US Countervail Against EU Olive Oil Subsidy:

Impacts in the US, Europe, and North Africa

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The research question

In the olive oil market of the United States, the EU subsidization, the lack of mandatory quality standards, and product adulterations are long-time concerns.

The EU has long subsidized Mediterranean agriculture and especially olive and olive oil production and processing. With a dominant position in export markets EU subsidies have generated opposition from producers and processors in other regions.

We investigate: What are the impacts of a U.S. countervailing duty against olive oil imports from the EU? How would the potential increase in the EU-specific tariff affect producers and processors in the United States, Southern Europe, and North Africa (Tunisia and Morocco in particular)? We answer these questions and provide a baseline for future analysis of non-tariff barriers and regulatory concerns in the global olive oil market.

Motivation and context

Countervailing duties imposed by Mexico and Argentina on EU olive oil imports were challenged by the EU through the WTO dispute settlement body. The EU won the case against Mexican countervails but is still in consultation with Argentina.

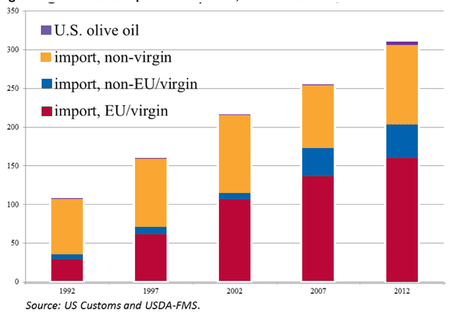
But concern about EU subsidies remain.

- **EU subsidization through CAP and other programs specific to olive oil have depressed world price of olive oil.**

"Direct payments generally comprise between 25 and 50 percent of olive farm income, depending on the year and the type of farm in question."
--- USITC, 2013, page 6-4.

- **Olive oil barely substitutes with ordinary vegetable oil (Xiong, Sumner, and Matthews)**
  - Current price of extra-virgin olive oil: $3,600/ton (UK ex-tank price)
  - Current price of rapeseed oil: $1,000/ton (Rotterdam fob price)
- **US consumption of olive oil has tripled over the past two decades.**

Figure 1. U.S. Consumption of olive oil, 1000 tons



Source: US Customs and USDA-FMS.

Method: simulating policy impacts in the olive oil market

We use a stochastic version of the equilibrium displacement model to analyze the effects of a potential US countervailing duty on olive oil imports from EU. In particular, we allow inaccuracy in the measurement of supply responses by assigning probabilistic distributions to elasticities of supply.

The US demand for olive oil is captured by

(1) $d\ln Q = \varepsilon d\ln p$,

where Q denotes the total consumption quantity and p denotes the price in the US market. Notation ε represents the demand elasticity in the US.

There are three sources of supplies in the US market: US, EU, and North Africa. Each supply response is characterized by an equation:

(2) $d\ln q_{eu} = \eta_{eu} d\ln p_{eu}$,

(3) $d\ln q_{na} = \eta_{na} d\ln p$,

(4) $d\ln q_{us} = \eta_{us} d\ln p$,

where η denotes the respective elasticity of supply and P_{eu} is the price received by EU exporters. In particular, this price is lower than the prevailing price in the US market by the magnitude of the countervail τ:

(5) $d\ln p_{eu} = d\ln p - \tau$.

Finally, we complement the partial equilibrium framework by imposing market clearing condition:

(6) $d\ln Q = s_{us} d\ln q_{us} + s_{na} d\ln q_{na} + s_{eu} d\ln q_{eu}$,

where s denotes the respective market share.

Since EU also imports and processes North African olive oils, we characterize the overall impacts on North African olive oil exports by:

(7) $d\ln E_{na} = \alpha_{eu} d\ln x_{eu} + \alpha_{na} d\ln q_{na} + \alpha_o d\ln q_o$,

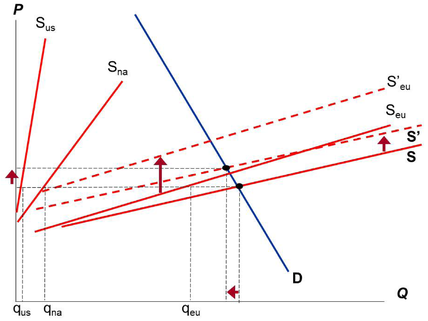
where E_{na} denotes North Africa' total export, $\alpha_{eu} = 0.49$ represents the share of North African exports sold to US as a percentage of North African total export, $\alpha_{us} = 0.42$ denotes the share of North African exports sold to EU as percentage of North African total export, x_{eu} denotes EU's import of North African olive oil for processing and re-exporting, and q_o stands for North Africa's export to other regions. Assuming EU olive oil export comprises of a fixed proportion of North African olive oils, we have

(8) $d\ln x_{eu} = \beta_{na} d\ln q_{na}$,

where $\beta_{na} = 0.1$ denotes the fraction of North African olive oils embedded in EU exports (excluding intra-EU trade).

The system (1)-(8) provides an analytical framework for our policy simulation. As illustrated in Figure 2, we expect the EU industry to lose, and US and North African industries to gain from the potential countervailing duty.

Figure 2. The impact of a US countervailing duty on EU olive oils



Data

Table 1. Olive oil production, consumption, trade, and processing in the EU, 2011/2012

	Spain	Italy	Greece
		(million tons)	
Production	1.61	0.45	0.30
Consumption	0.58	0.72	0.21
Net export	1.03	-0.27	0.09
Total number of mills	1,740	5,000	2,200

Source: Table 6.2, USITC, 2013, page 6-2.

Figure 3. North African olive oil distribution
Total production 275,000 tons, 2011/2012

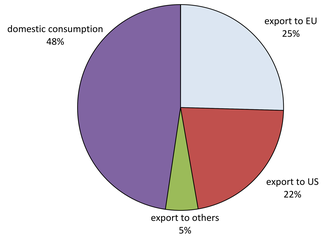


Table 2. 2012 EU CAP funding for olive oil

	Spain	Italy	Greece
		(million euros)	
CAP funding for all agricultural products:			
Single payment scheme	4,913	4,202	2,225
Rural development programs	1,051	1,267	626
CAP funding for programs specific to olive oil:			
Quality improvement measures	0	36	11
Article 68 coupled direct aid	0	9	10

Source: Table 6.3, USITC, 2013, page 6-6.

To parameterize the system (1)-(8), we borrow the estimate of the demand elasticity for olive oil, -0.3, from Xiong, Sumner, and Matthews. On the supply side, we review the possibilities of supply elasticities in the short run, when producers and marketers are constrained by certain fixed costs or capital stocks (olive trees can live to be 1500 years old!), and in the long run, when stakeholders in the business have more flexibility. We use olive oil price and quantity data from the US customs and the NASS California publications. We extract the rate of EU subsidization from the USITC report.

After reviewing the EU subsidization to the olive industry, we stipulate that a US countervailing duty of the rate 30% is plausible. To distinguish the short-run versus long-run implications of this import duty, we conduct two Monte-Carlo experiments based on the system (1)-(8). In the short-run scenario, the supply elasticities of EU, North Africa, and US follow a joint log-normal distribution with mean at 0.5, 0.3, and 0.2 respectively. In the long-run case, the supply elasticities from the three regions are centered at 10, 6, and 4 respectively.

Results and discussion

We present the short-run results in Table 3 and the long-run counterparts in Table 4.

Table 3: US countervailing duties on EU olive oil imports: short-run impacts

Variable in the US market	25% percentile	Mean	75% percentile
% change in market price	7	10	13
% change in price received by EU	-16	-13	-10
% change in US supply	0.7	2	4.5
% change in North African supply to US	1	4	4.5
% change in North African supply to EU	-0.6	-0.5	-0.3
% change in EU supply	-6	-5	-3
Increased revenue for US olive oil	$3m	$4 m	$7 m

Table 4: US countervailing duties on EU olive oil imports: long-run impacts

Variable in the US market	25% percentile	Mean	75% percentile
% change in market price	17	18	20
% change in price received by EU	-6	-5	-3
% change in US supply	29	68	87
% change in North African supply to US	46	110	136
% change in North African supply to EU	-5	-4	-2
% change in EU supply	-48	-40	-22
Increased revenue for US olive oil	$17 m	$31 m	$38 m

We find from Table 3 and 4 that the hypothetical US duty on EU olive oils would increase the olive oil price in the US market by 10% in the short run and 18% in the long run. EU's sales in the US market would decline by 5% in the short run and 40% in the long run. North African exporters would expand their sales in the US market by 4% in the short run and 110% in the long run. In addition, the annual revenue from US produced olive oil would increase by $4 million in the short run and $31 million in the long run.

Conclusion

Our findings bear policy implications for the olive oil industries in North Africa (Tunisia and Morocco in particular). The case study illustrates that the spread of Mediterranean diet in advanced nations provides unique opportunities for the rural economy in North Africa, given that Southern Europe competes fairly in the international market.

Future research

- Labeling, standards, and quality issues in the world market for olive oil
- Development strategies for olive oil producers and processors in North Africa

Reference

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United States International Trade Commission (2013). Olive Oil: Conditions of Competition between US and Major Foreign Supplier Industries. Investigation No. 332-537 USITC Publication 4419, August 2013.

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