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“Measuring Intangible Assets and Their Contribution to Growth”

Schooling and Disease Transmission

Rachel H. Soloveichik, Bureau of Economic Analysis, Rachel.Soloveichik@bea.gov

This paper uses historical United States data to illustrate the potential importance of disease transmission in schools. Like coronavirus, influenza is an acute respiratory disease that is generally transmitted through indoor social contact. Furthermore, influenza before 1940 had mortality rates similar to coronavirus nowadays. Consistent with the ‘flatten the curve’ disease model, additional school days were once associated with influenza epidemics that were both earlier and more lethal. This historical result remains statistically and economically significant even after controlling for state fixed effects, state trends, year fixed effects, year demographic interactions, and other control variables. Across the entire United States, each extra day of school caused to 650 extra deaths in normal times and thousands of extra deaths in pandemic times.

The paper then shows that disease transmission may explain the previous puzzle of extremely high returns to education (Abraham 2010). In the historical United States data, measured schooling costs increase more than 10-fold when indirect health costs are tracked together with the direct educational expenditures. This cost increase is sufficient to fully explain the apparent mismatch between measured human capital investment (Kendrick 1974) and measured human capital stock (Jorgenson-Fraumeni 1989). These results may have implications for measured human capital investment during the coronavirus pandemic.