

Doing Good with (Good) Econometrics

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Three Ideas Today

- 1 Econometrics is *incredibly useful*
- 2 Econometrics is *increasingly useful*
- 3 Econometrics can be used to *do good*

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- 1 (Good) Econometrics is *incredibly useful*
- 2 (Good) Econometrics is *increasingly useful*
- 3 (Good) Econometrics can be used to *do good*

(But only if it's *good* econometrics)



“Are you just pissing and moaning, or can you verify what you're saying with data?”

S: The New Yorker (?)

It all starts with **Data**

New words for the lexicon

Data inflation

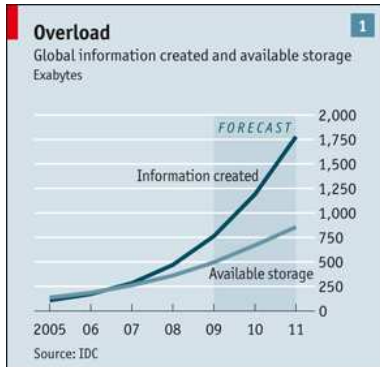
2

Unit	Size	What it means
Bit (b)	1 or 0	Short for "binary digit", after the binary code (1 or 0) computers use to store and process data
Byte (B)	8 bits	Enough information to create an English letter or number in computer code. It is the basic unit of computing
Kilobyte (KB)	1,000, or 2^{10} , bytes	From "thousand" in Greek. One page of typed text is 2KB
Megabyte (MB)	1,000KB; 2^{20} bytes	From "large" in Greek. The complete works of Shakespeare total 5MB. A typical pop song is about 4MB
Gigabyte (GB)	1,000MB; 2^{30} bytes	From "giant" in Greek. A two-hour film can be compressed into 1-2GB
Terabyte (TB)	1,000GB; 2^{40} bytes	From "monster" in Greek. All the catalogued books in America's Library of Congress total 15TB
Petabyte (PB)	1,000TB; 2^{50} bytes	All letters delivered by America's postal service this year will amount to around 5PB. Google processes around 1PB every hour
Exabyte (EB)	1,000PB; 2^{60} bytes	Equivalent to 10 billion copies of <i>The Economist</i>
Zettabyte (ZB)	1,000EB; 2^{70} bytes	The total amount of information in existence this year is forecast to be around 1.2ZB
Yottabyte (YB)	1,000ZB; 2^{80} bytes	Currently too big to imagine

The prefixes are set by an intergovernmental group, the International Bureau of Weights and Measures. Yotta and Zetta were added in 1991; terms for larger amounts have yet to be established.

Source: *The Economist*

More Data Demands More Analysis



- “Mankind created 150 exabytes of data in 2005. This year, it will create 1,200.”
- “Data are becoming the new raw material of business: an economic input almost on par with capital and labor”

Who's Going to Do It?



- “A new kind of professional has emerged, the ~~data scientist~~ [econometrician], who combines the skills of
 - ▶ A software programmer,
 - ▶ Statistician, and
 - ▶ ~~Storyteller/artist~~ **Interpreter**
 to extract the nuggets of gold hidden under mountains of data.”
- Hal Varian, Google Chief Economist:
 - ▶ “Data ... are widely available; what is scarce is the ability to extract wisdom from them.”

Why Econometricians???

- Econometrics combines

Economics
+
Statistics

Why Is This Combination Useful???

1 Economics \equiv

- ▶ People respond to incentives
- ▶ (This insight can be embodied in “behavioral relationships”)

These relationships show up in Data

2 Statistics...

- ▶ Allows them to be recovered from the data

(But **ONLY** if it is done well)

(i.e. only if it is **good** econometrics)

What is Good Econometrics?

Good Econometrics encompasses three elements:

- 1 An understanding of the economic forces generating the data,
- 2 The specification of an econometric model and estimation approach that can accurately and flexibly measure those forces, and
- 3 A careful interpretation of the results

What is Bad Econometrics?

- Bad econometrics is econometrics that is *not good*
- For example, bad econometrics might demonstrate ...
 - ▶ A lack of thought or understanding about...
 - ▶ Any (or all) of the three pillars of good econometrics
- **Bottom Line:**

Econometrics is a *complement to*, not a *substitute for*, thinking!

Is Bad Econometrics really so Bad?

- Bad econometrics is *far* worse than no econometrics
- If we can't measure something, we necessarily make judgements based on whatever qualitative evidence is available
 - ▶ (We've made decisions this way for thousands of years)
- Bad econometrics allows a new kind of mistake: **false confidence**
 - ▶ Bad econometrics will give “a number” based on methods that may appear plausible

Two Examples

- 1 Can a vertical merger drive out independent news?
- 2 Should TV channels be sold à la carte?

Bloomberg Television vs Comcast/NBC



VS



Mike Kape THE DENVER POST 1/22/11





(Michael Bloomberg)

Bloomberg Television vs Comcast/NBC



VS



- How can we tell if Comcast/NBC would behave anti-competitively?

Vertical Integration, Favoritism, and Competition

Austan Goolsbee asked a good question:

- Do cable systems carry more frequently their integrated channels?
 - ▶ Do they do it less when facing competition?

Variable	Goolsbee ¹
Vertical Integration	3.553***
Vertical Integration \times Competition	-0.194***
...	...
Other Controls	
Not Reported	

Goolsbee (2007) says **Yes** to both questions

¹Goolsbee (2007), Table 12G (The Science Channel). Finds similar effects for 9 of 11 channels.

Vertical Integration, Favoritism, and Competition

- Do cable systems carry more frequently their integrated channels?
 - Do they do it less when facing competition?
 - What did Comcast find?

Variable	Goolsbee ²	Comcast ³
Vertical Integration	3.553***	-3.157***
Vertical Integration \times Competition	-0.194***	0.112***
...
Other Controls		
Not Reported		

Do Comcast's results make sense???

²Goolsbee (2007), Table 12G

³Israel and Katz (2010a), Table VI.1

Vertical Integration, Favoritism, and Competition

- What do you think was going on???
- ▶ (It turns out one of Comcast's econometricians made a **mistake**)

Variable	Goolsbee ⁶	Comcast ⁴ (w/ mistake)	Comcast ⁵ (corrected)
Vertical Integration	3.553***	-3.157***	1.463***
Vertical Integration × Competition	-0.194***	0.112***	-0.019**
...
Other Controls			
Not Reported			

- After the correction, Comcast's results agree with Goolsbee:
 - ▶ More competition leads to less favoritism
 - ▶ (Suggesting anti-competitive incentives at work)

⁴ Israel and Katz (2010a), Table VI.1

⁵ Israel and Katz (2010b), p.2

⁶ Goolsbee (2007), Table 12G

What Happened?

JANUARY 18, 2011, 7:37 PM

In Comcast-NBC Conditions, a Victory for Bloomberg

- “Broadly, the [FCC] said that **Comcast must not favor its own content over competitors content on its cable systems.**”
 - ▶ “Specifically, the commission said that ‘if Comcast neighborhoods its news (including business news) channels, it must include all unaffiliated news (or business news) channels in that neighborhood.’

S: The New York Times (Jan. 18, 2011)

Bloomberg Television vs Comcast/NBC



VS



- Questions or Comments?

Should TV Channels be sold À La Carte???

How many channels do you get in your cable/satellite bundle?

How many do you **watch**???

PICK AND PAY FOR THE CHANNELS YOU WANT. THAT'S HOW CABLE SHOULD BE.

Below is a typical Expanded Basic cable package*. Uncheck the networks you don't want and we'll calculate your new bill. Sadly, this is just a demonstration of "how cable should be" and won't reduce your real cable bill. We'll use your vote – the choices you voice here – to help educate the public and tell cable companies, programmers, and our public servants that bringing consumer choice to cable is a must!

UNCHECK WHAT YOU DON'T WANT.

<input checked="" type="checkbox"/> ESPN	\$ 3.80/mo.	<input checked="" type="checkbox"/> Regional Sports Network	\$ 2.25/mo.
<input type="checkbox"/> Nickelodeon	\$ 1.40/mo.	<input type="checkbox"/> ESPN2	\$ 1.05/mo.
<input checked="" type="checkbox"/> TNT	\$ 1.00/mo.	<input checked="" type="checkbox"/> Sci-Fi Channel	\$ 1.00/mo.
<input checked="" type="checkbox"/> CNN	\$ 1.00/mo.	<input type="checkbox"/> Disney	\$ 0.95/mo.
<input type="checkbox"/> CNBC	\$ 0.90/mo.	<input type="checkbox"/> Bravo	\$ 0.85/mo.
<input type="checkbox"/> USA	\$ 0.85/mo.	<input checked="" type="checkbox"/> MTV	\$ 0.80/mo.
<input checked="" type="checkbox"/> AMC	\$ 0.75/mo.	<input type="checkbox"/> Fox News Channel	\$ 0.75/mo.
<input checked="" type="checkbox"/> FX	\$ 0.75/mo.	<input type="checkbox"/> ABC Family	\$ 0.75/mo.
<input type="checkbox"/> MSNBC	\$ 0.70/mo.	<input type="checkbox"/> TV Land	\$ 0.70/mo.
<input checked="" type="checkbox"/> Discovery	\$ 0.70/mo.	<input checked="" type="checkbox"/> NFL	\$ 0.70/mo.
<input checked="" type="checkbox"/> Cartoon Network	\$ 0.70/mo.	<input checked="" type="checkbox"/> Animal Planet	\$ 0.65/mo.

À La Carte

- Some support for à la carte in U.S. policy circles:
 - ▶ Former FCC Chairman Kevin Martin (August 22, 2007):
 - ★ "I believe all consumers would benefit from channels being sold in [an] à la carte manner."
 - ▶ Senator John McCain (March 26, 2004):
 - ★ "When I go to the grocery store to buy a quart of milk, I don't have to buy a package of celery and a bunch of broccoli... I don't like broccoli."

The Welfare Effects of Bundling in Multichannel Television Markets *

Gregory S. Crawford[†] Ali Yurukoglu[‡]

November 2010

Abstract

We measure how the bundling of television channels affects social welfare. We estimate an industry model of viewership, demand, pricing, bundling, and input market bargaining using data on ratings, purchases, prices, bundle composition, and aggregate input costs. We conduct counterfactual simulations of à la carte policies that require distributors to offer individual channels for sale to consumers. We estimate

À La Carte: Crawford & Yurukoglu (2010)

- What do we do?
 - ▶ Estimate demand for individual television channels (CNN, MTV, etc.)
 - ▶ Estimate marginal costs for those channels
 - ▶ Model the *bargaining* between channels and distributors
 - ★ Why? If CNN gets \$0.50/month for 100m US households...
 - ★ How much will they want if only 40m sign up?
 - ▶ Simulate a world where firms sell channels à la carte

À La Carte: Crawford & Yurukoglu (2010)

- What do we find?
 - ▶ If channels cost the same to cable systems...
 - ★ Consumers *would* be (17%) better off
 - ▶ But channels *wouldn't* cost the same:
 - ★ Channels and distributors would re-negotiate contracts
 - ▶ After renegotiation, we estimate consumers are *no better off*
 - ★ (And would likely be worse off) Why?
 - ★ Channels would be 145% more expensive to downstream firms without bundles.
- **Bottom Line:** The policy would likely be a bad idea
 - ▶ (At least in the short-run)

À La Carte

- Questions or Comments?

Doing Good on a Broader Scale

- I hope these examples have shown that
 - ▶ Good econometrics is critical for good decisions/policies

- I also think that
 - ▶ Good econometrics can be a powerful **agent for good in the world**

Doing Good with Good Econometrics

- Why?
 - ▶ More data \Rightarrow more evidence-based policymaking, but...
 - ▶ The playing field isn't level.
 - ▶ Which parties have an advantage?
 - ★ (Rich ones, Organized ones)
 - ▶ Which ones don't?
- As a society, we will need good econometricians advocating for good causes
 - ▶ (Consumer interests, Disadvantages citizens)
 - ▶ (NGOs and Charities)

Doing Good with Good Econometrics

- If you
 - 1 Are passionate about a particular social problem, and
 - 2 Have an interest in econometrics
- I encourage you to pursue that interest and those skills
 - ▶ I can promise you they will need you
 - ▶ (Even if they don't know it yet)

Doing Good with Good Econometrics

- Questions or Comments?

- Thank you very much!