An ordinary market maximizes consumer and producer surpluses

Tax theory, monopolies and public utility regulation
A tax distorts the market by driving a wedge between the price buyers pay and the price sellers receive. It reduces the quantity sold, raises tax revenues for the government, but also creates *deadweight losses*: consumers drop out of the market and firms produce less.
In this example, with linear supply and demand, a $4/unit tax generates $1,600 in tax revenues and creates a DWL of $200.
Doubling the tax to $8/unit increases tax revenues by 50% (to $2,400) but quadruples the DWL (now $800).
Higher tax rates typically yield diminishing revenue increases and accelerating DWL’s:
In this example, demand elasticity = -1; supply elasticity = +1
A $4/unit tax creates DWL = $200.
With lower elasticities ($E_{demand} = -0.5$ and $E_{supply} = +0.5$), DWL is less. Here the $4/unit tax creates $\text{DWL} = $100.

Tax efficiency is higher where demand and supply elasticities are low.
The incidence of a tax depends on the *relative* elasticities of supply and demand. Here $E_{\text{demand}} = 3 \times E_{\text{supply}}$, so sellers bear 3x the tax burden of buyers.
Here $E_{\text{supply}} = 3 \times E_{\text{demand}}$, so buyers bear 3x the tax burden of sellers.
Here Supply is perfectly elastic, so the entire tax burden falls on the buyers.
Here Supply is perfectly *inelastic*, so the entire tax burden falls on the sellers... and DWL is zero!
Here’s a $4/unit **subsidy** represented as shifting the demand schedule upward, increasing the Price to $12 and the Quantity demanded to 600 units.
The gains in Producer Surplus and Consumer Surplus ($1,100 each) are less than the $2,400 cost of the subsidy; the difference is DWL ($200)
A *quota* is another type of market distortion that creates deadweight losses. In this example, the government limits sales to 300 units, price rises, the sellers who have shares of the quota earn excess profits (the $2,400 gray rectangle) and the DWL = $800.
Consumers in this market enjoy a large consumer surplus from low-cost imports. US producers have a small market share and small producer surplus.
If imports are prohibited, US producers can sell more at a higher price, but the loss in consumer surplus is larger than their gain in producer surplus; the difference is DWL.
US Sugar Policies:

US import restrictions on foreign sugar (sucrose) have been in place for 190 years to “protect” US sugar beet and sugar cane producers. They aren’t very numerous, but they are rich enough to maintain a very powerful lobby in Congress.

Congress has typically restricted sugar imports to about 1 million tons/year and guaranteed US producers a price of 22 cents/pound ($440/ton), about 3½ times the world price—6.5 cents/pound ($130/ton).

US production is about 7 million tons/year. US consumption is about 8 million tons/year--or 130 pounds per household.
As with most commodities, the elasticity of demand for sucrose is low: the quantity demanded is not very responsive to price changes. This implies a steeply-sloped demand schedule. We assume the US supply elasticity is high, and the world supply is infinitely elastic (horizontal). So here’s a simple diagram of the US sucrose market:
Area of trapezoid \( acdg \):
\[
\frac{(9M + 8M)}{2} \times 2000 \text{ lbs/ton} \times ($0.22 - $0.065) = $2.635B/\text{year}
\]
But US sugar growers got some producer surplus—the triangle $abh$:
\[
\frac{1}{2} \times 7M \times 2000 \text{ lbs/ton} \times (\$0.22 - \$0.15) = \$490M/\text{year}
\]
...and the foreign suppliers lucky enough to get a share of the import quota got some nice profits—the rectangle $bcef$:

$$1 \text{M} \times 2000 \text{ lbs/ton} \times (0.22 - 0.065) = \$310 \text{M/yr}$$
...but all the rest is **deadweight loss**—trapezoid $hbfg$ plus triangle $cde$:

\[
[7M \times (\$0.22+\$0.15)/2 + \frac{1}{2} \times 1M \times (\$0.22-\$0.065)] \times 2000 \text{ lbs/ton} = \$1.69B + 155M = \$1.84B/\text{year}
\]
Some unintended consequences of US sugar policies:

• Environmental damage to the Florida Everglades
• Exodus of US candy manufacturers to Canada, which doesn’t restrict sugar imports
• Rise of artificial sweeteners, Splenda, etc.
• Capture of industrial sweeteners market by fructose (HFCS), which inflates corn prices, makes livestock & ethanol more expensive
• US trading partners impose retaliatory trade policies that punish US export industries
• Belize, Dominican Republic and other small sugar producers remain dependent on US food aid because they can’t sell their sugar in US markets
• Countries find alternative commodities to export to US markets, like cocaine.
Now consider the E10 ethanol mandate!

US gasoline consumption = 134 billion gallons/year (EIA, US DOE). EPA’s E10 mandate: gasoline must include 10% ethanol = 13.4 billion gallons. Elasticity of demand for gasoline = -0.3 (SR: drive less), -0.7 (LR: switch to more fuel-efficient cars)

Total corn production = 12 billion bushels. 40% (4.8 billion bushels) is converted to 13.4 billion gallons of ethanol (@ 2.8 gallons of ethanol per bushel of corn)

Elasticity of demand for corn = -0.4. Corn prices $2.25/bushel for 8.7 billion bushels produced in 2005; now $6/bushel for 12 billion bushels, implies a supply elasticity of about +0.4.

Ethanol’s energy content is 33% less than conventional gasoline, implying a 3% reduction in MPG.

$0.54/gallon tariff on Brazilian biofuels to protect ethanol US producers. $0.45/gallon blender’s tax credit for ethanol = $6 billion in direct subsidies
Consumer prices
Change from previous year, not seasonally adjusted

Source: Bureau of Labor Statistics
WASHINGTON – The all-food component of the Consumer Price Index was forecast to rise 2.5 percent to 3.5 percent in 2014, according to the US Department of Agriculture’s Food Price Outlook issued Feb. 25. Such a level of price inflation would represent a jump from 1.4 percent in all-food price inflation in 2013, the report said.

Foods consumed at home with the highest price inflation forecasts in 2014 were beef, veal and poultry, expected to show a 3 percent to 4 percent rise in prices compared with 2013. The food items expected to show the lowest rates of price inflation were fats, oils, cereals and bakery products, whose prices were expected to show price advances of 1.5 percent to 2.5 percent in 2014, the Food Price Outlook said.
Monopolies & Monopoly Regulation

“People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices. It is impossible indeed to prevent such meetings, by any law which either could be executed, or would be consistent with liberty and justice. But though the law cannot hinder people of the same trade from sometimes assembling together, it ought to do nothing to facilitate such assemblies; much less to render them necessary.”

--Adam Smith
monopoly profit

DWL

Q_m

QUANTITY
Sherman Antitrust Act 1890

(1) "Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal."

(2) "Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony."
Clayton Antitrust Act 1914

Outlawed additional anti-competitive practices:

• Price discrimination between different purchasers, if such discrimination tends to create a monopoly
• Exclusive dealing agreements
• Tie-in sales arrangements
• Mergers and acquisitions that substantially reduce market competition.

Federal Trade Commission Act 1914
REGULATED MONOPOLY: Price = AC

- AC: Average Cost
- MC: Marginal Cost
- MR: Marginal Revenue
- DEMAND: Demand Curve
- $P_{reg}$: Regulated Price
- $Q_{reg}$: Regulated Quantity
DELAWARE PUBLIC SERVICE COMMISSION

Created in 1949 to regulate investor-owned public utilities, the Delaware Public Service Commission (PSC) works to ensure safe, reliable and reasonably priced cable, electric, natural gas, wastewater, water and telecommunications services for Delaware consumers. For those services that are moving toward competitive markets, the Commission makes rules to level the playing field between competing providers, and resolves disputes between these providers. The PSC also assists consumers in resolving disputes with their service providers.

If you need financial assistance with payment of your utility bill, dial '211' for the Delaware Helpline. For out-of-state long distance, the number is 1-800-273-9500.

CONSUMER ALERT

The Delaware Public Service Commission has been advised of a growing telephone scam affecting utility customers across the country. Scammers claiming to represent utility companies are asking for PayPal or other online payments to avoid disconnection. Visit the Federal Trade Commission’s website for more information. Delmarva Power also encourages customers to take certain precautions.

EX PARTE COMMUNICATIONS

Ex Parte Communications are any oral or written communications with a Commissioner or Commission Staff member that addresses the merits of an adjudicatory proceeding on which the Commissioner or Staff member must render a decision and that was neither on the record nor on reasonable prior notice to all the parties. Such communications with Commissioners and Commission Staff are inappropriate between the time of the initial application filing and the rendering of a final decision on the case. When the Commissioners or Staff members receive such communications, they will be posted on the website for 30 days with notification sent to all parties of record on the proceeding.
Delaware PSC Regulatory Areas:

Electric
- Smart Meters/Smart Grid: Advanced Metering Infrastructure
- Electric Choice
- Revenue Decoupling (separate recovery of variable vs. fixed costs)
- Delaware Renewable Portfolio Standard
- Delmarva Power Integrated Resource Plan
- IRP Regulations
- Delmarva Power SOS (Standard Offer of Service)
- Bloom Energy (Qualified Fuel Cell Project)

Natural Gas

Cable TV

Telecommunications

Water

Wastewater
<table>
<thead>
<tr>
<th>SUPPLIER NAME</th>
<th>DELMARVA POWER</th>
<th>DELAWARE ELECTRIC COOPERATIVE</th>
<th>RESIDENTIAL</th>
<th>SMALL COMMERCIAL</th>
<th>COMMERCIAL</th>
<th>INDUSTRIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>5LINX Enterprises, Inc. (Broker) 1-866-418-1495</td>
<td>●</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Acclaim, Energy, Ltd. (888) 453-7674 Broker <a href="http://www.acclaimenergy.com">www.acclaimenergy.com</a></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>AEP Energy, Inc. 1-866-258-3782 <a href="http://www.aepenergy.com">www.aepenergy.com</a></td>
<td>●</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Affiliated Power Purchasers International, LLC (Broker) 1-800-520-6685</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
## MONTHLY CHARGES AND RATES

<table>
<thead>
<tr>
<th>SERVICE CLASSIFICATION</th>
<th>SUMMER Billing Months</th>
<th>WINTER Billing Months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>June Through September</td>
<td>October Through May</td>
</tr>
</tbody>
</table>

### RESIDENTIAL “R”

#### Delivery Service Charges:
- **Customer Charge**
  - **SUMMER**: $10.89
  - **WINTER**: $10.89
- **Renewable Portfolio Standard Charge**
  - Refer to Link Below

#### Distribution Charge:
- **First 500 kWh Rate**: $0.034023/kWh
- **Excess kWh Rate**: $0.034023/kWh
- **Environmental Fund Rate**: $0.000356/kWh
- **Low-Income Fund Rate**: $0.000095/kWh

#### Supply Service Charges:
- **Transmission Rate**
  - Refer to Rider SOS
- **Standard Offer Service (Refer to Rider SOS):**
  - **Supply Capacity, Energy and Ancillary**
    - **First 500 kWh Rate**: $0.082851/kWh
    - **Excess kWh Rate**: $0.082851/kWh
  - **Procurement Cost Adjustment**
    - Refer to Rider SOS

Total Supply Service price is the sum of Standard Offer Service, Transmission and Procurement Cost Adjustment.
Division Of The Public Advocate

David L. Bonar, Public Advocate

Welcome to the web site of the Division of the Public Advocate (DPA). The role of the Public Advocate is to advocate for the lowest reasonable rates for utility consumers, consistent with an equitable distribution of rates and the maintenance of reliable utility service.

The Public Advocate represents the interests of investor-owned utility consumers in any matter or proceeding before the Delaware Public Service Commission (PSC) involving rates, services or practices of public utilities regulated by the PSC. The Public Advocate also represents the interests of utility consumers before the courts of this State, federal courts and federal administrative and regulatory agencies and commissions. Visit our About Agency page to learn more.
Executive Order 11615 of August 15, 1971
Providing for Stabilization of Prices, Rents, Wages, and Salaries

WHEREAS, in order to stabilize the economy, reduce inflation, and minimize unemployment, it is necessary to stabilize prices, rents, wages, and salaries; and

WHEREAS, the present balance of payments situation makes it especially urgent to stabilize prices, rents, wages, and salaries in order to improve our competitive position in world trade and to protect the purchasing power of the dollar:

NOW, THEREFORE, by virtue of the authority vested in me by the Constitution and statutes of the United States, including the Economic Stabilization Act of 1970 (P.L. 91-379, 84 Stat. 799), as amended, it is hereby ordered as follows:

Section 1.

(a) Prices, rents, wages, and salaries shall be stabilized for a period of 90 days from the date hereof at levels not greater than the highest of those pertaining to a substantial volume of actual transactions by each individual, business, firm or other entity of any kind during the 30-day period ending August 14, 1971, for like or similar commodities or services. If no transactions occurred in that period, the ceiling will be the highest price, rent, salary or wage in the nearest preceding 30-day period in which transactions did occur. No person shall charge, assess, or receive, directly or indirectly in any transaction prices or rents in any form higher than those permitted hereunder, and no person shall, directly or indirectly, pay or agree to pay in any transaction wages or salaries in any form, or to use any means to obtain payment of wages and salaries in any form, higher than those permitted hereunder, whether by retroactive increase or otherwise.

(b) Each person engaged in the business of selling or providing commodities or services shall maintain available for public inspection a record of the highest prices or rents charged for such or similar commodities or services during the 30-day period ending August 14, 1971.

(c) The provision of section 1 and 2 hereof shall not apply to the prices charged for raw agricultural products.