
Marketing margins and trade policy reform. A general equilibrium analysis on Tanzania

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introduction

- the analysis of trade reform in low-income agriculture-dependent economies needs to take into account specific country conditions such as
 - backward technologies
 - poor infrastructural endowments
 - imperfect price transmission
- wide marketing margins affect the impact of trade reform in Africa, (Arndt et al, 2000; Wobst, 2003; Stifel et al, 2003)
- assumptions on the functioning of markets affect the results of policy analysis

objective

- assess the impact of trade policy reform in conjunction with changes in marketing margins
- focus on Tanzania, a Least Developed country depending extensively on agriculture
- multi-sectoral multi-household CGE, derived from IFPRI (Lofgren et al., 2002)

the context: Tanzania

- agriculture is 45% of GDP and 70% of employment;
- farm average size is 1 to 3 ha, backward technology, mostly rainfed
- poverty is highest in rural areas; 40% of households below a basic needs poverty line
- increasing agricultural labour productivity through infrastructures and integration has a strong pro-poor impact (Wobst, 2003)

marketing margins

- margins in three parts:
 - 1.transport and marketing cost;
 - 2.embodied services;
 - 3.non-competitive mark-ups
- with income growth, 1. should fall, 2. should increase; 3. ?
- reduction in 1. should be promoted
- studies focused on the wholesale-to-retail margins, while the producer-to-wholesale maybe wider (Sarris et al, 2006)
- margins in Africa are large and positively associated with poverty (Stifel et. al. 2003, Minot, 2005)

the model: single country static GE

- value added is a CES function of factors of production
- CES aggregates value added and total intermediate inputs
- activities produce commodities which are marketed and consumed directly: separate demand systems for home consumption (without margins) and consumption of marketed goods (with margins)
- marketed commodities are allocated to domestic and exports via a CET
- imports are imperfect substitutes of domestic consumption a-la Armington, CES
- three marketing margins: export, import and domestic

data

- 2001 SAM (Thurlow and Wobst, 2003) including marketing margins
- margins between wholesale and retail in the original dataset, adjusted to micro information on producer-to-wholesale prices
- SAM re-balanced (based on min ssq of residuals) holding trade and public sector data unchanged

the closure rule

- a “reasonable” setting:
 - flexible prices in commodity and factor markets but unskilled labour, which has fixed wages and unemployment; fixed wage differentials for skilled labour
 - saving-driven investment, flexible exchange rate with a fixed foreign savings
 - endogenous government budget, with fixed tax rates
- all scenarios run with 16 other closures, combining changes in the above assumptions

scenarios

1. 10 percent decrease in marketing margins (MARG DECR)
2. 50 percent cut in import tariffs (TARCUT)
3. combination of scenarios 1 and 2 (MARG & TARCUT)
4. 10 percent increase in export crop prices and in ag and food import prices (EXP IMP PR INCR)
5. combination of scenarios 4 and 2 (MULT TRAD LIB)

results (“reasonable” closure)

(percentage change from base)

experiments	GPD	agricult ural import	total imports	agricult ural export	total exports	investm ent	governme nt savings	unskilled labour	exchange rate
MARG DECR	3.71	-1.58	6.88	31.38	6.30	1.007	16.2	12.78	3.96
TARCUT	0.41	8.69	0.79	0.70	1.21	0.973	-49.4	1.32	1.66
MARG & TARCUT	4.21	7.16	7.80	32.52	7.65	0.979	-37.9	14.65	5.68
IMP EXP PR INCR	0.71	-4.00	0.29	0.76	-1.50	1.011	0.89	2.36	-5.18
MULT TRADE LIB	1.09	1.49	1.03	1.56	-0.32	0.985	-46.7	3.65	-3.63

Source: author's calculations

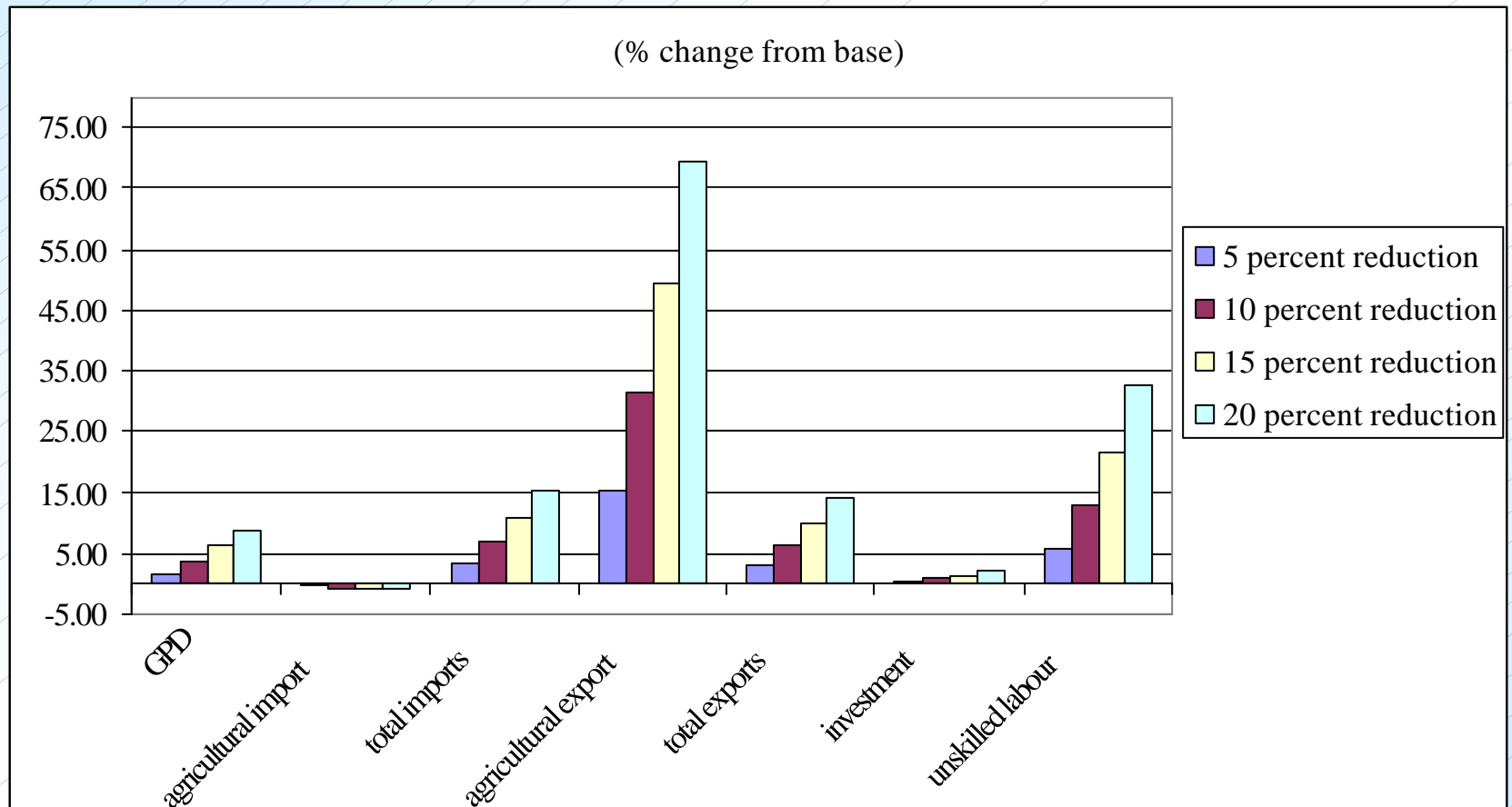
welfare results (“reasonable” closure)

base =1

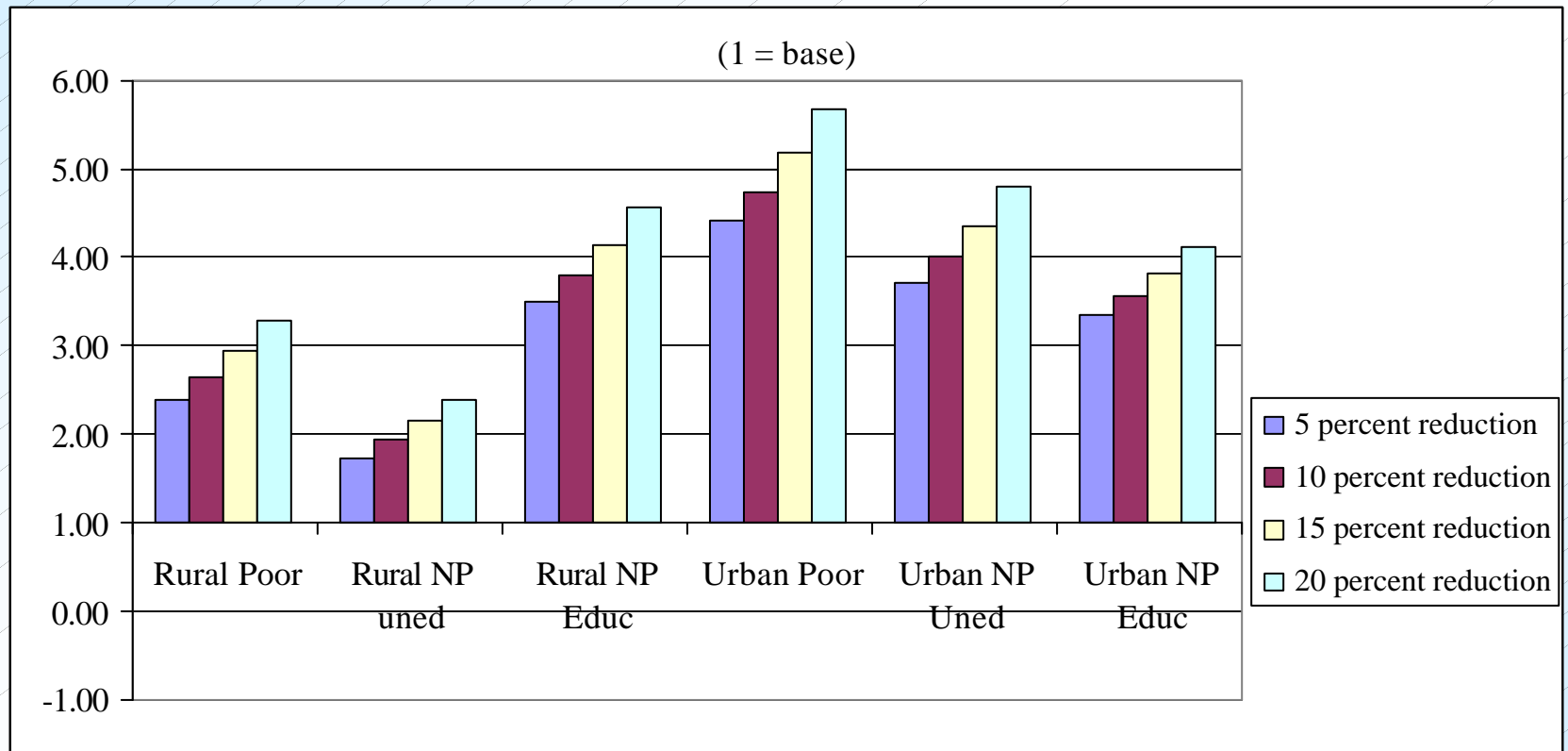
experiments	Rural Poor	Rural NP Uned	Rural NP Educ	Urban Poor	Urban NP Uned	Urban NP Educ
MARG DECR	1.051	1.037	1.074	1.094	1.079	1.070
TARCUT	0.999	0.998	1.015	1.022	1.017	1.014
MARG & TARCUT	1.050	1.036	1.091	1.120	1.099	1.086
IMP EXP PR INCR	1.005	1.001	1.014	1.025	1.016	1.009
MULT TRADE LIB	1.003	0.999	1.028	1.046	1.033	1.022

Source: author's calculations

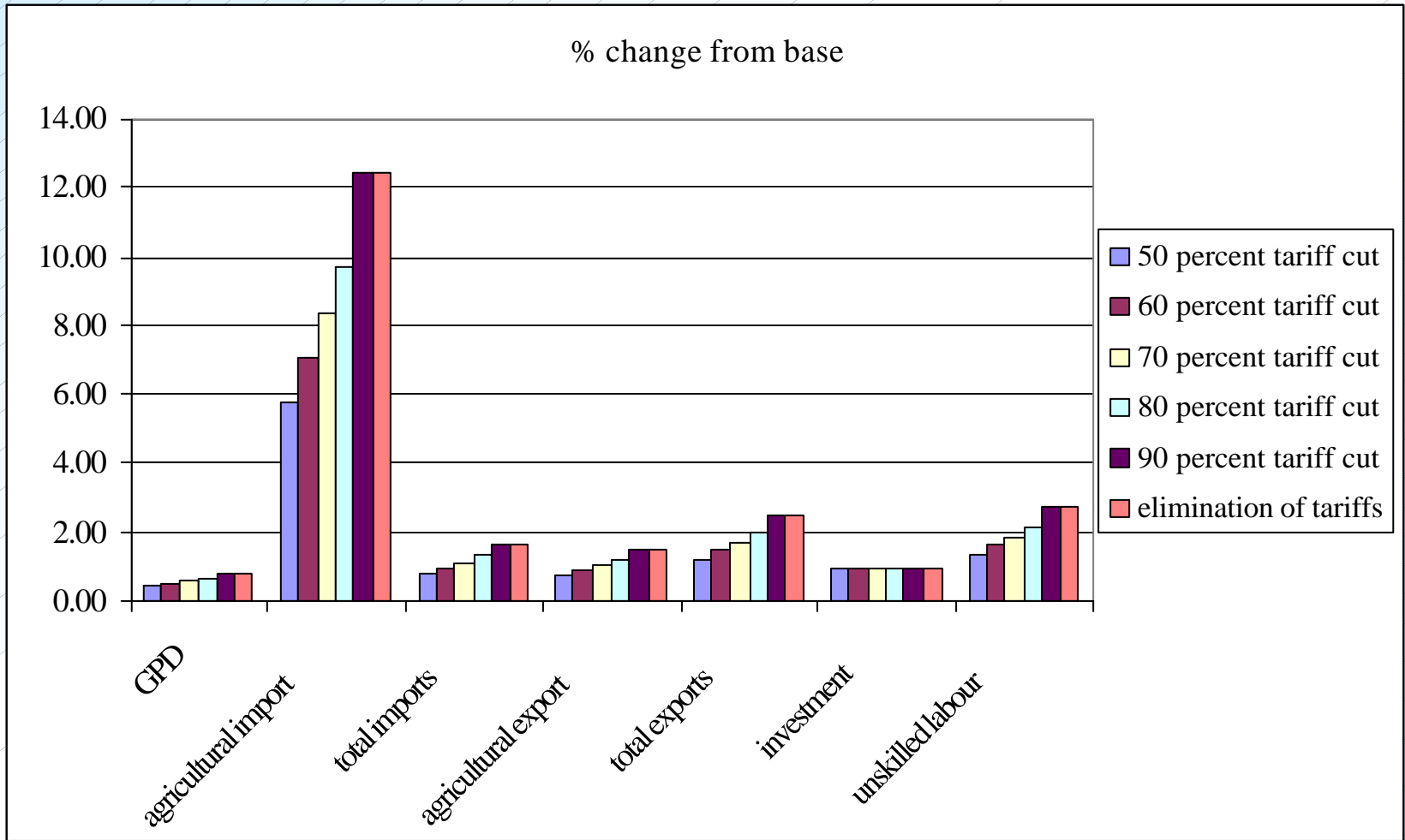
effect of reductions in marketing margins



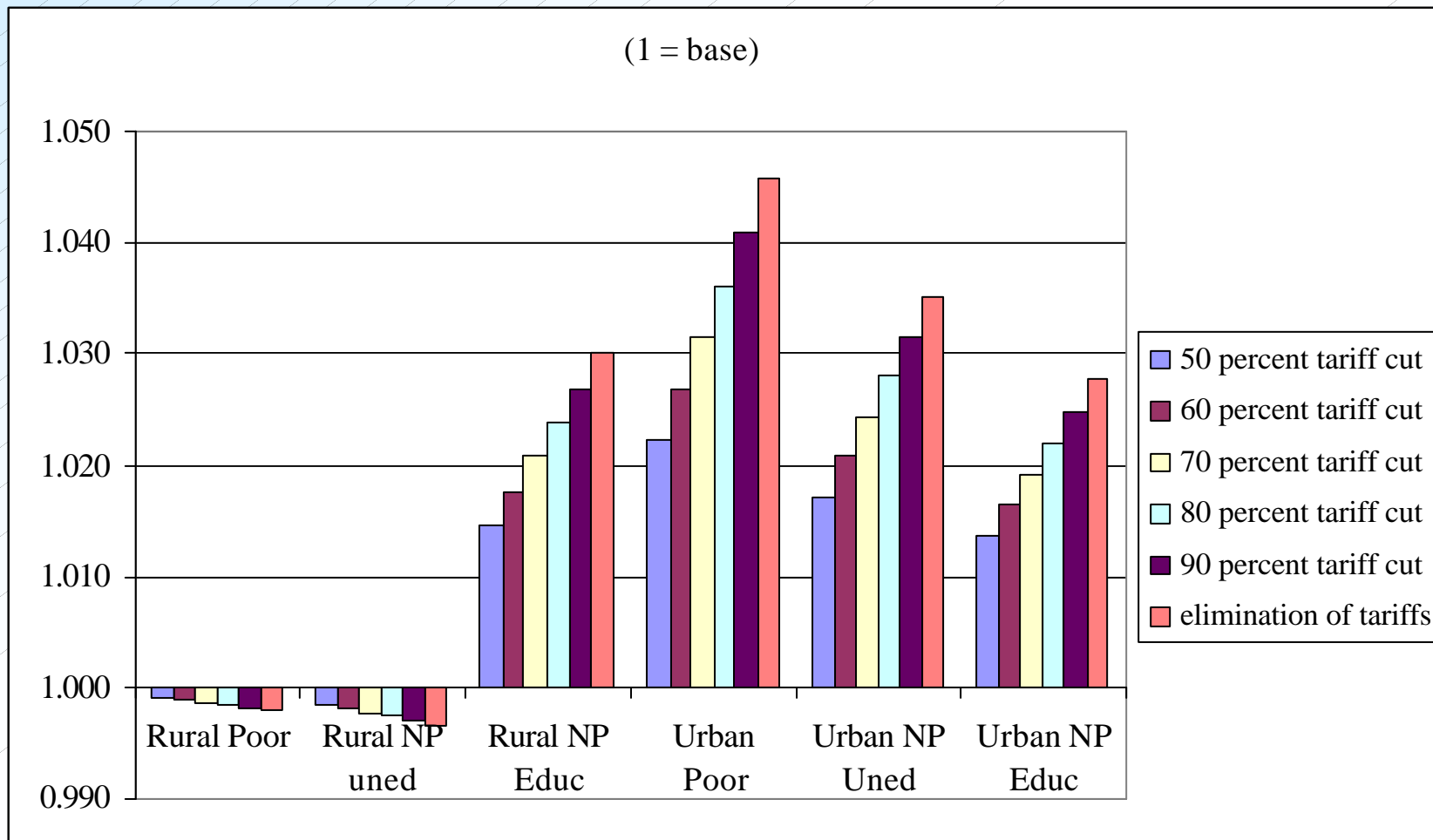
welfare effect of reductions in marketing margins on household types



effect of tariff reductions



welfare effect of tariff reductions on household types



closures

	Unskilled labor market	Skilled labor market	Exchange rate	Investment	Governemnt savings		Unskilled labor market	Skilled labor market	Exchange rate	Investme nt	Governemnt savings
Closure 1	Flex price	Flex price	Flexible	Savings driven	exogenous taxes endogenous savings	Closure 9	Flex price	Flex price	Flexible	Savings driven	endogenous di taxes and fixe savings
Closure 2	Flex price	Flex price	Flexible	Exogenous	exogenous taxes endogenous savings	Closure 10	Flex price	Flex price	Flexible	Savings driven	endogenous ind taxes and fixe savings
Closure 3	Flex price	Flex price	Fixed	Savings driven	exogenous taxes endogenous savings	Closure 11	Fix price	Fix price	Flexible	Savings driven	endogenous di taxes and fixe savings
Closure 4	Fix price	Fix price	Flexible	Savings driven	exogenous taxes endogenous savings	Closure 12	Fix price	Fix price	Flexible	Savings driven	endogenous ind taxes and fixe savings
Closure 5	Fix price	Flex price	Flexible	Savings driven	exogenous taxes endogenous savings	Closure 13	Fix price	Fix price	Fixed	Savings driven	endogenous di taxes and fixe savings
Closure 6	Flex price	Fix price	Flexible	Savings driven	exogenous taxes endogenous savings	Closure 14	Fix price	Fix price	Fixed	Savings driven	endogenous ind taxes and fixe savings
Closure 7	Flex price. Full substitution within class	Flex price. Full substitution within class	Flexible	Savings driven	exogenous taxes endogenous savings	Closure 15	Fix price	Flex price. Full substitution within class	Flexible	Savings driven	exogenous tax endogenous sav
Closure 8	Fix price	Fix price	Fixed	Savings driven	exogenous taxes endogenous savings	Closure 16	Fix price	Flex price. Full substitution within class	Flexible	Savings driven	endogenous di taxes and fixe savings
						Closure 17	Fix price	Flex price. Full substitution within class	Flexible	Savings driven	endogenous ind taxes and fixe savings

10 percent reduction in marketing margins with different closures: welfare

(base =1)

closures	Rural Poor	Rural NP uned	Rural NP Educ	Urban Poor	Urban NP Uned	Urban NP Educ
1	1.081	1.084	0.983	0.937	0.960	0.990
2	1.082	1.085	0.984	0.937	0.960	0.990
3	1.083	1.087	0.980	0.932	0.958	0.985
4	1.069	1.063	1.044	1.045	1.047	1.040
5	1.066	1.060	1.033	1.022	1.025	1.034
6	1.083	1.086	0.997	0.963	0.985	0.997
7	1.080	1.083	0.985	0.940	0.963	0.991
8	1.065	1.059	1.052	1.059	1.055	1.050
9	1.072	1.075	0.982	0.940	0.962	0.989
10	1.073	1.077	0.982	0.939	0.961	0.986
11	1.075	1.069	1.048	1.049	1.051	1.043
12	1.074	1.067	1.048	1.050	1.051	1.046
13	1.074	1.068	1.057	1.062	1.059	1.053
14	1.072	1.065	1.056	1.063	1.060	1.056
15	1.051	1.037	1.074	1.094	1.079	1.070
16	1.052	1.037	1.083	1.106	1.089	1.077
17	1.051	1.036	1.082	1.106	1.089	1.079

Source: author's calculations

50 percent tariff cut with different closures: welfare

(base =1)

closures	Rural Poor	Rural NP uned	Rural NP Educ	Urban Poor	Urban NP Uned	Urban NP Educ
1	1.004	1.006	1.004	1.004	1.003	1.004
2	0.996	0.998	1.002	1.007	1.005	1.000
3	1.004	1.005	1.006	1.006	1.003	1.006
4	1.003	1.003	1.007	1.010	1.008	1.007
5	1.003	1.003	1.007	1.009	1.007	1.007
6	1.004	1.005	1.005	1.005	1.004	1.004
7	1.004	1.005	1.005	1.005	1.004	1.005
8	1.002	1.002	1.011	1.016	1.012	1.012
9	0.994	0.994	1.002	1.004	1.002	1.003
10	0.995	0.997	1.002	1.003	1.001	0.999
11	0.994	0.995	1.002	1.004	1.002	1.002
12	0.996	0.998	1.002	1.003	1.002	0.999
13	0.994	0.995	1.007	1.013	1.008	1.009
14	0.996	0.997	1.008	1.012	1.007	1.006
15	0.999	0.998	1.015	1.022	1.017	1.014
16	0.997	1.000	0.990	0.985	0.988	0.992
17	0.999	1.003	0.991	0.984	0.987	0.989

Source: author's calculations

sensitivity

runs with different sets of *parameters*

- 25% higher and lower elasticities of substitution in consumption between domestically and foreign good (Armington)
- 25% higher and lower elasticities of transformation in production between domestic and exported goods
- 25% higher and lower elasticities of substitution between factors in production

and with the original SAM

The results did not change significantly

concluding remarks (a)

- reducing marketing margins yields the “best” results
- tariffs cuts alone imply declines in public revenues, and investment; outcomes are sensitive to the assumptions on the budget and the labour market
- the combination of tariff cuts *and* marketing margin reductions yields more than proportional welfare increases

concluding remarks (b)

- trade liberalization has weaker effects and more changeable distributional impacts
- depending on the closure
 - unemployment magnifies growth and welfare improvements
 - exogenous public budget determines more welfare decreases for rural poor
- results are generally robust to changes in substitution and transformation elasticities
- Aid for Trade looks like a good idea ?