Market failures

Session 12

PMAP 8141: Microeconomics for Public Policy
Andrew Young School of Policy Studies

Plan for today

Institutions, markets, and prices

Public goods

External effects

Addressing external effects

Institutions, markets, and prices

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."

Prices are messages

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

Prices coordinate activity and behavior among complete strangers

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

Public goods

Externalities

Monopolies

Missing markets

Asymmetric information

Public goods

Private goods

Excludable

You can stop people from using it

Rival

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

Public goods

Non-excludable

You can’t stop people from using it

Non-rival

You using it doesn’t make it so others can’t use it

Public goods

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

Rivalry and excludability

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

Public goods are underprovided

Public goods are a multi-party game theory dilemma

Free riding and hare hunting

Public goods are positive externalities

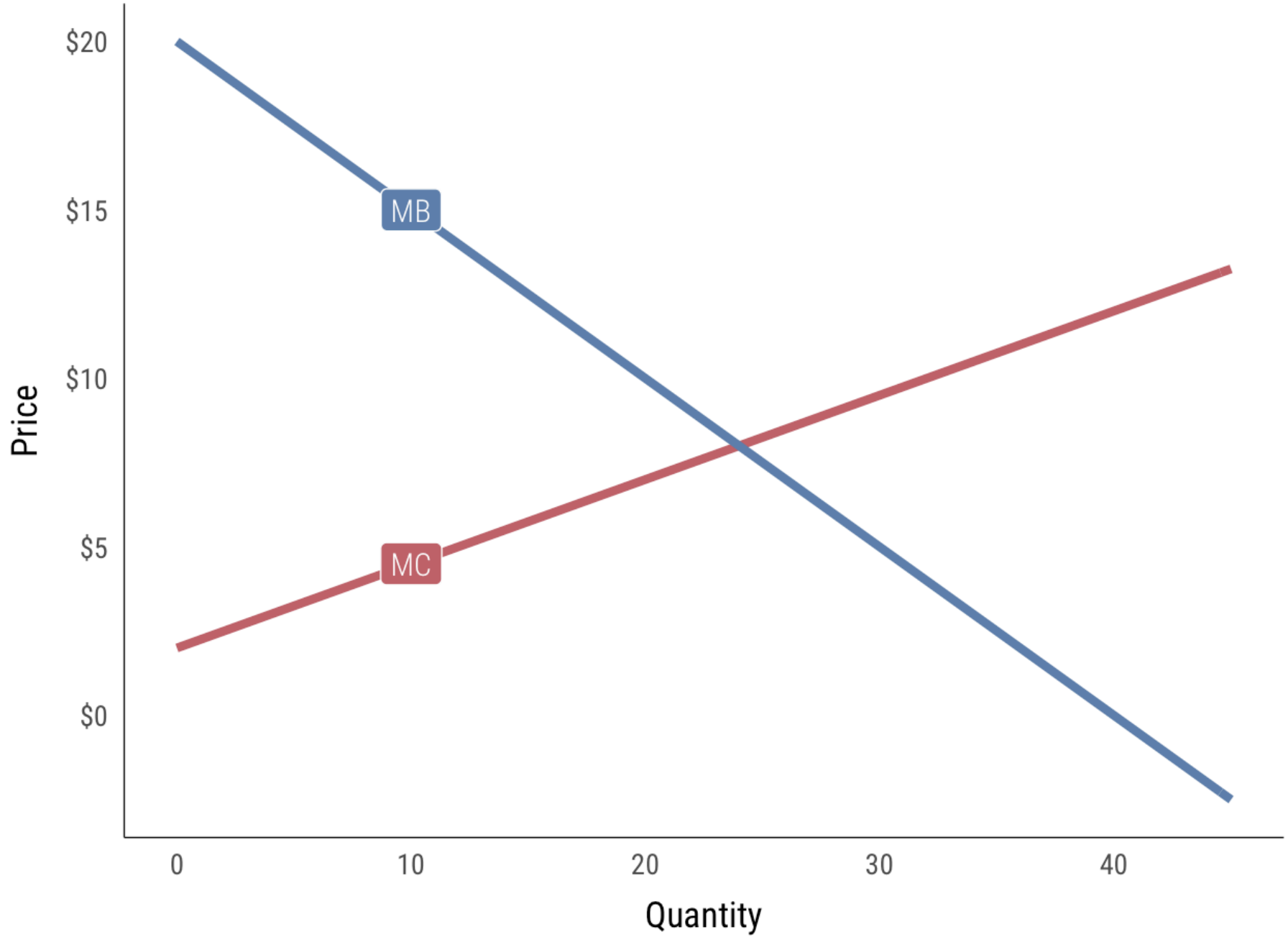
External effects

External effects

(aka externalities)

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

Social marginal cost/benefit


$20
$15
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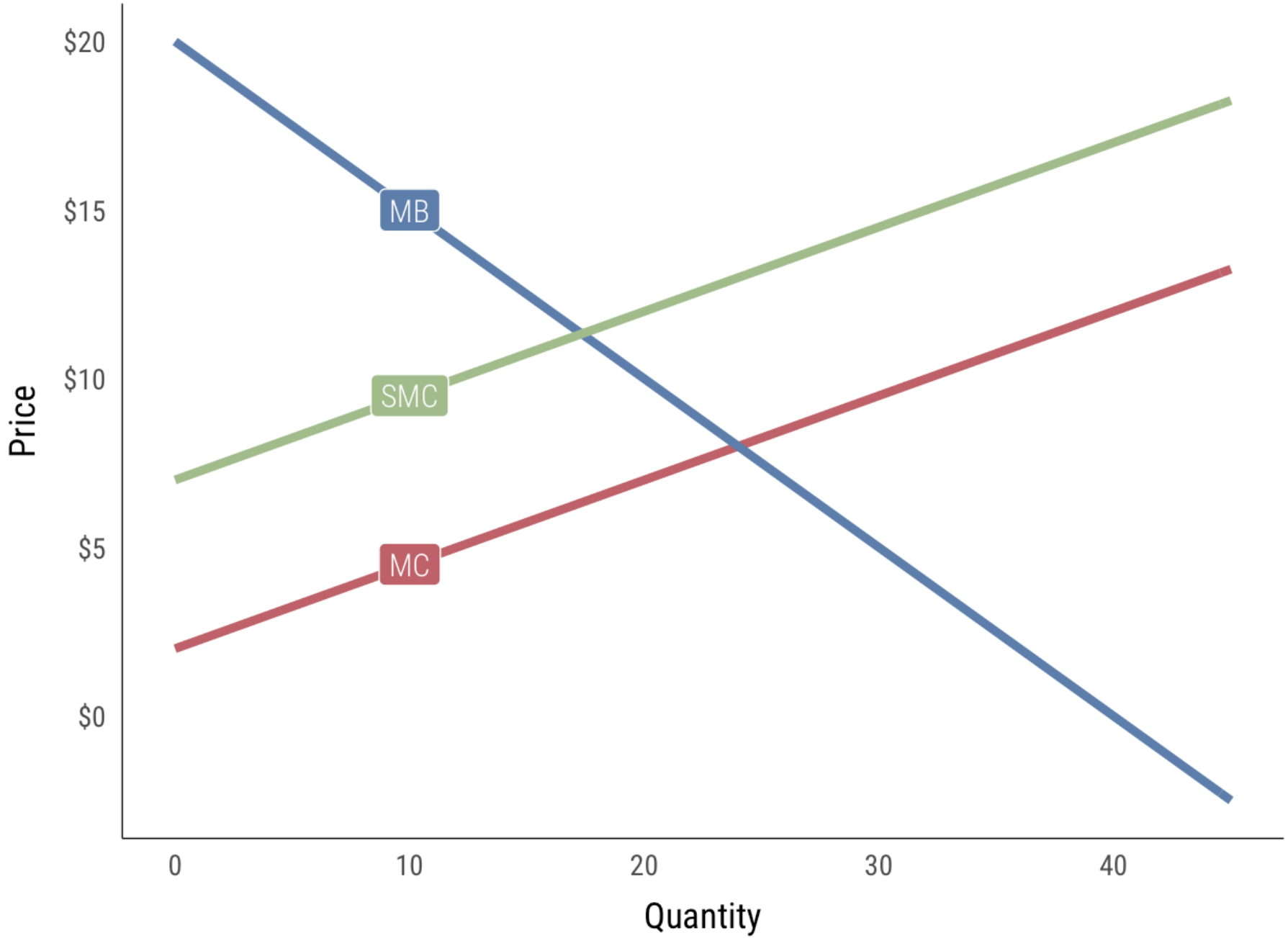
$0
Price
MB
MC
0
10
20
30
40
Quantity


$20
$15
$10
$5
$0
Price
MB
SMC
MC
0
10
20
30
40
Quantity

Examples

Pollution

Vaccinations

Cell phones and driving

Internet bandwidth

Research

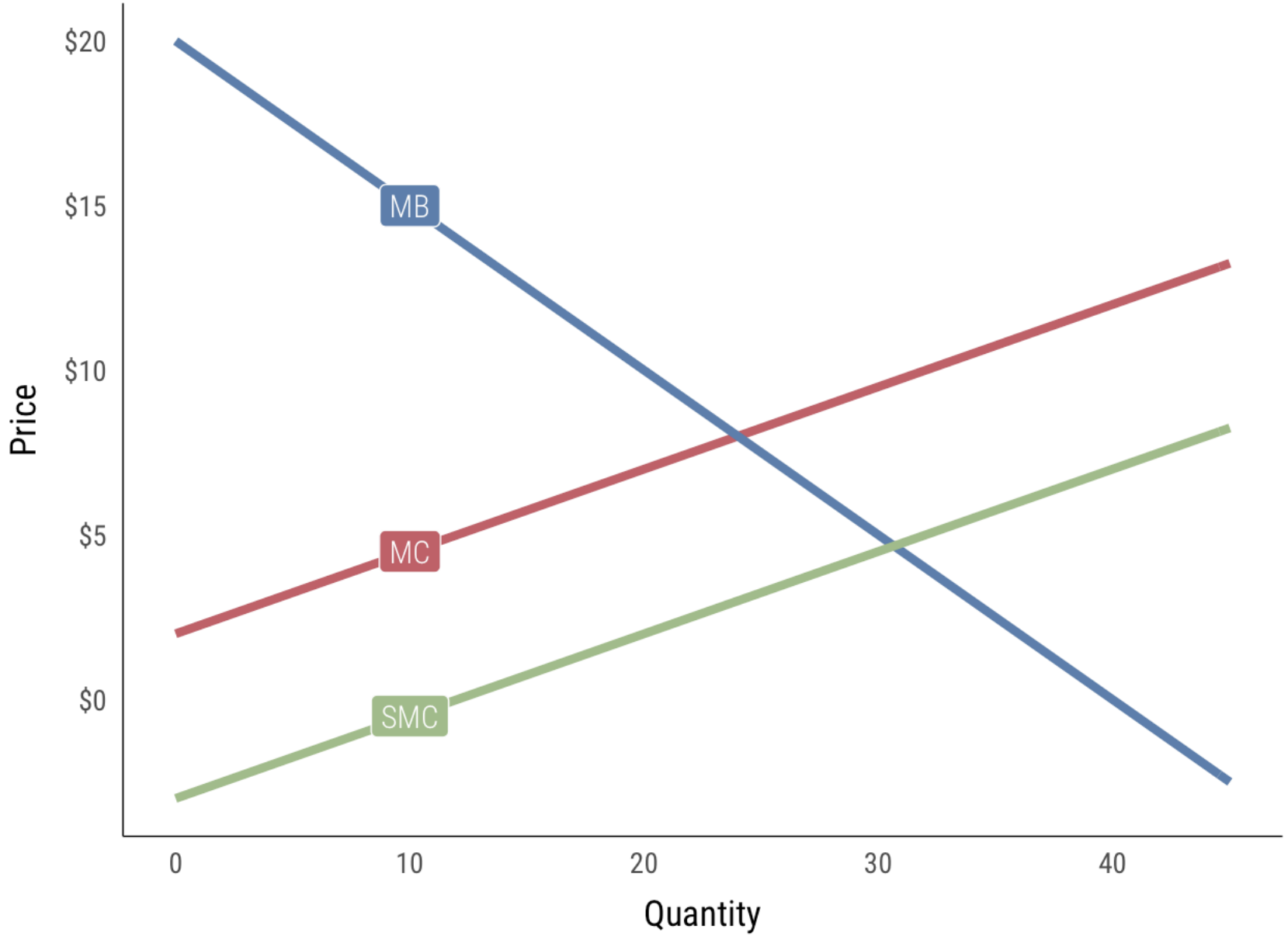
Education

Positive production effects

SMC below MC

Basic research

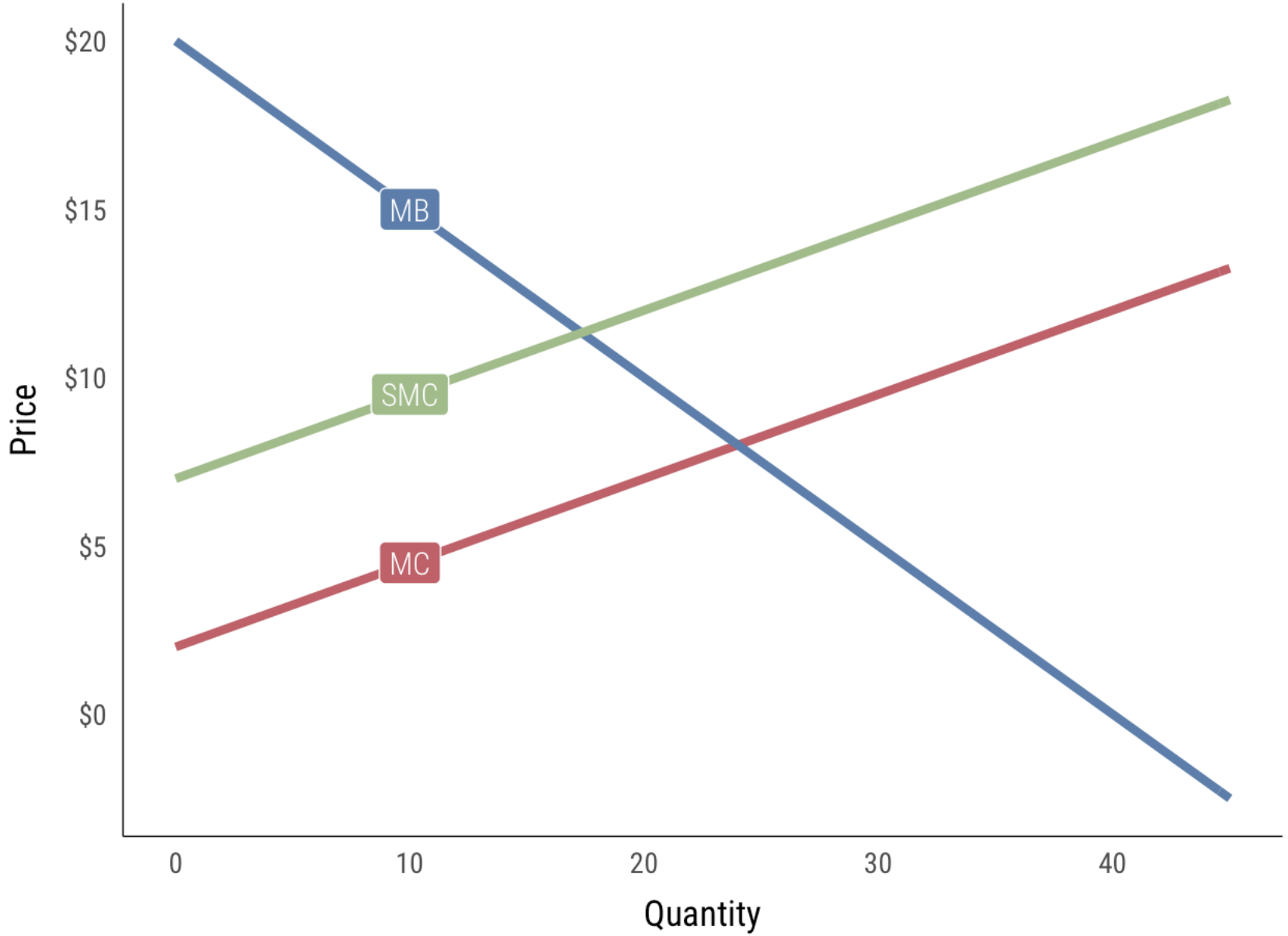
NSF, NIH, NEA



Negative production effects

SMC above MC

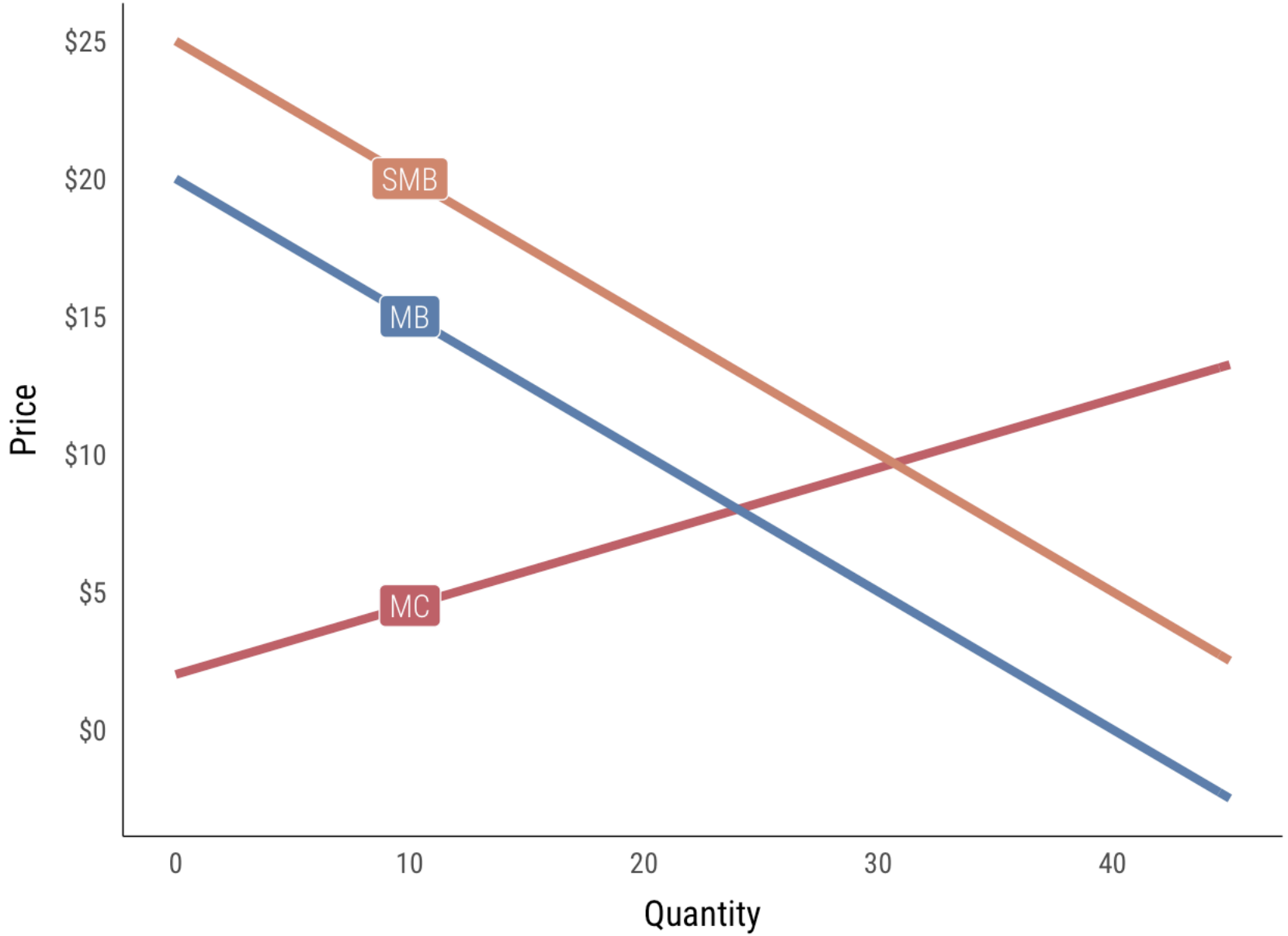
Pollution



Positive consumption effects

SMB above MB

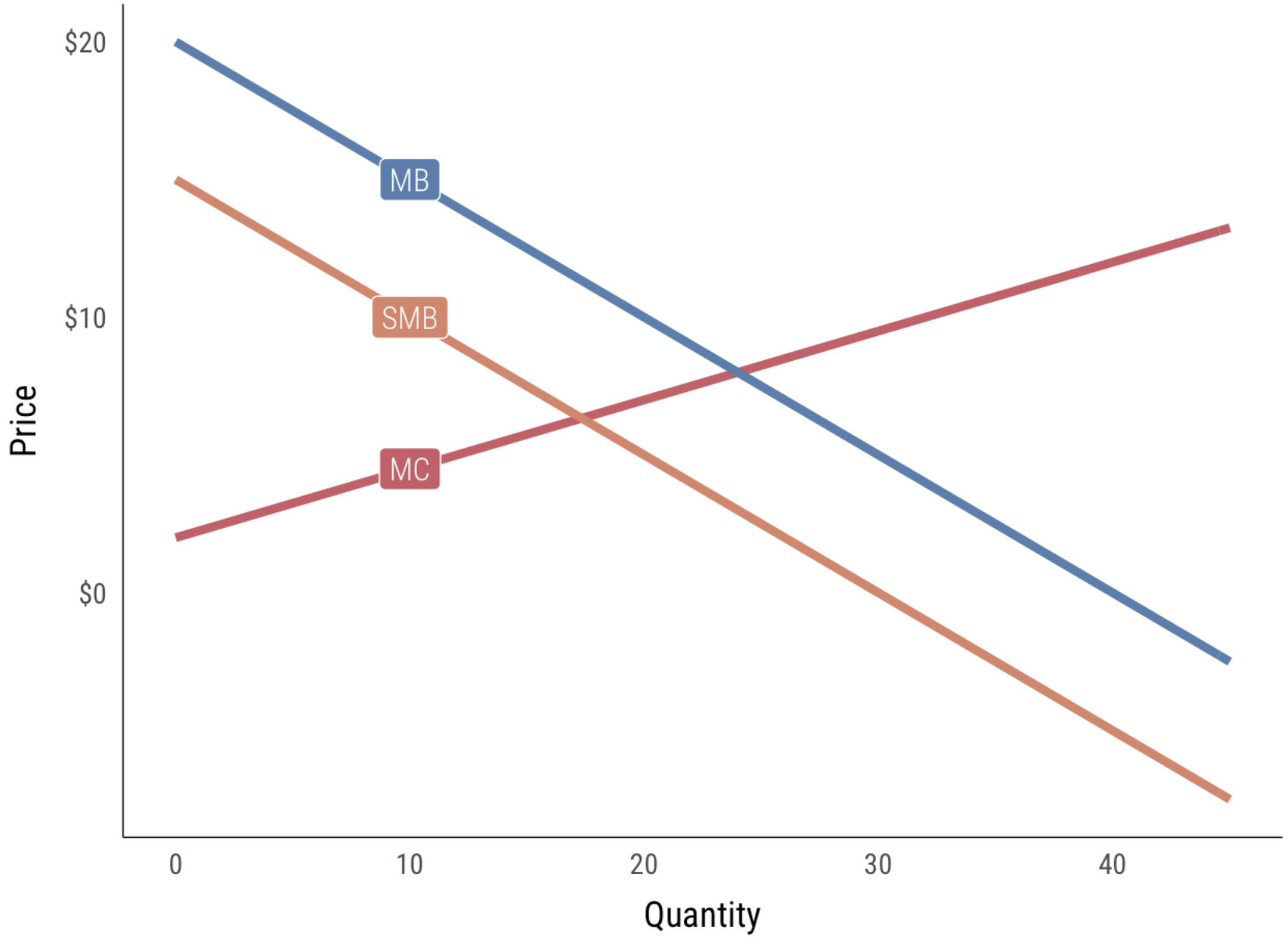
Vaccines



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 Saha[2]

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, A
Kimberley A. Mullins, David A. Paolella, S
Sumil K. Thakrar, Julian D. Marshall, and

PNAS published ahead of print March 11, 2019 htt

Edited by Susan Hanson, Clark University, Worcest
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

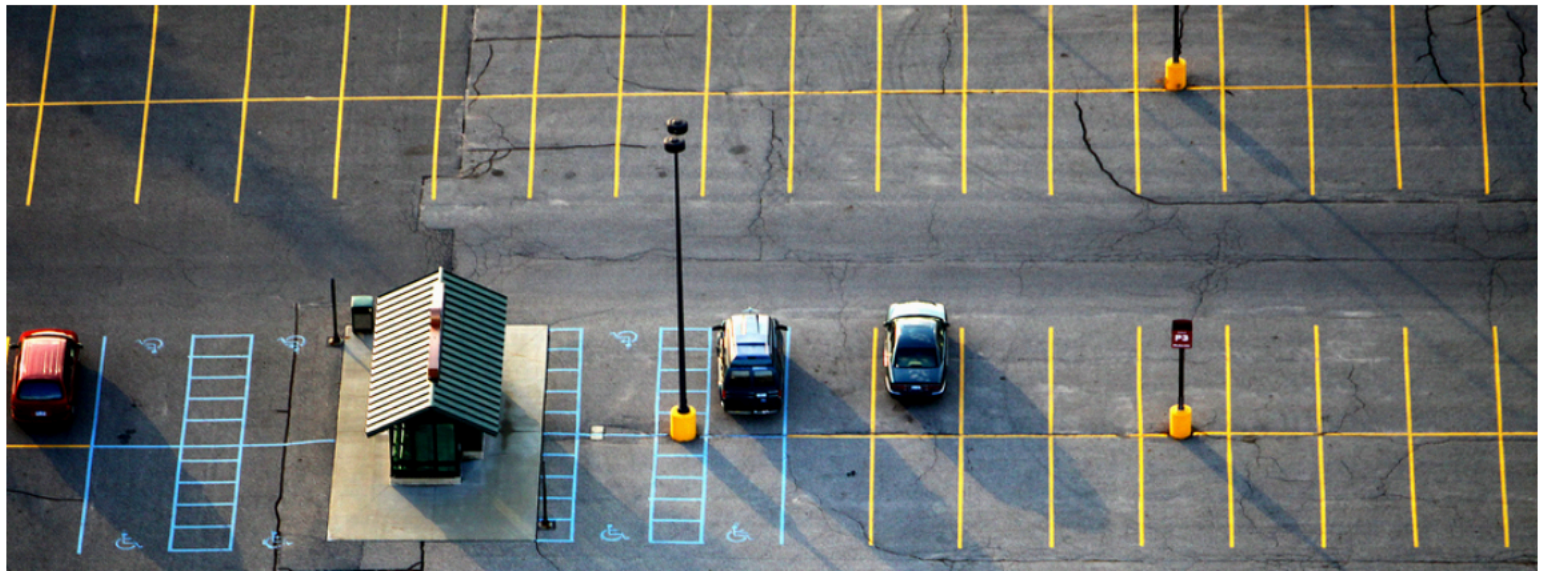
Internalize the externality

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:



Private sector solutions

Public sector solutions

Market-ish solutions

Private sector solutions

Merging and acquiring

Natural governance

Coasian bargaining

Merging and acquiring

The polluting firm buys the downstream firm

(or vice versa)

What gets internalized?

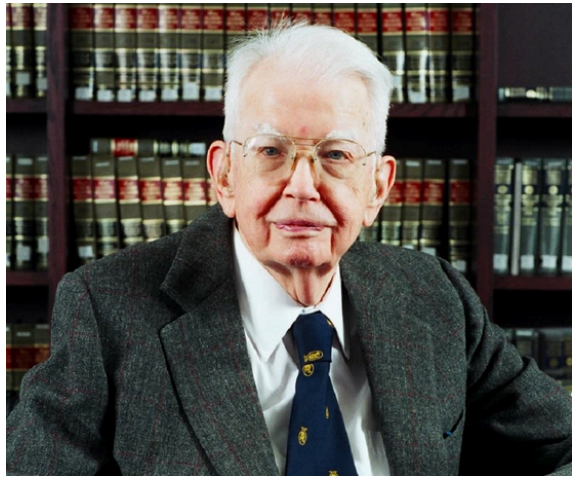
Natural governance

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

Who should pay?

Person reclining or person behind them?

Chris Wilson 
@WilsonWPA

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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
> Most important article I've ever posted: People Who Recline Their Airplane Seats Are Monsters @outsidemagazine outsideonline.com/2391763/stop-r …

3:23 PM - 18 Mar 2019

173 Retweets **2,408** Likes

Who should pay?

Person reclining or person behind them?

Parking lot owners or drivers?

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

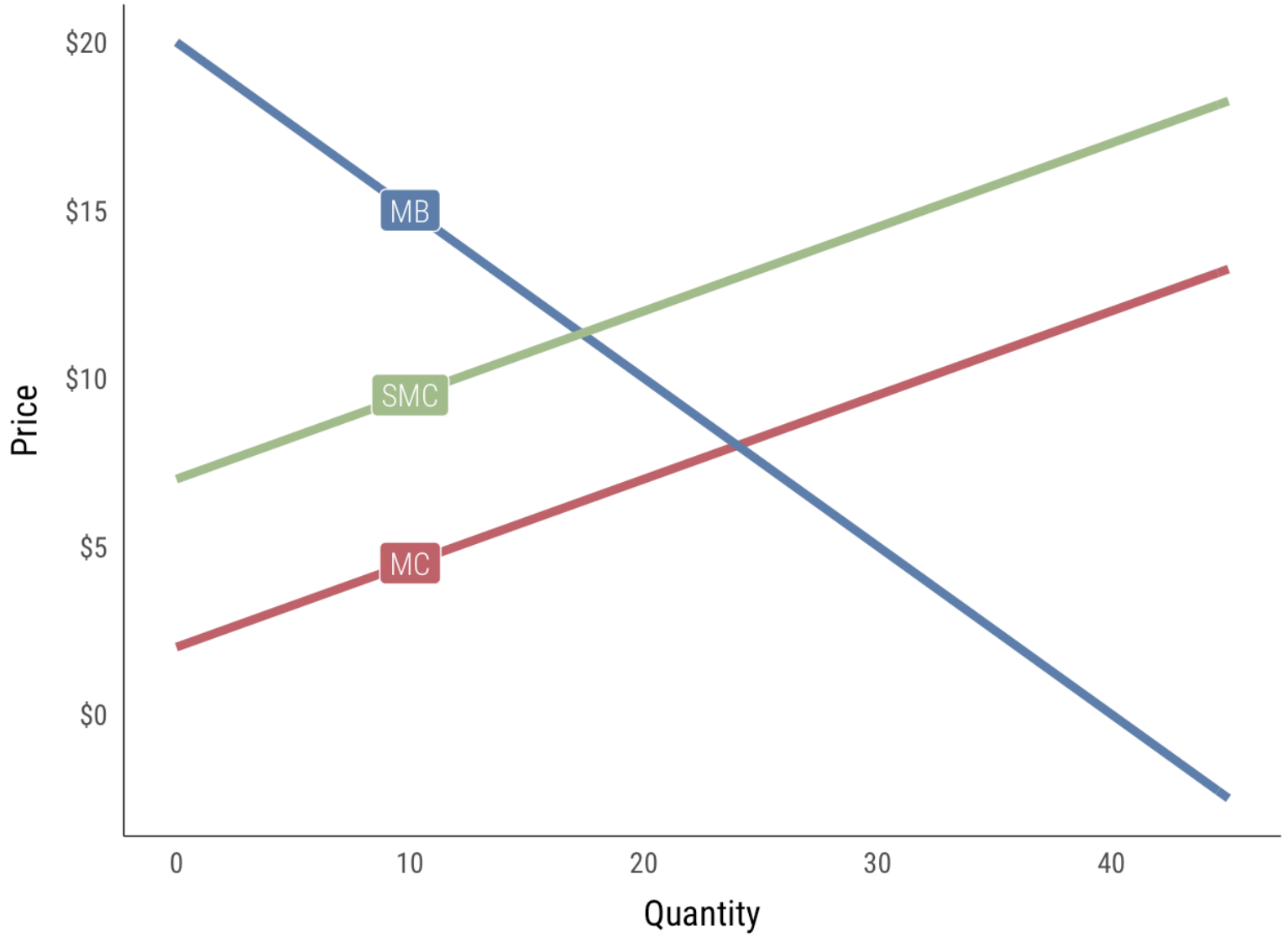
Pigouvian subsidies

Regulations

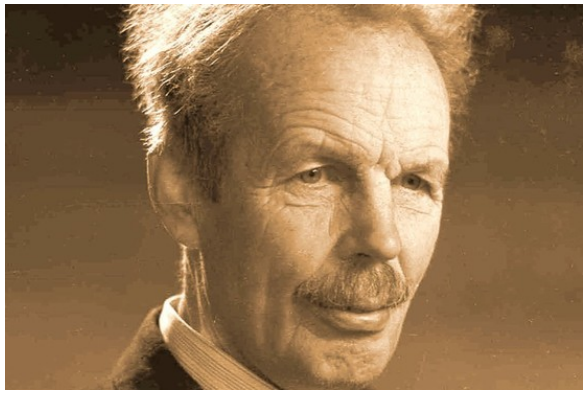
Use laws to limit Q

Shift MC ↑ to SMC

Reduce Q and DWL



Pigouvian taxation

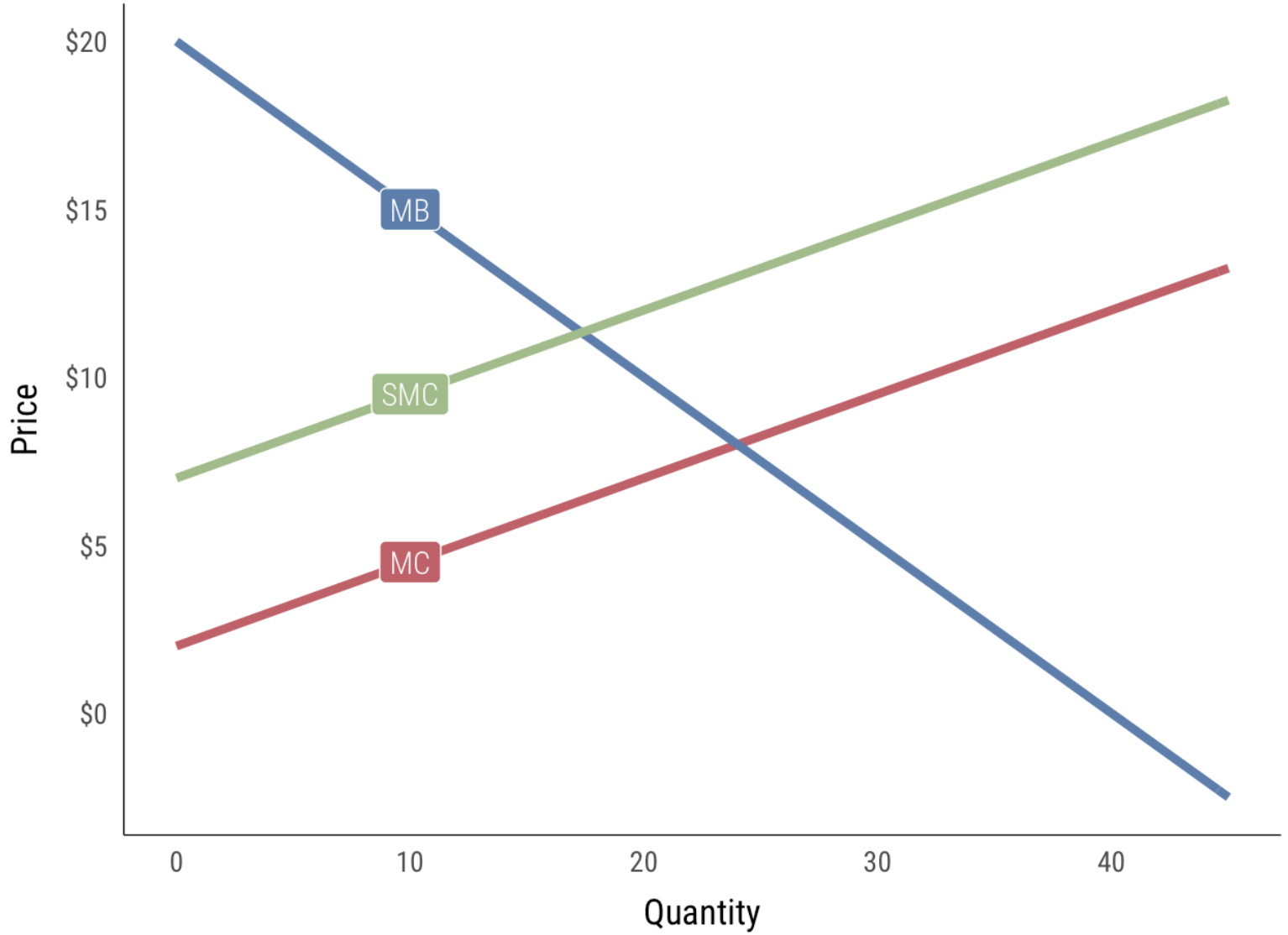


Arthur Pigou

Tax amount of damage

Shift MC ↑ to SMC

Reduce Q and DWL

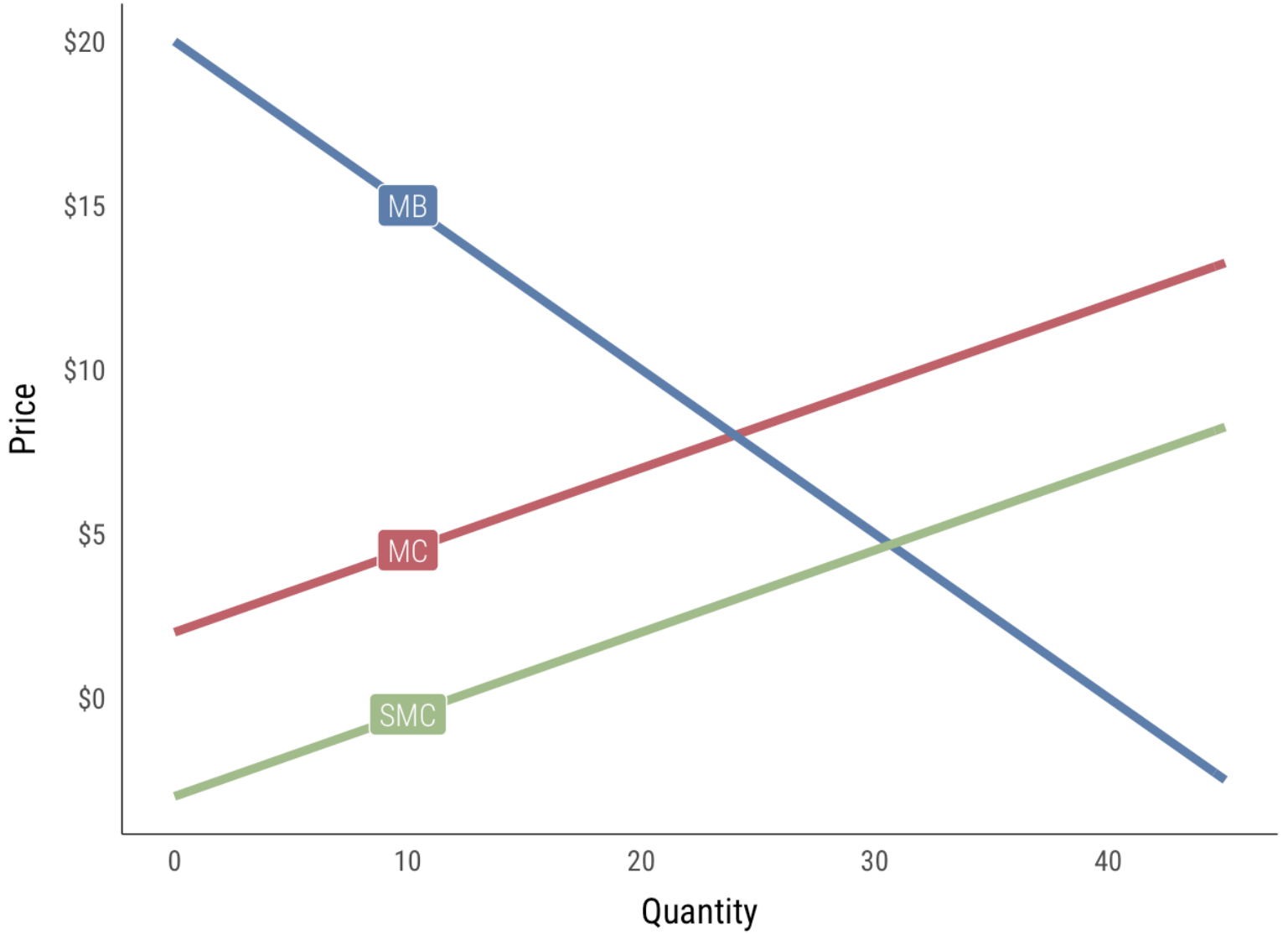


Pigouvian subsidies

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

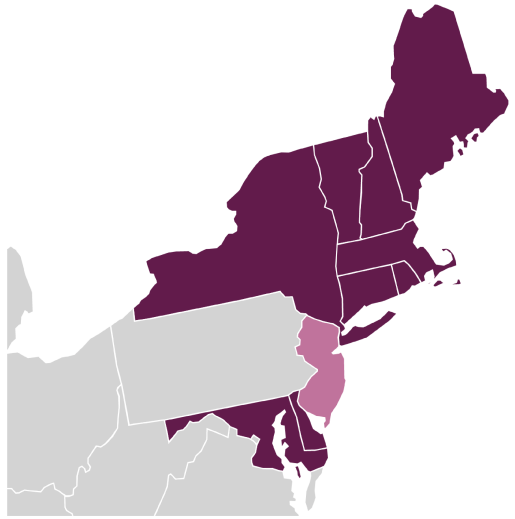
Plants A and B each get 100 permits

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

Regional Greenhouse Gas Initiative (RGGI)



Western Climate Initiative (WCI)

Sections

Los Angeles Times

LOG IN

Trump administration sues California over cap-and-trade agreement with Canada

EU Emissions Trading Scheme

American Clean Energy and Security Act of 2009

111TH CONGRESS
1ST SESSION

H. R. 2454

IN THE SENATE OF THE UNITED STATES

JULY 6, 2009
Received and read the first time

JULY 7, 2009
Read the second time and placed on the calendar

AN ACT

To create clean energy jobs, achieve energy independence, reduce global warming pollution and transition to a clean energy economy.

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

Which is best?

Private sector solutions

Public sector solutions

Market-ish solutions

lol

No perfect solution