Benefit-Cost Analysis & Equity

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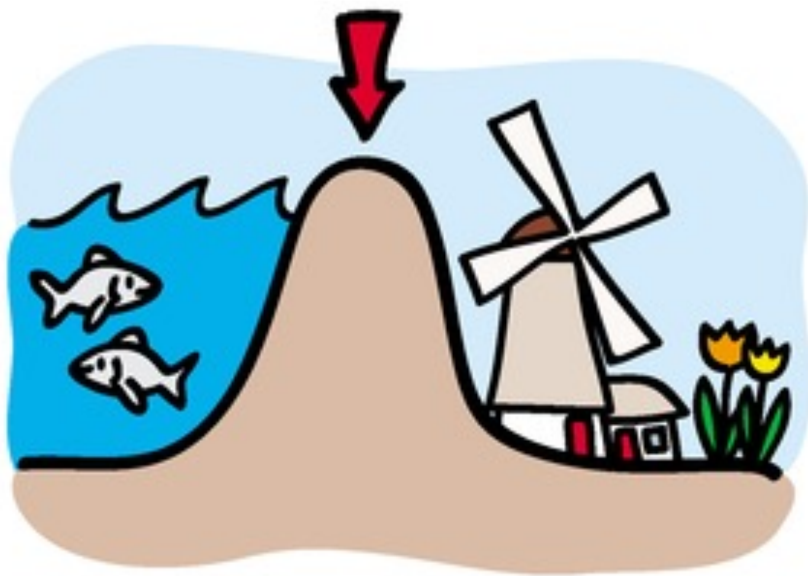
September 2023

A hypothetical example

FEMA is deciding between funding two levy projects to protect homes against flooding, each costing $10 million:



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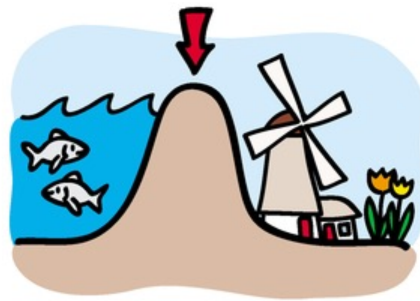
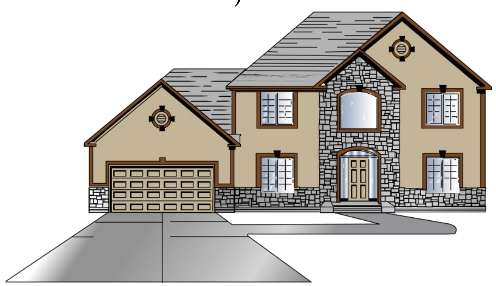


<u>Project A</u>



Protect 50 homes
in high-income neighborhood,
valued at $210,000 each

<u>Project B</u>

Protect 100 homes
in low-income neighborhood,
valued at $90,000 each

(For simplicity, assume 100% chance of destruction without levy.)

<u>Which should FEMA fund?</u>

What FEMA has historically chosen: (A) rich neighborhood

ENERGY & ENVIRONMENT

How FEMA helps white and rich Americans escape floods

An investigation by POLITICO's E&E News reveals systemic favoritism toward wealthy and white people in a federal program that lifts homes above rising floodwaters.

The Federal Emergency Management Agency gave Nanci and Jonathan Lewis $100,000 to raise their home in Fairfield, Conn., in 2018 (left). The agency rejected a request to demolish public housing in a Black neighborhood in Wilson, N.C., that was condemned after repeated flood damage (right). | Thomas Frank/E&E News (left photo); Francis Chung/E&E News (right photo)

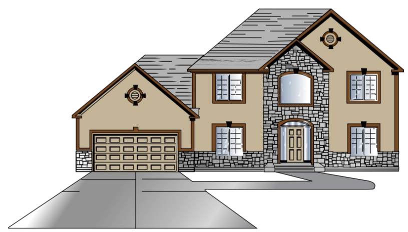
By **THOMAS FRANK**
05/27/2022 04:30 AM EDT

Why? Benefit-cost analysis (BCA) procedures (in part)

- FEMA grant spending goes through benefit-cost analysis (BCA)
  - Requires: benefits > costs

Here is the standard analysis:

- Recall costs are $10m



	Project A	Project B
Benefits	50 houses * $210,000 = $10.5m	100 houses * $90,000 = $9m

…and wealthy communities will tend to win…

Result: Project A wins

The Administration has a proposal to allow agencies to change this, which has been controversial

WSJ | OPINION

OPINION | COMMENTARY Follow

Biden's OMB Politicizes Cost-Benefit Analysis

The guidance threatens to upend the longstanding bipartisan reliance on best practices and evidence.

By Susan Dudley and W. Kip Viscusi

Aug. 28, 2023 5:44 pm ET

"[A]ll the former presidents of the Society for Benefit-Cost Analysis, along with editors of the Journal of Benefit-Cost Analysis" object to this change.

This talk:

1. The current approach does not maximize social welfare

2. An approach with distributional weights does maximize social welfare
   - Current proposed revisions accomplish this
   - Notwithstanding recent criticisms in the WSJ, etc.

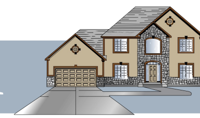
3. There are remaining implementation questions

Two notes:

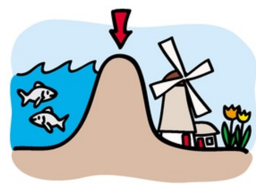
1) Although I worked on these issues as Chief Economist at OMB (including leading the process to revise the BCA of spending programs), I am speaking on my behalf, not the Administration's.
2) Much of this is based on a soon-to-be released draft with Cass Sunstein

1. The current approach does not maximize social welfare

- Return to the example

	Project A 	Project B 
Benefits	50 houses * $210,000 = $10.5m	100 houses * $90,000 = $9m
Household income	$150k/year	$50k/year

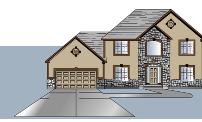
- Recall costs are $10m for each

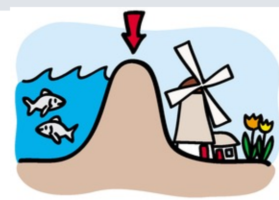


- Put this in a social welfare function (SWF)
    - Assume all are owner-occupied & 100% incident on them, over 10 years
    - SWF: assume log utility

1. The current approach does not maximize social welfare

- Calculate social welfare gain from the project:
  - Welfare with the project – welfare without the project
  - = # years * # households * [log (full income) - log (income after annual housing losses)]

	Project A 	Project B 
Social welfare gain from project	10 yrs * 50 hh * [log ($150k) – log($150k - $21k)] = 33	10 yrs * 100 hh * [log ($50k) – log ($50k - $9k)] = 86



Result: Project B wins

- What's going on here?
  - The declining utility of income means that it is much more valuable to direct resources to the low-income households
- Implication:
  - The current approach does not maximize social welfare

2. An approach with distributional weights does maximize social welfare

<u>First, some context</u>:

- I have been focusing - and am going to focus - on the BCA of spending (e.g., a FEMA grant), rather than regulation (e.g., requiring industry to reduce pollution)
  - Spending is actually governed by different OMB guidance (Circular A-94) than governs regulation (Circular A-4)
- BCA for spending is quite important
  - FEMA, for example, distributes several billion dollars a year in resilience grants to communities
  - Also Army Corps, DOT, etc.: in total \$40-\$50 billion / year
- I do this for two reasons:
  - It is clearer for discussing distributional considerations
  - It is the process that I led – and the BCA that I oversaw – at OMB, so I know institutional details

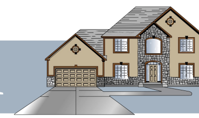
2. An approach with distributional weights does maximize social welfare

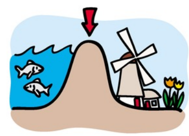
- The Administration has proposed revisions to benefit-cost analysis

- Administration's proposal:
  - Allows (but does not require) agencies to use distributional weighting
  - For log utility, that means a weight of 1/income (normalized by 1 / median income of $75k)
    - The higher the income, the lower the weight
  - Long been in UK guidance
  - Being piloted by FEMA

2. An approach with distributional weights does maximize social welfare

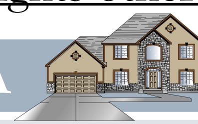
Recall the current method with weights of 1:

	Project A 	Project B 
Benefits	50 houses * $210,000 = $10.5m	100 houses * $900,000 = $9m

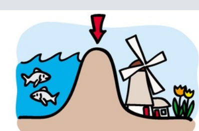


Result: Project A wins

Redo BCA analysis with distributional weights other than 1:

	Project A 	Project B 
Household income	$150k/year	$50k/year
Weight	(1/$150k) / (1/$75k) = 1/2	(1/$50k) / (1/$75k) = 1.5
Reweighted benefits	$10.5m * 1/2 = $5.25m	$9m * 1.5 = $13.5m

…social welfare maximized…
but there are costs…



Result: Project B wins

Criticisms of this approach are misguided

1. "Taxes are a better way of redistributing"
   - Maybe so. That doesn't mean that they actually redistribute.
   - Good reason to think that taxes won't redistribute. (Liscow, "Redistribution for Realists," 2022)
     - Public sentiment: psychological evidence that the public cares about the <u>means</u> of redistribution, not just amount – views in silos, not holistically
       - Taxation: Resists "giving out" cash and having close to revenue-maximizing at the top because of feelings that income is "earned"
       - Instead, prefers necessities (Liscow & Pershing 2022)
       - And cares about fairness (e.g., BCA?)
     - Empirically, tax system is wildly far off from reasonable utilitarian benchmarks
       - Implicit valuation of $1 at 10th percentile vs. 90th of income:
         - Tax system implicitly:1.5x (Hendren 2020)
         - Log utility: 13x

Criticisms of this approach are misguided

2. "This kind of redistribution is illegitimate. Look at how little we redistribute through taxes as a judge of what the public wants."
    - See previous argument: we shouldn't expect to see the same amount of "redistribution" across different domains
        - Does it even seem like "redistribution" to ensure that a low-income individual has the same shot as a high-income individual at receiving federal funding?
    - Nothing in statutes says that funding should be directed toward richer neighborhoods
    - There are broader notions of fairness

Criticisms of this approach are misguided

3. "Efficiency is better because the winners can compensate the losers, and everybody wins."
   - The current A-94 is explicitly based on this "Kaldor-Hicks" reasoning
   - What does it mean for FEMA to compensate losers when it is giving out money?
   - Putting that aside, that compensation rarely happens
     - It can't happen institutionally from the agency providing the grants
     - Little evidence that it happens more generally
       - China & WTO (Autor et al. 2016)
       - Example from litigation: State supreme courts require more funding for low-income schools. Do the relative losers receive offsetting benefits later? Not at all. (Liscow, "Are Court Orders Sticky?" 2018)

Criticisms of this approach are misguided

4. Institutional concerns – 1) this isn't what BCA is, 2) it is too value-laden, and 3) it lacks transparency

- Dudley & Viscusi in WSJ a few weeks ago:
  - "OMB's draft revisions to longstanding guidance stray from widely accepted principles and methods in several areas, including . . . by 'weighting' impacts by income to exaggerate their benefits to low earners. . . ."
  - "[T]hese changes would embed values other than economic efficiency in the benefit-cost analysis, rather than encourage career staff to present the best evidence and leave value judgments to politically accountable officials. OMB's draft opens the door to putting scientific-sounding numbers on inherently qualitative values like social justice. . . . That would vitiate the transparency and integrity of regulatory-impact analysis, which for decades has served as a ballast across administrations with widely varying policy objectives."
- Dudley & Viscusi approach:
  - Do efficiency-based BCA and then have political actors decide

Criticisms of this approach are misguided

Several responses to these institutional concerns:

1) There is no one way to do BCA. BCA is a quantitative tool to achieve goals.
   - Distributional concerns have been stated goal in federal guidance for decades. There is almost nothing to show. The current approach has not worked.
     - This suggests that a new approach would be helpful.
2) BCA is always value-laden: Those values can't be avoided. And current system (with weights of 1) is designed in a way that funds rich more than poor places.
3) It wouldn't help transparency for spending: The analyses aren't public! If benefit-cost analyses for spending were released, it could make sense to do 2 analyses for transparency purposes: with weights of 1 and with different weights.

Their proposal isn't workable under BCA for spending as currently practiced: For BCA of spending, this is not how things work. Projects with a BCR < 1 are not even considered. The BCA is decisive in this respect.

- Even if it were workable, it is a bad proposal. It is good to guide decisionmakers rigorously rather than for them to act in an ad hoc way. And helpful for applicants.
- In any case, it is the political actors choosing the weighting. This is discretionary.

Criticisms of this approach are misguided

- Example of why efficiency-based analysis works poorly: tax regulations
  - Context:
    - June 9 Memorandum of Agreement between OMB and Treasury: taxes aren't subject to OIRA review

- This is good
  - Under efficiency-based analysis, rules increasing tax enforcement will tend to be cost-INeffective
  - Revenue = transfer from taxpayers to government
  - Cost of government administration + taxpayer compliance / behavioral distortion
  - So, no benefits and some costs → bad rules
  - This is not sensible. Need distributional weighting (or other things).

3. There are remaining implementation questions on distributional weighting

- Should weights be mandatory?
  - No. Legal risk.

- What weights?
  - Leave to agencies, but have a default
  - Should not be based on weights implicit in tax system (see earlier argument)
  - And base on post-tax/transfer income

- Measurement questions
  - Not hard with income (easy from the Census)
  - But what level of geography?

3. There are remaining implementation questions on distributional weighting

- Administrative burden
  - Localities often spend tens of thousands of dollars on their BCA
  - Reason to do less

- Incidence
  - Hendren & Kaplow have done important work on “fiscal externalities”
    - Ex: people pay more taxes when their homes are not destroyed
  - Benefits should be counted <u>net of their effect on the budget</u>
    - And increase in tax revenue should be deducted from costs
  - Important for proper measurement & targeting to consider

Conclusion

- The current approach to BCA does not maximize social welfare
  - It also is arguably unfair
- A social welfare approach justifies distributional weighting

- Taking a step back:
  - Shows a deep relationship between tax and non-tax policy

- Reforming big rules is never easy
  - The US federal government has never used (to my knowledge) distributional weighting
  - Take time to figure out how exactly to do it best
  - But we're making important progress