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Context

During the Uruguay Round, many non-tariff barriers were transformed into tariffs to make the world trading system more transparent. In the Doha Round, the World Trade Organization (WTO) is encouraging “tariff simplification” or the use of ad valorem (AV) taxes, expressed as a percentage of the world price, as opposed to specific (S) tariffs which are expressed in money per unit (e.g., \$/kg). Specific tariffs are not as widely used as AV ones, but when used they tend to be applied on agricultural imports. This might be so because the margin by which the domestic price exceeds the world price under the AV tariff falls when the world price falls while it remains constant under the S tariff.

Country	Average Tariff			Share of non-AV tariffs in all tariff lines		
	All goods	Ag. goods	Non-ag. goods	All goods	Ag. goods	Non-ag. Goods
South Africa	7,7	9,1	7,5	2,2	14,3	0,4
Algeria	18,6	23,3	17,8	0	0	0
Argentina	13,6	10,4	14,1	0	0	0
Australia	2,8	1,4	3,1	0,2	1	0
Botswana	7,7	9,2	7,4	2,2	14,3	0,4
Brazil	13,7	10,3	14,2	0	0	0
Canada	4,5	18	2,5	1,6	11,9	0
China	9,6	15,6	8,7	0,5	0,5	0,5
United States	3,5	5	3,3	8,2	40,8	3,3
India	12,6	31,4	9,8	5	0,3	5,7
Indonesia	7	8,1	6,9	0,5	3,5	0,1
Japan	5,3	23,3	2,6	3,3	12,1	2
Mexico	8,3	21,4	6,3	0,7	5,1	0,1
Nigeria	11,7	15,5	11,2	0	0	0
Norway	7,8	55,8	0,5	6,8	51,3	0,1
New Zeland	2,1	1,4	2,1	0,4	0,1	0,5
Russia	9,4	13,4	8,7	13,1	29,8	10,5
Switzerland	7,8	43,5	2,4	79,7	70,4	81,2
Thailand	9,8	22	8	10	30,6	6,9
Turkey	9,6	41,7	4,8	0,6	0,6	0,6
European Union	5,3	13,9	4	4,7	32,4	0,6
Vietnam	9,8	17	8,7	0,1	0	0,2

Table: Tariff situation in 2011. Source: World Trade Organization (WTO)

Objective

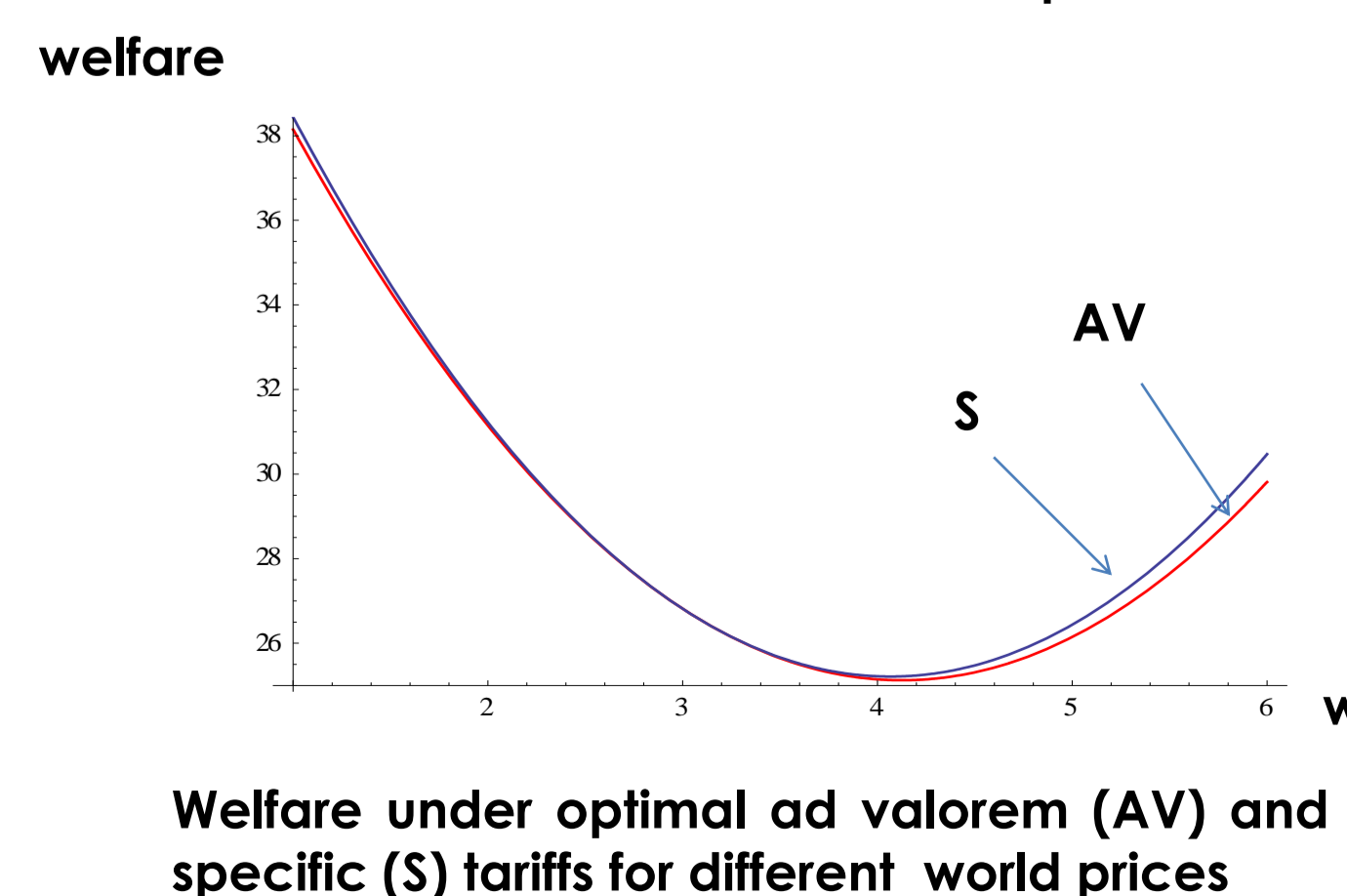
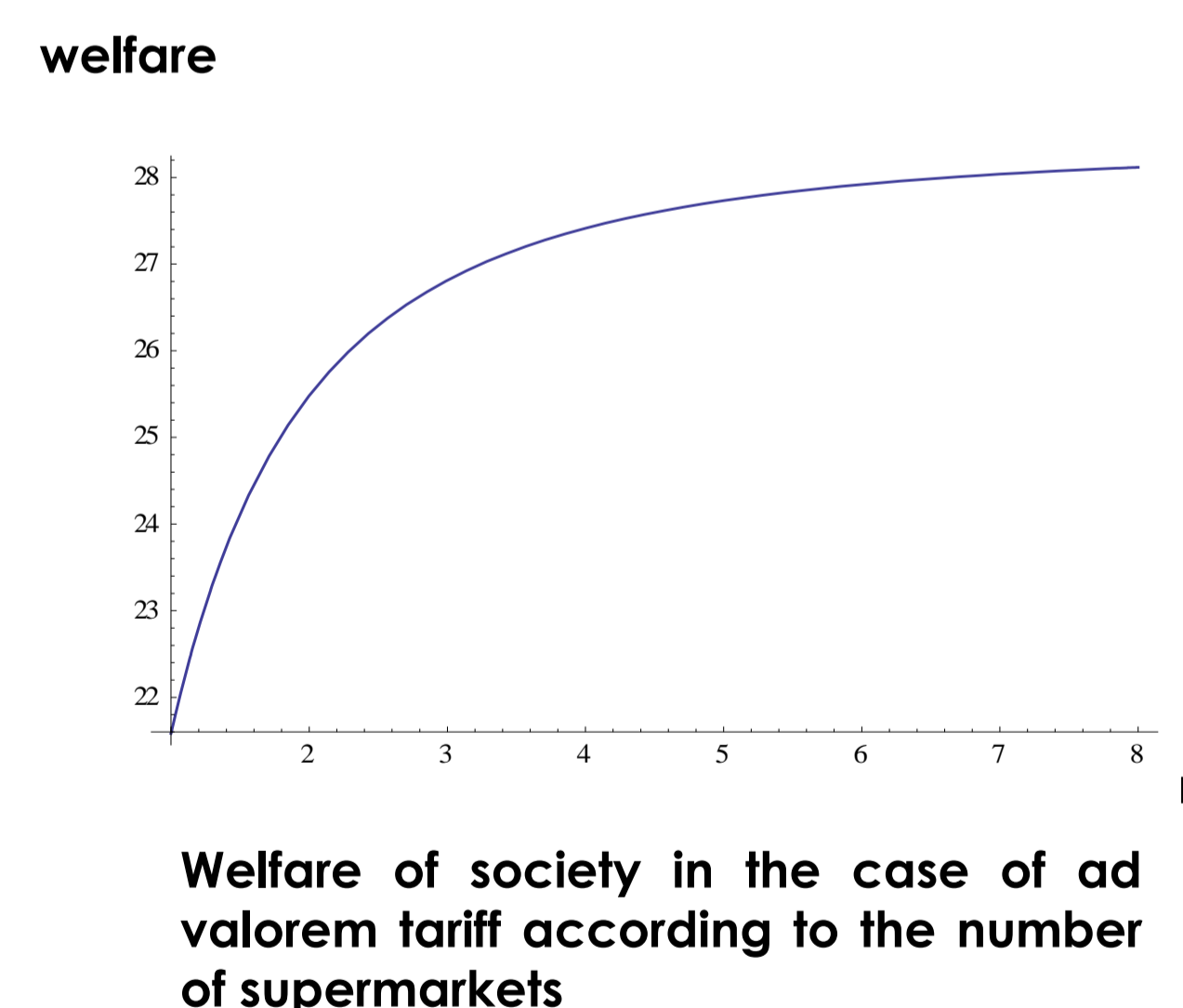
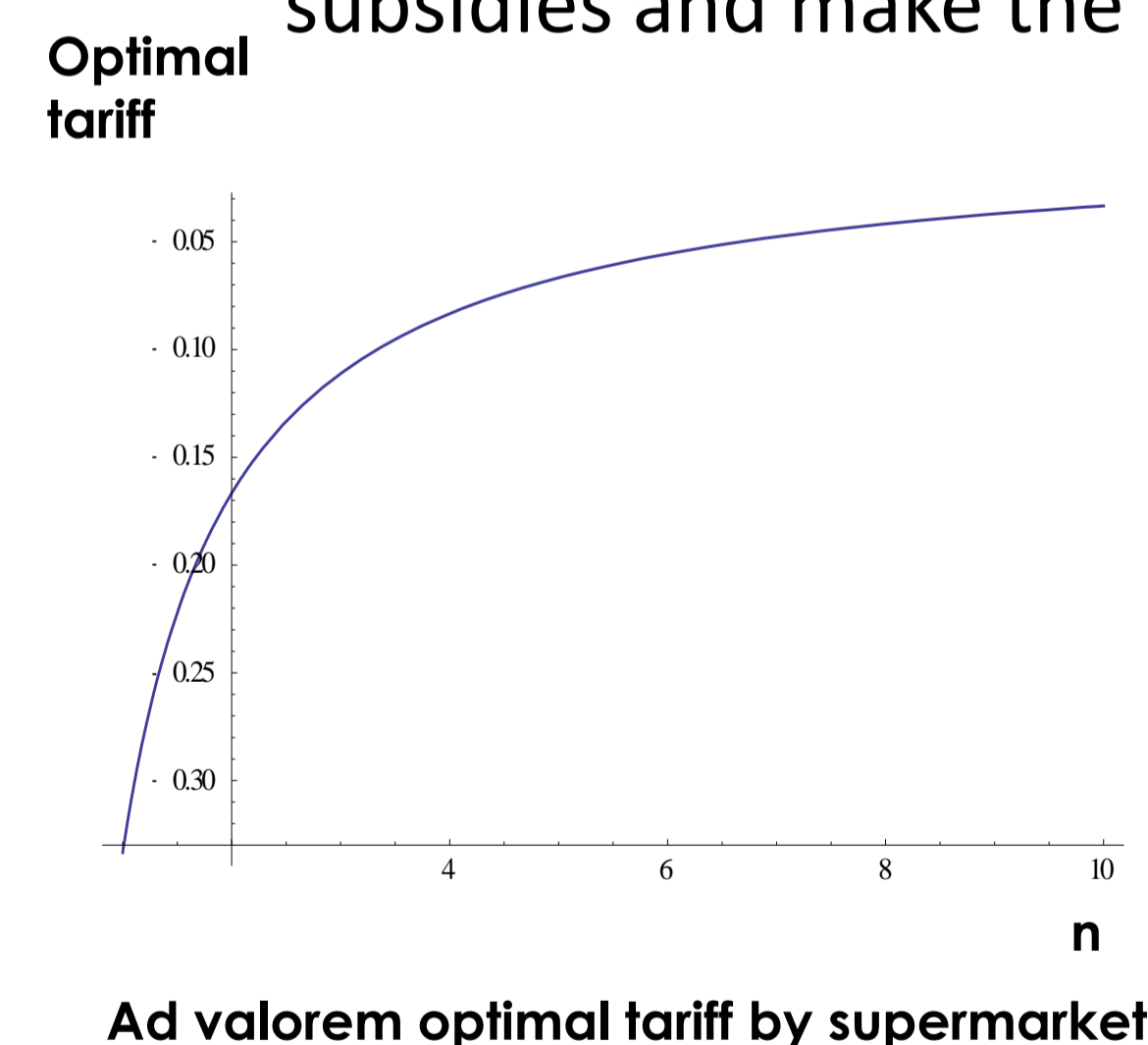
Analyze welfare effects of AV and S tariffs under volatile world prices and farmer loss-aversion (a drop in profit from a reference level has a stronger impact than an equal-size increase).

Methodology

We develop a model in which consumers buy from a few retailers endowed with market power who buy inputs from domestic loss-averse farmers and from the world market. We derive the optimal AV and S tariffs under stable and volatile world prices. Numerical simulations are used to compare the impact of each tariff policy on society's welfare.

Results

First, in the absence of volatility, AV and S tariffs are equivalent and not zero as is typical under the “small country” assumption. Tariffs are negative except when the world price is “quite” high. It is best to subsidize imports to address the market failure resulting from the lack of competition between supermarkets. The lack of competition at this level is typical in industrialized countries. Second, the optimal subsidy on ag imports decreases with the number of supermarkets (n). The presence of risk and loss-averse domestic farmers tends to lower the optimal import subsidies and make the specific tax/subsidy more attractive.


Table: Simulations results

Conditions n=3	Ad valorem Tariff		Specific tariff	
	Optimal tariff	Welfare	Optimal tariff	Welfare
Certainty	-0.11111	26,8125	-0.33333	26,8125
risk without aversion	-0,0617	28,3333	-0,3333	28,3945
risk with aversion ($\lambda=1,25$ et $\gamma=0,88$)	-0.0584	28,035	-0,3144	28,0851
risk with aversion ($\lambda=2.25$ et $\gamma=0,88$)	-0,0558	27,7962	-0,2971	27,838
risk with aversion ($\lambda=2.25$ et $\gamma=1,44$)	-0,0526	27,8108	-0,2718	27,8425
risk with aversion ($\lambda=3,25$ et $\gamma=0,88$)	-0,05321	27,5576	-0,2779	27,5913

Conclusion and implications

The optimal S tariff is a better instrument than the optimal AV tariff when commodity markets are volatile and food retail is highly concentrated. The optimal tax is not zero and it is negative except when the world price is very high. Farmers' loss aversion justifies the choice of specific taxes over AV ones in agriculture and it reduces the optimal subsidy. However, loss aversion cannot rationalize high ag tariffs. Higher degrees of concentration in retail and processing activities imply larger gains from tariff reductions. In this context, domestic policies reducing the supply of inputs exacerbate the competition problem.