

SUMMARY

Zhiran Wang, 2011

Thanks to the rapid appearance and disappearance of the 1918 flu pandemic, experts like Douglas Almond have used how the change of environment due to this event influenced people to show that individuals *in utero* during the 1918 flu experience substantial long term disadvantage, such as increased disability and reduced socioeconomic status during adulthood.

Our project, in addition, used the 1920 and 1930 US census data to examine the spillover effects of the flu as a health shock, on other members of the household, both contemporaneously and through intergenerational transmission effects. We analyzed how having a sibling affected or almost affected *in utero* by the flu cast influence on the socioeconomic status and education of an individual.

The availability of age detailed to month in the 1920 and 1930 census data enabled us to carry out the analysis to a more accurate level. Using the method of regression discontinuity, we have found that the existence of a sibling affected *in utero* by the flu in a household leads to lower school attendance and literacy of an individual, even though the individual himself was not affected directly by the flu. We have found that there might be some indirect impact of family characteristics, such as mom's literacy and mom's race, due to the treatment that would also affect the person's socioeconomic status and education achievement. However, after we have controlled for these indirect effects, we have still managed to find a discontinuity of outcome between the treatment group and control group (a person with a affected sibling or an almost affected sibling.)

Furthermore, we used the same model to analyze how the siblings' length of exposure to flu *in utero* and the different trimester exposed to flu *in utero* affected the education and income of the individual. The result turns out to be significant under some limitation, such as at a certain age or with a certain gender of the individual.

Activities student was responsible for

During the first part of the project, I was responsible for looking for the data and preparing the data for analysis. Using data management method in Stata, I selected out the individuals qualified for our regression of discontinuity from both 1920 census data and 1930 census data.

During the second part of the project, I discussed with Professor Fletcher about how we could carry out the analysis and how we could set up the model to fit in our framework. Then I carried out regression analysis in Stata using the models we had agreed upon and summarized

the results into tables. I also produced tables of summary statistics of the population in our analysis sample and in the whole census data.

I also plotted some of our results into more reader-friendly graphs as preparation for the paper, and I drafted some of the parts of the paper as well.

What student learned

I learned about the method of regression discontinuity and its application, especially in health economics. I learned how to carry out valid analysis using a huge census database, such as how to prepare the data and then how to compute the regression. I had firm grasp for many useful stata commands, such as “areg” and “outreg”, after plenty of practice, and I had a deeper understanding of how a research is carried out from the step of brainstorming to putting the idea into concrete analysis and then finally to detailed adjustment during the analysis.

I also learned about the structure of an academic paper, and how to prepare the graphs, tables and arguments in the paper.

Opinion of SRO experience

The SRO experience is really useful and helpful for a student to get a concrete understanding of how a professional economic research is carried out. The cooperation between the professor and student is a precious learning experience for me.

It would be even better if Yale could provide some technology support, such as a computer with larger enough RAM, since there might be larger datasets involved, like in my project. Also, it would be great if there are options provided for the students to continue the project with the professor into the academic terms because generally a summer is too small for a whole project, while changing RA creates some extra difficulty for the professor that is not that necessary.