Abstract:

We analyze the role of frontier knowledge for scientific production. First, we show that citing frontier work is correlated with writing hit papers. Second, we investigate a period of reduced international knowledge flows during WWI and the subsequent boycott against scientists from Central countries. During this period, knowledge flows between scientists from Allied and Central countries were substantially reduced, as measured by citations in scientific papers. Even frontier papers experienced substantial reductions in citations from scientists in opposing camps. Additional results indicate that the reduction in citations were predominately driven by a reduction in supply of foreign knowledge, rather than a fall in demand. Third, we show that scientists in field times country combinations that were more dependent on frontier knowledge from the enemy camp published fewer papers after the onset of the war, compared to scientists in field times country combinations that sourced the majority of their frontier knowledge from home. Lastly, we provide suggestive evidence that the collapse of international science affected the world-wide scientific progress as measured by the timing of Nobel Prize worthy ideas.