ECON 0150 | Part 0 | Day 1 | Welcome

Welcome!

I'm very excited to have you here.

If you're in this room you belong here.

If you were on the fence about whether to take this class, you've made the right decision.

If you're like me you're going to take a lot of classes at Pitt that you'll forget about in a couple of years. That's the way school goes.

This is not one of those classes, at least for many of you.

Dada Analysis

You've taken Econ theory courses, where you talk about things like the demand curve or marginal cost and such.

You write out some equation with a y variable and some x variables and some parameters.

Think about the inverse demand curve for a second, we have price is equal to some intercept term plus a slope parameter times quantity.

It's such a fundamental idea in our field, allowing us to talk about what people like.

But have you ever wondered where that slope parameter comes from?

Does someone just make it up? No.

We get it from data.

Many classes you'll take will give you some toy tools to play with when working with data.

In this field we have powerful tools that we share across the sciences.

Let me be clear: this is an intro course and it will feel like an intro course.

You need some statistics but you do not need to have any more technical background than that.

We've worked hard to deliver a course that will not give you just the toys.

You're getting the real thing. That should be exciting.

By the end of the semester you will be able to understand how to read models of data that others have written, build models with data on your own, and be able to communicate your models to an audience.

That's the core skillset we're developing in this class.

And we're going to do it from the ground floor.

I played tennis in high school.

How many of you have seen a tennis serve? You stand sideways behind the line, your racket is in your dominant hand with your elbow pointed into the air, racket behnind your head, you toss the ball up into the air with your non-dominant hand, crouch a bit and jump just as the ball reaches apogee, swinging the racket forard to hit the ball as it falls, aiming for a tiny part of the court across the net in such a way that the ball spins as it flys, then catching yourself before you fall, watching the ball fly, and then getting in position to move to where your opponent will hit it.

One summer as an early tennis player when I was learning the basics of tennis this looked absolutely unacheivable to me.

But as my instructor correctly told us, it turns out that practicing each one of these steps separately and then together, it's actually very acheiveable to perform something that looks complicated at the start.

Nothing in this class should feel overwhelming.

We're going to work with big ideas and powerful tools but we're going to do it step by step in an intuitive way.

That's not to say that nothing will feel challenging. It will.

But no single step will feel like too much.

And by the end you'll have the basics of the real tools we use in the field.

That should be exciting to anyone interested in what we do as economists.

Course Logistics

I was a student once. I like a good class. I like learning something big, insightful, or useful. I don't like exams. I don't like useless assignments. I don't like feeling lost or bored. I like fairness. I like a classroom that's considerate.

And that's what we're doing here. I've set this class up to be the class I would want as a student. It's more work for me but I love my job and I give that as a gift to you as my students.

ECON 0150 | Part 0 | Day 2 | Framework

Opener

In 1992 New Jersey passed a law increasing the state minimum wage. Economists have long questioned whether these kinds of policies are good for the labor market. If you've studied any economic theory you have likely seen a part of this debate.

Competitive markets with many buyers and many sellers will reach an equilibrium that maximizes the total surplus in the market. Introducing a price control changes the market's equilibrium. If we introduce a binding price ceiling, a maximum price that doesn't allow the market equilibrium price, we restrict the market price to be lower than without the price control. With this price control the market moves the price as close to the uncontrolled equilibrium as possible but gets stuck *at* the price control. A binding price ceiling leaves the market choosing a price *at* that binding price ceiling.

The same is true of a binding price floor in a competitive market. A binding price floor is a minimum price set *above* the uncontrolled market equilibrium price. As you've likely seen, the same incentives are at play here as in a binding price ceiling. The market pushes the price as close to the uncontrolled market equilibrium but are prevented from reaching it by the price control, leaving the price *at* the price control. With a binding price control in a competitive market this leads to a higher price and a quantity demanded lower than quantity supplied, what we call a shortage.

In a labor market buyers are firms doing the hiring of labor and sellers are workers who bring labor to the firm. In a competitive labor market with many buyers of labor (many companies competing for their hires) and many sellers of labor (many workers competing for jobs) the equilibrium wage the market reaches can in theory be so low that it's difficult to afford to pay ones bills. This was the motivation for New Jersey to raise it's minimum wage in 1992 with the aim of impacting labor markets like the fast-food industry.

Right across the border at the same time Pennsylvania did not raise *their* state minimum wage. This meant the nearby local labor markets in New Jersey and Pennsylvania would experience different minimum wage policies while sharing similar economic conditions, similar weather, and similar workers crossing borders for jobs. Two economists at Princeton, David Card and Alan Krueger, recognized this as an opportunity. Rather than relying on economic theory alone to predict what would happen, they could collect data and measure what *actually* happened.

Data

In early 1992, Card and Krueger designed a telephone survey of fast-food restaurants in New Jersey and eastern Pennsylvania. They chose the fast-food industry for several practical reasons. Fast-food restaurants are major employers of low-wage workers, they comply with minimum wage laws, and the jobs and products are similar across stores, making comparison straightforward. They built a sample of 410 restaurants from the Burger King, KFC, Wendy's, and Roy Rogers chains.

The first wave of surveys went out in late February and early March 1992, just before New Jersey's minimum wage rose from $4.25 to $5.05 on April 1st. Card and Krueger asked managers about employment levels, starting wages, prices, and store characteristics. The second wave followed in November and December 1992, about eight months after the increase. Remarkably, they successfully re-interviewed nearly 100 percent of the original stores, including tracking down the six restaurants that had permanently closed.

Summarization

Before the minimum wage increase, restaurants in both states looked similar. The average starting wage was $4.61 in New Jersey and $4.63 in Pennsylvania. About 30 percent of New Jersey stores were paying exactly the $4.25 federal minimum. Average employment was 20.4 full-time-equivalent workers per store in New Jersey and 23.3 in Pennsylvania.

After the increase, the picture changed. In New Jersey, virtually all restaurants that had been paying below $5.05 raised their wages to meet the new minimum. By November 1992, 85 percent of New Jersey stores reported a starting wage of exactly $5.05. Pennsylvania stores, facing no new requirement, stayed put. About a quarter were still paying $4.25.

Analysis

Card and Krueger used what economists call a **difference-in-differences** approach. The logic is simple: compare how employment changed at New Jersey restaurants to how it changed at Pennsylvania restaurants over the same period. Any difference in the *changes* can be attributed to the minimum wage increase, since both groups of restaurants faced similar economic conditions otherwise.

They also ran a second comparison entirely within New Jersey. Some New Jersey stores had already been paying $5.00 or more before the law changed. These "high-wage" stores were largely unaffected by the new minimum. Comparing employment changes at low-wage stores (those forced to raise wages) to high-wage stores (those already above the threshold) provided another test of the minimum wage's effect.

Results

The results contradicted the standard prediction. Employment at Pennsylvania stores *fell* by an average of 2.16 full-time-equivalent workers per store while employment at New Jersey stores *rose* by 0.59 workers per store. This difference-in-differences of 2.76 more employees per store in New Jersey than Pennsylvania meant that the state with the minimum wage increase actually saw *relative employment gains* of about 13 percent.

The within-New Jersey comparison told the same story. Stores that had been paying $4.25 before the increase saw employment rise. Stores already paying $5.00 or more saw employment fall by almost exactly the same amount as Pennsylvania stores. If unobserved factors were driving New Jersey's gains, they should have affected high-wage and low-wage stores alike. They didn't.

Card and Krueger also found that fast-food prices rose about 4 percent faster in New Jersey than Pennsylvania, suggesting restaurants passed some of the higher labor costs on to customers rather than cutting workers.

Conclusions

The Card and Krueger study became one of the most cited and debated papers in labor economics. It didn't settle the minimum wage debate. Critics questioned the data, the methodology, and the generalizability of the results. But it demonstrated something important: careful data collection and analysis can challenge long-held theoretical predictions.

Economic theory told us one thing. The data told us something different. Understanding **why** requires more than theory alone. It requires learning how to gather data, how to measure what we care about, how to compare groups fairly, and how to interpret what we find. That is what this course is about.

They make it look easy. But there's a lot of detail. That's where we're going in this course.