

MARKET FAILURES II

MPA 612: Economy, Society, and Public Policy

March 20, 2019

*Fill out your reading report
on Learning Suite*

PLAN FOR TODAY

External effects

Addressing external effects

Market failures

EXTERNAL EFFECTS

EXAMPLES

Pollution

Vaccinations

Cell phones and driving

Car alarms

Internet bandwidth

Research

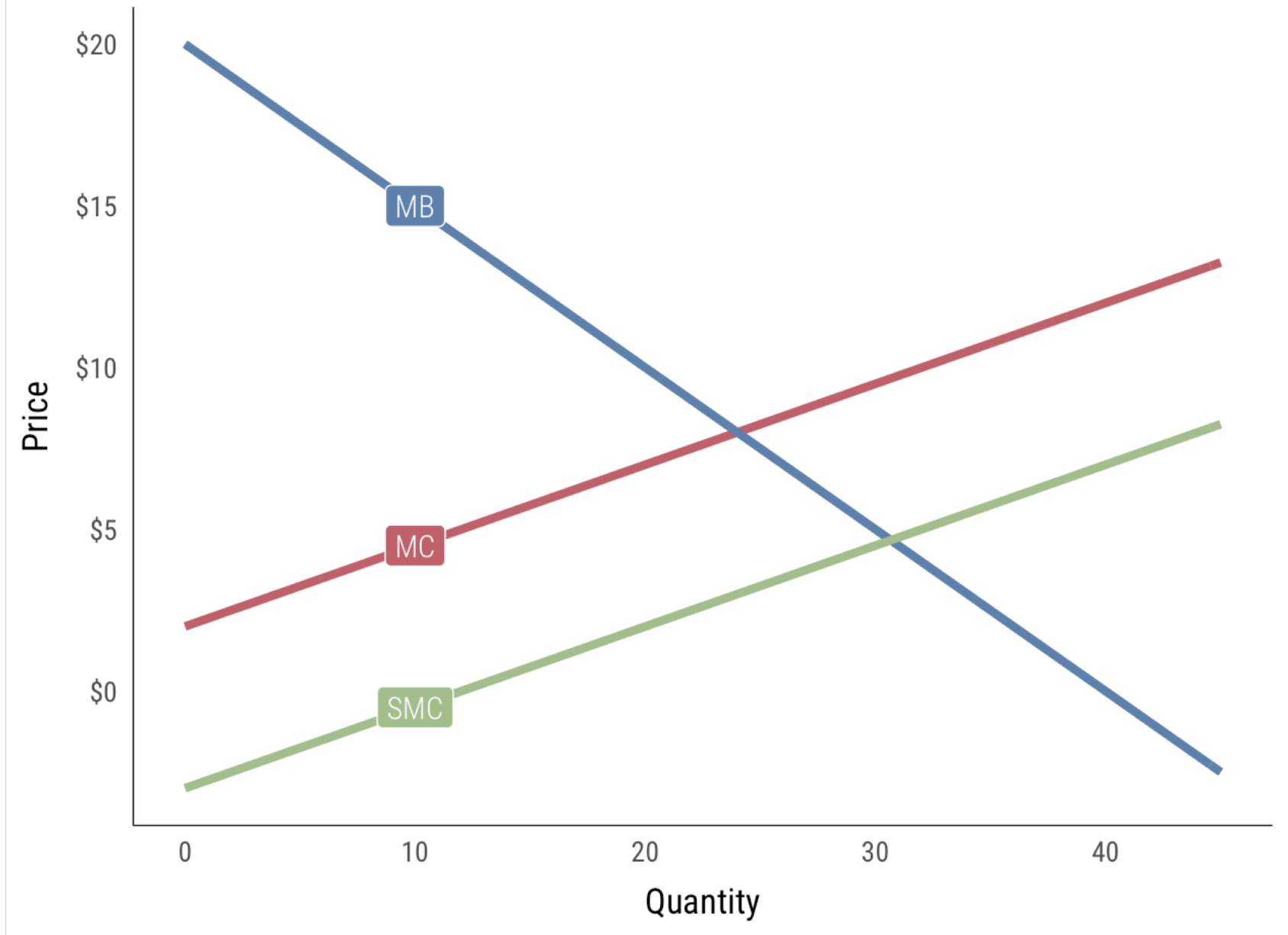
Education

Positive production effects

SMC *below* MC

Basic research

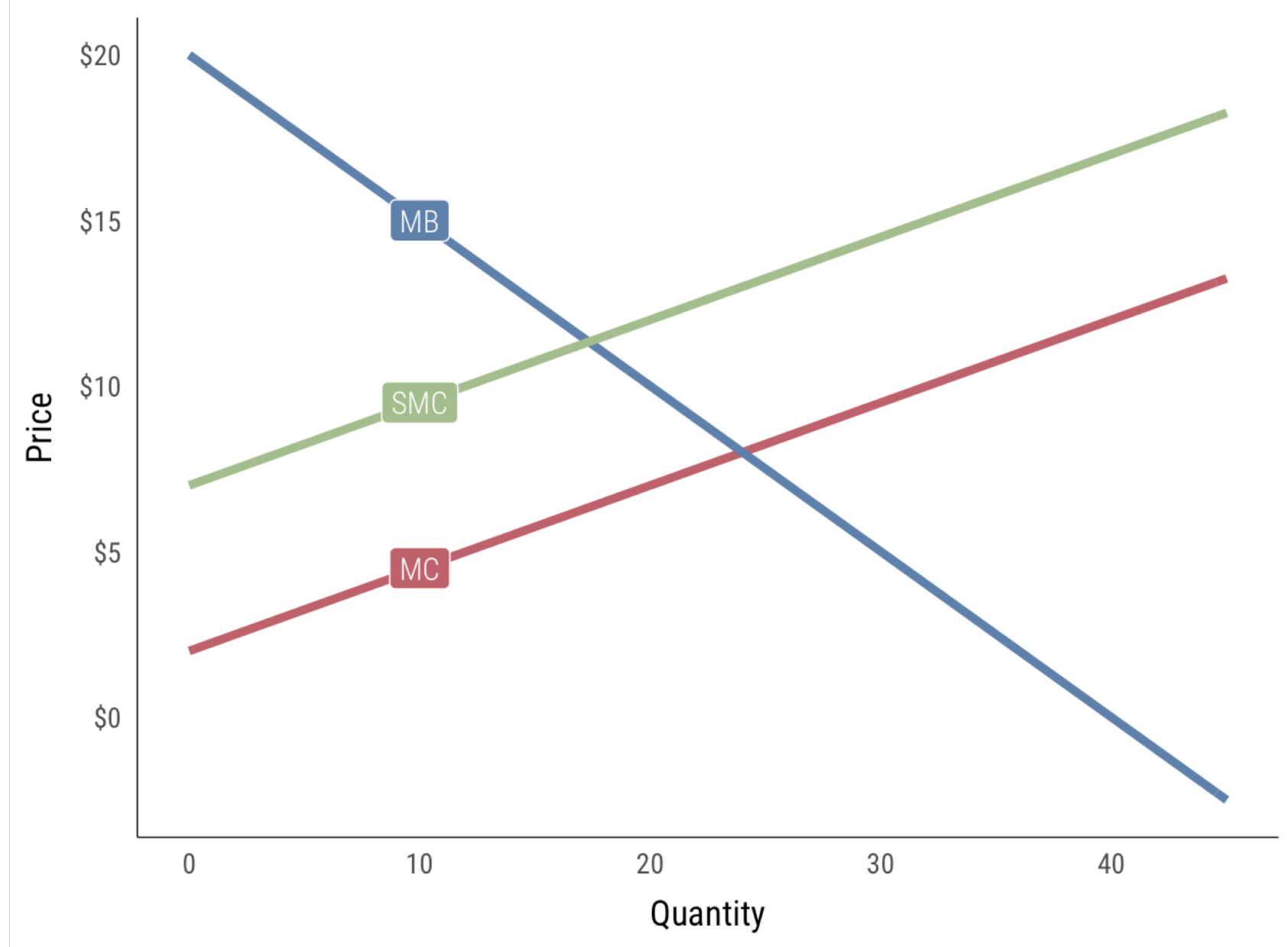
NSF, NIH, NEA



Negative production effects

SMC *above* MC

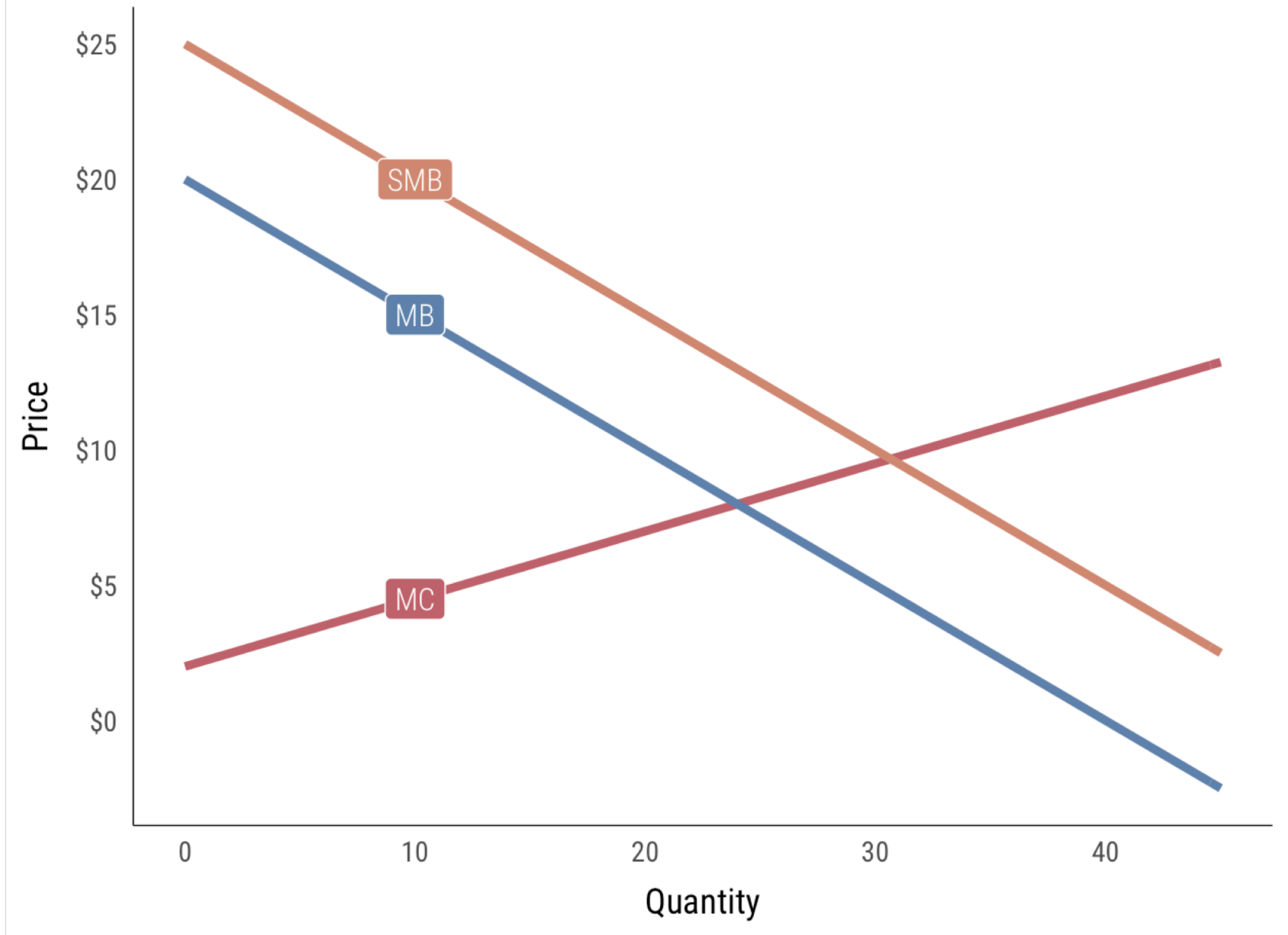
Pollution



Positive consumption effects

SMB above MB

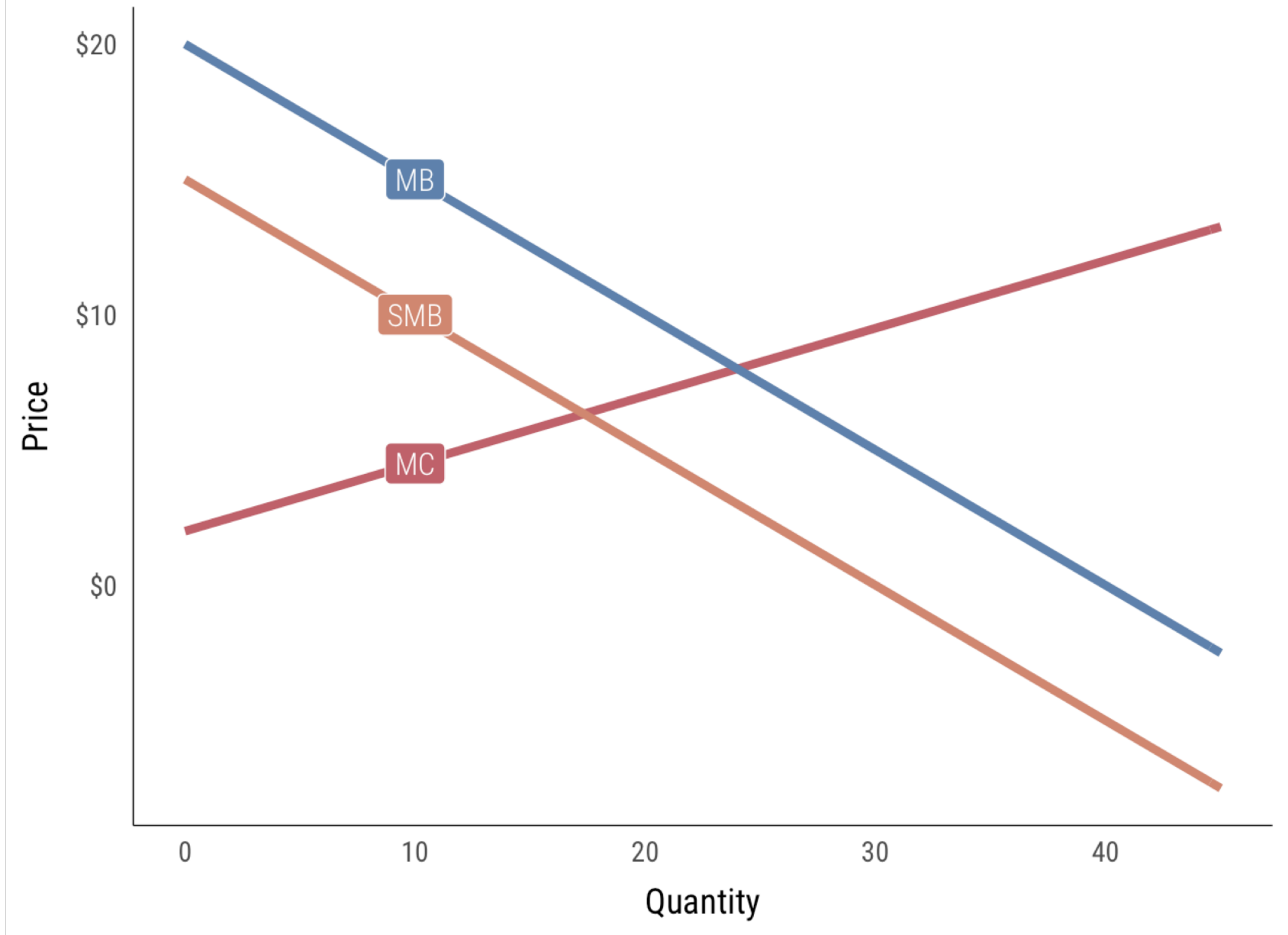
Car alarms



Negative consumption effects

SMB *below* MB

International
airline travel



EQUITY AND FAIRNESS ISSUES

Environmental Research Letters

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^{1,3} and Robin Saha²

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_{2.5}) air pollution exposure is the largest environmental health risk factor in the United States. Here, we link PM_{2.5} exposure to the human activities responsible for PM_{2.5} 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_{2.5} 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_{2.5} 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

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



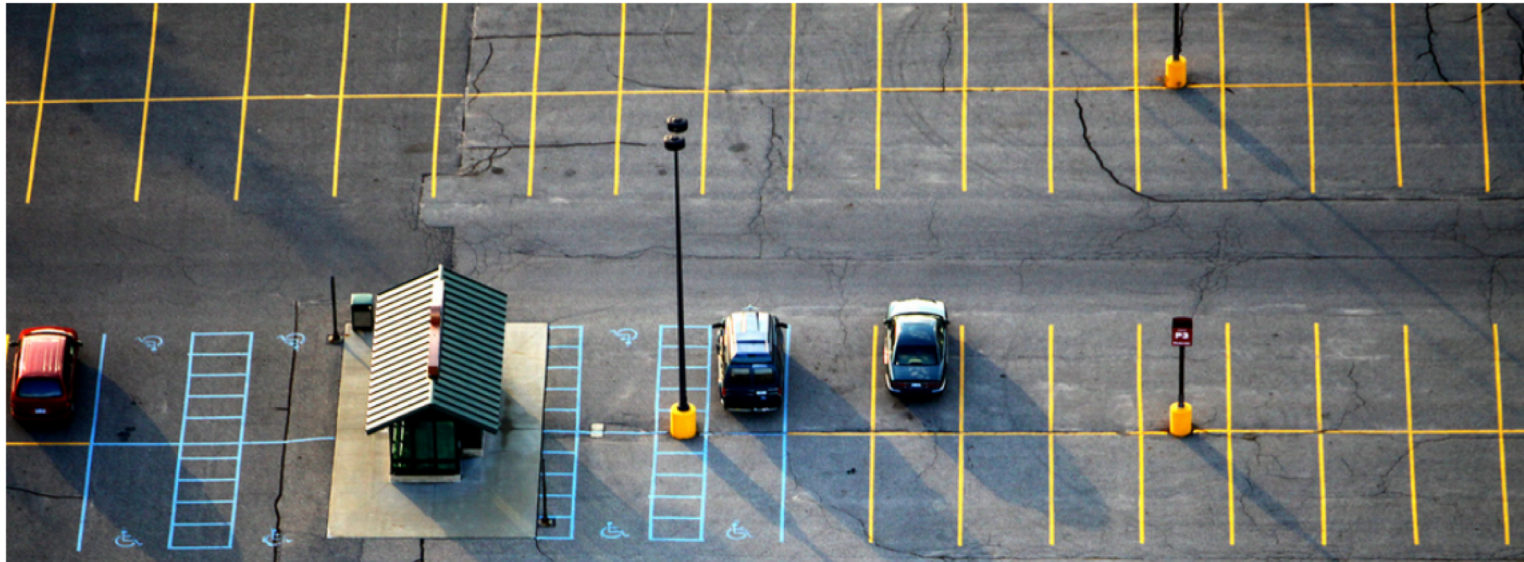
LISTEN NOW:



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

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

What gets internalized?

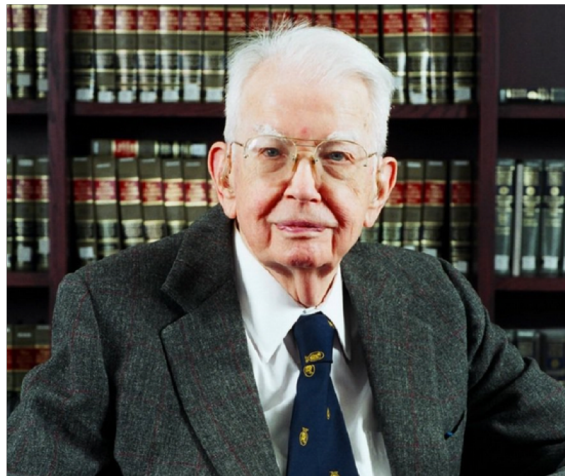
NATURAL GOVERNANCE

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

What gets internalized?

COASIAN BARGAINING

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



Ronald Coase

COASIAN BARGAINING

"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

Coase Theorem part #1

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

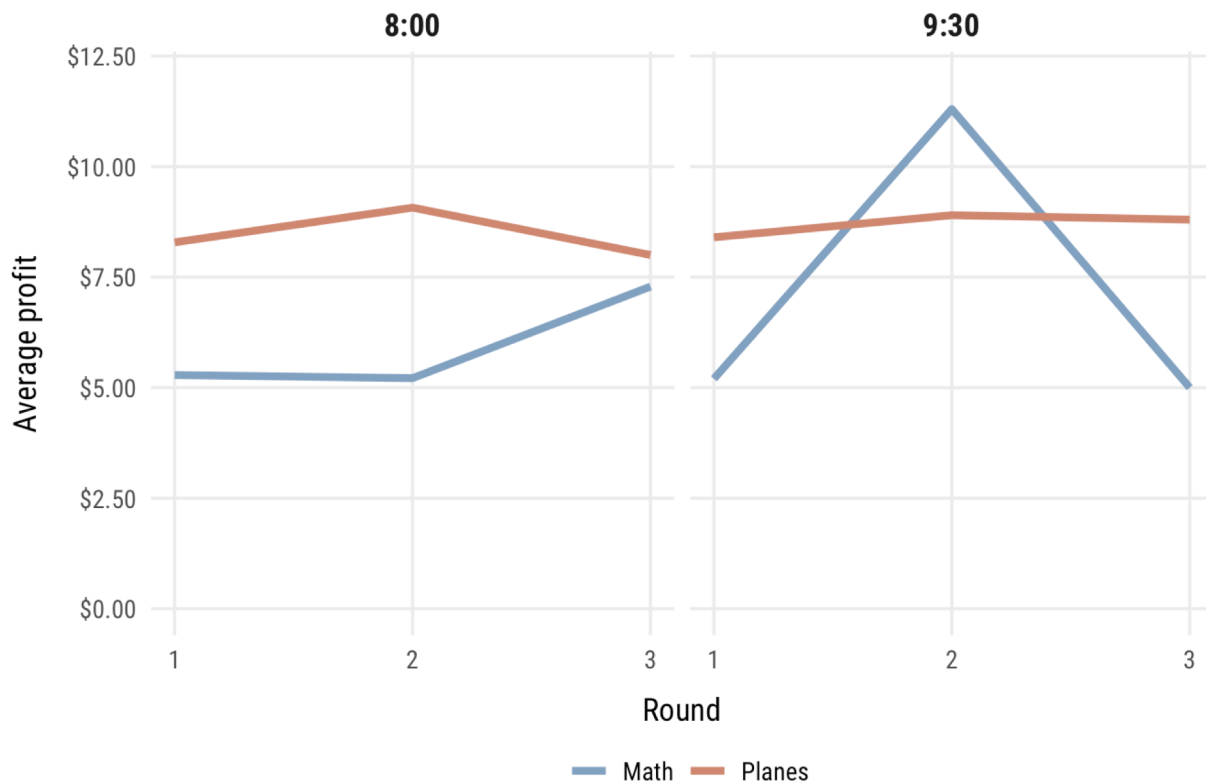
Coase Theorem part #2

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

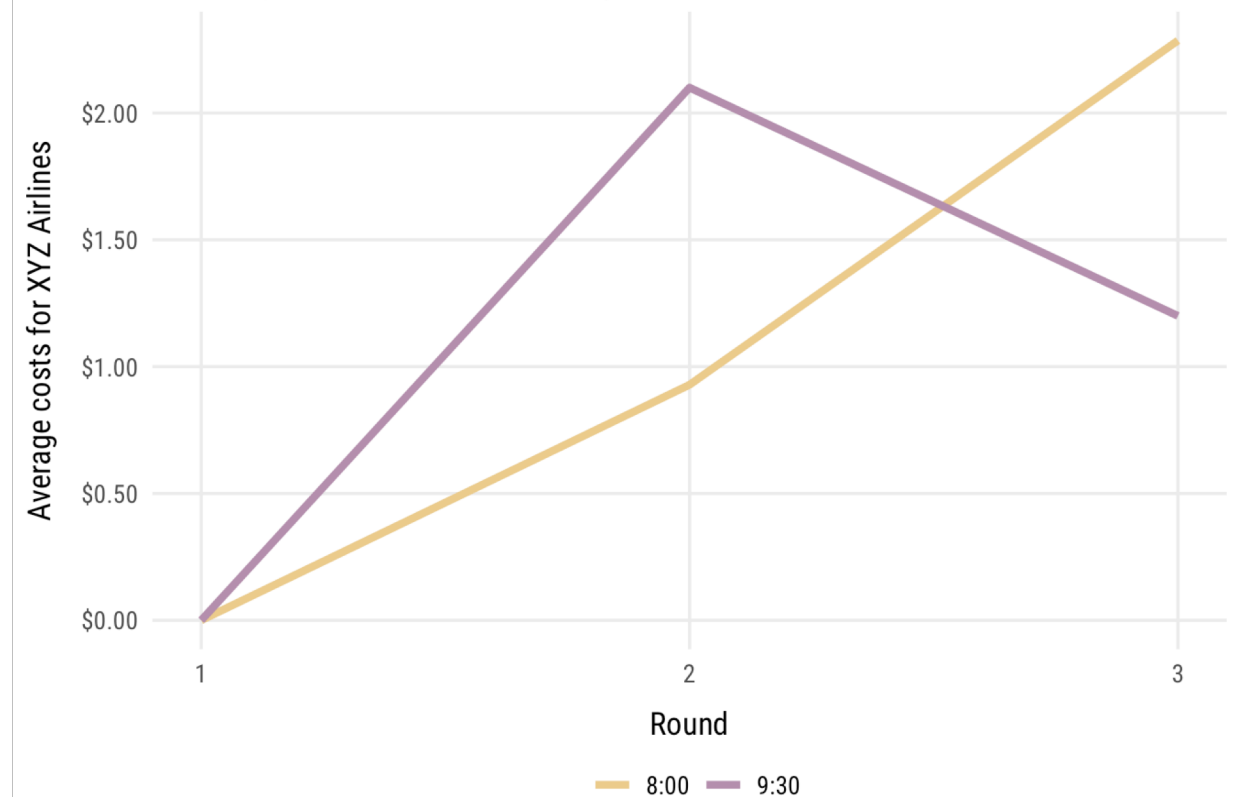
What gets internalized?

It depends!

Average profit for upstream and downstream firms



Average costs taken on by downstream firms



WHO SHOULD PAY?

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

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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...

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WHO SHOULD PAY?

Person reclining or person behind them?

Parking lot owners or drivers?

Airplane people or math people?

Factories or fishermen?

Government or downwinders?

WHO SHOULD PAY?

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...

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

Great for small-scale, localized externalities that are trackable

Good luck fixing global climate change or curing cancer

Public sector solutions

Regulations

Pigouvian taxation

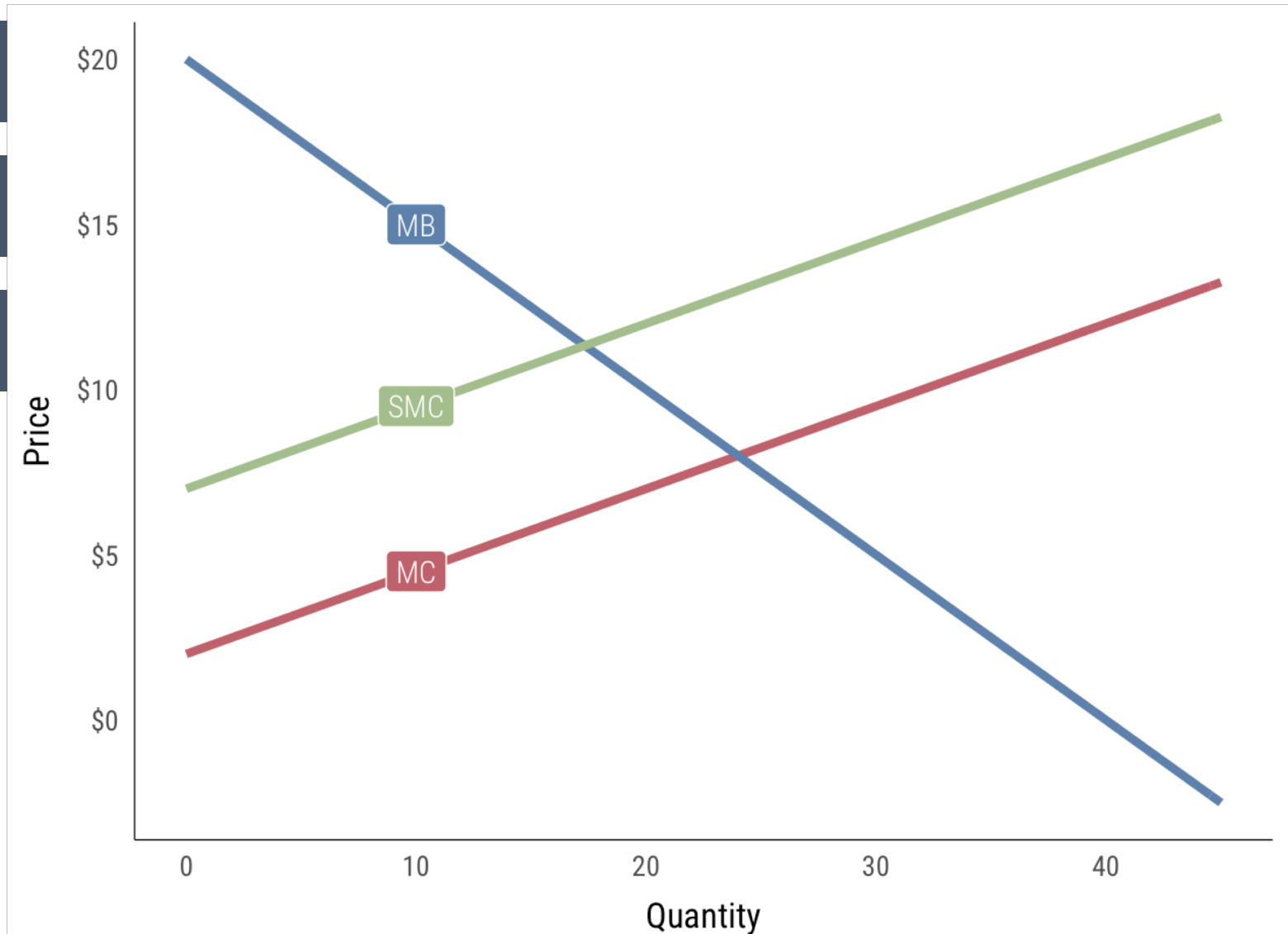
Pigouvian subsidies

REGULATIONS

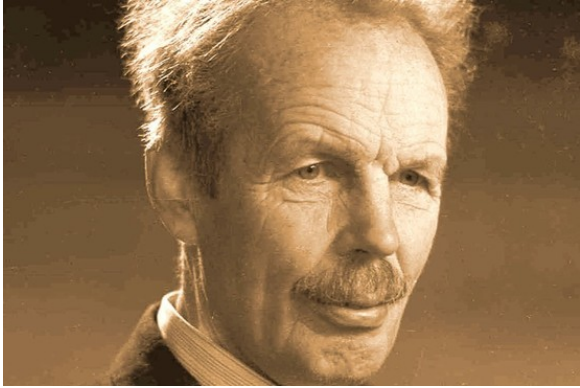
Use laws to limit Q

Shift MC \uparrow to SMC

Reduce Q and DWL



PIGOUVIAN TAXATION

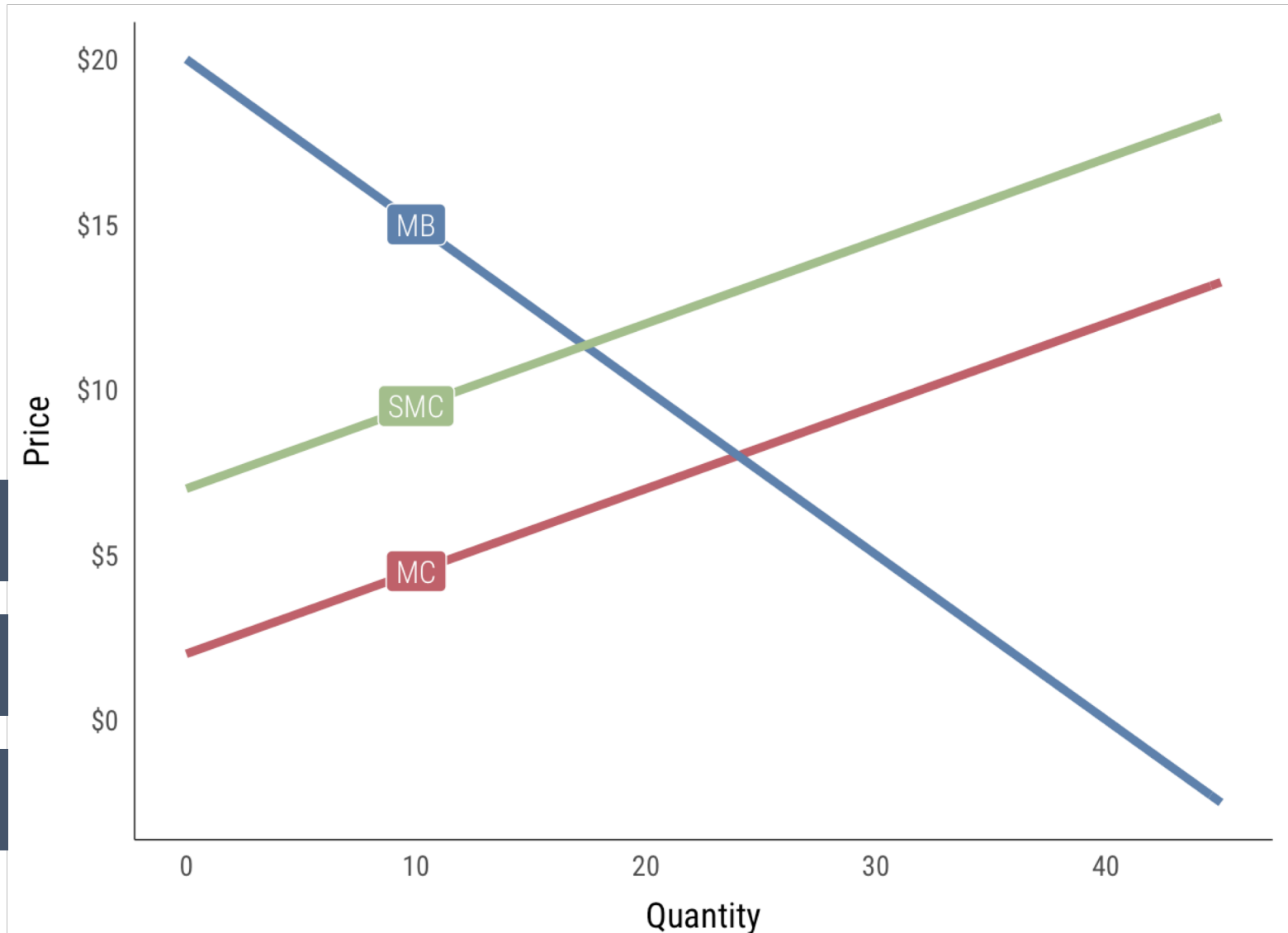


Arthur Pigou

Tax amount of damage

Shift MC \uparrow to SMC

Reduce Q and DWL

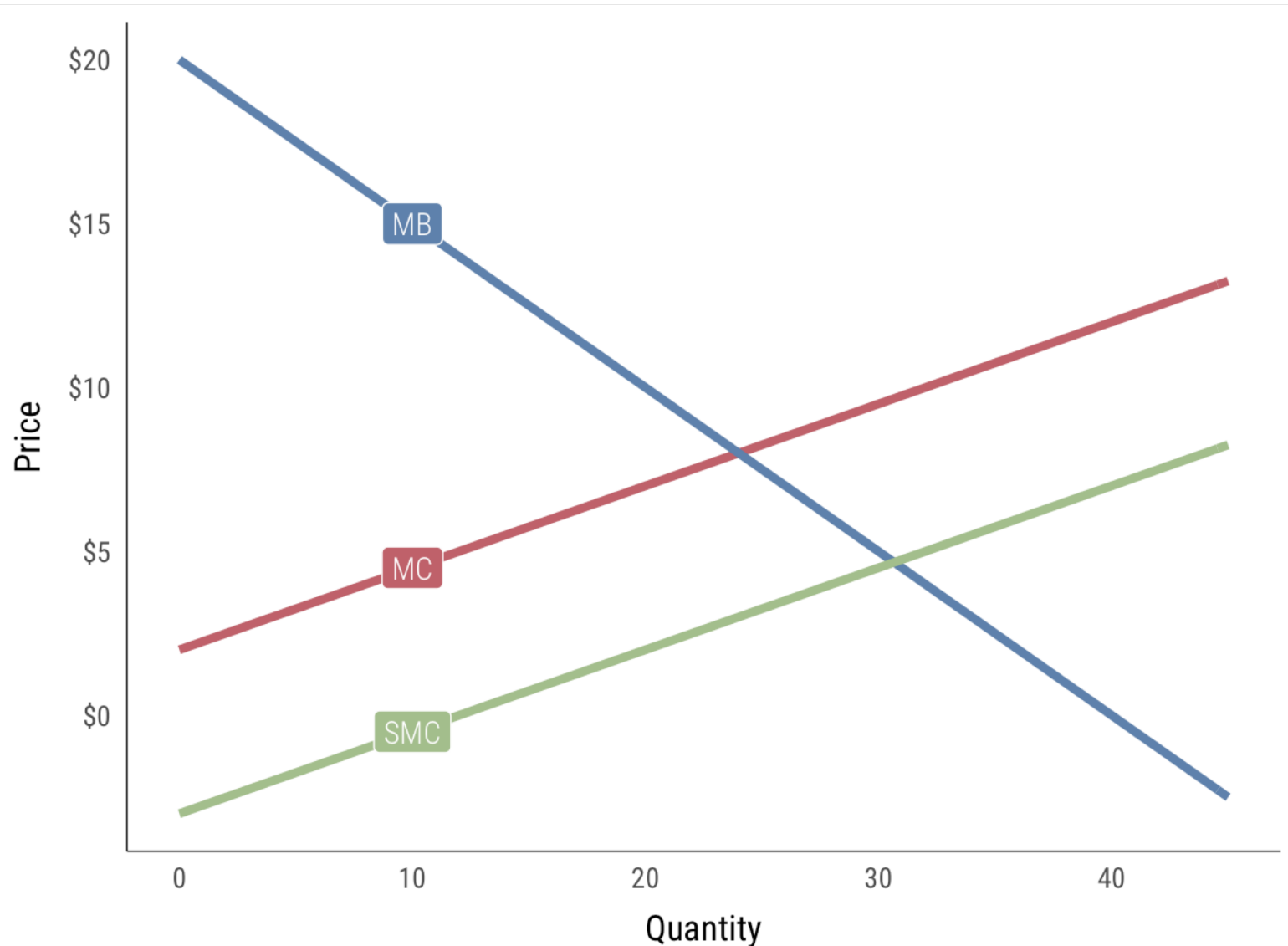


PIGOUVIAN SUBSIDIES

Pay amount of benefit

Shift MC ↓ to SMC

**Increase Q and
social surplus**



BUT THERE ARE PROBLEMS...

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

Market-ish solutions

Caps + tradable permits

**Government issues 200 permits
to allow for 1 unit of pollution**

Plants A and B each get 100 permits

**It's cheaper for A to abate pollution,
so they don't need as many permits**

**B will buy permits from A until
they have 150 and 50 each**

**Pollution goes down while
maintaining flexibility**

BUT THERE ARE PROBLEMS...

**Reduce damage now,
consequences be damned**

vs.

Minimize costs

Quantity regulations get the right level of reduction, but it can be way expensive and can distort markets

Cap and trade keeps costs down, but doesn't guarantee level of abatement

MARKET FAILURES

PUBLIC GOODS

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

PUBLIC GOODS ARE TRICKY

Public goods are underprovided

Public goods are a multi-party
game theory dilemma

Free riding and hare hunting

Public goods are
positive externalities

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

Public goods

Externalities

Monopolies

Missing markets

Asymmetric information