

Global Agricultural Reform and U.S. Adjustment Capacity

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Agricultural adjustment to policy reform

- Net benefits from global reforms for U.S. agriculture are positive.
- Who loses from reforms?
 - Direct effects from subsidy removal
 - Changes in market incentives
- Debates on policy reform are frequently informed by economic models of exposure, while adjustment draws at least as much interest from policy makers but is rarely treated in models.



Who Wins or Loses From Global Reform?

- How are opportunities distributed?
 - Changes in level of support
 - Changes in relative prices
- How are outcomes distributed?
 - Farm household adjustment
- A 0-0-0 Global Reform
 - Global tariffs, export subsidies, and the “AMS” are brought to zero.



How do households adjust to changes in market signals?

- Households may change the mix of commodities produced on their farm
- Farm households may re-allocate from their current portfolio of household labor and investment between on-farm vs. off-farm activities



Factors Affecting Any Individual Household's Abilities to Adjust

- Current endowments of farm production resources, including labor, assets, and other factors of production.
- Ability to adjust between different farm enterprises and between farm and non-farm activities, including
 - Substitution possibilities among production activities
 - Household characteristics such as age, education, and occupation
 - Off-farm employment and business activities
 - Skills and managerial capacity
- Off-farm opportunities, such as local job markets



USDA Farm Typology

Limited-resource. Any small farm with gross sales less than \$100,000, total farm assets less than \$150,000, and total operator household income less than \$20,000. Limited-resource farmers may report farming, a non-farm occupation, or retirement as their major occupation.

Retirement. Small farms whose operators report they are retired (excludes limited-resource farms operated by retired farmers).

Residential/lifestyle. Small farms whose operators report a major occupation other than farming (excludes limited-resource farms with operators reporting a nonfarm major occupation).

Farming occupation/lower-sales. Small farms with sales less than \$100,000 whose operators report farming as their major occupation (excludes limited-resource farms whose operators report farming as their major occupation).

Farming occupation/higher-sales. Small farms with sales between \$100,000 and \$249,999 whose operators report farming as their major occupation.

Large family farms. Farms with sales between \$250,000 and \$499,999.

Very large family farms. Farms with sales of \$500,000 or more.

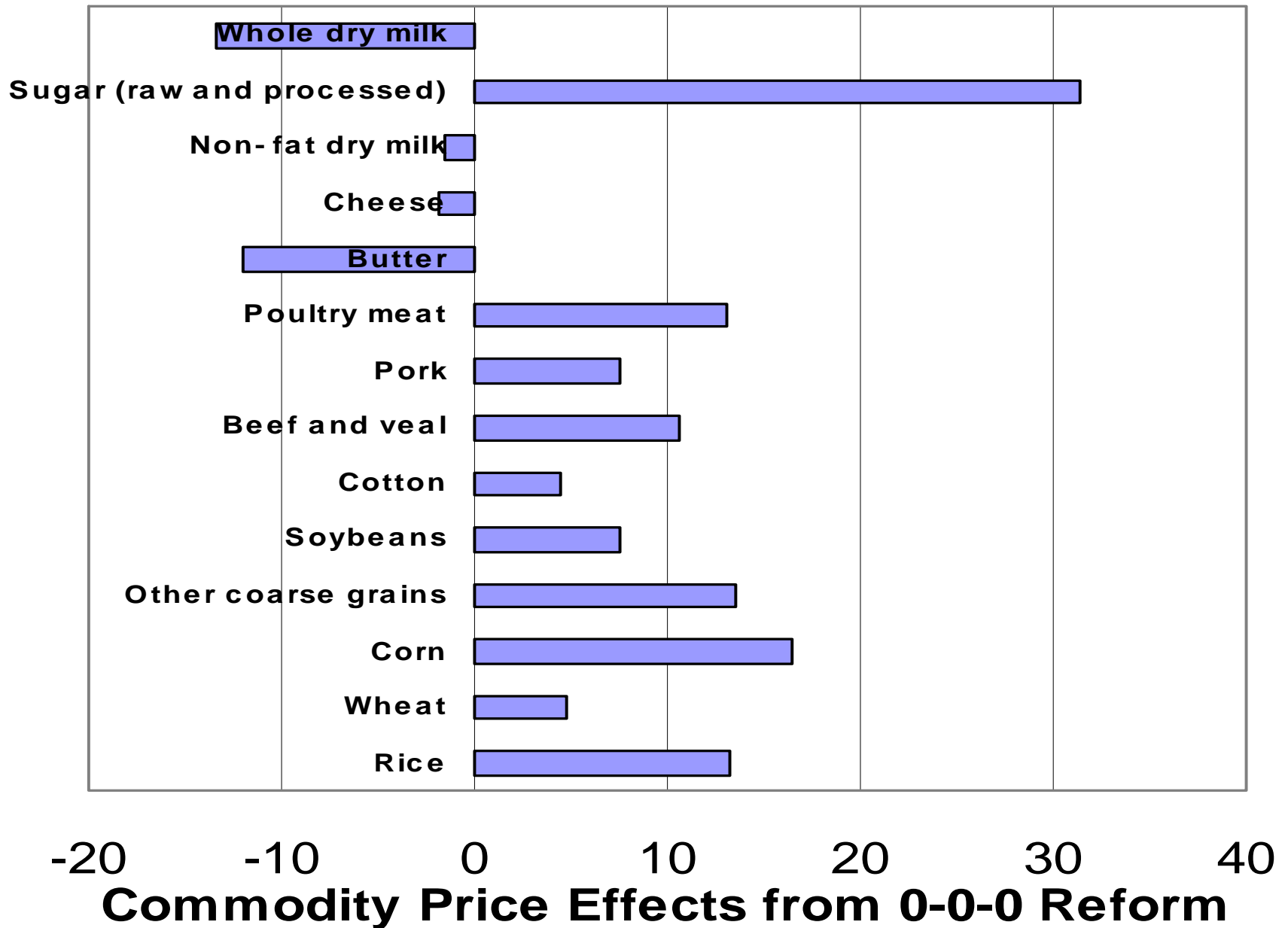
Nonfamily farms. Farms organized as nonfamily corporations or cooperatives, as well as farms operated by hired managers.



Distribution of Adjustment Capacity

Farm type	Diversification Index <i>0=monoculture</i>	Off-farm work <i>Ave. Probability</i>	Financial performanc <i>Average percentile rank</i>
Limited resource	0.05	41	43
Retirement	0.05	29	39
Residential/lifestyle	0.06	74	40
Farm occ. / low sales	0.11	46	52
Farm occ. / high sales	0.19	43	83
Large	0.19	36	87
Very large	0.14	35	91
All	0.09	55	50





Source: ERS-PSU model, reported in Cooper, et al. 2003

Payment Loss from 0-0-0 Global Reform

Farm type	Number of farms	Total payments removed	Average payment per-farm	Average payment per dollar of production
	Thousands	\$US million	\$US	US cents
Limited resource	127	9	69	0.57
Retirement	298	14	46	0.83
Residential/lifestyle	931	75	81	1.00
Farm occ.-low sale	480	161	336	1.17
Farm occ.-high sale	175	343	1955	1.20
Large	77	309	4000	0.45
Very large	58	341	5833	0.79
All	2,147	1,252	583	0.79

Source: ARMS, 1999 and ERS-USDA CGE model.

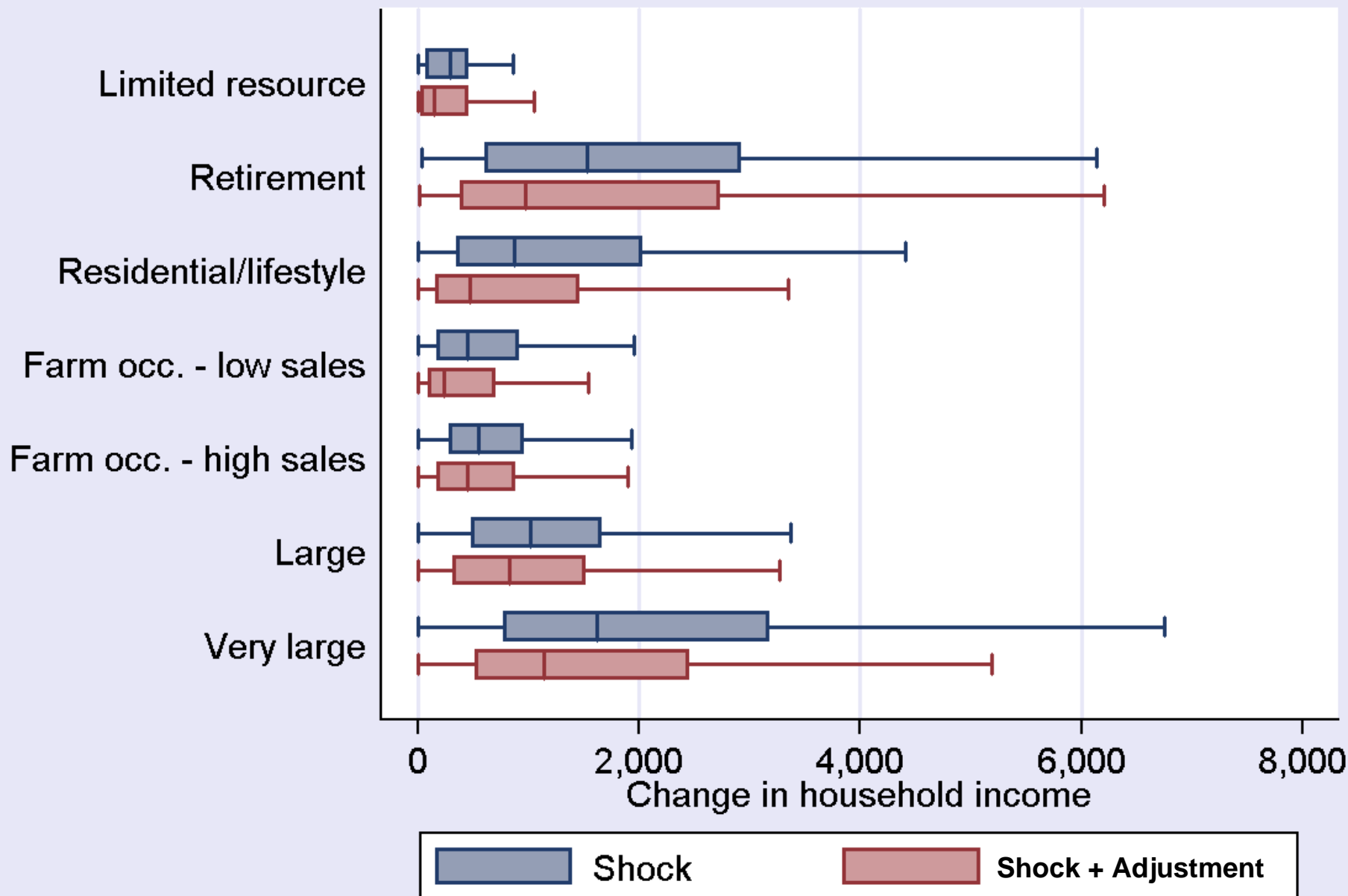


Macro Net Effects on Farm Income

	Govt. pay- ments	Farm labor income	Other Farm Factor Ret.	Off- farm labor income	Other non- farm income	Tax relief	Total hhold Income
	<i>Billions \$US</i>						
Limited resources	-0.009	+0.006	+0.009	+0.001	+0.000	+0.001	=0.004
Retirement	-0.014	0.046	0.017	-0.005	0.003	-0.006	0.041
Residential/lifestyle	-0.075	0.148	0.096	-0.021	0.003	-0.010	0.141
Farm occ–low sale	-0.161	0.087	0.179	-0.011	0.003	-0.010	0.087
Farm occ.-high sale	-0.343	0.059	0.376	-0.008	0.000	-0.006	0.078
Large	-0.309	0.042	0.338	-0.006	0.000	-0.004	0.061
Very large	-0.341	0.084	0.338	-0.009	0.000	-0.004	0.068
All farms	-1.252	0.471	1.353	-0.058	.010	-0.040	0.484

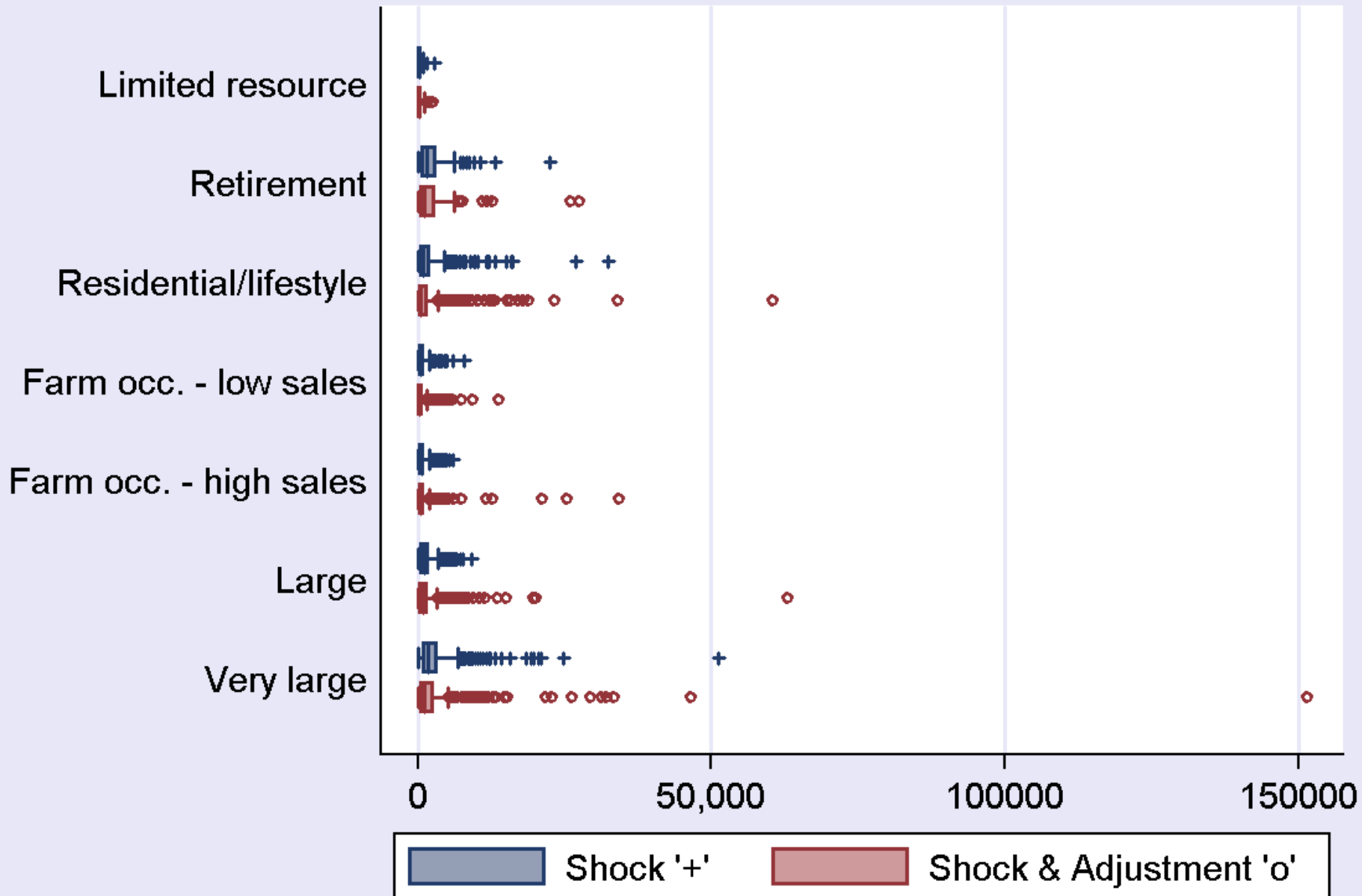


Micro Net Effects on Household Income



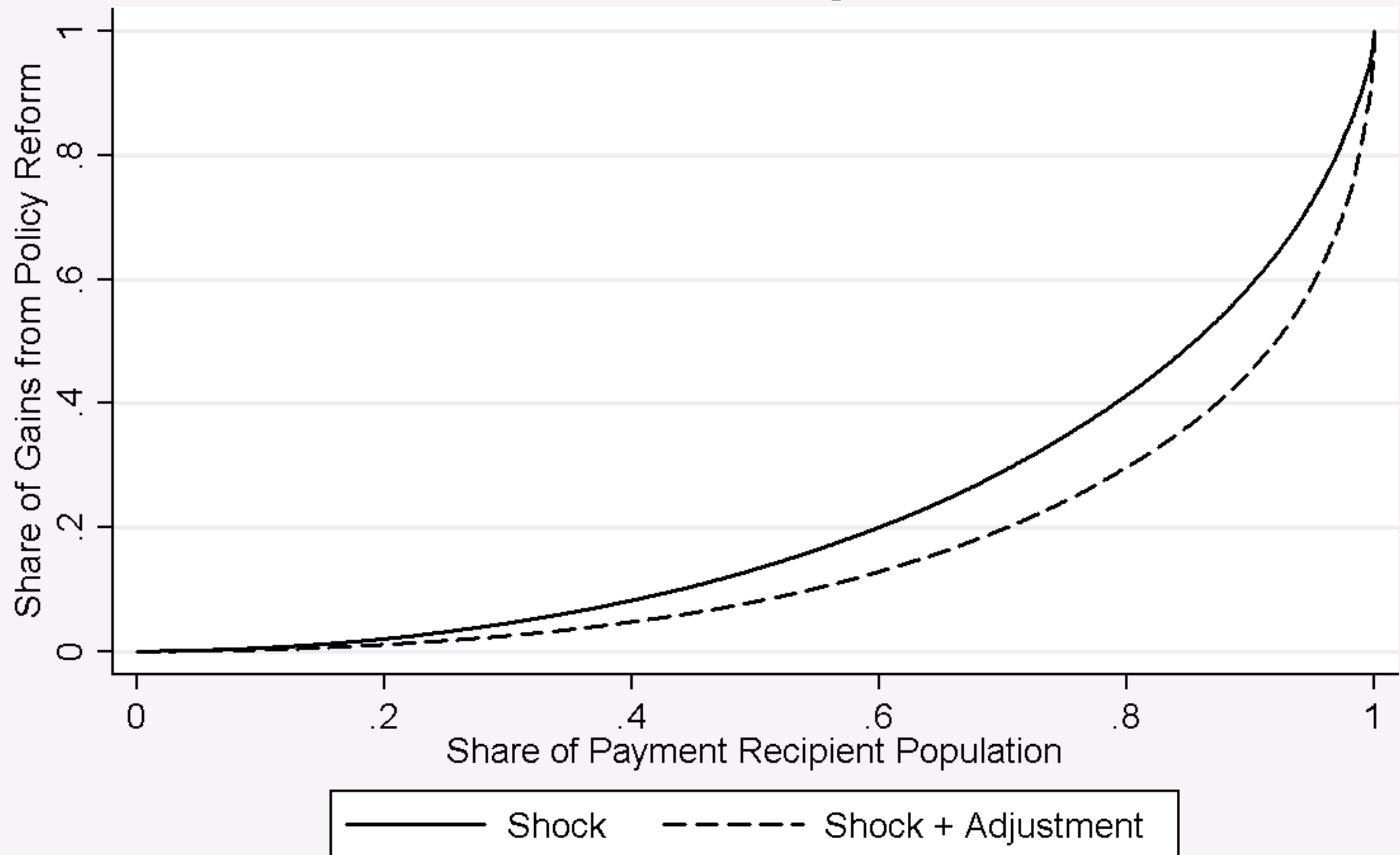
Excludes 'outlier' values. Source: Author calculations using ARMS, U.S. Dept. of Agriculture, 1999

Disproportionate Gains for a Relative Few



Source: Author calculations using ARMS, U.S. Dept. of Agriculture, 1999

Generalized Lorenz curve of gains from reform



Source: Author calculations using ARMS, U.S. Dept. of Agriculture, 1999

Conclusions

- Distributions of capacity to adjust as well as shocks affect trade reform impacts.
- Adjustment capacity varies with characteristics of households as well as with links to sectors.
- Future issues: commodity specificity, inter-temporal adjustments, farm typology revisited.

