Pre-Class Response for Lecture 17:

Difference-in-differences is based on the assumption that in the absence of the intervention, the treated and control units would follow parallel trends. Suppose we apply DiD to the "Anti-smoking campaign" example discussed last week in class. In this example, the state of CA funded an anti-smoking campaign starting January 1989, consisting of higher taxes on tobacco products; anti-smoking advertisements; and supporting local "clean indoor-air" initiatives. (It might be shocking now to realize that in the 1980s, it was allowed and normal to smoke in restaurants, planes, and all sorts of indoor spaces!) Seven other states passed some sort of legislation in the post-treatment period: MA, AZ, OR, FL passed their own state-wide programs between 1989 and 2000; and AL, HI, MD, MI, NJ, NY and WA significantly raised taxes on tobacco products. The remaining 38 states didn't pass any sort of smoking-related legislation. The outcome that we're interested in is state-wide smoking rates, as measured by cigarette sales per capita. Say we have data on this going back to 1970 and up to 2000, giving 19 years of pre-treatment data and 10 years of post-treatment data.

Do you think that the "parallel trends" assumption for DiD holds here, where the "control" is the average of the 38 states that did not pass any legislation, and the "treatment" is CA? What if we restricted to a subset of the other states, or to a time period going back less than 19 years or forward less than 10 years? If so, which other states/time periods would you pick and why? (Answer the question based on your intuition – no need to go get data or do any statistical analysis!)