

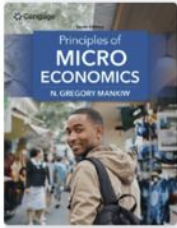
# **Both Governments and Markets Fail: Teaching Economics with Real-World Insights**

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# Economists Hate Taxes

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## Principles of Microeconomics

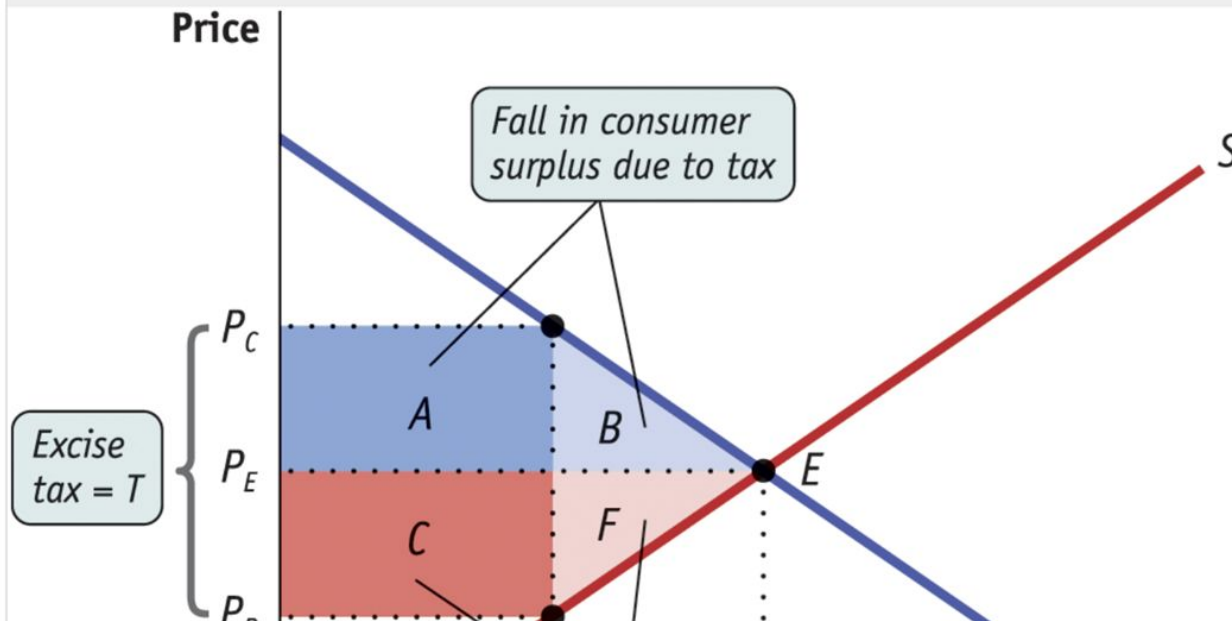
N. Gregory Mankiw

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# We Hate Taxes Because they Create Deadweight Loss

**FIGURE 8 A Tax Reduces Consumer and Producer Surplus**

Before the tax, the equilibrium price and quantity are  $P_E$  and  $Q_E$ , respectively. After an excise tax of  $T$  per unit is imposed, the price to consumers rises to  $P_C$  and consumer surplus falls by the sum of the dark blue rectangle, labeled  $A$ , and the light blue triangle, labeled  $B$ . The tax also causes the price to producers to fall to  $P_P$ ; producer surplus falls by the sum of the red rectangle, labeled  $C$ , and the pink triangle, labeled  $F$ . The government receives revenue from the tax equal to  $Q_T \times T$ , which is given by the sum of the areas  $A$  and  $C$ . Areas  $B$  and  $F$  represent the losses to consumer and producer surplus that are not collected by the government as revenue. They are the deadweight loss to society of the tax.



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# But Do They?

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Do taxes cause deadweight loss?



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## AI Overview

**Yes, taxes can cause deadweight loss:**

### Definition

Deadweight loss is a loss to society caused by market inefficiency, which can be caused by taxes, price controls, and price floors.

### Explanation

Taxes cause deadweight loss because they alter the supply and demand of a good, which prevents buyers and sellers from realizing some of the gains from trade. This results in a fall in total surplus, which is the sum of consumer surplus, producer surplus, and tax revenue.

### Factors that affect deadweight loss


The amount of deadweight loss created by taxes depends on several factors, including how much consumers are willing to spend on a product and how well suppliers can get the product to consumers.

### Calculating deadweight loss

The formula for calculating deadweight loss is  $\text{Deadweight loss} = \frac{(P_n - P_o) \times (Q_o - Q_n)}{2}$ , where  $P_n$  is the product's new price after taxes.

# How Taxes Create Deadweight Loss

When a government imposes a tax on a good or service, it effectively increases the price that consumers pay and decreases the price that producers receive. This dual impact causes the quantity traded in the market to decrease compared to the equilibrium quantity that would exist without the tax. Here's a step-by-step breakdown:

1. **Imposition of Tax:** Suppose the government imposes a per-unit tax on a good. This tax shifts the supply curve upward by the amount of the tax.
2. **Higher Consumer Prices and Lower Producer Revenues:** Consumers now face higher prices, while producers receive lower net prices after accounting for the tax. This dual effect discourages both consumption and production of the taxed good.
3. **Reduction in Quantity Traded:** The higher price deters some consumers from buying the good, and the lower effective price discourages producers from supplying as much. As a result, the quantity traded in the market decreases.
4. **Creation of Deadweight Loss:** The reduction  in trade means that some mutually beneficial transactions that would have occurred without the tax no longer take place. The lost gains from

Why do economists think that government intervention like taxes or price controls cause deadweight loss? Aren't governments trying to help people with these policies?



Thought for 7 seconds ▾

Economists often point out that government interventions like taxes or price controls can lead to a **deadweight loss**, which is a loss of economic efficiency that occurs when the equilibrium outcome is not achieved. This doesn't mean that governments are not trying to help people; rather, it highlights the unintended economic consequences that such policies can have.

#### How Taxes Cause Deadweight Loss:

- **Market Distortion:** Taxes increase the price buyers pay and decrease the price sellers receive, leading to a reduction in the quantity of goods traded compared to a free market.
- **Reduced Trade:** Fewer transactions occur because the tax makes the good or service less affordable for consumers and less profitable for producers.
- **Loss of Total Surplus:** The decrease in transactions results in a loss of total surplus (the sum of consumer and producer surplus) that is not offset by any gain elsewhere in the economy. This loss is the deadweight loss.

#### How Price Controls Cause Deadweight Loss:





### How Price Controls Cause Deadweight Loss:

- **Price Ceilings (Maximum Prices):** Set below the market equilibrium price, they lead to shortages because the quantity demanded exceeds the quantity supplied.
- **Price Floors (Minimum Prices):** Set above the equilibrium price, they result in surpluses because the quantity supplied exceeds the quantity demanded.
- **Inefficient Allocation:** Resources are not allocated to their most valued uses, leading to wasted resources and lost economic efficiency.

### Government Intentions:

Governments implement taxes and price controls with the aim of achieving various social and economic objectives:

- **Redistribution of Income:** Taxes can fund public services and welfare programs that benefit society.
- **Correcting Externalities:** Taxes on goods like tobacco or carbon emissions aim to reduce negative externalities.
- **Protecting Consumers and Producers:** Price controls might make essential goods more affordable or ensure fair wages for workers.

### The Trade-Off:

While these policies aim to help, they can have side effects:

- **Efficiency vs. Equity:** There's often a trade-off between making the economy more efficient and making it more equitable.
- **Alternative Solutions:** Economists suggest that targeted subsidies or direct assistance might achieve social goals with less deadweight loss.



# Do taxes on alcohol cause deadweight loss?

## Balancing Deadweight Loss and Social Benefits

While taxes on alcohol do introduce deadweight loss by reducing market transactions, they also serve other important economic and social functions, which can offset or even outweigh the inefficiencies:

### 1. Internalizing Negative Externalities

Alcohol consumption is associated with various negative externalities, such as:

- **Health Costs:** Increased healthcare expenses due to alcohol-related illnesses.
- **Social Costs:** Expenses related to accidents, violence, and other social issues linked to excessive alcohol consumption.
- **Productivity Losses:** Reduced workforce productivity and increased absenteeism.

By imposing taxes on alcohol, governments aim to internalize these external costs, meaning that the price of alcohol more accurately reflects its true societal cost. This can lead to a more socially optimal level of consumption, potentially increasing overall welfare despite the deadweight loss.



# What Happened to Perfect Competition?

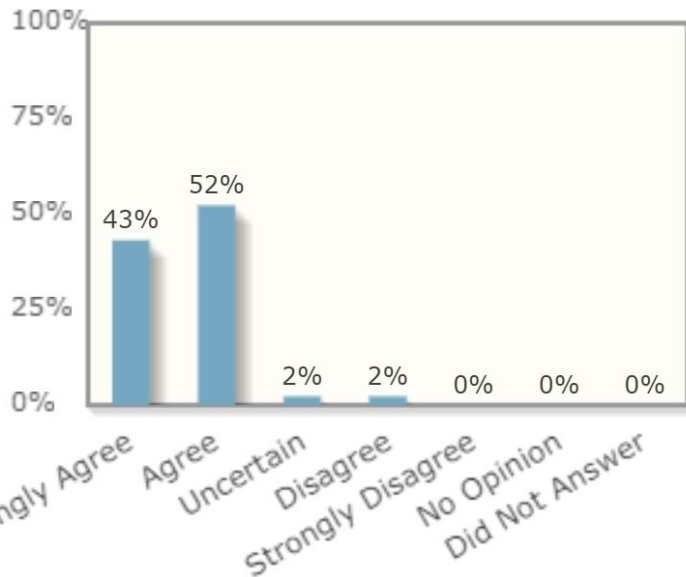
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# Economists Agree on What Happens to Prices When You Tax Something

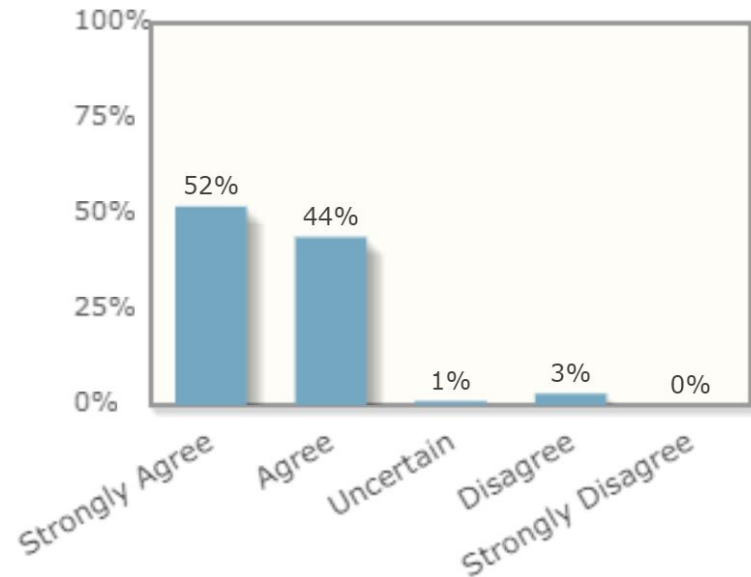
## Question B:

Imposing tariffs results in a substantial portion of the tariffs being borne by consumers of the country that enacts the tariffs, through price increases.

## Responses



## Responses weighted by each expert's confidence



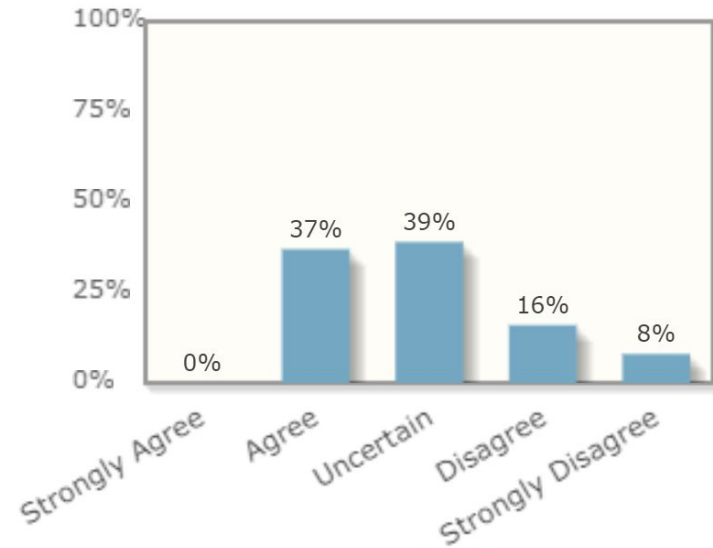
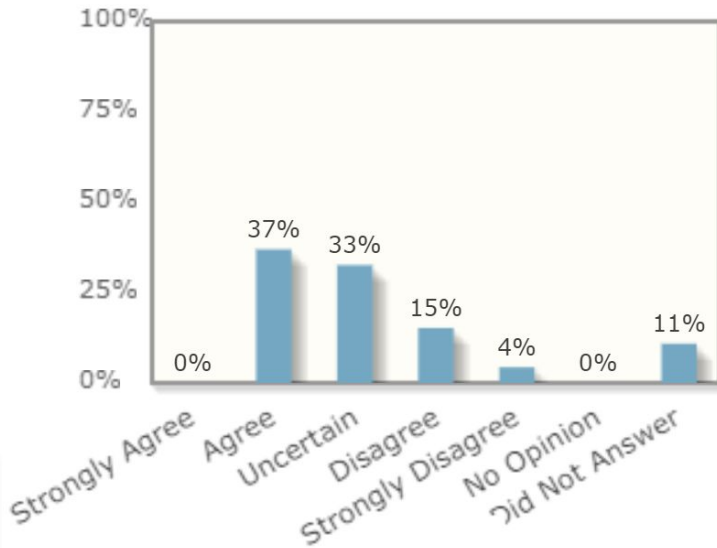
# We Have Less Confidence About What it Means for Jobs

## Question A:

Tripling existing import taxes on Chinese steel and aluminum products would lead to measurably higher employment in the US steel industry over the next five years.

## Responses

## Responses weighted by each expert's confidence

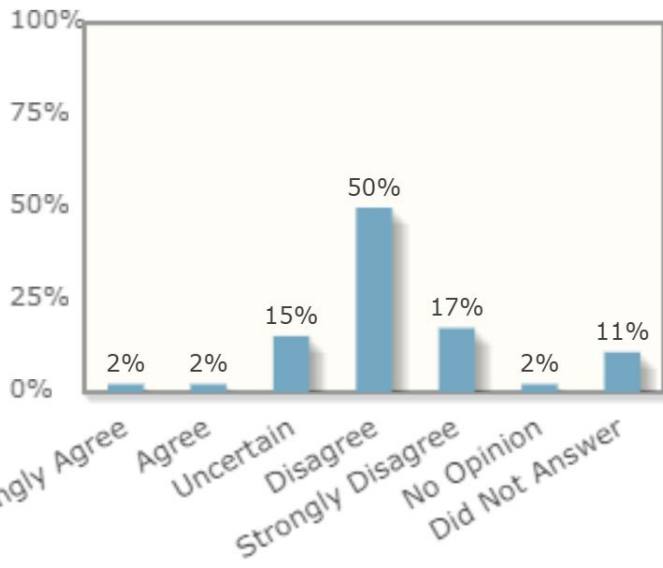


# And Welfare

## Question C:

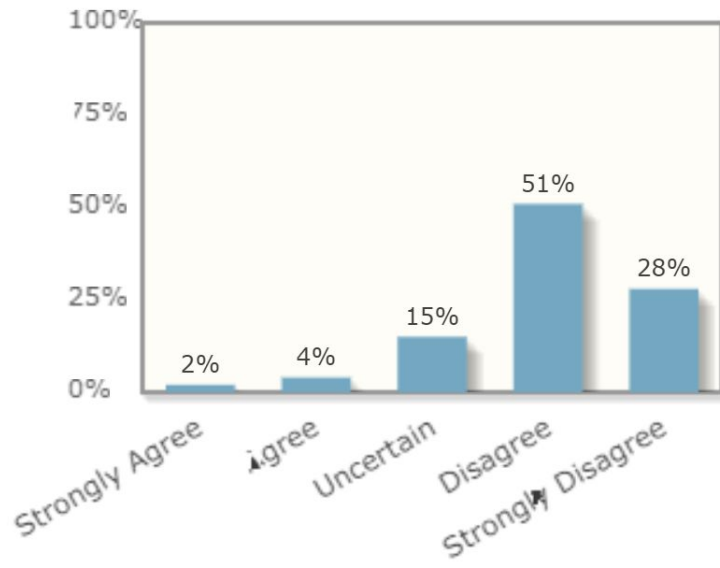
The gains for the American economy from tripling the tariffs would measurably outweigh the losses.

## Responses



© 2024. Kent A. Clark Center for Global Markets.  
Source: Clark Center Economic Experts Panel

## Responses weighted by each expert's confidence

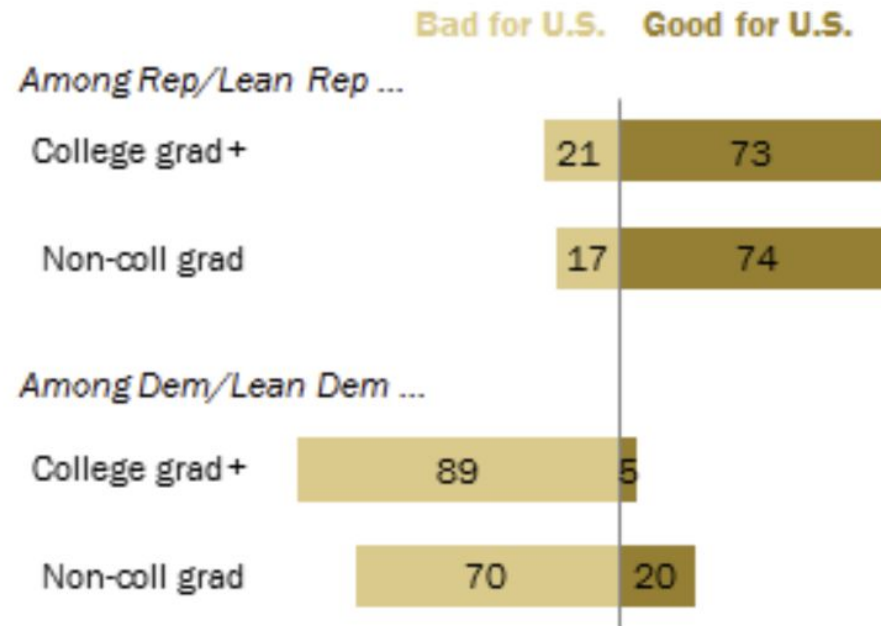


© 2024. Kent A. Clark Center for Global Markets.  
Source: Clark Center Economic Experts Panel

# Tax Incidence and Welfare Analysis Is Now Political

## Large share of Democrats with college degree say tariffs will be bad for U.S.

*% who think increased tariffs between the U.S. and some of its trading partners will be ...*



Note: Don't know responses not shown.

Source: Survey of U.S. adults conducted July 11-15, 2018.

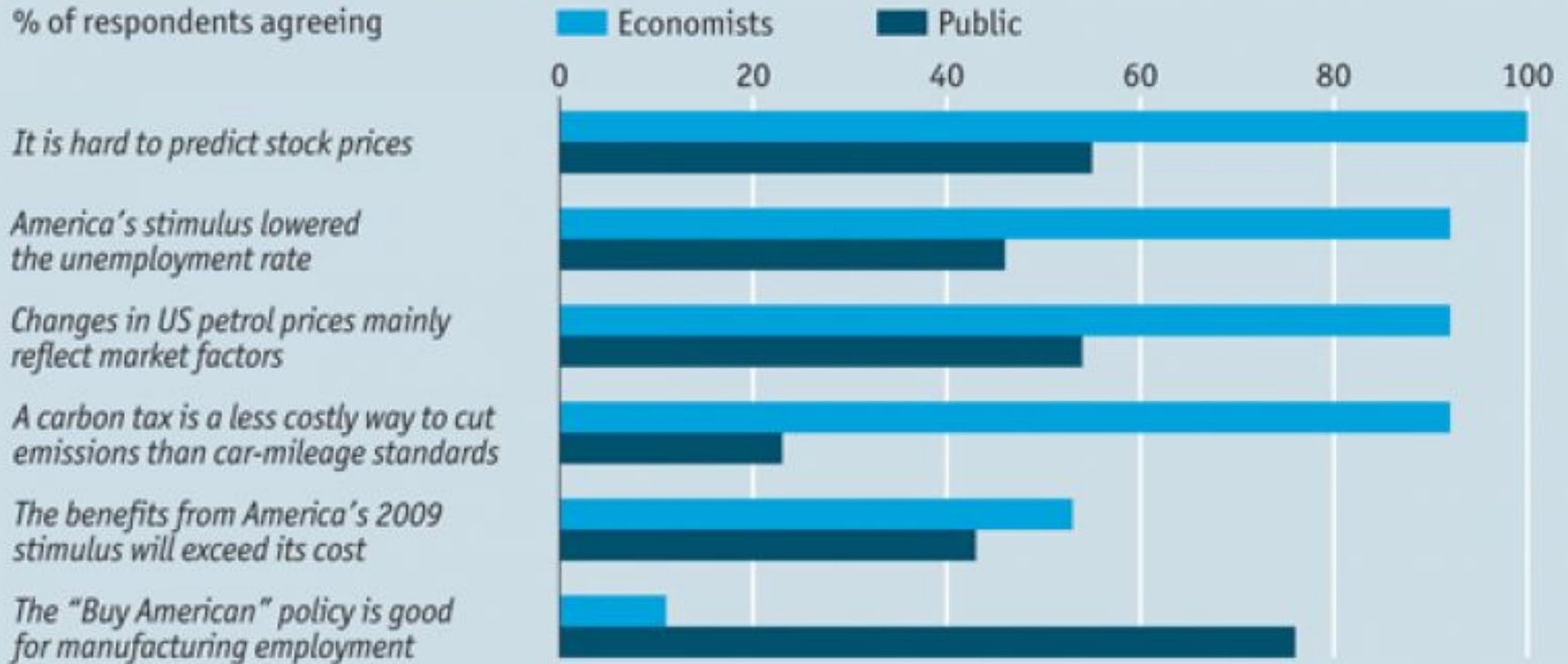
PEW RESEARCH CENTER

# People Don't Agree with Economists....

...And that's greatest when economists have consensus!

## Economists v rest of America

% of respondents agreeing

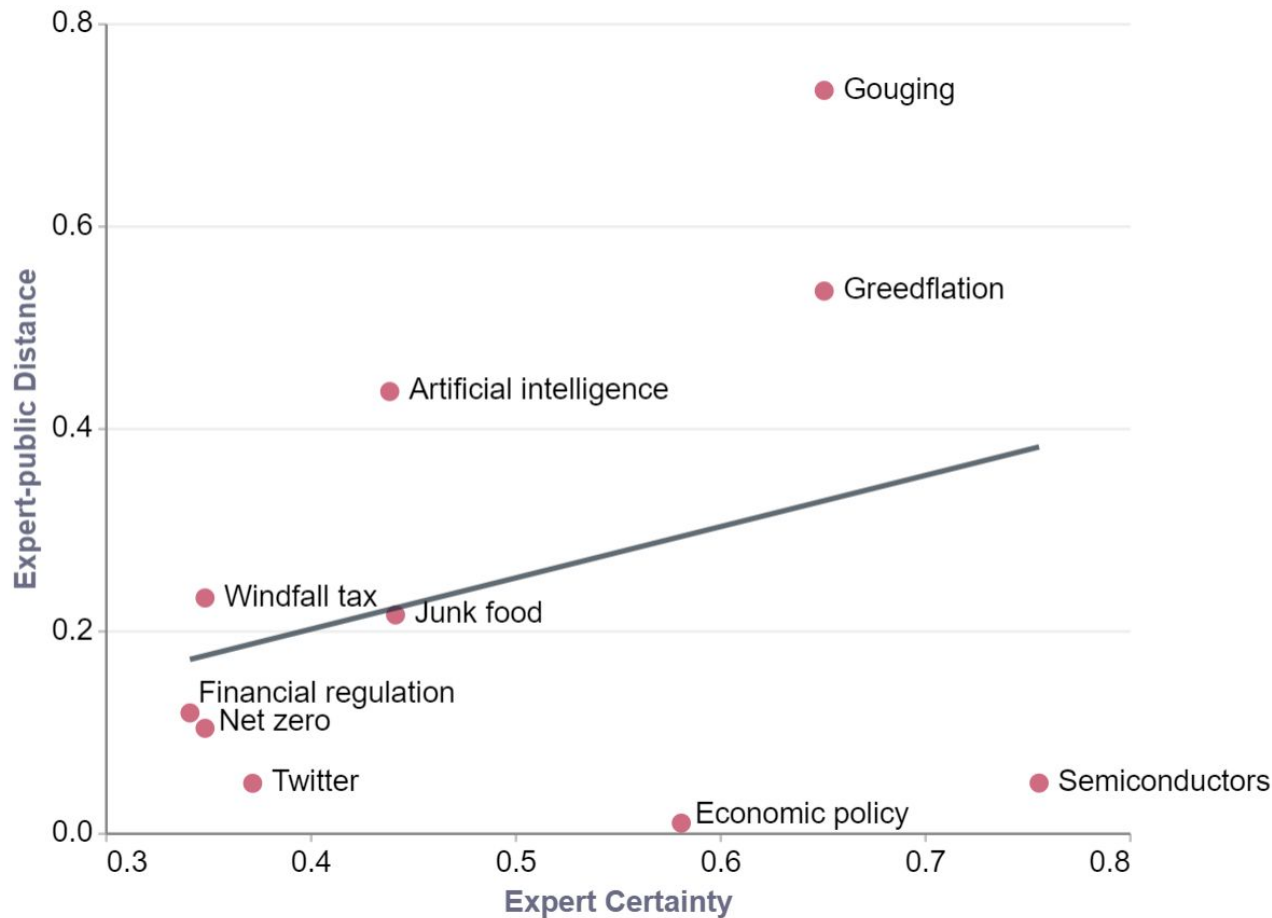


Source: "Economic Experts vs. Average Americans", by Paola Sapienza and Luigi Zingales, 2013



# Updated and The Same

Figure 1: Distance between expert and public opinions against levels of expert certainty



## *Why nobody trusts economists*

**Economics affects all our lives, but it can be hard to understand. Research shows that on certain topics, the opinions of economic experts are different from those held by a representative sample of members of the public. This highlights the need for better communication.**

# In Policy Debates Economists Are Losing the Public

The  
Economist

## Room with a view

### 'People Have Had Enough of Experts'

By **Sheila Dow**

FEB 6, 2017 | ECONOMIC HISTORY | HISTORY OF ECONOMIC THOUGHT | INCOME & WEALTH | GOVERNANCE | INSTITUTIONS, POLICY & POLITICS | REINTRODUCING ECONOMIC THEORY

*If economists agree on something, the public will almost certainly think differently*

Print edition | Finance and economics >



#### BUSINESS

## Should We Trust Economists?

They're fractious, frequently wrong, and have lost much of the public's faith. But their insights are still valuable -- as long as you don't expect them to predict the future.

**NOAH SMITH** JUN 4, 2013

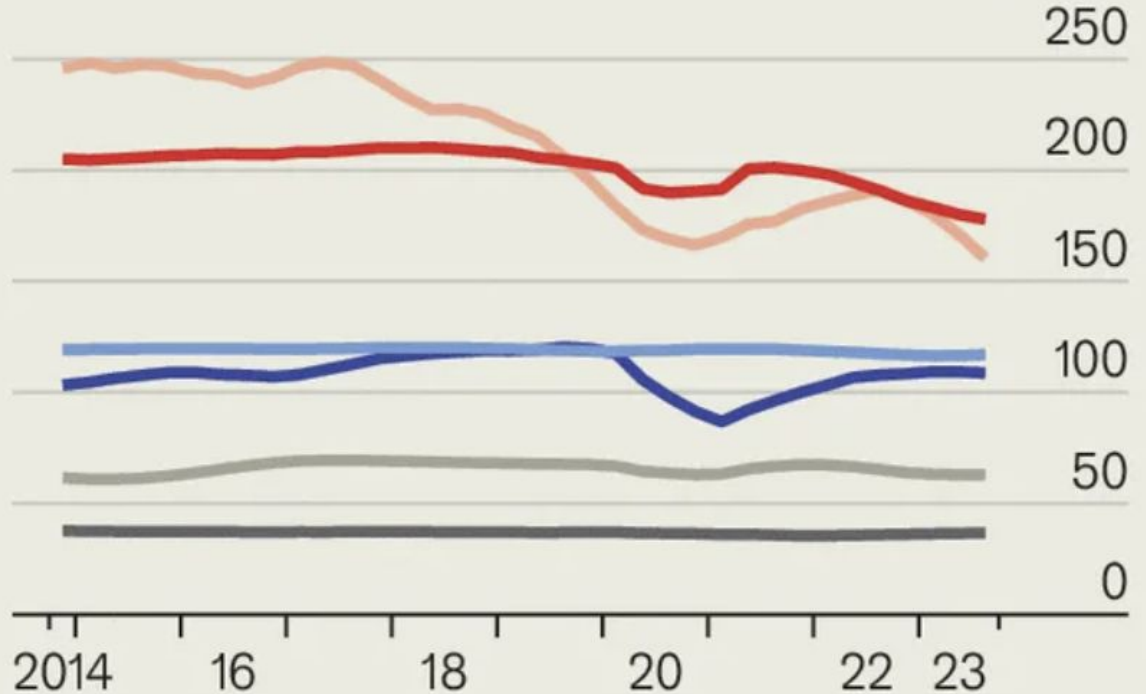
# Taxes Lead to Lower Quantities

## It's the carbon price, stupid!

1

EU greenhouse-gas emissions\*,  
m tonnes of CO<sub>2</sub> equivalent

- Manufacturing
- Electric & gas utilities
- Agriculture, forestry & fishing
- Transportation & storage
- Services<sup>†</sup>
- Water supply & waste management



\*Four-quarter moving average †Excluding transportation & storage

Source: Eurostat

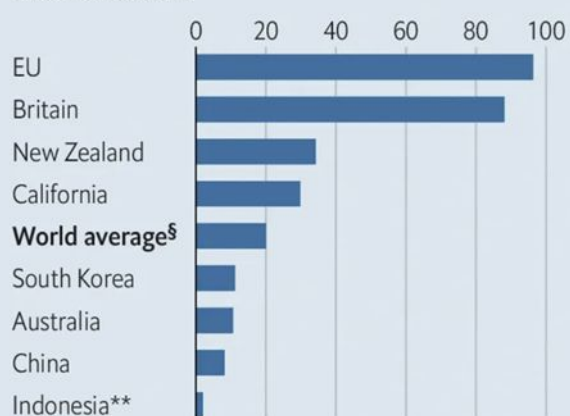
### Carbon-pricing initiatives\*

% of greenhouse-gas emissions covered



### ETS<sup>‡</sup> carbon price, March 2023, \$ per tonne

Selected schemes



\*Regional, national and subnational †Forecast  
<sup>‡</sup>Emissions-trading system <sup>§</sup>IMF estimate \*\*2021 pilot  
 Source: World Bank

# Some Blame is Landing on 101: The Rise of 101ism

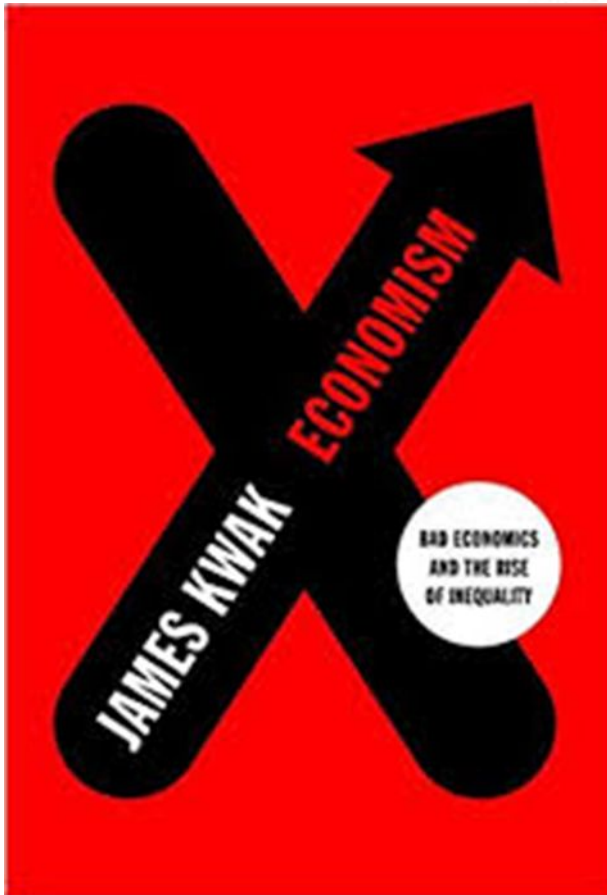
View

## The Ways That Pop Economics Hurt America

A new book suggests that Econ 101 helped advance a rigid and potentially harmful free-market agenda.

by Noah Smith

July 19, 2017, 8:30 AM EST



Washington Center  
for **Equitable Growth**  
*Evidence for a stronger economy*

INSIGHTS & EXPERTISE	ENGAGE	ELEVATING RESEARCH	WHO WE ARE	SEARCH <input type="text"/>
COMPETITION	FAMILIES	INEQUALITY & MOBILITY	LABOR	CONNECT WITH AN EXPERT   EVENTS   GET UPDATE

Must-read: Noah Smith: Thesis: Economics and Econ 101ism



# More Broadly Some Suggest that We Need to Change Teaching

Economics

## Five things economists can do to regain trust

The Bank of England's chief economist has admitted errors in its Brexit forecast - how can the profession get out of its crisis?

Katie Allen and Phillip Inman

Fri 6 Jan 2017 06.49 EST



97 423



# The Guardian

### 5. Shake up economics teaching

There is a movement inside universities to move away from a purely mathematical view of the economy. Students have become increasingly uneasy with the focus on equations to judge how the economy operates.

Equations are expected to balance, but according to Steve Keen, professor of

# Do Students Need This?

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- Economics majors in their senior year can't pass a basic economic literacy test and barely do better than non-economic majors
  - Allgood, S. & Walstad, W. B. What Do College Seniors Know about Economics? [American Economic Review](#), 1999 89 (2), 350-354
- Economics students come into the classroom with preconceived ideas about economic policy like zoning laws, minimum wages, tax policy. Their views are largely unmoved by their economics class and often contradict the answers given on exams.
  - Busom, I, Lopez-Mayan, C, & Panadés, J (2017) Students' persistent preconceptions and learning economic principles, *The Journal of Economic Education*, 48:2, 74-92
- Economics majors take away “rational” to mean selfish and the normative view that it is “better”. Conclusion: Students become less cooperative members of society after taking economics.
  - Frank, R. H., Gilovich, T. & Regan, D. T. Does Studying Economics Inhibit Cooperation? *J. Econ. Perspect.* **7**, 159-171 (1993).
  - Frank, B. & Schulze, G. G. Does economics make citizens corrupt? *J. Econ. Behav. Organ.* **43**,101-113 (2000).



## Are We Guilty?

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- Let's start by asking if we're guilty as charged:

“With Econ 101 as the default lens through which everyone views the world, Kwak argues, government programs and regulations start to seem dangerous and inefficient”

# Is Perfect Competition the Right Starting Point?

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- Federal excise taxes in the US:
  - Tobacco
  - Alcohol
  - Gas
  - Airport and airway trust fund (pays for the FAA and airports)
- Do these taxes discourage any mutually beneficial transactions?
- Maybe. It depends on the balance between market failure and government failure. When we teach the deadweight loss here, we start by saying that the market has gotten these externalities right.

# Sometimes We Even Teach Things that Are Wrong

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R. GLENN  
**HUBBARD**  
ANTHONY PATRICK  
**O'BRIEN**



**Economics**  
SIXTH EDITION

- “Unfortunately, *whenever* the government imposes a price ceiling, a price floor, or a tax there are *predictable negative economic* consequences. It is important for government policymakers and voters to understand these negative consequences when evaluating the effects of these policies.
- Economists have developed the concepts of consumer surplus, producer surplus, and deadweight loss to help policymakers and voters analyze the economic effects of price ceilings, price floors, and taxes”

# Positive Versus Normative Analysis of Government

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- When you take a position at the beginning that the government is always doing harm what you are teaching doesn't match most students experience or prior beliefs
- So why should they believe you that government intervention changes quantities and prices (which it always does) if they don't believe you that it always prevents otherwise beneficial trades?
- While deadweight loss is a positive analysis, the claim that government always causes deadweight loss is a normative statement.

## Similar arguments in the media

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- “Every time studies show that tax cuts don’t do much to encourage investment, or that the impact of minimum wage hikes is modest, the public loses a little faith in the power of traditional Econ 101.” –Noah Smith in Bloomberg

# How Can We Do It Better?

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- Deadweight loss arises whenever a quantity difference from the socially efficient quantity arises
- We shouldn't put a value judgement in 101 by teaching deadweight loss through government only
- In reality, any form of market failure (including government failure) can cause deadweight loss
- Is it too complicated? NO! By simply naming up front the ways in which markets don't get it right, students will **recognize** the world in your description and they will **trust** what you want to teach more
  - Studies show that children find it easier to learn new things when its in a context that they recognize. Making the world more realistic is a context that students recognize.

# Market Failure

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- Our supply and demand curves represent well-functioning markets with perfect competition.
- In reality, few markets are perfectly competitive.
- **Market failure:** When the forces of supply and demand lead to an inefficient outcome.





# Market Failure is Common

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1. Firms are not always price-takers.
  - Problem of market power
2. There are side effects on others
  - Problem of externalities
3. People are not always well informed
  - Problem of asymmetric information
4. People make bad choices
  - Problem of irrationality
5. Government regulations impede market forces
  - Problem of government failure



# Economic Efficiency and Deadweight Loss

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□ An **efficient** outcome creates the largest possible economic surplus.

□ **Deadweight loss:** Measures how far economic surplus falls below the efficient outcome.

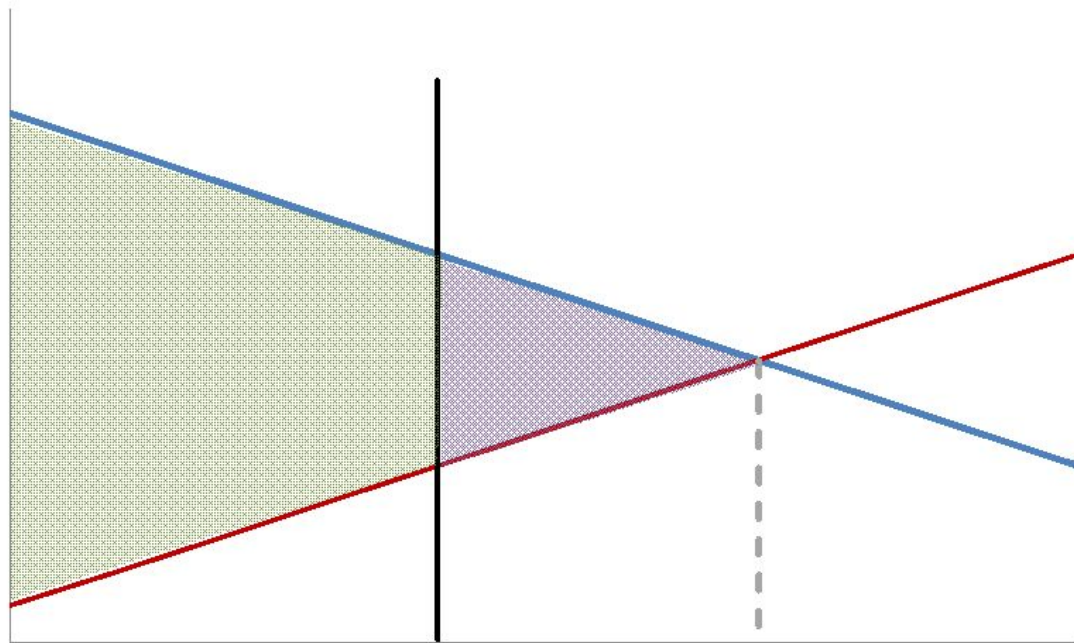
*= Economic surplus at the efficient outcome*

*Minus*

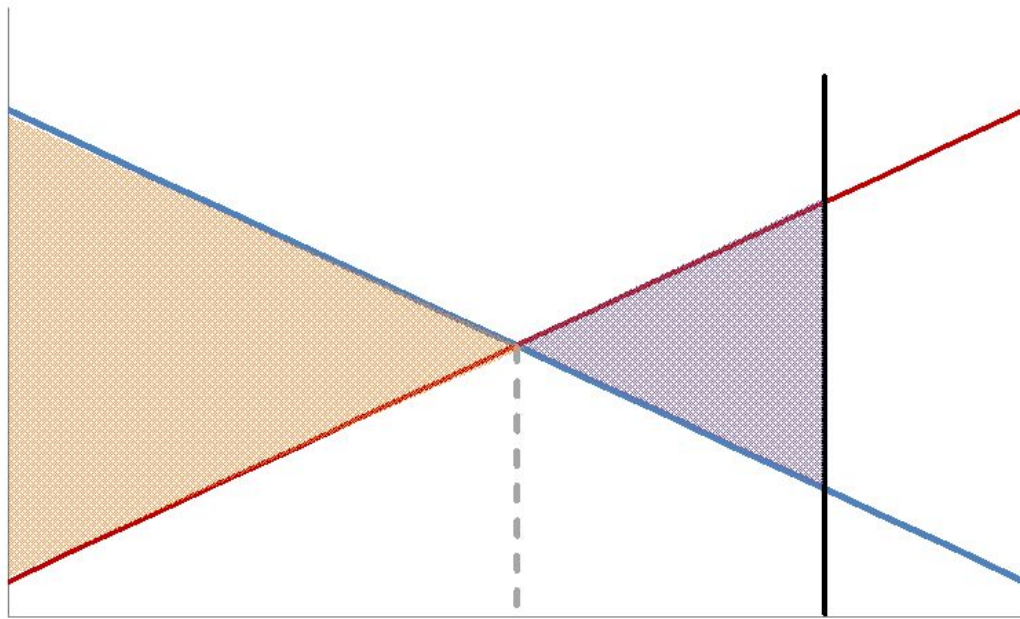
*Actual economic surplus*

□ Measures the cost of inefficiency

# The deadweight loss of underproduction



# The deadweight loss of overproduction

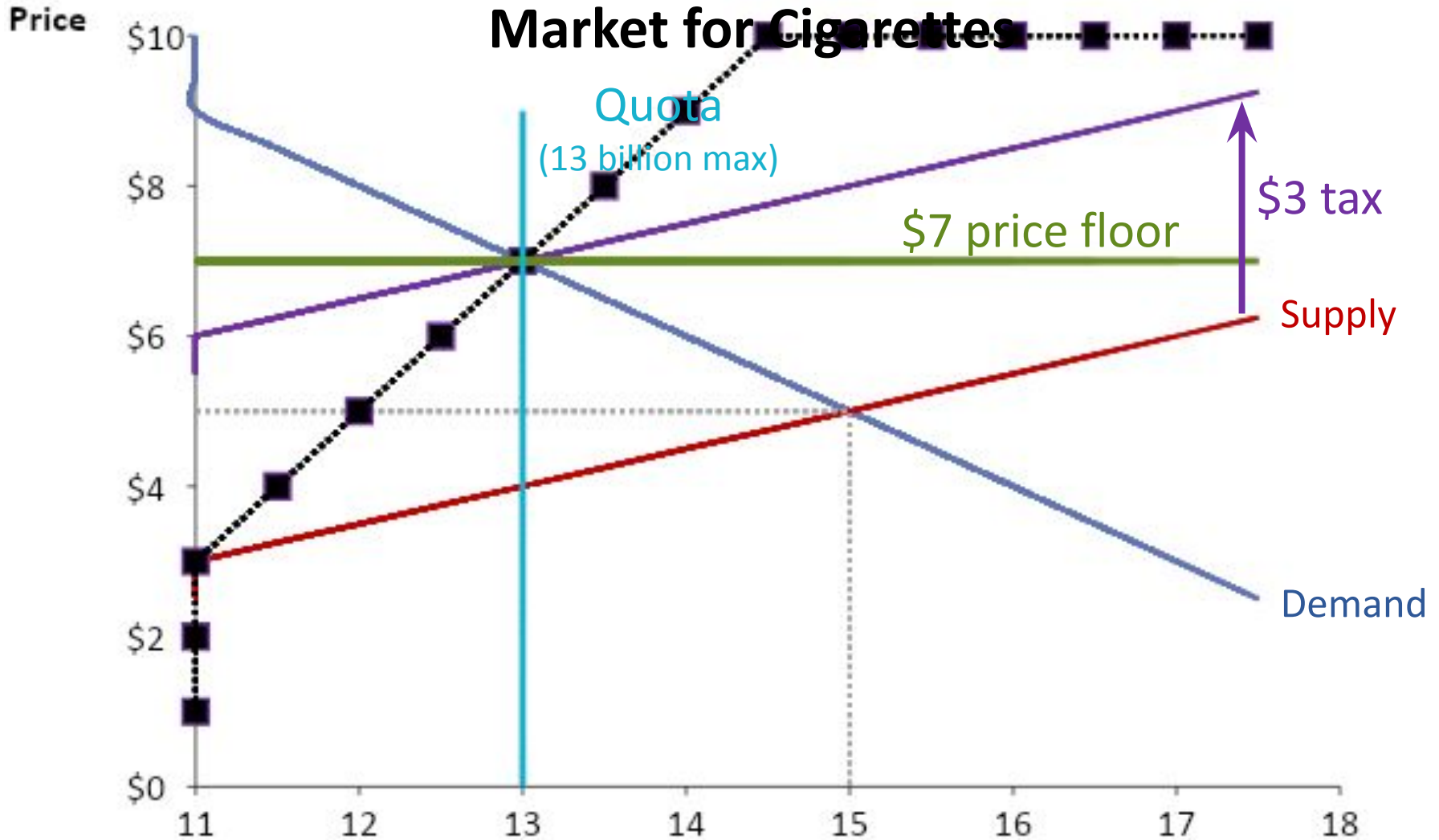


# So what about teaching government intervention?

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- What do you want students to take away from a lesson on government intervention?
- My goal is four things:
  1. Government can't determine both price and quantity in a market
  2. Market forces respond to the incentives that government creates
  3. Government can't really "assign" a tax to one side of the market because prices adjust
  4. All the tools available to government policy makers—taxes, price regulations, and quantity regulations—can achieve a particular governmental goal like reducing the quantity consumed in a market

# Three Tools to Shape Outcomes



# Three Tools to Shape Outcomes

	Tax increase	Price floor	Quantity quota
<b>Quantity</b>	Decreases to 13bn	Decreases to 13bn	Decreases to 13bn
<b>Price paid by buyers</b>	Rises to \$7	Rises to \$7	Rises to \$7
<b>Price received by sellers</b>	Falls to \$4	Rises to \$7	Rises to \$7
<b>Tax received by government</b>	\$3 tax × 13bn packs	\$0	\$0

Explains the politics of government regulation



Debate about carbon tax (tax solution) versus cap and trade (quantity restriction)



# Conclusion

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- The first question of public finance is “Why should the government be involved?” It’s also a question that people ask themselves when they hear of a proposed policy.
- Our examples of government intervention are ones that exist in the real world—gas taxes, zoning laws, cigarette taxes, minimum price for alcohol, plastic bag tax—all of these government policies are responding to a market failure
- We can be more successful convincing the public (and our students) to believe economists if we teach an economics that they recognize to be true
- This idea should also inform how we teach market power (modern IO has come a long way and given us new tools to use in the 101 classroom!), business cycles, unemployment, and more

# Quantity Regulation

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- A **quota** is a **maximum** quantity of a good that can be bought or sold.
- Examples of quotas
  - **Zoning laws**
    - Restrict number of houses
  - **Immigration laws**
    - Restrict number of workers
  - **Anti-polygamy laws**
    - Restrict number of spouses
  - **Environmental regulation**
    - Restricts emissions
  - **Marijuana regulation**
    - Restricts amount people can buy
- A **mandate** is a **minimum** amount of a good that can be bought or sold.
- Examples of mandates
  - **Low-income housing**
    - Requires some production
  - **Health care**
    - Requires consumers to purchase
  - **Car Insurance**
    - Requires drivers to purchase
  - **Environmental regulation**
    - Requires emission standards
  - **Corporate board of directors**
    - Requires women representation