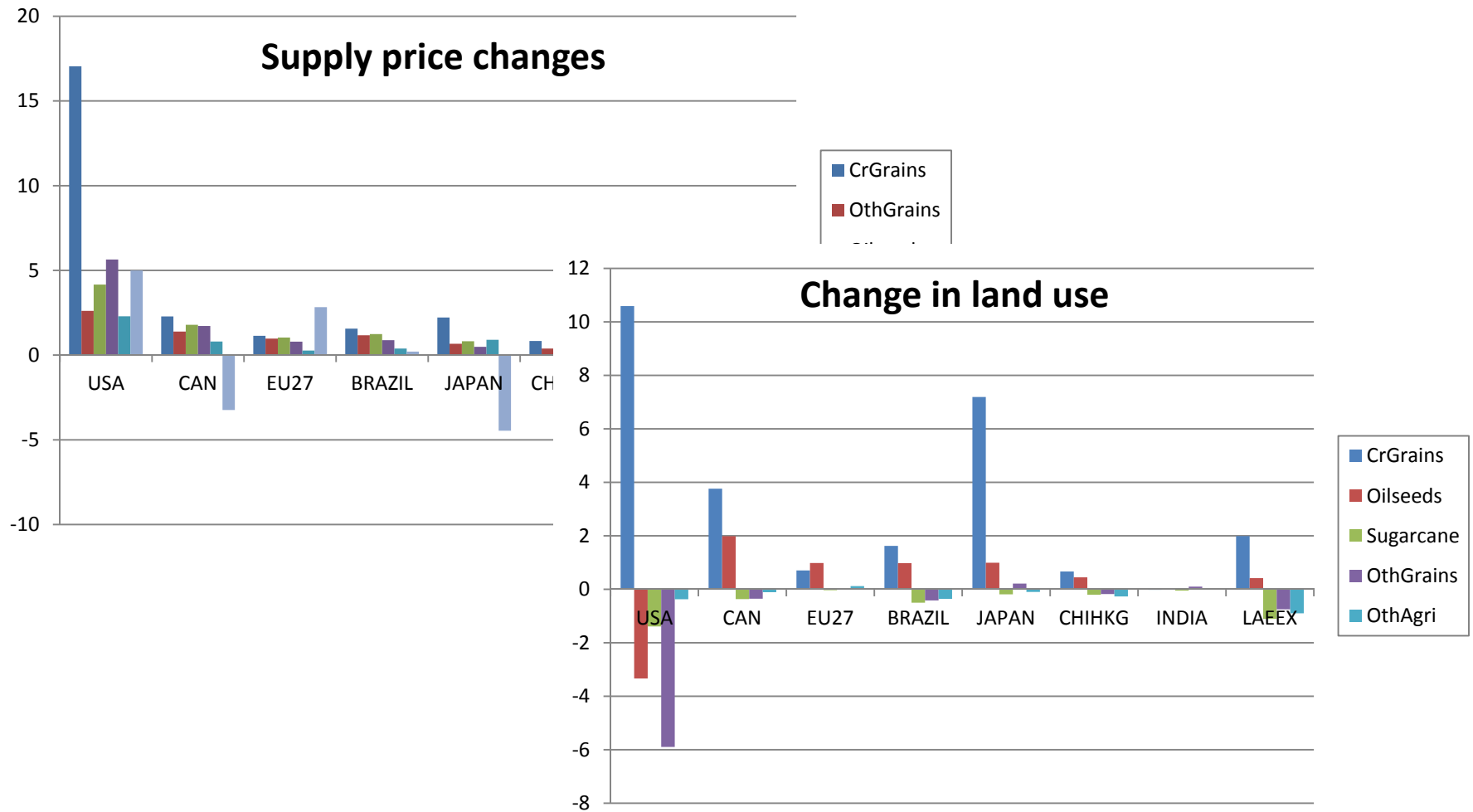
Effects on industries

- Price for coarse grains: 17.05%



	CrGrains	OthGrains	Oilseeds	Livestock	OthFoodPdts
domestic	-5.56	-0.37	-0.22	-0.7	0.12
exports	-4.7	-5.69	-3.56	-0.21	0
Total	-10.26	-6.06	-3.78	-0.91	0.12

US Shock: Effects on the world market



Experiment II

- Ethanol mandate of 2.75BG/a in the US
- Global decrease of productivity of land in corn sector by 20%

Global shock: Effects within the US

Production of coarse grains: -7.51%

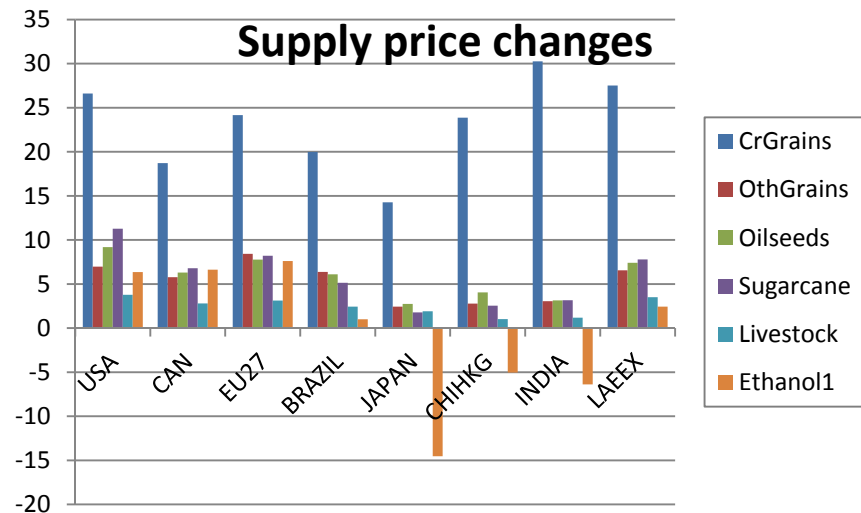
Change in land-use

- Yield: -18.41%
 - Intensive margin: -16.9%
 - Extensive margin: -1.79%
- Area change: 13.3%
 - From forestry and especially livestock, other grains, oilseeds

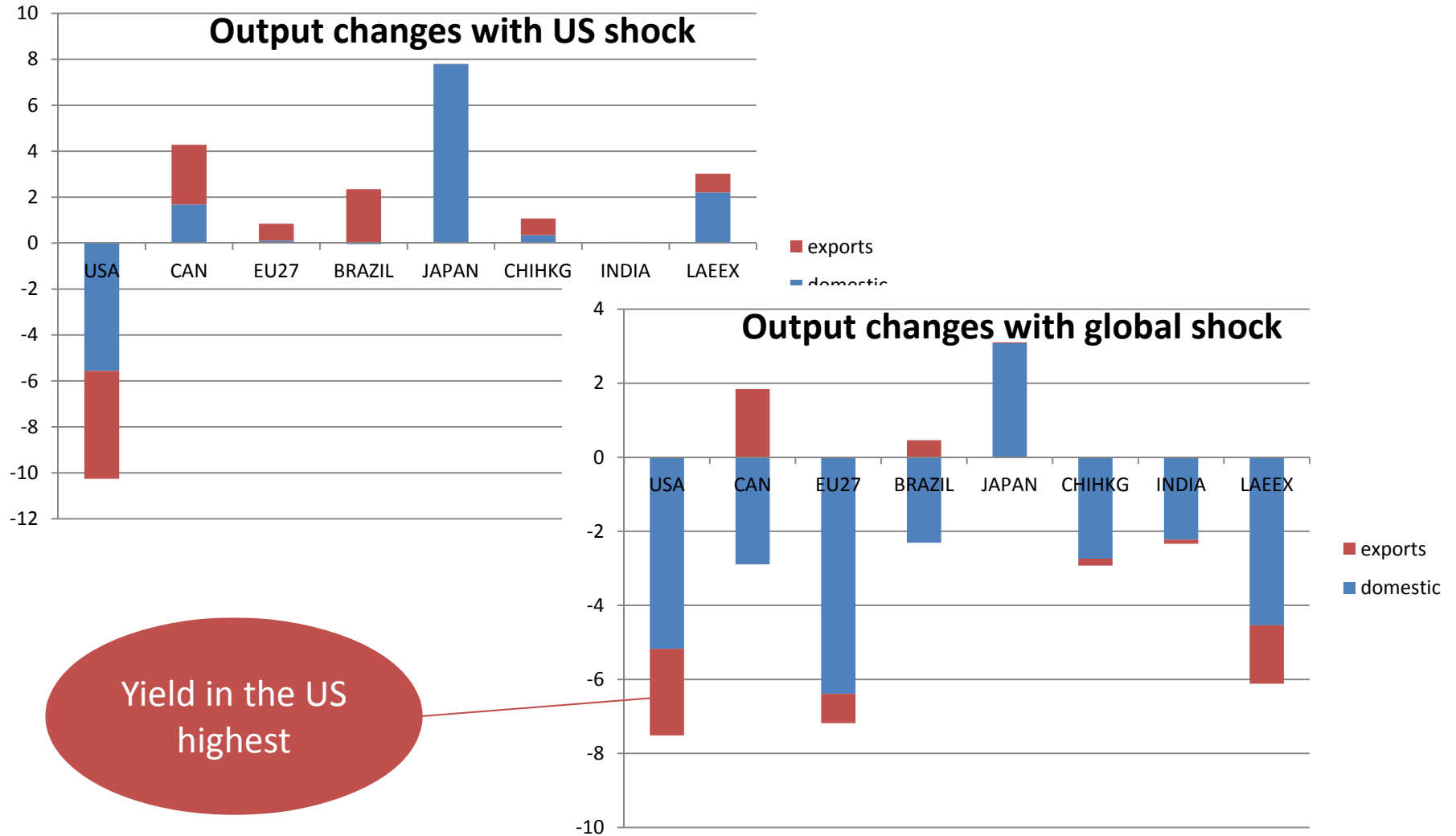
	change in yield	intensive	extensive
CrGrains	-18.718	-16.931	-1.787
Oilseeds	-0.0735	1.8608	-1.9343
Sugarcane	1.1889	2.3158	-1.1269
OthGrains	0.4733	1.5318	-1.0585
OthAgri	-0.7754	0.6008	-1.3762

Effects on prices

- Price for coarse grains: 26.6%



Global Shock: Effects on the exports



Conclusions

Global shock leads to:

- Bigger price increases
- Smaller output effects
- Smaller reduction in US exports of coarse grains due to:
 - Highest yield around the world
 - Prices in other countries increase significantly as well