INSTITUTIONAL ALTERNATIVES + EVALUATING POLICIES

MPA 612: Economy, Society, and Public Policy

April 10, 2019

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PLAN FOR TODAY

Tragedies and CPRs

Solutions to CPRs

What is CBA?

Nine simple steps of CBA

CBA example

TRAGEDIES AND CPRS

WHAT IS A TRAGEDY?

Sad event vs. τραγῳδία

"The essence of dramatic tragedy is not unhappiness. It resides in the solemnity of the remorseless working of things."

Deliberate choices of humans set off inevitable and inescapable chains of events

COMMON POOL RESOURCES

Non-excludable

Rivalrous

TRAGIC TRAJECTORY

If the commons is under capacity, new animals can be added without damaging the system

So people add more animals. It’s rational.

Commons goes over capacity

oh no

"Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit—in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. **Freedom in a commons brings ruin to all.**"

Garrett Hardin, “The Tragedy of the Commons” (1968), p. 1244

CPR EXAMPLES

Fisheries **Forests** **Pastures**

Air **Antibiotics** **Beautiful views**

Fruit in public parks **Road capacity**

Christmas creep

HOW DO WE FIX CPR PROBLEMS?

Privatization

Government

Informal institutions and self-regulation

Third sector

PRIVATE SOLUTIONS TO CPR PROBLEMS

Make the non-excludable excludable

PROPERTY RIGHTS & PERMITS

Property rights

Assign rights to all stakeholders

Parcel the commons

Incentive to overuse disappears

Permits

Assign right to infringe on CPR

PROPERTY RIGHTS & PERMITS

BUT…

Coasian bargaining issues

What if people get bad parcels?

What about the air? The ocean?

It’s Pareto efficient, but is it fair?

GOVERNMENT SOLUTIONS TO CPR PROBLEMS

REGULATION & TAXATION

Regulation

Monitor the commons and punish defectors

Abatement is fixed

Feels “fair”; is more politically feasible

REGULATION & TAXATION

But this requires…

…knowledge of CPR capacity

…costless monitoring

…costless punishment

…costless administration

…benevolent government

REGULATION & TAXATION

Taxation

Move PMC in line with SMC and cancel out DWL

Can reduce taxes on other things

Increases flexibility

REGULATION & TAXATION

But…

…it’s hard to set taxes correctly

…it leads to unknown abatement, since some will just pay tax

INFORMAL SOLUTIONS TO CPR PROBLEMS

Institutions!

Why do we follow informal institutions?

FIXING ALANYA'S CPR

Rely on local knowledge

Rotating system for sites

Violations handled in coffee house

Fishermen still had to be licensed

Local solutions require legitimacy and authority

THIS DOESN'T ALWAYS WORK!

Bodrum, Turkey

More fishermen, more cooperatives, more tourists

THIRD SECTOR SOLUTIONS TO CPR PROBLEMS

WHAT IS THE THIRD SECTOR?

Organizations and institutions that aren't private and aren't public

Voluntary organizations that advocate for reform, rights, and public goods

Fill in service gaps not covered by public and private sectors

Education | Health | Poverty | Advocacy

WHAT MAKES THE THIRD SECTOR?

“value-driven action and commitment from individuals operating within it”

People not motivated by coercion (government) or profit (private), but by values

Organized **Private** **Self-governing**

No distribution of profits **Voluntary**

BUT WHAT IS IT REALLY?

" At times the concept [of the third sector] seems to take on the property of a gas, expanding or contracting to fit the analytic space afforded it by each historical or sociopolitical setting."

Michael W. Foley and Bob Edwards, "The Paradox of Civil Society"

DIFFERENT CONCEPTIONS

Extension of state power

Antonio Gramsci

Counterweight to state

Revolutionaries

Essential to cooperation in a state

De Tocqueville, Putnam

MORAL OF THE STORY

Governments don’t need to do everything

WHAT IS CBA?

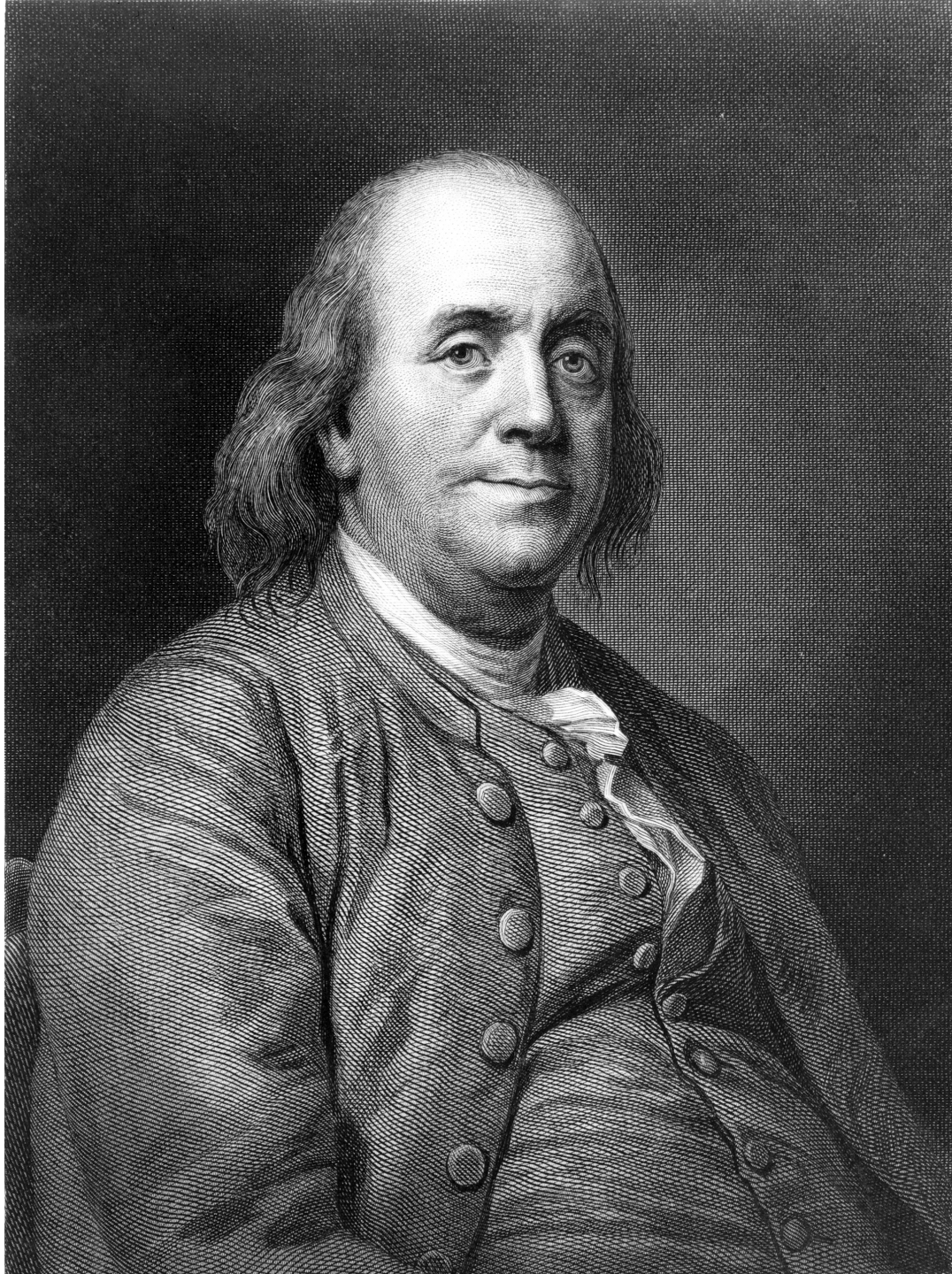
My way is to divide half a sheet of paper by a line into two columns; writing over the one Pro and over the other Con.... When I have thus got them altogether in one view, I endeavor to estimate their respective weights; and where I find two, one on each side, that seem equal, I strike them both out.... [T]hus proceeding, I find where the balance lies; and if after a day or two of further consideration... , I come to a determination accordingly.

Benjamin Franklin

At its core, CBA is just Franklin's pro/con list, but for society

Easy logic

Net social benefit = benefits − costs



CBA IN GOVERNMENT

1936: Army Corps of Engineers

1950s–70s: Experimentation

1981: Reagan’s EO 12291 and RIA

1994: Clinton’s EO 12866

WHO USES CBA?

Executive agencies

Legislators

Courts

Cities and states

Nonprofits and foundations

Aid agencies

CBA is deceptively hard and complicated and expensive in real life

...
There are benefits, of course, which may be countable, but which
Have a tendency to fall into the pockets of the rich.
While the costs are apt to fall upon the shoulders of the poor.
So cost-benefit analysis is nearly always sure.
To justify the building of a solid concrete fact,
While the Ecologic Truth is left behind in the Abstract.

Kenneth E. Boulding, “A Ballad of Ecolocial Awareness” (1973)

NINE SIMPLE STEPS OF CBA

lolz

1. Specify the set of alternative projects

List all the possible alternatives

Keep status quo if still viable

Asphalt or concrete

4 different routes

2, 3, 4, or 6 lanes

No tolls, low tolls, high tolls

Elk tunnels?

Begin construction now or later

2. Decide whose benefits and costs count

Standing

Just citizens of city/state/country?

Just people currently alive?

3. Identify impacts and measure them

Impacts = inputs and outputs

Think of every possible thing involved

You live in a city that currently does not require bicycle riders to wear helmets. You like riding your bicycle without a helmet.

From your perspective and society's perspective, what are the major costs and benefits of a proposed city ordinance that would require all riders to wear helmets?

How might you measure these?

4. Predict the impacts quantitatively over the life of the project

Make predictions for each of the impacts from step 3

Figure out number of vehicle trips on new highway + old roads

Extrapolate and estimate driving costs saved, accidents avoided, lives saved, etc.

5. Monetize all impacts

Put everything in the same scale: $$$

Market prices

Shadow prices

Statistical life ≠ individual life

What did Colbert claim? What was wrong?

Value of a statistical life

How much people are willing to pay for a reduction in the probability of death, extrapolated to 100%

Like a demand curve for injury and death

Contingent evaluation

Ask people what they'd be willing to pay to lower their risk of death

Surveys, focus groups, guesses

Revealed preferences

Look at what people pay in real life

Low risk jobs pay less than high risk jobs, so higher wage = WTP for reduction in risk

Contingent evaluation vs. revealed preferences

We tend to trust people's own revealed safety vs. money preferences

But, it's tricky

Monthly Labor Review
mlr
BLS

ARTICLE

OCTOBER 2013

Using data from the Census of Fatal Occupational Injuries to estimate the "value of a statistical life"

The advent of the Census of Fatal Occupational Injuries has enabled researchers to reduce measurement error in fatality rate estimates; in turn, estimates of the "value of a statistical life" that are based on labor market data have become less uncertain.

Table 1. Fatality rates, by industry and occupation, 2006–2008

Occupation	Industry										
	Total	Construction	Finance, insurance, and real estate	Information	Manufacturing	Mining	Public administration	Retail trade	Services	Transportation and public utilities	Wholesale trade
Management, business, and financial	1.2	3.8	0.8	0.6	0.7	3.2	0.9	0.7	1.1	1.3	1.5
Professional and related	.9	3.5	.2	1.1	.7	7.2	1.2	.7	.8	1.5	1.3
Service	3.2	16.2	2.8	2.0	1.9	(1)	9.1	2.1	2.4	2.9	(1)
Sales	1.9	1.9	1.1	2.1	1.7	(1)	(1)	2.3	1.1	1.0	2.1
Office and administrative support	.5	.6	.3	.4	.4	(1)	.3	.6	.4	1.4	.5
Farming, fishing, and forestry	8.3	(1)	(1)	(1)	6.7	(1)	10.3	8.6	19.4	15.5	4.6
Construction and extraction	12	11.8	4.8	(1)	6.6	34.9	5.0	3.1	12.4	8.4	8.4
Installation, maintenance, and repair	6.9	13.8	6.2	3.6	6.0	16.5	1.9	3.0	6.2	8.9	11.7
Production	2.8	14.1	3.2	2.0	2.4	16.1	2.8	1.1	2.8	4.1	7.0
Transportation and material moving	15.8	21.6	15.3	28.2	7.9	25.4	13.9	5.7	14.1	22.4	11.4
Industry average	…	10.2	1.0	1.7	2.4	20.7	3.9	2.1	1.8	11.5	4.0

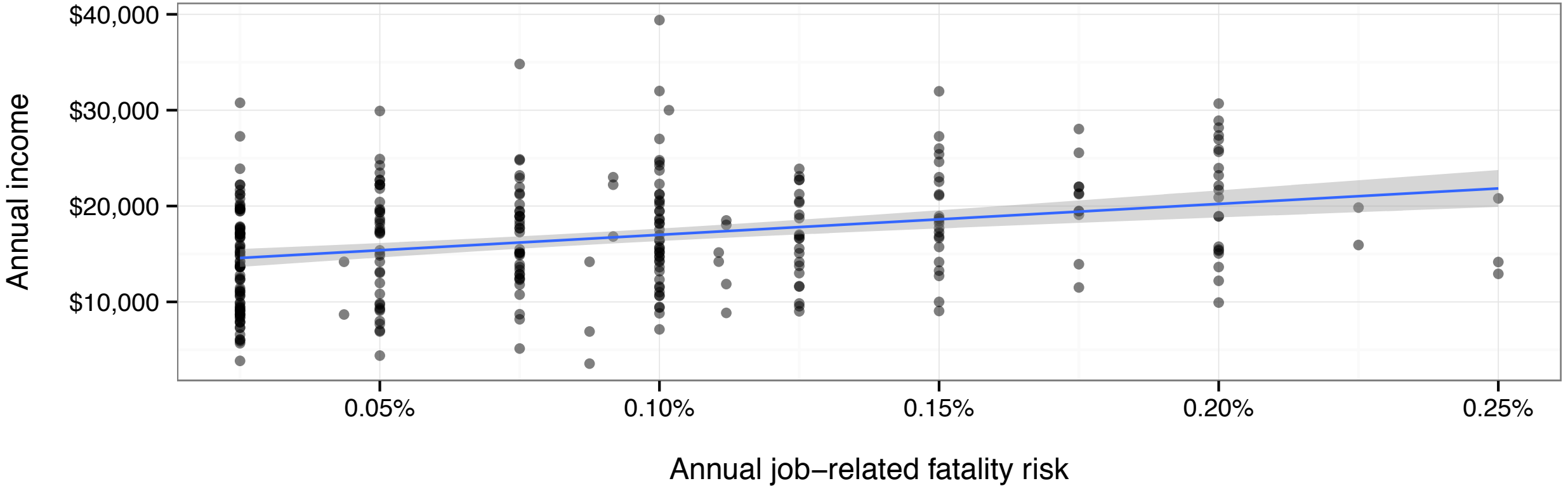

$40,000
$30,000
$20,000
$10,000
Annual income
0.05%
0.10%
0.15%
0.20%
0.25%
Annual job−related fatality risk

Table 3. Regression estimates of the value of a statistical life

Category	Wage equation, based on—		Logarithm of wage equation, based on—	
	Hours-based fatality rates	Employment-based fatality rates	Hours-based fatality rates	Employment-based fatality rates
Fatality rate	0.0395 (0.0078)	0.0437 (0.0067)	0.0024 (0.0003)	0.0026 (0.0003)
Value of a statistical life (in millions of dollars)	7.9	8.7	9.9	11.1
Adjusted *R*-squared	.3884	.3885	.4405	.4407

Note: Standard errors are in parentheses following the estimate. All coefficients are statistically significant at the 99-percent level or better. Endnote 5 in the text gives other variables included in the equation. The sample size is 126,225.

Source: Author's calculations, based on U.S. Bureau of Labor Statistics, Current Population Survey.

potential work experience + potential work experience squared + years of education + indicator variables for male, married, Black, Native American, Asian, Hispanic ethnicity, doctorate or professional degree earned, paid hourly rate, full-time employment, union or employee association membership, government employment, six metropolitan and nonmetropolitan areas, eight regional areas, nine largely blue-collar occupations, and professional occupational group

Coefficient × 100,000 × average hours worked per year

0.0395 × 100,000 × (42.57 × 52) = $8.74 million

Off because of rounding

Others, like NHTSA

AN ECONOMIC ANALYSIS OF A DRUG-SELLING GANG'S FINANCES*

STEVEN D. LEVITT AND SUDHIR ALLADI VENKATESH

VSL = $50,000

6. Discount benefits and costs to obtain present values

Present value = value of an amount that occurs in the future

$$PV = \frac{FV}{(1+r)^t}$$

Why discount?

Costs of public projects are front loaded

Benefits occur over a long period of time

How do we know if the benefits over time are worth the initial costs?

Discount rates

Opportunity costs

Time value of money

OMB Circular A-94 Appendix C

1%, 3%, 7%, then sensitivity analysis

World Bank uses 10%

7. Compute the net present value of each project

$$PV = \frac{FV}{(1+r)^t}$$

$$TPV = \sum_{t=0}^{n} \frac{X_t}{(1+r)^t}$$

$$NPV = TPV(\text{benefits}) - TPV(\text{costs})$$

8. Perform sensitivity analysis

Manipulate or simulate everything that is uncertain or contentious

Impacts

Discount rate

VSL

Monetizations

9. Make a recommendation

If NPV > 0, 👍

Important CBA numbers

Benefit cost ratio (BCR):
Total benefits / Total cost

🌟**Net present value** (NPV): 🌟
Benefits – costs

Should we do a project if NPV < 0?

Sometimes, yeah, if we're comfortable with DWL or outcome

Sin taxes; Pigovian taxes; subsidies

Justify the policy on other grounds

Standards of fairness/efficiency

Pareto standard

Nobody made better off without someone being made worse off

Kaldor-Hicks standard

Potential Pareto

Adopt policy iff those who gain could compensate those who lose and still be better off

Compensation doesn't have to happen; benefits could all go to one person

CBA EXAMPLE