Doctor density

December 24, 2017

Paper Outline

1. Time trends in doctor density, 1960-2010
   1. Overall time trend
      1. Increase from 12/10,000 in 1960 to 27/10,000 in 2010
   2. Time trend by 1960 physician density
      1. Gap between bottom- and top-decile places has increased from ~17 to ~26
   3. Time trend by 1960 rural vs urban
      1. Gap has increased from ~5 to ~15/10,000
   4. Time trend by 1960 rich vs poor
      1. Gap has increased from ~6 to ~11/10,000
   5. Time trend by 2010 share black
      1. Gap has increased from ~6 to ~24/10,000
   6. Time trend by 1960 mortality
      1. Haven’t done this yet. But there is an endogeneity issue that makes it hard to interpret.

Main takeaway for part 1

* Physician density has increased overall, but the increase has been concentrated in rich, diverse, urban areas

Next steps with part 1

* Problematic to have static definitions of place characteristics. (For example, if a place that was poor in 1960 became rich in 2010, then it would look like poor places improved.)
* So it’s better to have definitions update each decade, right? If so, where can we look for the data? If not possible, what’s the best way to address the above issue?

1. Trends in doctor density, 2010
   1. Correlation plot
      1. College graduation rate (+0.6), income segregation (+0.5), and median home value (+0.4) are most highly associated with doctor density
   2. Specialists versus non-specialists
      1. Specialists are more geographically concentrated that non-specialists
      2. Specialists tend to practice in rich, urban areas
   3. Rank specialties by concentration in rich/poor areas
      1. 21% of general practice doctors work in counties in the bottom 10 percent of median household income; only 0.4% of plastic surgeons do
      2. 42% of psychiatrists work in counties in the top 10 percent of median household income; only 28% of family medicine doctors do

Main takeaway from part 2

* Doctors are concentrated in rich places with highly educated populations and high levels of income segregation
* These findings hold even more for specialists (vs non-specialists)

Next steps for part 2

* Identify places that need more doctors
* Need a simple way to quantify this as a first step. For example, it could be places with lowest life expectancy, highest population density, and (of course) least physicians
* Can further break down mortality data by cause of death in order to say something about which specialties are needed certain places. For example, places with highest under-5 mortality need more obgyn / pediatricians.
* Ultimate goal would be to publish a list of counties most in need of more doctors
* Could also use variables on doctor age to quantify where old/new doctors are working