

Shengjun Jiang**College Majors, College Curriculum, and Subsequent Labor Market Outcomes**

My research concerns the effects of college major and college curriculum on labor market outcomes. In my job market paper, “Is Two Better than One? The Effect of a Double Major on Post-College Wages”, I answer two questions: (1) Do double majors have less depth of knowledge and/or less opportunity to explore a wide range of elective courses? If so, how do these affect subsequent wages? (2) What is the causal effect of having a double major on wages? To answer these questions, I use the postsecondary transcript data from the 1997 National Longitudinal Survey of Youth (NLSY97) to investigate course taken patterns and measure college curriculum concentration. Compared to single majors, I find double majors do not take fewer courses in their primary fields of study. However, they take more courses in the second main fields of study and do not take elective courses in a broad range of academic disciplines, which would negatively affect their subsequent wages during their first year in the labor market. I then match schools in the NLSY97 to schools listed in the Integrated Postsecondary Education Data System and construct instrumental variables (IV) by using school-specific characteristics on second major offering to identify the causal effect of a double major on wages. The IV estimates show that having a second major increases wages by 13.5% in the first year of the labor market, and the corresponding ordinary least squares estimates have a large downward bias. However, the return to a second major is small and insignificant in the long term, suggesting no significant long term difference between single majors’ and double majors’ wages. This provides evidence against students pursuing a double major for the purpose of earning higher wages.

My second paper, titled “Trends in Earnings Differentials Between Single Majors and Double Majors and Across Double Major Combinations”, studies trends in the earnings gap between single majors and double majors, and trends in earnings differentials across double major combinations from 1993 to 2013. I also examine whether changes in demand for labor market skills can explain any of the changes in these earnings differentials. I pool three large cross-sectional data sets from the 1993, 2003, and 2013 National Survey of College Graduates. I find that, in general, the earnings gap between single majors and double majors has slightly increased from 1993 to 2013. The magnitude of the change in the earnings gap varies among different second majors. Furthermore, the examination of the trends in earnings inequality among different double major combinations reveals a large widening of the earnings differentials between a higher paying combination and an average combination between 1993 and 2013. Further, I construct measures of abstract, routine, and manual task intensity based on measures from the US Department of Labor’s Dictionary of Occupation Titles and find that the increase in returns to abstract tasks and the decrease in returns to manual tasks can partly explain the change in earnings differentials between single majors and double majors, as well as across double major combinations.

My third paper, “Decomposition of Wage Differences Between STEM Graduates and Non-STEM Graduates: the Importance of Subjects Studied in College”, examines the factors that would explain the wage gap between college STEM (Science, Technology, Engineering, and Mathematics) major graduates and Non-STEM major graduates, with a focus on investigating the importance of subjects studied in explaining the wage gap. I decompose the wage gap at the 10th, 50th, and 90th percentiles into wage structure effects and composition effects by constructing counterfactual wages using a reweight method. I then divide these two effects into the contribution of family background, ability and pre-college preparation, subjects studied in college, college performance, work-related characteristics, and personal characteristics using an influence function regression technique. I find that the composition effects are large and significant. Throughout the wage distribution, work-related characteristics and family background play an important role in explaining the wage differentials. The main contribution to the wage gap is provided by subjects that studied in college in upper quantiles. Subjects learned in college accounts for 25% and 51% of the wage gap at the 50th and the 90th percentiles, respectively, however, it plays no role at the 10th percentile.