Policies and Trade - Part III: Export Policies

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Real Food Price Trend

Real agricultural prices have fallen since 1900, even as world population growth accelerated.

Agricultural price index, 1977-79=100

Source: USDA, Economic Research Service using Fuglie, Wang, and Ball (2012). Depicted in the chart is the Grilli-Yang agricultural price index adjusted for inflation by the U.S. Gross Domestic Product implicit price index. The Grilli-Yang price index is a composite of 18 crop and livestock prices, each weighted by its share of global agricultural trade (Pfaffenzeller et al., 2007). World population estimates are from the United Nations.
Export Subsidies

- Governments promote or subsidize exports more often than they restrict or tax them.
- Export subsidies often highly transparent, e.g., those given to agricultural commodities by EU (Figure 1).
- Since inception of WTO, focus on any policy that acts as an export subsidy in agriculture, e.g., Brazil won case in 2009 against US in WTO relating to cotton.
- WTO members agreed in 2015 to abolish their use.
- Export subsidies often good for those who complain about them, bad for those who use them.
Figure 1: EU Agricultural Export Subsidies, 1990-2010

Source: OECD
Export Subsidy: Large Country

**Exporter**

- Demand: \( D \)
- Supply: \( S \)
- Price: \( P_w \)
- Price with subsidy: \( P_w' + s \)
- Quantity demanded: \( Q_D' \)
- Quantity supplied: \( Q_S \)
- New quantity demanded: \( Q_D' \)
- New quantity supplied: \( Q_S' \)

**World Market**

- Demand: \( D_w \)
- Supply: \( S_w \)
- Price: \( P_w \)
- Price with subsidy: \( P_w' + s \)
- New quantity demanded: \( Q' \)
- New quantity supplied: \( Q_S' \)
Terms of Trade Effects

- Large exporter faces supply curve, $S_w$
- With $s$, exports rise to $Q_s'$, or equivalently $Q'$, and world price falls to $P_w'$
- Exporter deadweight net loss is $-(f+h+i+j+k+l+m)$, made up of consumption effect $-(f)$, production effect $-(h)$, and terms of trade effect $-(i+j+k+l+m)$
- In world market, importer benefits due to fall in world price by extra consumer surplus of $+(n+r+t)$
- Overall, world worse off by $-(f+h+u)$, i.e., too much of good is exported
Spikes in World Food Prices

- Post-2007 – world prices of key staple foods volatile around relatively high levels
- Different to pattern over past century where real food prices have trended downwards
- Historically, while price spikes are often intense, they have typically been infrequent
- 2008 – price of Thai rice saw 198% increase from $335/ton to $1000/ton (Dawe and Slayton)
Political Impact of Higher Prices

- Higher food prices found to increase poverty sharply in short-run (World Bank, 2012)
- Research suggests food riots are correlated with high food prices (Bellemare, 2015)
- Intervention a matter of political survival in countries with large poor populations
- Indian Prime Minister and Indonesian President both re-elected in 2009 after campaigns emphasizing ability to limit impact of food crisis in respective countries
Response to Food Price Spikes

- Many developing countries responded to food price spikes by directly intervening to stabilize domestic markets.

- 2008: 68 countries used trade policies (e.g., China, India).

- Trade policies typically consisted of: (i) export controls for net exporters, and (ii) import subsidies for net importers.

- In contrast, developed countries typically did not implement such policies.
If enough countries adopt trade policies, end result is increased world food price instability.

“...export restrictions play a direct role in aggravating food crises...” (Pascal Lamy, Director General of WTO, 2011)

40%, 19% and 10% of 2007-08 spike in rice, wheat and maize prices respectively due to trade policies (Anderson and Nelgen, 2012)

Unless countries cooperate over not using trade policies, each has unilateral incentive to intervene, but collectively no better off.
World Rice Market

Supply with Export Controls

Demand with Import Subsidies

Supply

Demand

Rice Price

Rice Quantity

W_1 = P_1

W_2

W_3

P_2

P_3

Q_2

Q_1 = Q_3
Welfare Effect of Export Taxes

Supply with Export Taxes

Supply

Demand

W_1 = P_1

W_2

P_2

Q_2

Q_1 = Q_3

Rice Price

Rice Quantity
Welfare Effect of Export Taxes

- If several countries use export tax, shifts up world supply curve, world price increasing to $W_2$, domestic price in exporting countries falling to $P_2$

- Global effects of export tax:
  - importers loss of consumer surplus $= -(a+b)$
  - exporters loss of producer surplus $= -(c+d)$
  - exporting government tax revenue $= +(a+c)$
  - deadweight loss $= -(b+d)$

- Exporters gain only if $a > d$, but importers clearly lose as they transfer income to exporter
Disciplines on Trade Policy

- Trade policies appeared successful in stabilizing domestic prices, but ended up exacerbating world price spikes.

- Solution to prisoner’s dilemma is cooperation via a self-enforcing agreement, i.e., the WTO.

- Doha Round of WTO pushing for reductions in agricultural tariffs and disciplines on export subsidies.

- Developed countries have also pushed for tighter WTO disciplines on export restrictions – rejected by many exporting developing countries.