

An unofficial guide to trying to do empirical work

Amy Finkelstein

January 17, 2007

Purpose

- Graduate school is well-structured to teach you:
 - Economics
 - i.e. What are the interesting and important questions?
 - Technical skills
 - i.e. How to answer them
- But what about the *process* of doing (or trying to do) research?
 - This is a semi-structured list of some tips I wish someone had told me....

Topics

- How to come up with a question / find data
 - Covered in more detail last year
- So you've got a question... now what?
 - The focus this year

The bottom line

1. It is hard to do good research
 - for *everyone*
2. Research is not a solo process
 - *Talk about your ideas with people early and often*
3. Work in a systematic and organized fashion:
 - *Keep detailed notes on all your thoughts – you'll forget them quickly*
 - *If you decide something will make or break the project, look into it sooner not later (in fact, look into it immediately!!)*

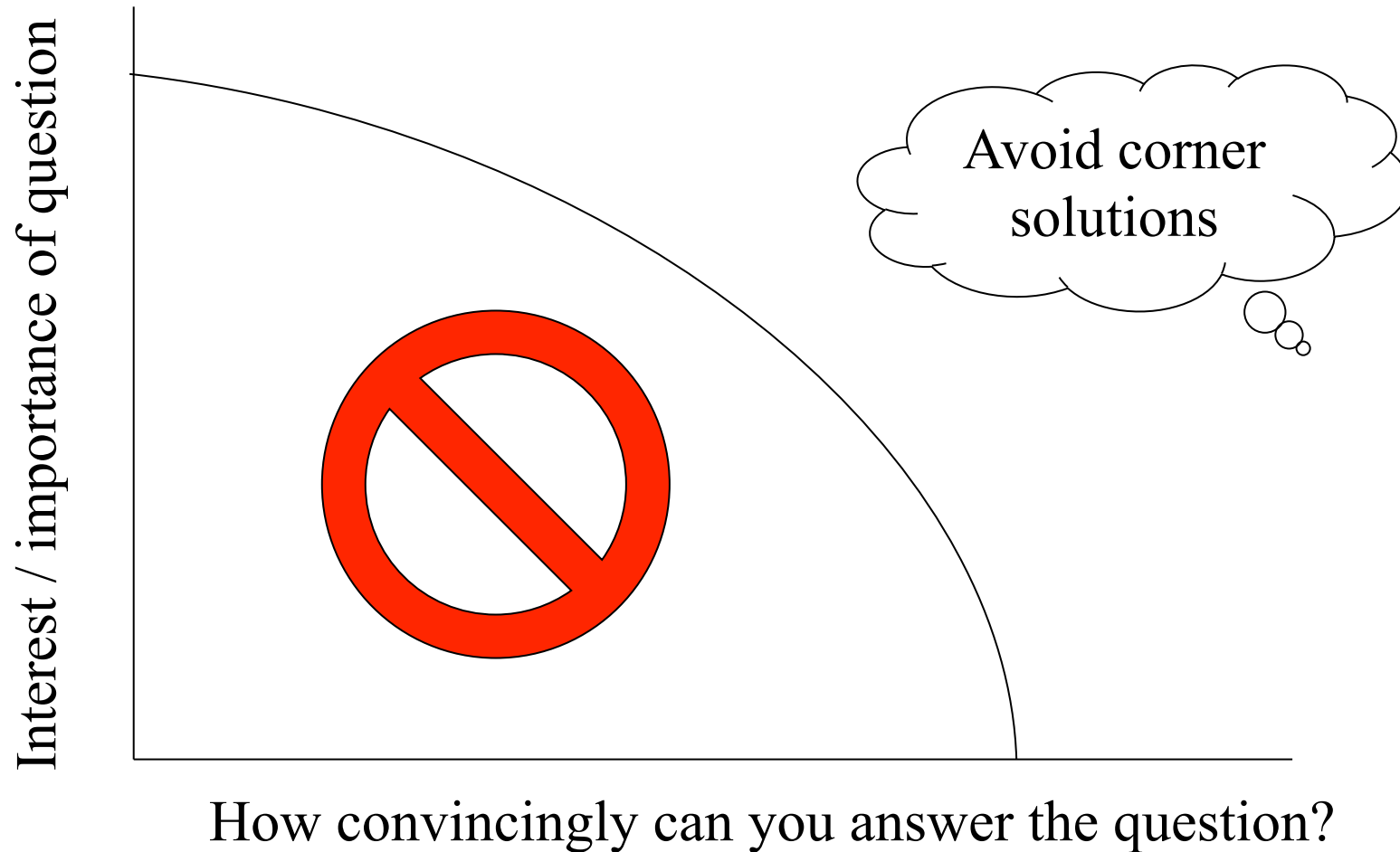
Step 1: Coming up with ideas

- All (good) research starts with a *question that is interesting*
 - Can you explain to others why it's interesting and exciting?
 - Your peers and professors
 - Non economists
 - Your family
 - Non-economist friends (if any)
 - Are *you* interested in this question?
 - If you are not interested and excited in your project, how can you possibly expect anyone else to be?
 - And you will certainly not enjoying working on it for many years!

Some ways to come up with ideas...

- Chicago adage
 - “vote early, vote often”
 - Think about ideas early, often and always
- Write all your ideas down!
 - Especially *why you care*
- Sources of ideas:
 - Classes – what are the important unanswered questions?
 - Seminars – what does the seminar make me think about?
 - In general do not go to the literature for ideas
 - Broad survey articles can stimulate ideas
 - JEL, JEP, Handbook Chapters
 - Read the newspaper with an eye towards economic questions
 - Look at the real world, not just the economics literature
 - Read non-economics non-fiction
 - Biography, history
 - Talk to people – economists and non economists
 - Ideas come at random times
 - Be sure to write them down whenever you have them
 - *Keep at it*

Always be on the frontier



Useful tip #1: fast forward to the end

- If you think you have a good idea:
 - Imagine you came up with a way to answer your question convincingly
 - I know it's hard but “fast forward” to the end where you've produced a really convincing answer
- Now ask yourself:
 - So what? Why is this interesting?
 - What would make it more interesting?
 - May help you modify / fine tune your question....

Useful tip #2: be a compulsive note-taker

- So you think you have an idea...
 - **Start a file** on it and write down why it's interesting
 - You'll be surprised at how quickly you can lose sight of the forest for the trees!
 - I always go back to these notes before writing an introduction
 - Try out your motivation on people (fellow students, faculty members, other friends and family)
 - Update your notes as you get new ideas or spins from talking with them
 - *Never* delete old notes though!
 - Write down a description of your ideal data / variation
 - You'll almost never have it but this should help you focus on what elements are essential as you consider (non-ideal) data

2. So you' ve got a question... now what?

- Work in a focused and systematic fashion
 - What would be the ideal data and variation?
 - What are the essential data / variation you would need?
 - Does it look like anything is there?
 - What' s the relevant theory?
 - What issues / questions / concerns emerge and how can you deal with them?
- Talk *continuously* with people about what you are doing
 - As you learn more, they will be able to give new comments and thoughts

That's all really vague...

- A specific example from my own recent work
 - Do less salient tax systems produce higher equilibrium tax rates
- *A caveat*: this is selecting on the dependent variable
 - Many other projects will fail at any given step
 - The key is to figure that out sooner rather than later...
 - And keep at it

How it began...

- I asked Jim about his experiences on the tax commission
 - Subliminal message #1: the more you talk / think / live economics....
- Something clicked with my thoughts on driving to NYC
 - Subliminal message #2: real world experience doesn't hurt either!
 - Subliminal message #3: especially if you're always thinking about economics "out there in the real world"

What did I do first?

- Started a file
 - Jotted down my idea and why it might be interesting
- Mentioned the idea to several friends (*that day*) and saw if anyone could point out an obvious issue / tell me this topic was uninteresting
 - Took notes on additional motivations they gave me (e.g. Milton Friedman)
- Starting looking for existing data sources
 - Google scholar on papers on tolls
 - Searches for trade organizations etc
- NB: I did all of this *immediately* – put the other stuff I was working on aside for a few days
 - Harder to try to come up with / work on an idea when not inspired

Is there anything quick and easy to do?

- Searching on line found several toll histories
 - Looked like there was something there
- Sent out some haphazard inquiries to any toll facilities whose contact information I could find
 - Within a week had about 15 facilities and some suggestive evidence
- *Always good to try to do something “quick and easy” to get a sense of whether it is worth more time*
 - Don’ t wait until you have the final / perfect / all-t’ s-crossed-data set before starting to look at it

Took stock

- Was there really anything serious / fundamental to be learned from this
 - Went back to the initial motivation and followed up on readings
 - Talked to more people
 - Added to my motivation notes
- Thought about how I could systematically collect a data set
 - Also did another check of whether the data didn't already exist / there wasn't some easier way to get it (e.g. would a trade organization do a survey...)
 - *Worth investing in making sure you're using the optimal data before you spend too much time with your data!!*

As I began to get results

- Talked *whenever possible* to whomever possible about my project
 - Got more ideas on motivation / links to other literatures
 - Got another empirical idea (looking at elasticity):
 - Suggested need for new data (on traffic)... so started in on that
 - NB: often ideas get refined / evolve and this suggests different or additional avenues to take the research
 - don't wait until you think you're done to get feedback!!!
 - People brought up several important problems I hadn't thought of
 - So I started trying to think about how to deal with them and what additional data or designs I would need...

All this goes into the file!!

- My file has a running stream of thoughts and suggestions on
 - Motivations – related literature / theories
 - Empirical concerns raised and my thoughts on what to do
 - Empirical suggestions
- Constantly adding to it
 - *Never* delete old notes
 - Sometimes helpful to try to summarize thoughts thus far...

As I began to get results...

- I also started *writing the paper*
 - Don't wait until you think you're "done"
 - Writing the intro / trying to motivate can stir additional thoughts for theory / empirics
 - Trying to write down in words your empirical strategy and its assumptions can give you a new perspective on whether they are reasonable / how you could improve them
 - The data section has to be written some time...
 - Sometimes in writing it can discover issues (e.g. sample definition)

Two tips for starting to write...

- Go back to your file
 - Should help especially with the introduction
 - Why did I start this project? It wasn't really because I was interested in tolls, was it?
- Find a well-written published paper to use as a template
 - Don't reinvent the wheel. Find a template and start by mimicking it.
 - Faculty can often help here if you need a suggestion...

The bottom line re-visited.

- Research is not a solo process
 - Form weekly working groups with your friends to talk about your latest thoughts
 - Force everyone to talk about at least one idea, no matter how lame they think it is
 - Think / talk / discuss your ideas or project constantly
 - As project progresses, will get different kinds of feedback
- Keep a file on your thoughts and people's comments
 - You'd be amazed how quickly you can forget...
- Proceed in a systematic fashion:
 - If X is essential for the project's success, look into X now, not later!