

# MARKET FAILURES

PMAP 8141: Economy, Society, and Public Policy

October 31, 2019

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on iCollege!*

# PLAN FOR TODAY

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**Markets and institutions**

**Trading and prices**

**Public goods**

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**External effects**

**Addressing external effects**

# MARKETS AND INSTITUTIONS

# What is a market?

An institution used for organizing society

“A way of connecting people who may mutually benefit by exchanging goods or services through a process of buying and selling.”

**What is the  
free market?**

# Can markets be used to govern anything?

Firms?

Governments?

Nonprofits?

Families?

# Neoliberalism

“an ideology that rests on the assumption that individualized, arms-length market exchange can serve as a metaphor for all forms of human interaction”

<https://tompepinsky.com/2013/12/04/defining-neoliberalism/>

**Should markets do everything?**

# ARGUMENTS AGAINST MARKETS

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Other institutions more effective and equitable

Intrinsic crowding out

Repugnant markets

# REPUGNANT MARKETS

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**Stuff that shouldn't be exchanged in a market because doing so violates norms**

Organs

Babies

People

Votes

Cadavers

Horse meat

# ARGUMENTS AGAINST MARKETS

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Other institutions more effective and equitable

Intrinsic crowding out

Repugnant markets

Merit goods

# MERIT GOODS

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**Stuff that everyone should get automatically outside of markets because of norms**

Education

Security

Healthcare

Transportation

Culture

# ARGUMENTS AGAINST MARKETS

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Other institutions more effective and equitable

Intrinsic crowding out

Repugnant markets

Merit goods

# TRADING AND PRICES

# ARGUMENTS FOR MARKETS

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**They are great at producing and distributing goods and services**

**They are great at allowing for specialization**

# **Avocados and olive oil**

# SPECIALIZATION + TRADE

## **Comparative advantage**

Opportunity cost is lower than other party's

## **Absolute advantage**

Cost is lower for one party

# GAINS FROM TRADE

**Expanded PPF**

Both parties can do more; allows for more growth

**Fairness though...**

# ARGUMENTS FOR MARKETS

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**They are great at producing and distributing goods and services**

**They are great at allowing for specialization**

**Through prices, markets send signals about scarcity**

# PRICES ARE MESSAGES

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**“When markets work well, prices send messages about the real scarcity of goods and services”**

Prices coordinate activity and behavior among complete strangers

# PRICES ARE MESSAGES

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Friedrich Hayek

**We all make decisions  
based on information**

**Markets produce prices**

**Prices guide our decisions**

**We don't need to know about all  
global economic and political trends!**

**Prices are all someone needs to know to take action in an economy**

# MESSAGES OF WHAT?

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**Prices shape what we consume**

Seasonal fruit; droughts, floods, wars

**Prices shape production  
and innovation**

US Civil War and cotton

McRib, Extra Most Bestest, HFCS

**How should  
prices be set?**

**What happens if prices  
are systematically wrong?**

# When prices do not capture the effects of individual actions, markets fail

Public goods

Externalities

Monopolies

Missing markets

Asymmetric information

# PUBLIC GOODS

# PUBLIC GOODS

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## Excludable

You can stop people  
from using it

## Rival

You using it makes it so  
others can't use it

# PUBLIC GOODS

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	Excludable	Not excludable
Rival	Private goods/bads	Common Pool Resources
Not rival	Club goods	Public goods/bads

# RIVALRY AND EXCLUDABILITY

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A free public lecture held at a university

Noise produced by aircraft around an airport

A forest used by the community  
to collect firewood

*Hamilton* tickets

A public park

Bird/Lime/Uber scooters

# PUBLIC GOODS ARE TRICKY

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Public goods are underprovided

Public goods are a multi-party  
game theory dilemma

Free riding and hare hunting

Public goods are  
positive externalities

# EXTERNAL EFFECTS

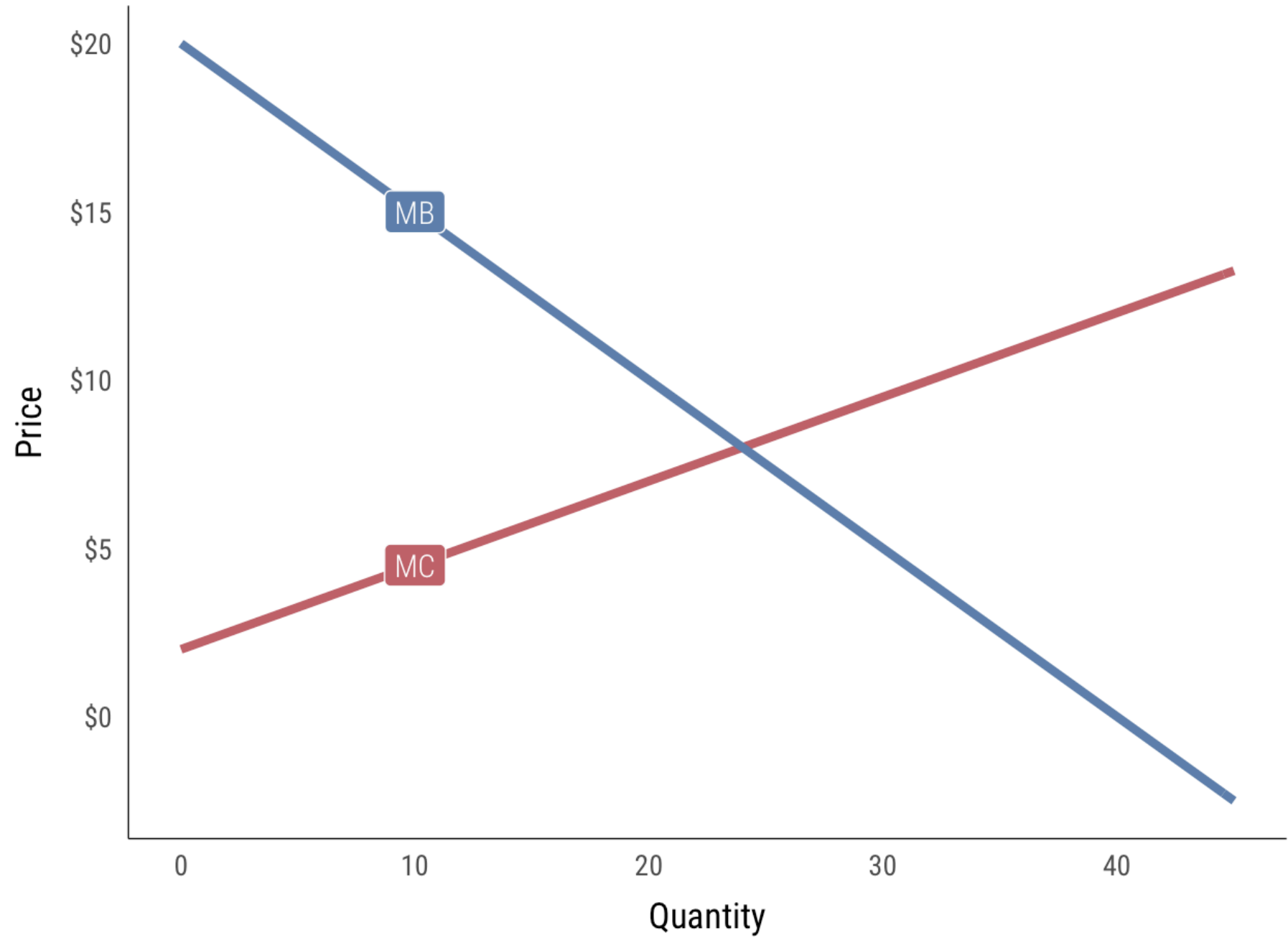
# EXTERNAL EFFECTS

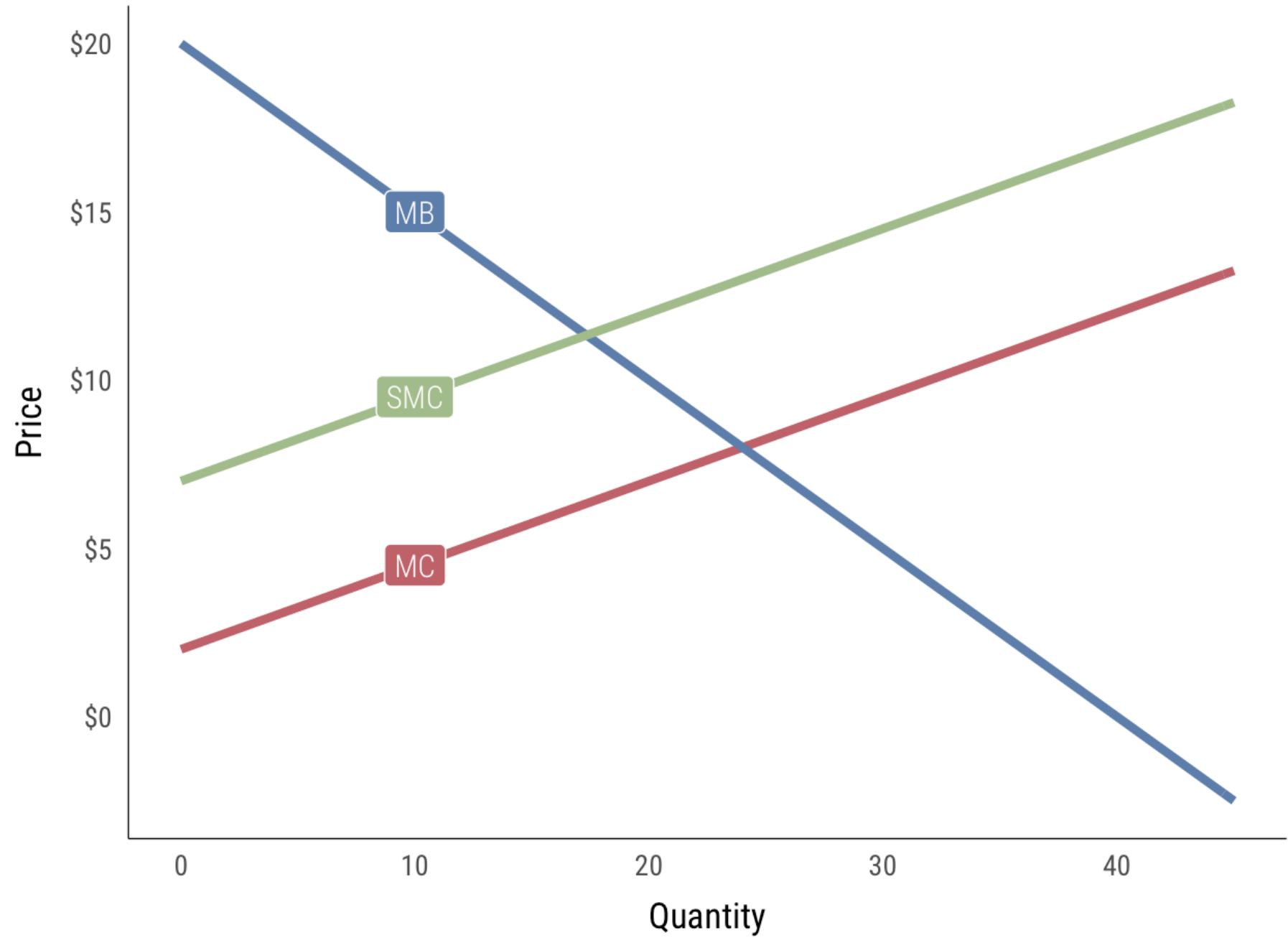
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(aka externalities)

**A cost or benefit to  
someone who did not  
choose that cost or benefit**

**Social marginal cost/benefit**







# **EXAMPLES**

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**Pollution**

**Vaccinations**

**Cell phones and driving**

**Car alarms**

**Internet bandwidth**

**Research**

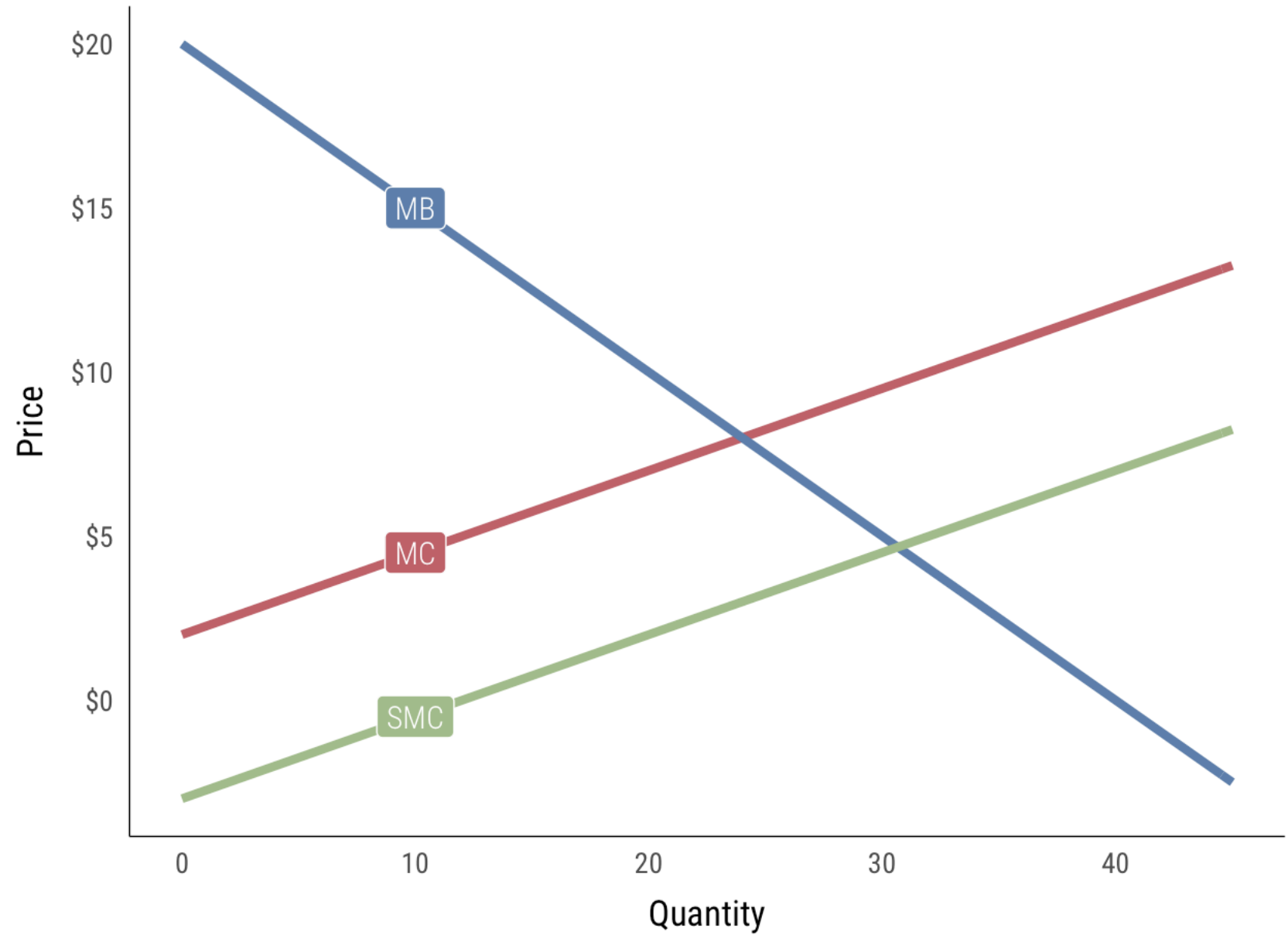
**Education**

# Positive production effects

SMC *below* MC

Basic research

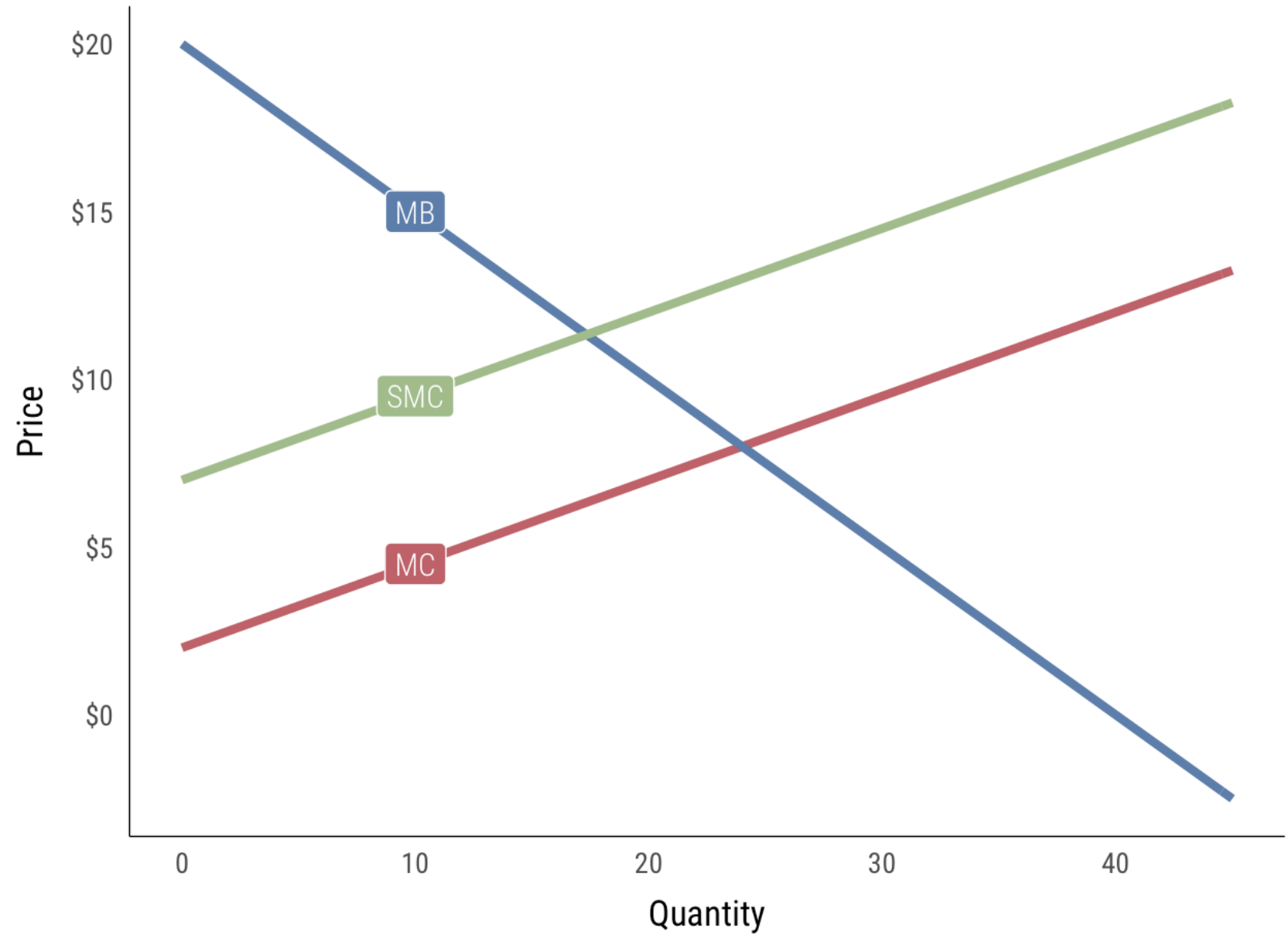
NSF, NIH, NEA



# Negative production effects

SMC *above* MC

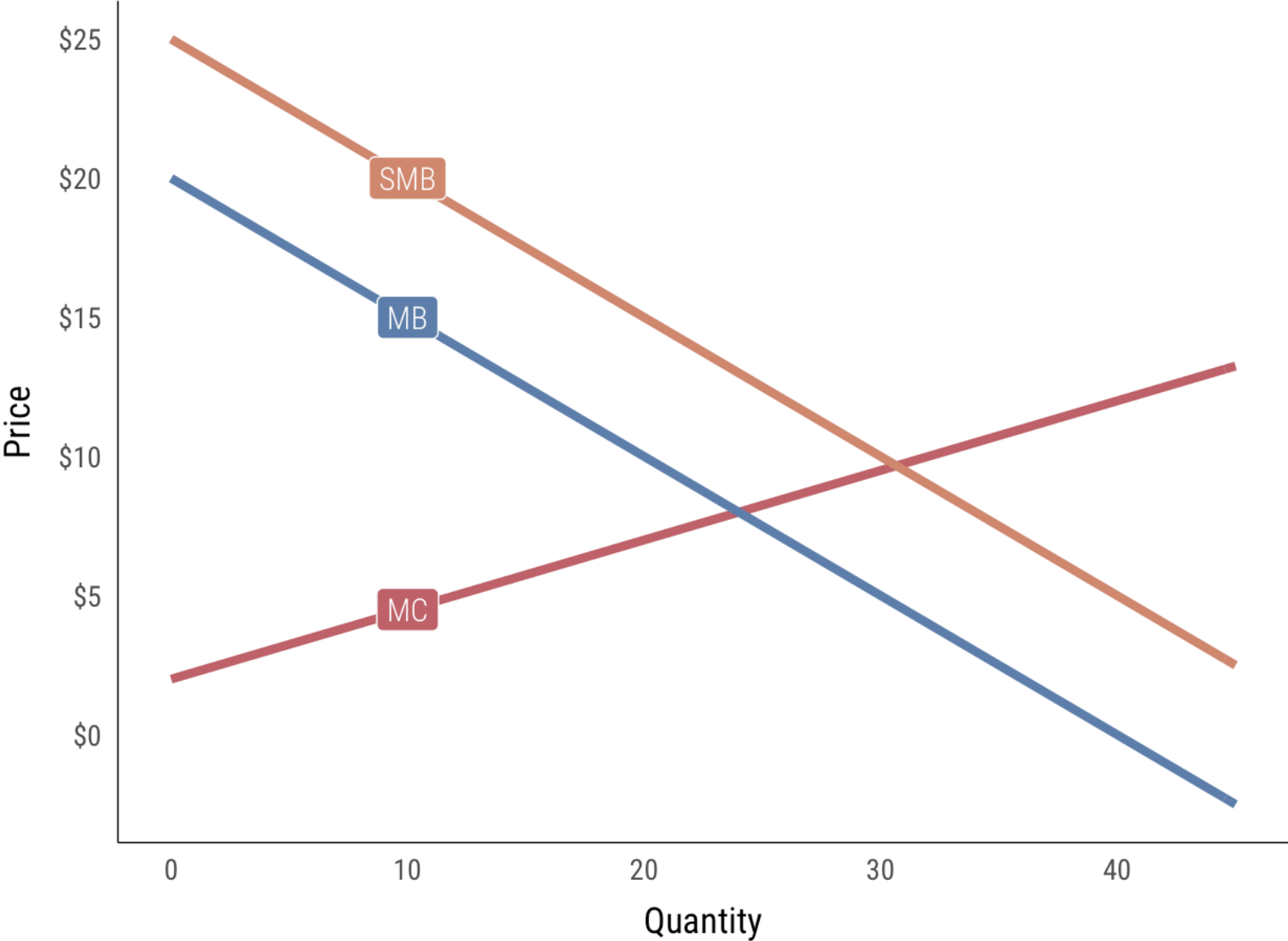
Pollution



# Positive consumption effects

SMB *above* MB

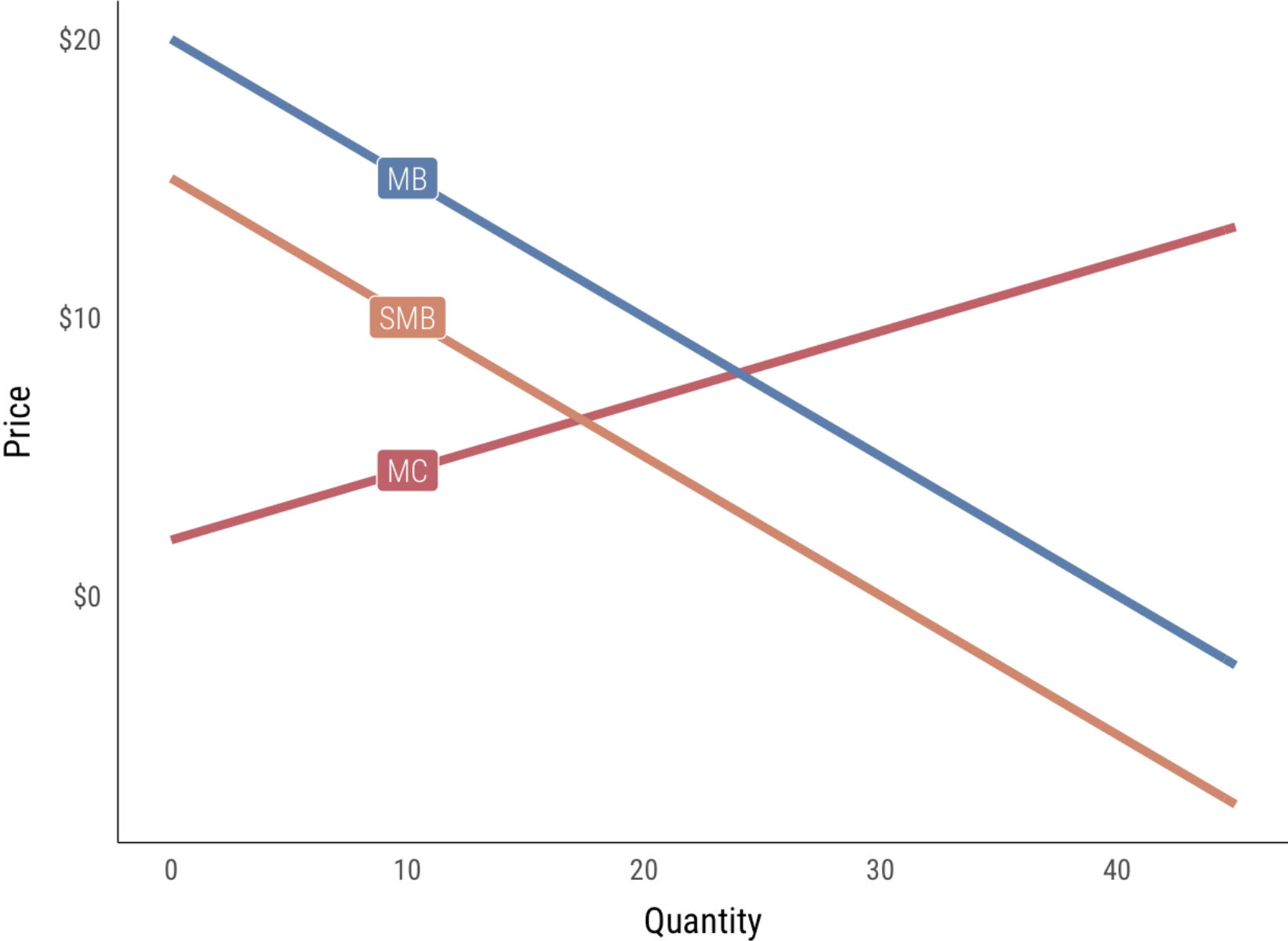
Car alarms



# Negative consumption effects

SMB *below* MB

International  
airline travel



# EQUITY AND FAIRNESS ISSUES

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Environmental Research Letters

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LETTER • **OPEN ACCESS** • **IOPSELECT**

## Which came first, people or pollution? Assessing the disparate siting and post-siting demographic change hypotheses of environmental injustice

Paul Mohai<sup>1,3</sup> and Robin Saha<sup>2</sup>

Published 18 November 2015 • © 2015 IOP Publishing Ltd

[Environmental Research Letters](#), [Volume 10](#), [Number 11](#)

[Focus on Environmental Justice: New Directions in International Research](#)

# Inequity in consumption of goods and services adds to racial-ethnic disparities in air pollution exposure



Christopher W. Tessum, Joshua S. Apte, /  
Kimberley A. Mullins, David A. Paoella, S  
Sumil K. Thakrar, Julian D. Marshall, and

PNAS published ahead of print March 11, 2019 [http://](#)

Edited by Susan Hanson, Clark University, Worcester  
(November 2, 2018)

Fine particulate matter (PM<sub>2.5</sub>) air pollution exposure is the largest environmental health risk factor in the United States. Here, we link PM<sub>2.5</sub> exposure to the human activities responsible for PM<sub>2.5</sub> pollution. We use these results to explore “pollution inequity”: the difference between the environmental health damage caused by a racial-ethnic group and the damage that group experiences. We show that, in the United States, PM<sub>2.5</sub> exposure is disproportionately caused by consumption of goods and services mainly by the non-Hispanic white majority, but disproportionately inhaled by black and Hispanic minorities. On average, non-Hispanic whites experience a “pollution advantage”: They experience ~17% less air pollution exposure than is caused by their consumption. Blacks and Hispanics on average bear a “pollution burden” of 56% and 63% excess exposure, respectively, relative to the exposure caused by their consumption. The total disparity is caused as much by how much people consume as by how much pollution they breathe. Differences in the types of goods and services consumed by each group are less important. PM<sub>2.5</sub> exposures declined ~50% during 2002–2015 for all three racial-ethnic groups, but pollution inequity has remained high.

# ADDRESSING EXTERNAL EFFECTS

# GENERAL PROBLEM WITH EXTERNALITIES

**Someone isn't paying enough**

# SOLUTION TO ALL EXTERNALITY PROBLEMS

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**Internalize the externality**

Make SMC/SMB part of the equation so that the price fully reflects the external costs and benefits of a party's actions

# Parking Is Hell (Ep. 118)

March 13, 2013 @ 6:47pm  
by Katherine Wells



LISTEN NOW:



ART19



00:00 / 35:12



**Private sector solutions**

**Public sector solutions**

**Market-ish solutions**

# Private sector solutions

Merging and acquiring

Natural governance

Coasian bargaining

# M E R G I N G   A N D   A C Q U I R I N G

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**The polluting firm buys  
the downstream firm  
(or vice versa)**

What gets internalized?

# NATURAL GOVERNANCE

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**Buyers or producers fix and  
govern the externality on their own**  
(invisible hand)

What gets internalized?

# COASIAN BARGAINING

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**Use private property +  
negotiations to fix everything**



Ronald Coase

# COASIAN BARGAINING

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"My favorite example of the Coase Theorem in action relates to airline seats. **A lot of people like to complain about airline passengers who recline, taking away precious knee-room. But Coase would have said there's a simple solution to this problem:** pay the person in front of you not to recline. If you value your knee space more than he values the option to lean back, the seat will stay upright where it belongs. There's no need for the government, or the airline, to intervene to protect your knees."

# COASIAN BARGAINING

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Coase Theorem part #1

**Property rights + bargaining  
= everything is fixed**

Coase Theorem part #2

**It doesn't matter who  
has the property rights**

# WHO SHOULD PAY?

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**Person reclining or person behind them?**



**Chris Wilson** ✓

@WilsonWPA

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Monsters @outsidemagazine



#### Stop Reclining Your Seat on Airplanes

There's one thing I hate about flying, and it's not the overpriced tickets or the baby crying three rows ahead of me in economy class.

[outsideonline.com](https://outsideonline.com)

2:52 PM - 18 Mar 2019



**Josh Barro** ✓

@jbarro

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If you're not supposed to recline the  
seat, why do they give you a button for  
reclining the seat, and why do they  
specify particular times at which  
reclining is prohibited?

**Chris Wilson** ✓ @WilsonWPA

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Seats Are Monsters @outsidemagazine [outsideonline.com/2391763/stop-r](https://outsideonline.com/2391763/stop-r)

...

3:23 PM - 18 Mar 2019

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# WHO SHOULD PAY?

**Person reclining or person behind them?**

**Parking lot owners or drivers?**

**Factories or fishermen?**

**Government or downwinders?**

# WHO SHOULD PAY?

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## THE RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT (1992)

### PRINCIPLE 16

National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

**Is the “polluter pays” principle fair?**

# BUT THERE ARE PROBLEMS...

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## Assignment

Who gets blamed and who pays?

## Holdouts

One person can veto

## Free riders

Individuals will underinvest

## Transaction costs

Negotiations are hard and costly

# COASIAN BARGAINING

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**Great for small-scale, localized externalities that are trackable**

**Good luck fixing global climate change or curing cancer**

# Public sector solutions

Regulations

Pigouvian taxation

Pigouvian subsidies

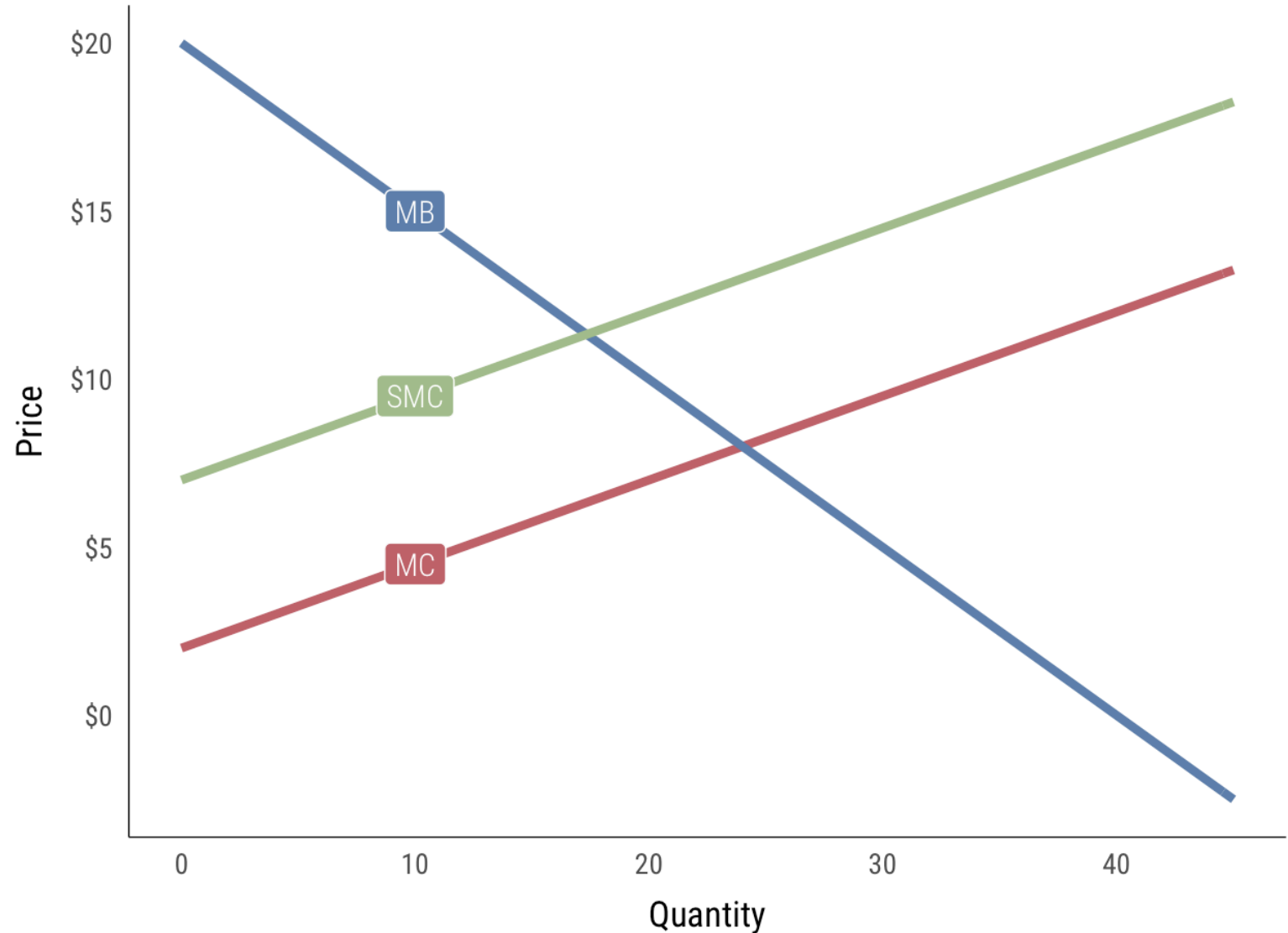
# REGULATIONS

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Use laws to limit Q

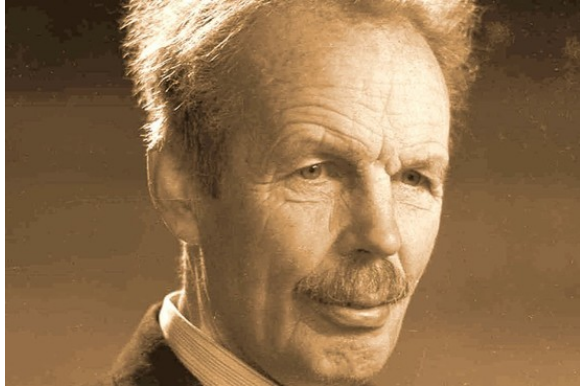
Shift MC  $\uparrow$  to SMC

Reduce Q and DWL



# PIGOUVIAN TAXATION

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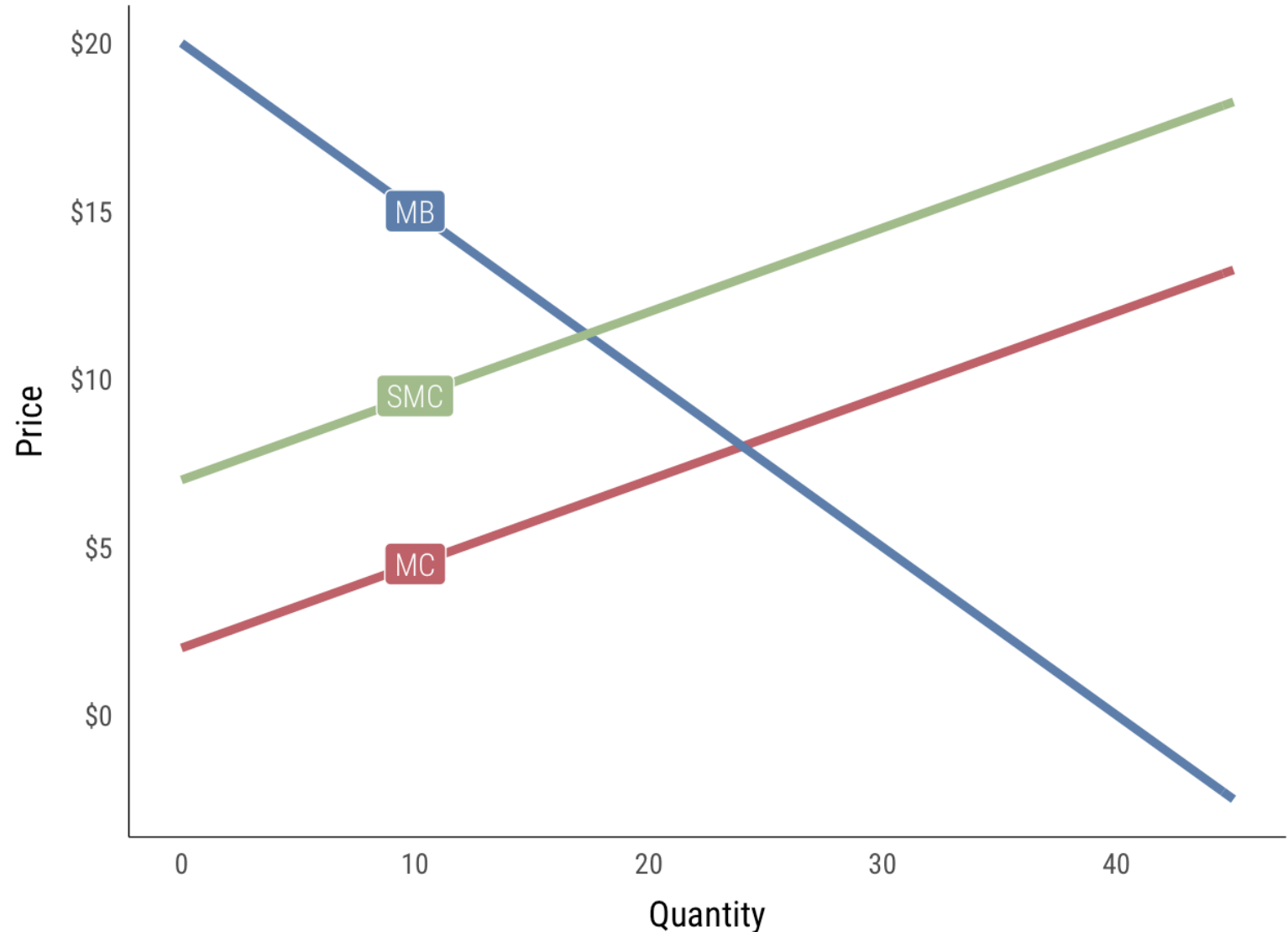


Arthur Pigou

**Tax amount of damage**

**Shift MC  $\uparrow$  to SMC**

**Reduce Q and DWL**



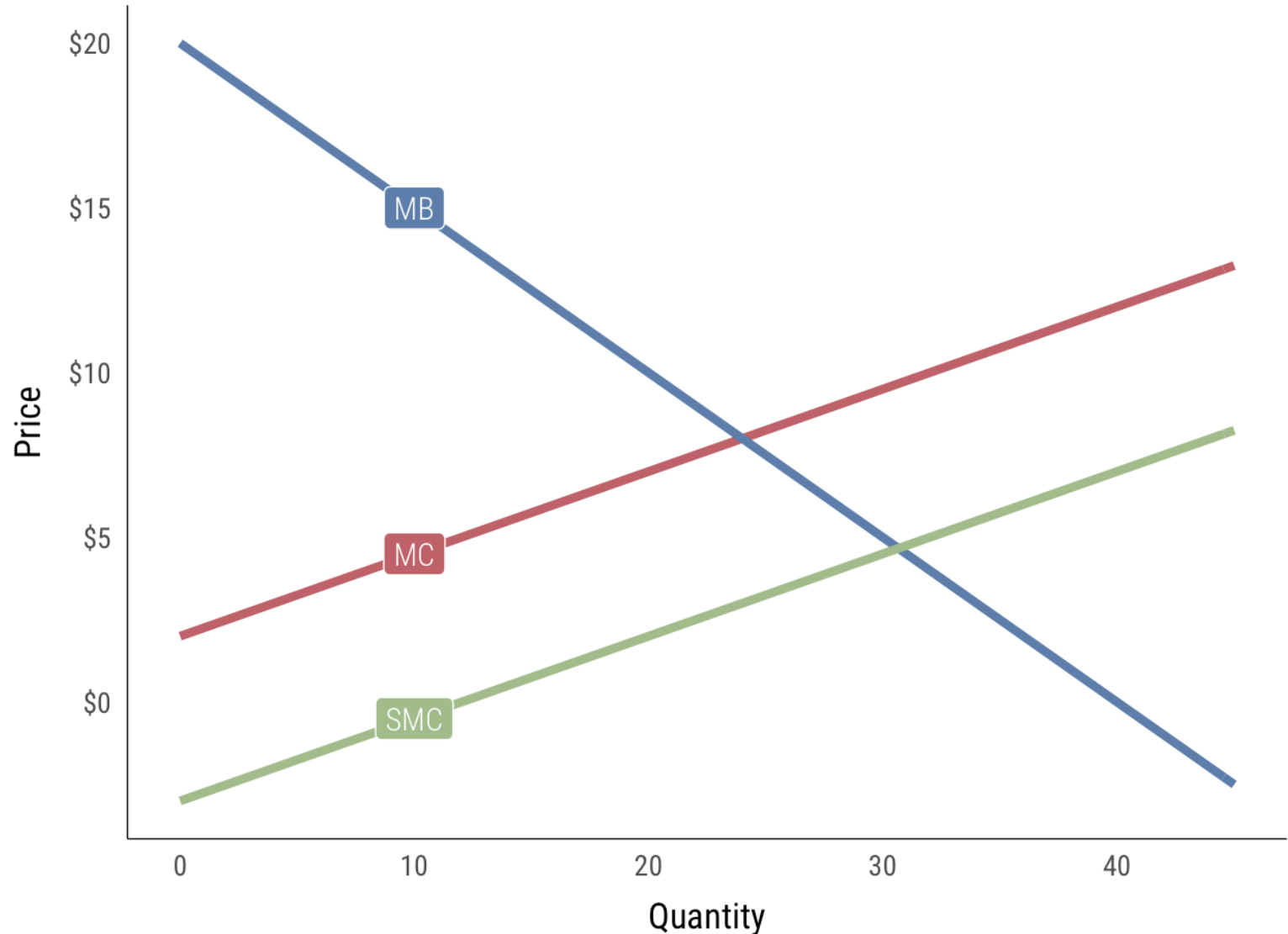
# PIGOUVIAN SUBSIDIES

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**Pay amount of benefit**

**Shift MC ↓ to SMC**

**Increase Q and  
social surplus**



# BUT THERE ARE PROBLEMS...

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**Harm hard to measure**  
Who is hurt the most?

**Costs hard to measure**  
How much does the damage cost society?

**Power and politics**  
Powerful can make powerless pay