Tax/economic Incidence

Wojciech Kopczuk, adapted by Kyle Coombs

Vassar College

September 11, 2025

In the news: who pays for tariffs?

- President Trump raised tariffs on imports to at least 10%.[1]
- His administration insists foreign producers pay the tariffs.
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- What do you need to know to make an educated guess?

- How can we estimate incidence?

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Learning goals

1. Differentiate statutory from economic tax incidence
2. Derive formula for tax incidence in partial equilibrium
3. Evaluate the role of elasticity in determining tax incidence

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- suppliers of all these companies

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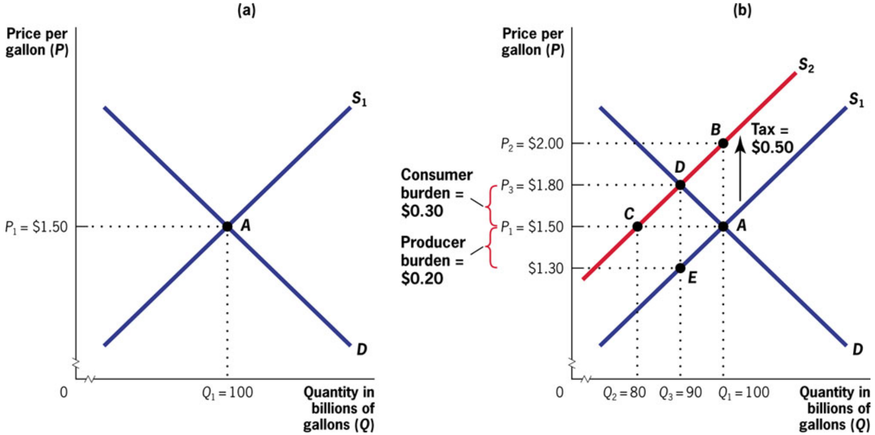
- **Economic incidence**: how much parties pay relative to tax-free equilibrium

Tax incidence in partial equilibrium



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- **Partial equilibrium**: study one market (e.g. Just SUVs)
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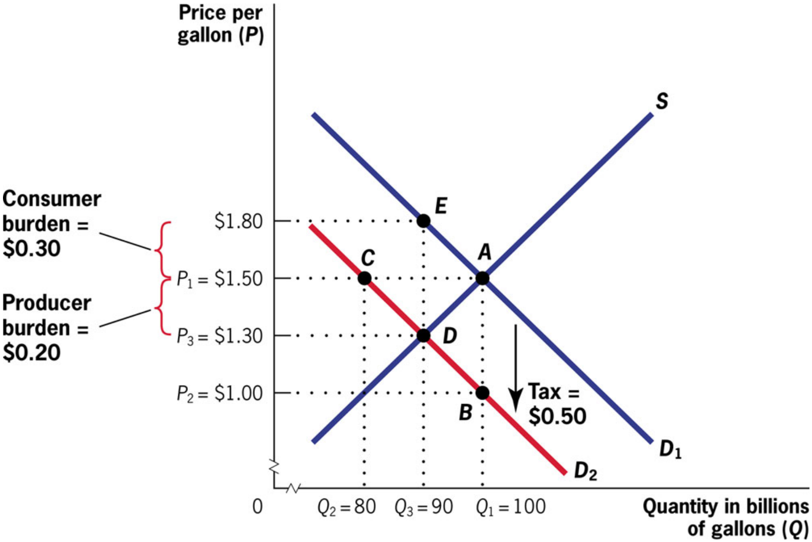
- Statutory is irrelevant in standard models

Shifting the tax to the other side



Statutory incidence irrelevance

Consider a \$10 tax on mugs. $D(p) = 130 - 2.5p$, $S(p) = 5 + 2.5p$.

Without taxes: $130 - 2.5p = 5 + 2.5p \Rightarrow p = 25$

Different tax schemes (t_C and t_P):

1. Buyers pay $t_C = 10$
2. Sellers pay $t_P = 10$
3. Buyers pay $t_C = 5$, sellers pay $t_P = 5$,

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Tax on consumers, different markets

Tax on consumers, but supply/demand change.

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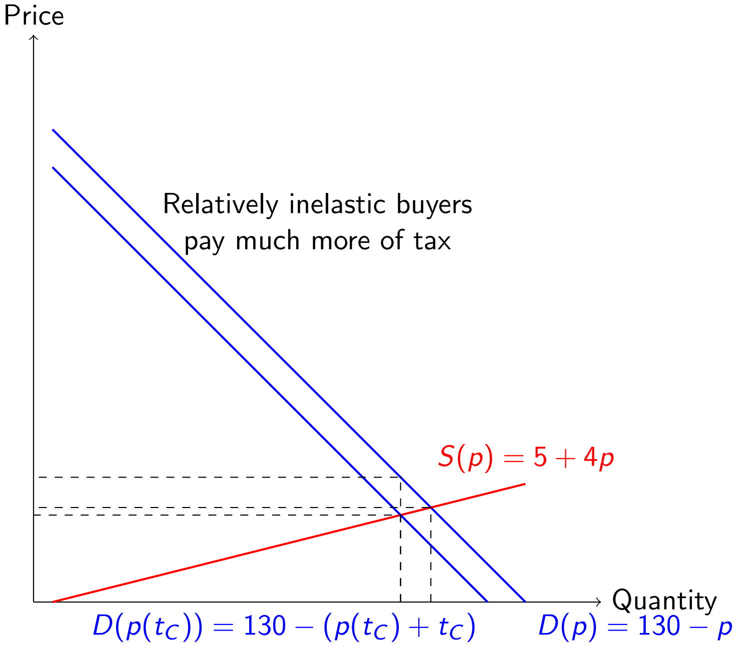

Price
Relatively inelastic buyers
pay much more of tax
$S(p) = 5 + 4p$
Quantity
$D(p(t_C)) = 130 - (p(t_C) + t_C)$
$D(p) = 130 - p$

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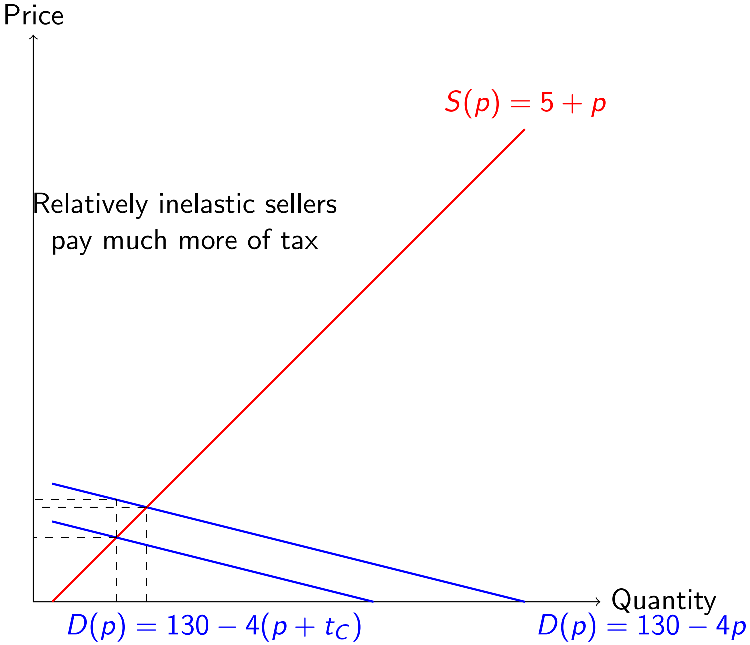
$$\left.\begin{array}{l} \text{sellers: } p(t_C) = 17 \\ \text{buyers: } p(t_C) + t_C = 27 \end{array}\right\} \Rightarrow \text{Sellers: } 80\%, \text{ buyers: } 20\%$$

For more examples, try out:
https://demonstrations.wolfram.com/TaxIncidence/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- But slopes could change... is there a better formula?

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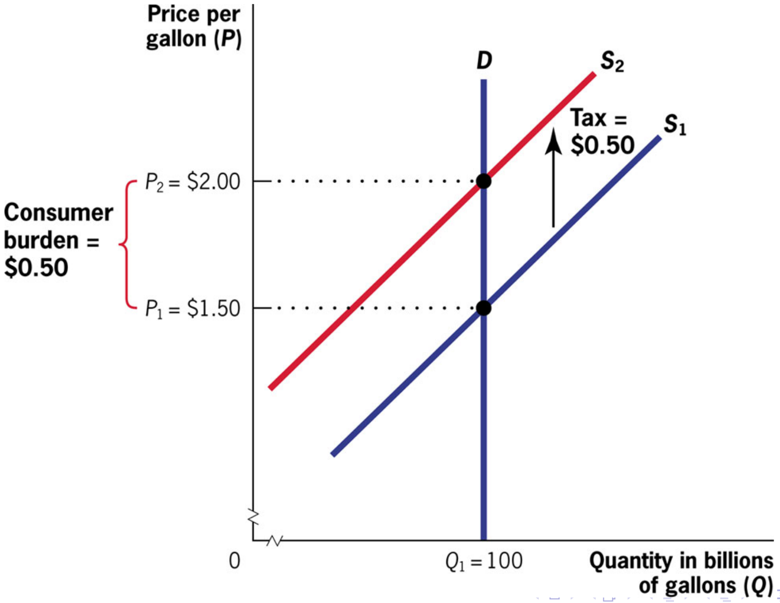
Abuse of notation to simplify expression: ε_D defined as $D'(p+t)\frac{p}{D(p+t)}$ rather than $D'(p+t)\frac{p+t}{D(p+t)}$.

Special cases

Denoting p_C is the price paid by consumers, p is the price paid by producers, and t is the tax:

- vertical (inelastic) demand (smoking?)
  $D'(p) = \varepsilon_p^D = 0$, $\frac{\partial p}{\partial t} = 0$, $p_C'(t) = 1$

What kind of demand elasticity is this?



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  $D'(p) = \varepsilon_p^D = \infty$, $\frac{\partial p}{\partial t} = -1$, $p_C'(t) = 0$
- horizontal (elastic) supply (speculative capital in an open economy)
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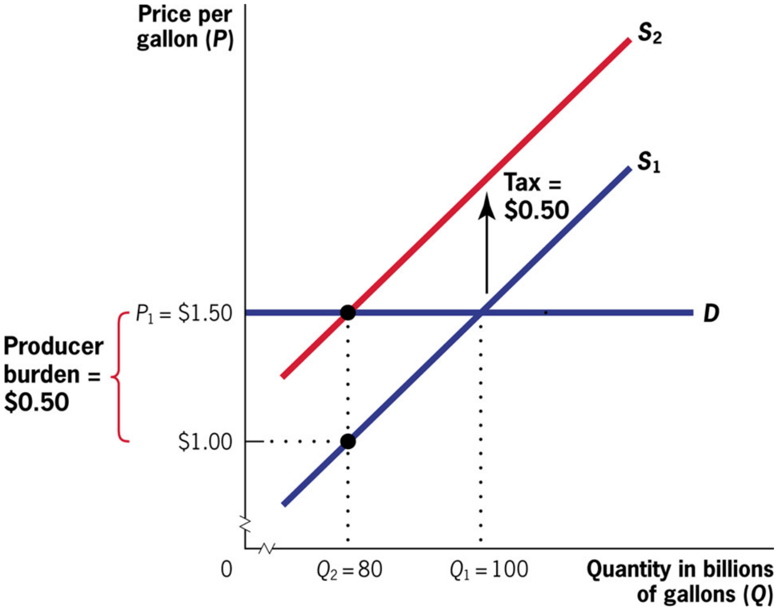
What kind of demand elasticity is this?



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- vertical (inelastic) supply (labor in the short term?, land?)
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- His administration insists foreign producers pay the tariffs.
- Critics insist U.S. consumers and producers pay the tariffs.
- What do you need to know to make an educated guess? Elasticities (we use theory!)
- How can we estimate incidence? Causal inference tools (diff-in-diff, IV, shift-share, etc.)

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- Of course, statutory incidence may matter for other reasons:
  - Imperfect tax compliance
  - Price frictions
  - Tax misperceptions
  - Other markets (general equilibrium)

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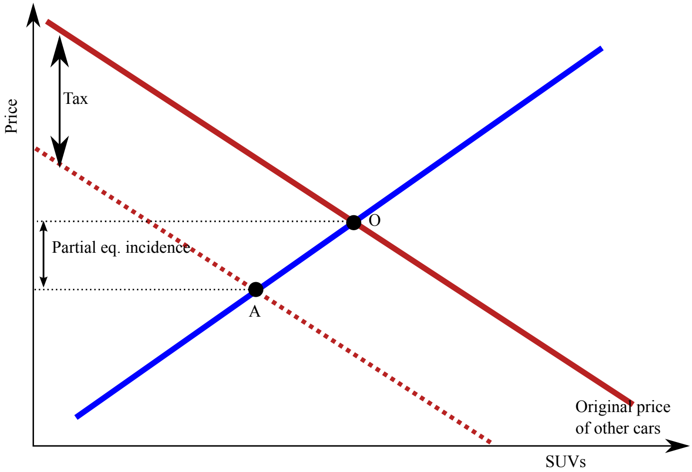
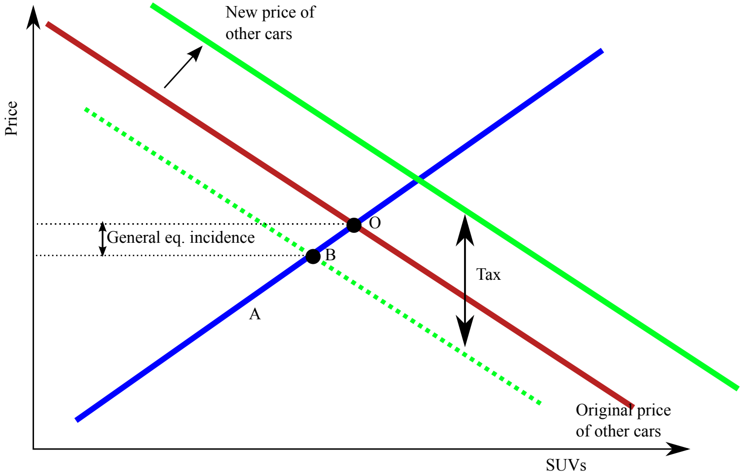
General equilibrium incidence: What about other cars?



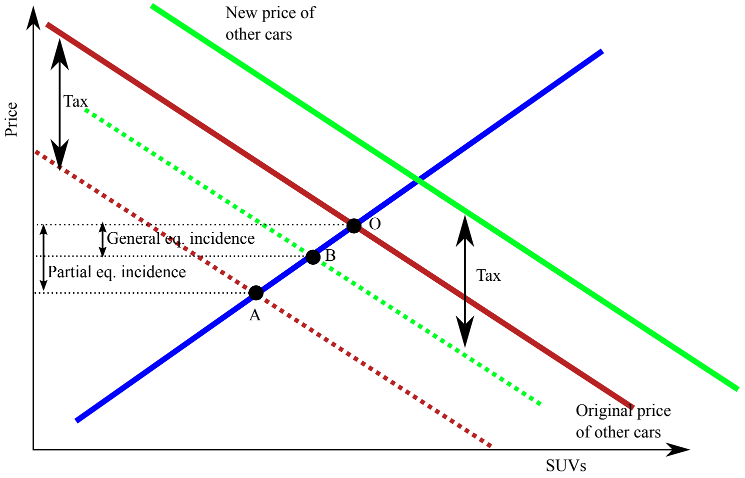
Less demand for SUVs due to tax. Eq: $O \to A$

General equilibrium incidence



1. Demand for other cars up, raising their price (not pictured).
2. SUV Demand up when substitutes more expensive. $A \to B$

General equilibrium incidence



Gen eq. incidence $O \to B$ smaller than partial equilibrium $O \to A$ – tax burden shifts from SUV market to other car markets.

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- partial and general equilibrium answers may be very different
- Demand: $D(p, p^2) = (a + c \cdot p^S) - b \cdot p$, where p^s is the price of a substitute
- Supply: $S(p) = d \cdot p$
- The same thing will be happening in the other market; we should analyze both of them at the same time.

Empirical examples

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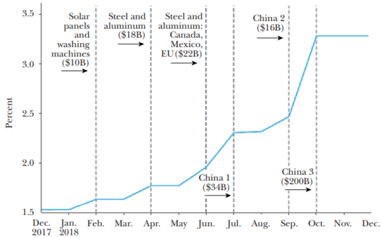
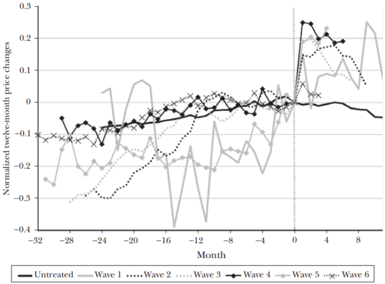
- What is a possible empirical method for this scenario?

Figure 3
Average Tariff Rates



Average tariff rates.

Figure 4
Twelve-Month Proportional Change in Import Prices by Tariff Wave



Import prices increased substantially.

Figure: Tariff rates and relative import prices in 2018. (Source: Amiti et al. (2019))

Table 1

Impact of US Tariffs on Importing

	log change foreign exporter prices *(1)*	*log change import quantities* *(2)*	*log change import quantities* *(3)*	*log change import values* *(4)*	*log change import values* *(5)*
	$\Delta\ln(p_{ijt})$	$\Delta\ln(m_{ijt})$	$\Delta\ln(m_{ijt})$	$\Delta\ln(p_{ijt}\times m_{ijt})$	$\Delta\ln(p_{ijt}\times m_{ijt})$
log change tariff $\Delta\ln(1 + Tariff_{ijt})$	−0.012 (0.023)	−1.310*** (0.090)	−5.890*** (0.590)	−1.424*** (0.086)	−6.364*** (0.773)
N	1,647,617	1,647,617	3,318,912	2,487,370	4,461,376
R^2	0.021	0.024	0.099	0.012	0.102

Foreign exporters saw effectively no change in their prices, implying consumers bore the price increases. (Source: Amiti et al. (2019))

Empirical examples

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- What is a possible empirical method for this scenario?
- Estimated that consumers bore the entire tax burden ($\frac{\partial p}{\partial t} \approx 1,\ p'_C(t) \approx 0$)

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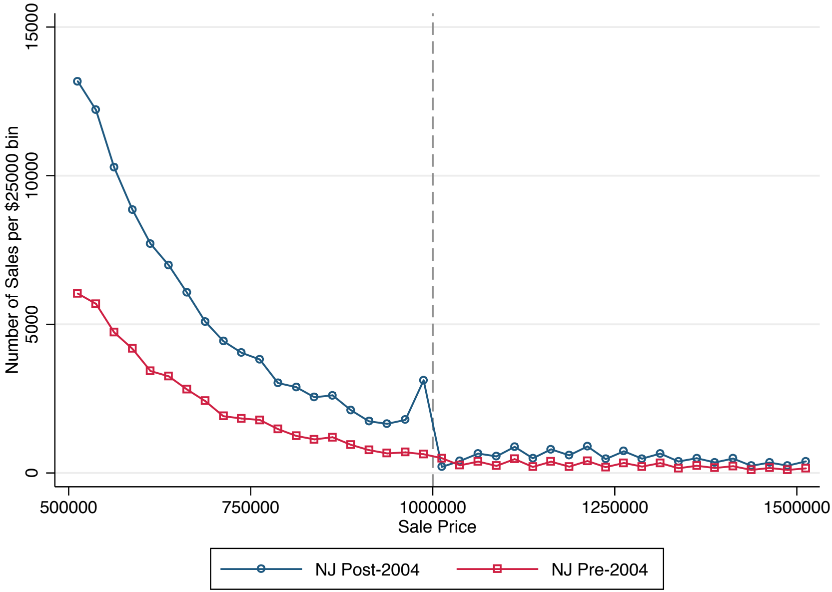
- Kopczuk & Munroe (2015): discontinuous mansion tax in NJ and NY
  - 1% tax on sales of houses/apartments over \$1M
  - \$0 if the price is \$999,999 and \$1K when the price is \$1M.
  - Introduced in NJ in 2004.

Distribution of Taxable Sales in New Jersey



Final remarks

- Short-term and long-term incidence can be quite different. For example, the demand for gasoline is very inelastic in the short-run but may be elastic in the long-run.
- Examples of empirical work related to economic incidence:
  - Tax salience — whether the tax is included in the price or presented separately seems to matter (Chetty, Looney and Kroft, American Economic Review, 2009)
  - The effect of EITC on wages — result: $1 increase, $.23 decline in wages (Rothstein, American Economic Journal: Economic Policy, 2010)
  - The effect of simultaneous Food Stamp payments on prices in local stores — not much (Hastings and Washington, American Economic Journal: Economic Policy, 2010)