# CHAPTER 1: THE FIELD OF POLICY ANALYSIS

Whoever does that kind of thing?

Case 1: On October 11, 2017 President Trump said that if Mexico and Canada would not agree to renegotiate the North American Free Trade Agreement (NAFTA), "it'll be terminated and that will be fine." Five days later the *Wall Street Journal*[1] ran an editorial touting the result of a Boston Consulting Group analysis that "ending Nafta could mean the loss of 50,000 American jobs in the auto-parts industry as Mexico and Canada revert to pre-Nafta tariffs."

**Trump:** It's a tremendous tax cut for people, and people are really learning. I don't have to explain it. They're just seeing a lot more money show up in their check that they didn't see a couple of years ago.

**Hauser:** And you said $5 billion in savings here in the state of Minnesota --

**Trump:** Yes.

**Hauser:** Is that according to -- who?

**Trump:** $5 billion according to whoever does that kind of thing.

Case 2: The Affordable Care Act included a tax on high cost employer health plans, the so-called Cadillac tax. Economists have long argued that the tax deductibility of insurance leads employers to offer overly generous plans. The Cadillac tax attempted to restore balance to the tax treatment of wages versus health insurance benefits while raising funds to extend insurance coverage to people not covered by employer plans. The Congressional Budget Office (CBO) and Congressional Joint Committee on Taxation predicted that the Cadillac tax would increase federal revenue by $193 billion between 2019 and 2029.[2] Of that, employers would pay $96 billion. The remainder would be paid by employees. The CBO projected that employers would respond to the tax by shifting compensation from insurance to wages

[1] Editors. Trump's Nafta threat. *Wall Street Journal* October 16, 2017. Page A018.
[2] Congressional Budget Office. Federal Subsidies for Health Insurance Coverage for People Under Age 65: 2019 to 2029. May 2019.

(which would increase federal individual income tax receipts), though opponents of the tax were skeptical. Congress repealed the tax in 219.

## What is policy analysis?

The goal of policy analysis is to project the future impact of policies. Our ancestors attempted to predict the future by observing seemingly random patterns in nature or manmade objects. Examples include alectromancy (observing a rooster pecking at a grain), ceromancy (dripping wax), and extispicy (animal intestines). Policy analysis tries to put prediction on a sounder, more scientific footing.

For purposes of this course, "policy analysis" is a term used to describe quantitative predictions of the impact of yet-to-be enacted policies. Elsewhere, the term is sometimes used to describe verbal descriptions of regulations and laws, memos that lay out options for addressing specific problems, summaries of feedback from stakeholders, subjective ratings of how policies satisfy various objectives, and analyses describing the challenges associated with implementing policies.

Caravaggio's Fortune Teller, 1595

Cost-benefit analysis, conducted from the societal perspective, is the foundational framework for policy analysis. But most policy analyses are not cost-benefit analyses and are not conducted from the societal perspective. They focus on outcomes that are more tangible, easier to digest, and relevant to policymakers and the public: jobs created, smoking rates, HIV prevalence, costs to patients, costs to firms, and, especially, costs to the government.

Often, policy analyses extend academic research by extrapolating results to salient outcomes (i.e., outcomes that normal people care about). Academic studies often measure the impact of policies or interventions on intermediate outcomes for practical reasons. For example, an academic study may measure the impact of an educational intervention on test scores or grade completion. But policymakers would rather know how it affects employment rates, earnings, incarceration rates, government spending, or other "downstream" outcomes. A policy analysis can make the connection between the intervention, results reported in an academic study, and outcomes that get the attention of policymakers and the media.

Many policy analyses assess the impact of policy changes on government spending. Partly, this is due to Senate rules that make it harder to pass legislation that increases the deficit, but many policymakers are concerned about the size of the deficit and federal debt. When a member of Congress considers a new policy, the first question they usually ask is, "How much will it cost?"

Analyses where the outcome is the cost are not simply accounting exercises. Instead, they need to take account of the complex effects of policy changes. For example, funding a program to treat uninsured HIV patients may reduce transmission, which could partially or completely offset the up-front costs of the program. To make this kind of prediction, an analyst would need to predict the impact of treatment availability on treatment rates, the

impact of treatment on HIV levels, and the impact of HIV levels on transmission opportunities and rates. The analyst would need to use methods and results from economics and epidemiology.

Some analyses are complex, but complexity for its own sake is not a virtue. The best analyses and models strip away extraneous assumptions and calculations and focus on the heart of the matter.

*Simple can be harder than complex because you need to get your thinking straight first.* -Steve Jobs

## Policy analysis: a brief and incomplete history

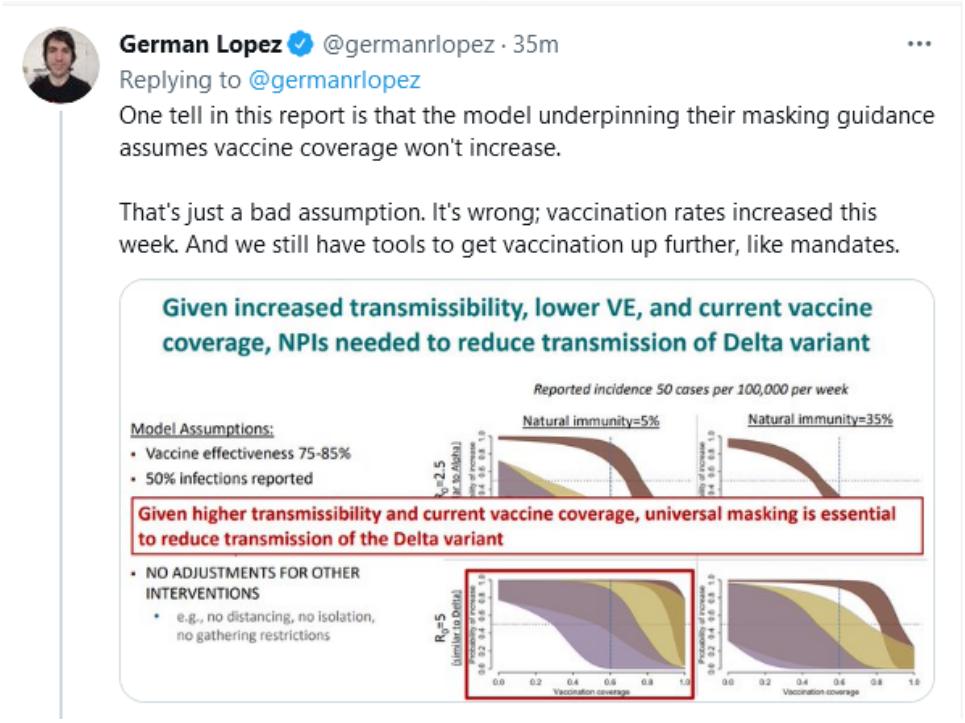
The Progressive Movement, a reaction to the machine politics of the late 1800s, emphasized "scientific" decisionmaking and the application of modern management techniques, pioneered by Frederick Winslow Taylor, to eliminate waste and improve efficiency. It elevated the status of experts and sought to reduce the influence of parochial political concerns on policymaking.

Jumping ahead, World War II and the Cold War presented many opportunities for experts to influence defense policy. The stakes were so large, the weapons so costly and destructive, that seat-of-the-pants decision making could lead to catastrophic failures. Here is an example of expertise applied to a pressing problem faced by military leaders.

> During World War II, [Abraham] Wald applied his statistical skills when considering how to minimize bomber losses to enemy fire. Researchers from the Center for Naval Analyses had conducted a study of the damage done to aircraft that had returned from missions, and had recommended that armor be added to the areas that showed the most damage. Wald noted that the study only considered the aircraft that had survived their missions—the bombers that had been shot down were not present for the damage assessment. The holes in the returning aircraft, then, represented areas where a bomber could take damage and still return home safely. Wald proposed that the Navy instead reinforce the areas where the returning aircraft were unscathed, since those were the areas that, if hit, would cause the plane to be lost.[8][9] This is still considered today seminal work in the then-fledgling discipline of operational research.
>
> -- https://en.wikipedia.org/wiki/Abraham_Wald

Ironically, Wald died in a plane crash. Nobel prize winner John Nash briefly worked at the RAND Corporation on game theory, which the Air Force used to develop strategies for deterring a nuclear attack by the Soviet Union.

In the 1960s and 70s the federal government expanded its reach into areas like health, education, and the environment where previously it had only minimal involvement in these areas. This shift created a growing demand for analysis and program evaluation. Around the same time, University of Chicago economist and eventual Nobel Prize winner Gary Becker started to examine issues like discrimination, marriage, and crime that went well beyond the traditional boundaries of the discipline. His work showed how the tools of economics could be applied to analyze many different types of policies, not just those directly related to macroeconomic issues like unemployment rates and inflation.




More recently, businesses have increasingly come to realize the value of formal, quantitative analysis. In his book *Moneyball*, Michael Lewis describes how the Oakland A's, rather than relying solely on the subjective judgements of baseball scouts, combined data on player characteristics with insights about the game to select players that were undervalued. (It is a great book and worth reading even if you don't like baseball.) Today many sports franchises employ statisticians and analysts, some of whom have even become general managers. The demand for analysis among decisionmakers in finance, sports, government, and other fields has never been greater.

I put policy analysis into a few different categories. There are analyses that are required by law or executive order. And then there are policy analyses performed by academics, consulting firms, think tanks, and trade associations to influence decisionmakers.

## The Congressional Budget Office

The Congressional Budget Office, or CBO, is the most influential and important body conducting policy analysis in the United States. Under the rules the Senate sets for itself, the requirements for passing a bill that increases the budget deficit are more stringent. A bill that increases the deficit requires 60 votes.

The CBO is the official scorekeeper: it analyzes the impact of proposed laws on federal spending and revenue over a 10 year period. When writing bills, lawmakers try to anticipate the CBO analysis and structure provisions to yield a favorable CBO "score". Sometimes, the cart drives the horse, in the sense that Congressmen shape a law to achieve the best score given the CBO's modeling assumptions and scoring rules. This was the case with the Affordable Care Act: "As it made its way through Congress in 2009 and 2010, the Affordable Care Act basically took shape through a long series of back-and-forth adjustments between the relevant committees and the Congressional Budget Office, intended to tweak the coverage and cost scores of the bill to accord with the idiosyncrasies of CBO's modeling."[3,4] The Affordable Care Act passed in 2010, but major provisions, including the Medicaid expansion, did not take effect until 2014. Critics charged that the drafters delayed implementation of these costly provisions until year 4 of the 10 year CBO budget window so that the CBO analysis would show that the Act was deficit neutral.

The CBO does not publish its methods or models. Senator Mike Lee has introduced a bill that would require the CBO to do so. It is called the Show Your Work Act of 2017.

### Regulatory impact analysis

Federal regulatory agencies are required to perform a cost benefit analysis of major regulations and have a difficult time enacting regulations unless the benefits outweigh the costs. We will return to this topic in another chapter.

### Merger analysis

The Department of Justice and the Federal Trade Commission have authority to block mergers between companies that will harm consumers. They typically commission analyses to project the impact of the mergers on prices and other outcomes of interest. The merging companies will commission their own analysis. These analyses are arcane and highly technical, so we won't talk about them too much. But it is a good business. People who can execute and testify about these analyses are well compensated.

### State requirements

State governments have idiosyncratic requirements for policy analyses. In California, laws that add new health insurance benefit mandates or modify existing ones are analyzed by the California Health Benefits Review Program. The Program projects the impact on community health, use of the service, and health care costs. The New Jersey legislature is considering (as of this writing) a bill that would require the state's Office of Legislative Affairs to prepare "racial and ethnic impact statements" that project how changes to criminal justice laws would affect minorities.

### Policy analysis in the private sector

[3] Saldin, Robert P. When Bad Policy Makes Good Politics: Running the Numbers on Health Reform. Oxford University Press. New York, NY 2017.
[4] Levin, Yuval. The Congressional Budget Office Needs to Be Reformed. National Review Online. June 2, 2017.

Outside the federal government, there are a number of consulting firms that perform policy analysis. These include niche players, for whom policy analysis is a core part of their business, and larger firms like PwC (PricewaterhouseCoopers), that perform policy analysis in addition to their usual management consulting activities. Some of the smaller firms that are active in the health care sector are Lewin and Avalere Health.

Non-partisan think tanks and contract research organizations that perform policy analysis under contract include RAND, Research Triangle Institute, Mathematica Policy Research, and the Urban Institute. With the exception of Mathematica, all are non-profit. There are also a number of associations, like Pharma and the American Cancer Society, ideologically-oriented think tanks, like the American Enterprise Institute and Families USA, and non-partisan research groups, like the Employee Benefit Research Institute, that produce policy analysis.

Advocacy groups, think tanks, and lobbyists release policy analyses to influence the opinions of policymakers, the media, and, in some cases, the general public. Here is an instance where the *Wall Street Journal* editorial page referred to the findings of a policy analysis of the cost of deporting illegal immigrants.

> Donald Trump and Ted Cruz say they'd deport all of the 11.3 million or so undocumented immigrants living in the U.S. They don't say how they would pull off this forced human exodus. But new research shows that executing on this promise would require at least $400 billion in new federal spending and reduce U.S. GDP by about $1 trillion. A study released this month by the American Action Forum, a free-market think tank led by economist Doug Holtz-Eakin, walks through the process of evicting 11 million people over two years, a time frame Mr. Trump has floated. The report assumes that about 20% of those here illegally would leave voluntarily once the roundups begin. But that still leaves about nine million to find and deport.[5]

Here is another discussing a policy requiring groceries and food manufacturers to label products with genetically modified organisms.

> Consumers will pay through higher grocery bills, perhaps $500 a year for a family of four, according to a Cornell University study of a similar proposal in New York. A recent study by economic consult John Dunham & Associates found that if national companies react to Vermont's law by switching to non-GMO commodities— most of which cost about 10% more—a family would pay $1,050 more a year for food. (Opponents of the law financed the study).[6]

Most policy analysis produced in the private sector are narrowly targeted at elites: corporate executives, Congressional and Executive Branch staff, think tank employees, and reporters at media outlets that cater to the rich and powerful. For example, pharmacy benefit manager Express Scripts released an analysis in 2013 predicting savings to the state of California if the Food and Drug Administration allowed pharmaceutical firms to sell biosimilars (kind of like generic copies of genetically engineered drugs). Given the obscure topic, Express Scripts probably did not expect to receive a lot of media coverage. Rather,

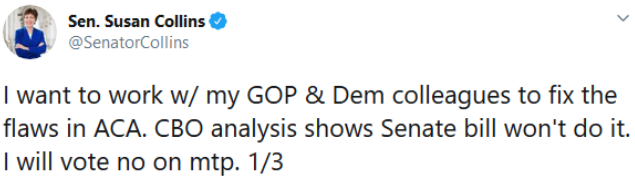
[5] Editors. The Costs of Mass Deportation. Wall St. Journal March 21, 2016.
[6] Editors. Vermont Invades Your Kitchen. Wall St. Journal March 10, 2016.

they hoped the analysis would make key opinion leaders in the state more sympathetic to their cause.

There are cases where the audience for a policy analysis is the general public. Trying to win approval for public funding for a new stadium, the Minnesota Vikings commissioned a policy analysis to show the economic benefits of the stadium for the local economy, the state government, and the construction industry.[7] The analysis was widely reported in the local media.

## Does policy analysis influence policy?

In 2016, President Trump and many Congressional Republicans ran on a platform of repealing the Affordable Care Act. Their position was unambiguous. In May of 2017, the House of Representatives voted 217 to 213 to repeal the Act. In June, the Congressional Budget Office came out with a revised projection of the impact of repeal. It showed that 22 million people would lose coverage. Confronted with the projection, Senator John McCain stated, "Well, obviously that's not good news." In July, the Senate took up the issue. Two Republican Senators, Susan Collins and Lisa Murkowski, came out against the bill. In a dramatic move, previously undecided Senator John McCain, who had been absent while he received treatment for a brain tumor, returned to the Senate to cast the deciding vote against repeal, which was defeated in a 49-51 vote. It is unclear if the CBO projection influenced Senators' votes or merely gave them cover for a position they would have taken anyway. But, to many observers, the CBO's projections of large increases in the uninsured population swayed public opinion and votes against repeal. Policy analysis made a difference.




The case of COVID and March 2020 lockdowns provides a particularly powerful illustration of the ability of policy analysis to influence policy. We will discuss COVID modeling in another chapter.

There are also many instances where decisions are made in spite of or in the absence of a policy analysis. Policy analyses have an important role to play in highlighting unintended consequences. Facing pressure from New York state governor Andrew Cuomo, Entergy, Inc. closed its Indian Point nuclear plant in Westchester County without performing an environmental impact review. (Opponents of the shutdown argued that a review was required under the state's Environmental Quality Review Act.) The plant was ostensibly closed for environmental reasons, but an analysis might have shown that replacing the energy from the nuclear plant with energy from gas-powered plants would increase carbon dioxide emissions.[8,9]

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[7] U.S. Bank Stadium. Economic Impact. http://www.vikings.com/stadium/new-stadium/economic-impact.html

[8] Editors. Cuomo's Nuclear Short Circuit. Wall St. Journal. May 18, 2017

[9] Giambusso, David, Marie J. French. Cuomo to announce closure of Indian Point. Politico. January 6, 2017. http://www.politico.com/states/new-jersey/story/2017/01/sources-cuomo-to-announce-closure-of-indian-point-108520

## An example

In 2008 the California state legislature considered a bill requiring restaurant chains to post calorie counts. Obesity rates have increased rapidly, paralleling the increase in the number of meals consumed at restaurants. Consumers and even nutritionists tend to underestimate the calories in restaurant food. Menu labeling could reduce obesity rates if, as a result of viewing calorie labels, restaurant patrons shift to lower calorie items and consume fewer calories in total.


A 2008 analysis by Los Angeles County's Department of Public Health predicted that posting calorie counts in restaurant chains with 15 or more locations would prevent 38.9% of the weight gain in the population that would have otherwise occurred during the course of a year. [10]

The analysis combines assumptions about restaurant revenue, the percent of revenue that accrues to chains subject to the law, and the price per meal to calculate the number of meals Los Angles consumers eat at restaurants each year. It then calculates how labeling would affect weight gain based on assumptions about the impact of labeling on consumption of low calorie meals, the difference in calories between regular and low calorie meals, the relationship between calories consumed and weight (3,500 additional calories equals one pound), and baseline trends in weight gain.

The key assumption in the analysis links labeling to consumer behavior. The authors assume that the share of patrons ordering reduced-calorie meals would increase by 10 percentage points if menus were labeled. This assumption is based on a study[11] that randomly-assigned menus with and without calorie counts to subjects in a mail survey and asked them to select an item. The share of subjects ordering the low calorie item (a sandwich "piled high with succulent turkey") was 10 percentage points higher among subjects receiving the menus with calorie counts.

Consumers' food choices in the real world may differ significantly from respondents' hypothetical responses to a mail survey. Respondents might be more willing to say that they would choose the low calorie turkey sandwich over the "deluxe hamburger with fries"

[10] Simon P, CJ Jarosz, T Kuo, JE Fielding. *Menu Labeling as a Potential Strategy for Combatting the Obesity Epidemic.* County of Los Angeles Public Health. May 2008. http://publichealth.lacounty.gov/docs/menu_labeling_report_2008.pdf

[11] Burton S, Creyer EH, Kees J, Huggins K. Attacking the Obesity Epidemic: The Potential Health Benefits of Providing Nutrition Information in Restaurants. *American Journal of Public Health*. 2006;96(9):1669-1675. doi:10.2105/AJPH.2004.054973.

(another one of the menu items) given that they did not actually have to eat it. The real-world effect of labeling might be less than 10 percentage points.

The survey asked respondents to make a one-time choice. If the effect of menu labeling wanes over time, the study will have overestimated the impact.

The response rate to the survey was only 50%. The study will have overestimated the impact of menu labeling if subjects who were more interested in health and nutrition were more likely to return the survey.

Ninety-seven percent of respondents had a high school degree compared to 88% of persons age 25 and older in the US.[12] It is unclear whether the real effect of labeling would be larger or smaller based on differences between the study sample and the U.S. population. Well-educated consumers may be able to better interpret calorie counts, but they may also be more informed about items' caloric content in the absence of menu labeling.

Another key assumption is that low calorie restaurant meals would have 100 fewer calories than regular meals. This assumption was based on a "personal communication", and so it is difficult to assess its validity.

According to the analysis, residents of Los Angeles gain 6.8 million pounds annually. The authors predict that labeling would prevent 2.6 million pounds of weight gain, or 38.9%, of the weight gain that would otherwise occur. The outcome is difficult to explain and put into context. It might have been more helpful to know how labeling would change the share of residents who are overweight or obese.

The analysis implicitly assumes that decreases in the amount of calories consumed at restaurants will not be offset by increases in the number of calories consumed at home. It is possible that patrons who consume low calorie meals at restaurants will compensate by consuming more calories at home, offsetting some of the benefits of labeling.

[12] Ryan CL, K Bauman. *Educational Attainment in the United States: 2015*. U.S. Census Bureau. March 2016.

| Variable | Estimate | Data Source/ Method of Calculation |
|---|---|---|
| 1. Total annual restaurant revenue, Los Angeles County | $14,600,000,000 | Projected restaurant sales for 2007 in California as reported by National Restaurant Association, web site: Http://www.restaurant.org, accessed September |
| 2. Large chain restaurant market share - 15 or more stores in California | 51% | Extrapolated information from the NYPD Group, 2005; cited in the U.S. District Court Declaration of Thomas R. Frieden, Commissioner of the New York |
| 3. Large chain restaurant revenue, Los Angeles County | $7,446,000,000 | Calculated by multiplying the estimates in variables 1 and 2. |
| 4. Average price per meal in large chain restaurants (includes fast food and sit-down restaurants) | $7.80 | Based on national meal price estimates in 1992 (Jekanowski, 1999), adjusted for inflation using a factor of 2.866% per year compounded (based on the |
| 5. Annual number of meals served in large chain restaurants, Los Angeles County | 954,615,385 | Calculated by dividing the estimate in variable 3 by the estimate in variable 4. |
| 6. Annual number of meals served, ages 0-4 years | 36,500,000 | Estimate derived from the 2005 Los Angeles County Health Survey data. |
| 7. Annual number of meals served, ages 5 and older | 918,115,385 | Calculated by subtracting the estimate in variable 6 from the estimate in variable 5. |
| 8. Percentage of large chain restaurant patrons who select reduced-calorie meals as a result | 10% | Extrapolated from data published by Burton et al., Am J Public Health 2006;96:1669-1675. |
| 9. Annual number of reduced-calorie meals | 91,811,538 | Calculated by multiplying the estimates in variables 7 and 8. |
| 10. Average amount of calorie reduction per meal | 100 | Unpublished survey data (person communication: Dr. Lynn Silver, New York City Department of Health and Mental Hygiene, December 3, 2007). |
| 11. Total annual number of reduced calories attributable to menu labeling | 9,181,156,846 | Calculated by multiplying the estimates in variables 9 and 10. |
| 12. Calories per pound of weight | 3,500 | Duyff RL. American Dietetic Association *Complete Food and Nutrition Guide*. Hoboken, New Jersey: John Wiley and Sons, 2002 (page 36). |
| 13. Total annual pounds of weight loss attributable to menu labeling | 2,623,187 | Calculated by dividing the estimate in variable 11 by the estimate in variable 12. |
| 14. Average annual population weight gain, ages 18 years and older (pounds) | 5,500,000 | Calculated using data from the 1997 and 2005 Los Angeles County Health Surveys. |
| 15. Average annual population weight gain, ages 5 to 17 years (pounds) | 1,250,000 | Calculated using data from the 1999 and 2006 California Department of Education Physical Fitness Testing Program. |
| 16. Average annual population weight gain, ages 5 years and older (pounds) | 6,750,000 | Calculated as the sum of the estimated in variables 14 and 15. |
| 17. Percentage of population weight gain averted due to menu labeling | 38.90% | Calculated by dividing the estimate in variable 13 by the estimate in variable 16. |

Since 2008, over 30 studies have retrospectively evaluated the impact of state or local labeling laws on behavior.[13] These assess the "real world" impact of menu labeling on caloric consumption. The authors of a review article[13] conclude that, "there is an abundance of evidence that suggests calorie labeling, as it is currently being implemented, has no impact on overall food purchases or consumption for the population as a whole."

## Academic research versus policy analysis

In some cases policy analyses are performed and published as academic studies, but in most cases they are not. Policy analysis and academic research exist in related but different spheres.

Academic research is historical, even when it is not being performed by historians. Academic researchers describe data that have been collected and experiments performed in the past. Policy analysis is future-oriented. The goal is to project what will happen in the future if a particular policy is changed. Of course it is helpful and usually necessary to look back in time to make projections into the future, but the goal is always to make predictions about events that have yet to occur.

Differences between academic research and policy analysis

| Academic research | Policy analysis |
|---|---|
| Historical | Forward-looking |
| Descriptive | Predictive |
| Originality | Speed |
| Objective | Client-driven |
| Rigor | Back-of-the-envelope |
| Broad perspective | Narrow perspective |
| Scholarly | Accessible |

Adopted from Table 2.1 in Weimer and Vining, *Policy Analysis: Concepts and Practice*, 1999.

While most academic researchers work hard, academic research often proceeds at a leisurely pace. The goal is to uncover the truth, however long that may take. By contrast, most policy analysis is conducted quickly. Policymakers may have an impending decision, and they need an analysis as soon as possible. The length of time between conception to completion for a policy analysis is typically weeks, not the months or years that an original academic study takes to complete. For this reason, policy analysis has to rely on previously published studies. In academic research, originality is prized. In policy analysis, speed and accuracy are more important. It is not feasible to perform an original analysis in most cases.

Ideally, academic research is objective, conducted by researchers who do not have a stake in the outcome. By contrast, many policy analyses are sponsored by interested parties. It is client-driven, with varying degrees of involvement from the client. It is important that a policy analysis have the veneer of objectivity, but it is unlikely that a client would pay money for an analysis that is not helpful to its cause.

Academic research is inherently conservative, not in the political sense, but rather in the sense that researchers have to be very careful about making assumptions and drawing inferences from data. Conclusions are usually cautiously stated. Rigor and formality are

[13] Kiszko KM, Martinez OD, Abrams C, Elbel B. The influence of calorie labeling on food orders and consumption: A review of the literature. *Journal of Community Health*. 2014;39(6):1248-1269.

prized. People who work in policy analysis do not have that luxury. They cannot hem and haw about the need to conduct more research. They need to come up with an answer, and they need to come up with it quickly based on whatever evidence is available. There is a greater tolerance for logical leaps and back-of-the envelope calculations. Support for assumptions can come from industry sources, government reports, and interviews in addition to peer-reviewed publications.

Academic research in the social sciences often adopts a societal perspective (even if that is not explicitly stated). If a study focuses on a narrow endpoint, the study manuscript will carefully acknowledge the broader effects of an intervention or policy change.

Academic research is scholarly. Researchers write for other researchers, and think nothing of using jargon like “cluster-adjusted standard errors” or “Pareto optimality”. Policy analysis tries to be more accessible. The audience includes policymakers, journalists, and even the general public. Technical concepts need to be explained in plain language, and there is relatively more emphasis placed on simplicity and transparency and less on rigor.