

Public Abstract

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In one chapter of this dissertation we study how earnings of workers in a county are related to earnings of workers in the neighboring counties in time and space. Conventional spatio-temporal models study these relationships while measuring them on average across all counties in the neighborhood. We believe that the counties in the neighborhood may not be similar due to some their characteristics so the relationships between earnings of the workers in neighboring counties may not be similar either. So we hypothesize that if we can distinguish counties by the shares of the workers employed in different sectors of the economy in the overall number of workers in the county or, rather, by the change of those shares, then we can observe different effects that earnings in neighboring counties can have on each other. We build a model that allows measuring the relationships between neighboring counties' earnings of the workers based on the change in their sectoral share of the number of the workers and find that these relationships are different both in their size and direction of the effects that earnings have on each other – positive or negative. This finding opens the door to a better understanding on how economies work when the geographical units – counties – are treated differently in the analysis.

The other chapter of this dissertation is devoted to the study of the relationships of the earnings of workers in different sectors of the economy. We use conventional model with the average overall effects that sectoral earnings have on each other but look at the relationships between earnings in the sectors within the same county which measures their growth in time and between neighboring counties which measures their growth in time and geographical space. We also believe that due to this particular choice of points of interest earnings in different sectors and different counties have their own average level which we measure as fixed effects.