

Is Regulation Beneficial?

Cost of Living Summit

10:30-10:50^{AM}, Friday 13 October, 2017

Old Legislative Council Chamber

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Outline

1. Role of science

2. Scientific evidence on regulation

A. Industry

B. Commercial speech

C. Corporate social responsibility

D. Climate policy

E. Governance

3. Four checklists for assessing a regulation...

A. Iron Law of Regulation: Can it improve on a free market?

B. Guidelines for Science: Is it based on science?

C. Golden Rule of Forecasting: What happened in the past?

D. Assessing simplicity: Can you understand it?

4. What you can do

Role of science

Regulation, by definition, reduces liberty,...

but many people believe regulation increases welfare.

The scientific method is the best way that we know to test...

whether a regulation is, or will be, beneficial.

Do researchers mostly comply with science?

- No.
 - Only a fraction-of-one-percent of papers published in scientific journals follow the criteria for scientific research as outlined in the checklist for scientific research described later.
- Why?
 - No one asks them to.
- Worse, they are rewarded for unscientific work, including:
 - commissioned research (especially grants from governments)
 - advocacy
 - complex writing
 - using complex, invalid, and irrelevant techniques
 - citations, regardless of whether the work complies with science
 - mass media coverage, regardless of scientific content*.

*As a consequence, there is reason to be sceptical of the truthfulness of “scientific findings” reported in the media.

**Competing hypotheses:
“Market Failure” vs “Government Failure”**

Hypothesis R: Government regulations *improve* welfare relative to laissez-faire

Hypothesis M: Government regulations *fail to improve* welfare relative to laissez-faire

Why is predictive validity important?

What value is the knowledge that you claim to have, if you can't make predictions about a new situation with greater accuracy than is possible without that knowledge?

Evidence on Industry Regulation

Effect of regulatory reform [deregulation] on customer welfare (cost down, service up)*:

- Airlines +
- Railroads +
- Trucking +
- Telecommunications +
- Cable Television +
- Banking +
- Brokerage +
- Petroleum ~
- Natural Gas +

*Winston (1993). Economic Deregulation: Days of Reckoning for Microeconomists. *JEL*, 1263-89.

Evidence on Commercial Speech Regulation

Mandatory disclaimers*:

experimental studies:	19
consumers confused:	19
ineffective or harmful:	16
consumers benefit:	0

Mandatory disclosures**:

studies:	many
consumers benefit:	0

*Green, K.C. & Armstrong, J.S. (2012). [Evidence on the Effects of Mandatory Disclaimers in Advertising](#). *Journal of Public Policy & Marketing*, 31, 293-304.

**Ben-Shahar, O. & Schneider, C.E. (2011). The Failure of Mandated Disclosure. *University of Pennsylvania Law Review*, 159, 647–749.

Lack of Evidence on Regulation of Corporate Social Responsibility*

1. What definition?
2. But you know it when you see it?
3. Does everyone agree with your definition?
4. Is it ethical to impose your definition on others?
5. Are government officials superior in ethics and knowledge so that they can...
 - a. Identify the socially desirable outcome?
 - b. Ensure that firms cooperate to achieve it?

*See Armstrong & Green (2013). [Effects of corporate social responsibility and irresponsibility policies](#). *Journal of Business Research*, 1922-1927.

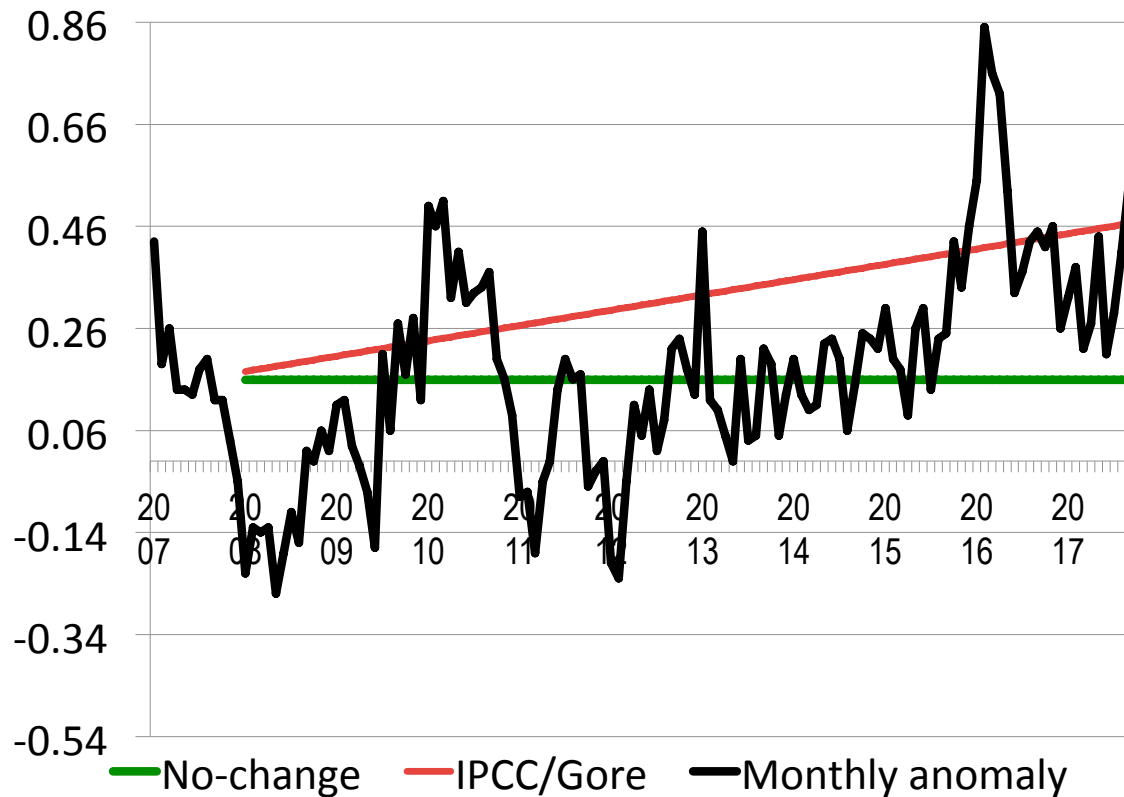
Predictive validity of 21st Century global climate hypotheses

Hypothesis H: Dangerous warming will occur as a consequence of human CO₂ emissions
[Al Gore's 2007 "tipping point" / IPCC's +3°C per century]

Hypothesis N: Temperatures will continue to change naturally, without any persistent or dangerous warming or cooling trend
[[Green, Armstrong, & Soon \(2009\)](#) no-change forecast]

Experiment to test climate hypotheses: theclimatebet.com

Global average temperature anomaly in °C
(UAH lower troposphere)



By the numbers*...

- * 10 year "Bet" starts 2008
- * 3 months remain
- * Winning months
 - * IPCC/Gore: 35 (30%)
 - * No-change: 82 (70%)
- * Mean absolute error
 - * IPCC/Gore: 0.19°C
 - * No-change: 0.16°C
- * Mean error
 - * IPCC/Gore: +0.14°C
 - * No-change: -0.02°C

See also Green & Armstrong (2014). [Forecasting global climate change: A scientific approach.](#)

Other examples of policy making getting ahead of predictive validity testing

Coding of analogies to manmade global warming alarm*

Analogy	Year**	A	B	C	D	E
1 Population growth and famine (Malthus)	1798	1	-1	1	1	1
2 Timber famine economic threat	1865	3	-1	1	1	3
3 Uncontrolled reproduction and degeneration (Eugenics)	1883	3	-1	1	1	1
4 Lead in petrol and brain and organ damage	1928	2	0	1	1	1
5 Soil erosion agricultural production threat	1934	3	0	1	1	1
6 Asbestos and lung disease	1939	2	0	1	1	1
7 Fluoride in drinking water health effects	1945	3	0	0	n/a	n/a
8 DDT and cancer	1962	3	-1	1	1	1
9 Population growth and famine (Ehrlich)	1968	1	-1	1	1	1
10 Global cooling; through to 1975	1970	3	-1	1	0	n/a
11 Supersonic airliners, ozone hole, skin cancer, etc.	1970	3	0	1	1	1
12 Environmental tobacco smoke health effects	1971	2	-1	1	1	2
13 Population growth and famine (Meadows)	1972	1	-1	1	1	1
14 Industrial production and acid rain	1974	3	0	1	1	1
15 Organophosphate pesticide poisoning	1976	2	0	1	1	3
16 Electrical wiring and cancer, etc.	1979	3	-1	1	1	1
17 CFCs, the ozone hole, and skin cancer, etc.	1985	3	-1	1	1	1
18 Listeria in cheese	1985	2	-1	1	1	1
19 Radon in homes and lung cancer	1985	2	-1	1	1	1
20 Salmonella in eggs	1988	3	-1	1	1	1
21 Environmental toxins and breast cancer	1990	3	-1	1	0	n/a
22 Mad cow disease (BSE)	1996	3	-1	1	1	1
23 Dioxin in Belgian poultry	1999	3	-1	1	1	1
24 Mercury in fish effect on nervous system development	2004	2	-1	1	1	1
25 Mercury in childhood inoculations and autism	2005	3	-1	1	1	1
26 Cell phone towers and cancer, etc.	2008	3	-1	1	1	1

- A. Forecasting method.
 1=unrealistic mathematical model
 2=extrapolation to a near-zero dose of a genuine effect from a large dose
 3=extrapolating hypothesized weak effect becoming important over time or large population
 4=appropriate evidence-based forecasting procedures
- B. Accuracy of forecasts was rated on a -1 to +1 scale
 -1=wrong direction, 0=no, or minor, effect; +1=accurate
- C. Did the proposed action involve substantive government intervention?
- D. Did substantive government intervention take place, or not?
- E. Outcome of government policies to date on the value of their net benefit
 1=government policies were harmful
 2=government policies were ineffective
 3=the net effects of government policies were uncertain
 4=government policies were effective

*Initial codings by Green and Armstrong. We welcome evidence that relates to the codings.

**Approximate year that alarm was first raised.

From the Global Warming Analogies Forecasting Project page at publicpolicyforecasting.com

Did government interventions help?

A/ Outcomes of interventions for the 23 situations with government responses to alarming forecasts of environmental catastrophe:

Policies caused harm	20
Policies were ineffective/uncertain	3
Policies were effective	0

B/ Accuracy of forecasts for all 26 analogous situations:

Categorically wrong	19
Wrong in degree	7

C/ Unscientific methods (hence large errors only to be expected):

Unrealistic mathematical models	3
Extrapolating a genuine effect from a large dose to an alarmingly widespread effect at near-zero dose	7
Extrapolating that a hypothesized weak effect might become important over time or a large population	16

Governance hypotheses

Hypothesis G: Government regulation and enforcement are necessary to prevent chaos
[The currently common view]

Hypothesis P: Personal morality and private arrangements can provide order equal or superior to that provided by governments

Governance evidence

Personal morality and private arrangements can, have, and do provide better governance than governments in many and diverse areas of social and economic life.

There may be areas in which governments do *not* crowd out good governance, but one would want to see evidence that this was so before accepting the loss of freedom.

For evidence that the social world is more consistent with Hypothesis P than Hypothesis G, see, e.g.,

Ostrom, E. (1990). *Governing the commons: the evolution of institutions for collective action*. New York: Cambridge University Press.

Stringham, E.P. (2015). *Private governance: creating order in economic and social life*. New York: Oxford University Press.

The Iron Law of Regulation

“There is no form of market failure, however egregious, which is not eventually made worse by the political interventions intended to fix it”

Original source unknown

Conditions Necessary for a Regulation to be Successful: A Checklist for Regulators & Reviewers*

1	<input type="checkbox"/>	Identified stakeholders' endowments, relationships, and preferences that are relevant to the regulation [See <i>Nisbett & Wilson (1977)</i> re difficulty]	6	<input type="checkbox"/>	Established fair procedures independent of the regulator for resolving disputes arising from enforcement and to remedy any unintended consequences
2	<input type="checkbox"/>	Designed the regulation to produce only the intended changes	7	<input type="checkbox"/>	Ensure that the party harmed, and not the regulator or any other interest group, benefits financially from the identification of violations of regulations
3	<input type="checkbox"/>	Designed the regulation to avoid requiring that individuals commit acts that they believe to be immoral or that would violate any existing law or regulation	8	<input type="checkbox"/>	Avoided "capture" by those being regulated, and by any other interest group [<i>Few men have virtue enough to withstand the highest bidder—George Washington</i>]
4	<input type="checkbox"/>	Established rewards and penalties that ensure that the regulation is followed	9	<input type="checkbox"/>	Ensured that the public and private costs of administering the regulation are substantially lower than the benefits
5	<input type="checkbox"/>	Ensured that those affected will be aware of the regulation, understand what changes they must make, and know how to appeal wrongful applications of the regulation	10	<input type="checkbox"/>	Established independent scientific monitoring and evaluation to assess whether the conditions continue to be met, and rectification or repeal procedures in case not

*Available from IronLawofRegulation.com. See also Green & Armstrong (2015) Australian Senate Economics References Committee Inquiry submission, "[Regulating choice: The need for evidence](#)".

Criteria for Scientific Research Checklist

Eight well-established criteria for judging whether research complies with the scientific method, following Bacon, Newton, Franklin, and others:

1. Design was objective (unbiased by advocacy for a preferred hypothesis)
2. Findings are useful (can be applied to achieve better outcomes)
3. Prior scientific knowledge was comprehensively reviewed and summarised
4. Disclosure is comprehensive (sufficient for understanding and replication)
5. Data are valid (true measures) and reliable (repeatable measures)
6. Methods were valid (proven fit for purpose) and simple
7. Experimental evidence used to compare* reasonable alternative hypotheses
8. Conclusions are based on evidence

See GuidelinesForScience.com for *Criteria for Useful Science Checklist*

*Especially predictive validity.

Valid methods:

E.g. *Golden Rule of Forecasting Checklist*

Based on decades of scientific research on forecasting*.

Golden Rule is to “Be Conservative”,

or to

“Forecast unto others, as you would have them forecast unto you.”

Be conservative by adhering to *cumulative knowledge* about:

- 1.the situation, and
- 2.evidence-based forecasting methods
- 3.rejecting “*this time it’s different*” arguments

Checklist of 28 items (valid methods and procedures) that reduce errors by ~30% on average at GoldenRuleofForecasting.com

[*See Armstrong & Green (2017). [Forecasting Methods and Principles: Evidence-Based Checklists](#). *ResearchGate working paper*.]

Simple methods: Occam's razor

1. Analysts can use complex methods to provide forecasts to support decision-makers' preconceptions
2. Clients are impressed by complexity.

“There is, perhaps, no beguilement more insidious and dangerous than an elaborate and elegant mathematical process built upon unfortified premises.”

(T. C. Chamberlin 1899)

A test of Occam's Razor using experimental comparisons in forecasting found 32 papers with 97 comparisons between simple and complex methods:

- *None* of the papers found that complexity helped forecast accuracy
- Complexity increased errors by 27% on average across papers

Evidence and simple checklist at Simple-Forecasting.com

A Challenge to Lawmakers and Commentators Who Care about the Prosperity of Australians

Put the burden of scientific proof of benefit onto regulators and their regulations by using the evidence-based checklists and methods at:

- IronLawofRegulation.com
- GuidelinesForScience.com
- GoldenRuleofForecasting.com
- Simple-Forecasting.com

...to determine whether there is evidence beyond reasonable doubt that a regulation is beneficial.

Use the checklists to assert the right of Australians to the presumption of innocence of the need to be disciplined by regulation.