

Do Postsecondary Training Programs Respond to Changes in the Labor Market?  
SREE 2020 Abstract Submission  
Michel Grosz  
(Federal Trade Commission)

The United States labor market has seen dramatic shifts in its occupational composition over the past few decades. Employment and wages have grown for workers at both the high and low end of the skill distribution, while those in the middle have suffered. The labor market has also seen huge declines in industrial and manufacturing employment, and the rise of low-skill service jobs. While the causes of these massive changes are still being debated, the consequences are far-reaching, affecting income inequality, political alignments, and other social indicators.

As the labor market changes, attention has shifted to the role of education and training in keeping up. Community colleges, in particular, have historically acted as suppliers of middle-skill jobs and drivers of upward socioeconomic mobility. There is an overarching sense, though, that community colleges only keep up with changes in the labor market to a limited extent. However, there is little empirical work that explicitly explores this linkage between occupational growth and the community college response.

In this paper I study the connection between community colleges and the labor market by focusing on the occupations for which community colleges train students. I leverage an administrative dataset encompassing all students, faculty and course offerings in all California community colleges since 1992. I link program-level information on enrollment, completion, faculty hiring, and course availability to occupation-level information on employment, wages, and education from the Census.

This paper makes several contributions to the literature. First, this is the first paper to explore the content of community college degrees and certificates in the context of the recent literature on labor market polarization. Because of the vocational mission of community colleges, this connection is important to understand. Second, while much of the prior literature has lamented a supposed mismatch between community college program offerings and occupation-level labor demand, I provide an explicit estimate. Finally, a growing body of work explores the causes and consequences of student sorting across college majors; in this paper I explore this issue at the community college level.

I first provide analysis of the range and content of community college program offerings. I describe the extent of the overlap between employment and community college degrees and certificates. I show that while completions increased for occupations at the bottom of the skill distribution, they have not increased for occupations at the top. However, community colleges do train students in occupations that are broadly similar to those held by highly educated workers. Demand has declined for occupations that have a high intensity of routine, codifiable tasks that can be performed by a computer. Here again I show that the task content of community college programs resembles the task content of occupations that employ highly educated workers. However, overall trends in employment over time parallel the more general shifts seen throughout the labor market: a decline in routine tasks and a rise in abstract, non-routine and non-manual tasks.

I then relate long-term changes in the occupational structure of employment to changes in the share of degrees and certificates awarded in the same occupations. The underlying hypothesis is that if employment in a particular occupation grows or contracts rapidly, then community college offerings in programs that train students for that occupation should follow suit. A concern in this analysis is that CTE degrees and certificates are endogenously determined: if community colleges supply new workers, then growth in employment might actually be caused by college expansions. To account for this potential bias, I use an instrument that relies on occupation-level labor demand based on overall employment growth in non-California states.

I find evidence of a modest link between occupational employment change and the growth of degrees and certificates. An occupation whose share of overall employment grew by 1 percentage point over a decade sees its share of all degrees and certificates grow by 0.5 percentage points. On the other hand, I find that occupational wages have a negligible effect on community college programs. In general, the OLS and instrumental variables results are quite similar, suggesting that there is limited scope for the potential reverse causality that may bias the OLS results.

I also find significant heterogeneity across occupations in terms of the connection between employment and awards. Occupations in the production and manufacturing sector have a weaker response than other occupations, as do those that require extensive manual tasks. I also find that occupations with a high intensity of social tasks grew faster in response to changes in occupational demand. There is also some heterogeneity across colleges: I find that larger colleges are more responsive than smaller colleges.

Finally, given the relationship I document between employment and awards, it is important to disentangle whether the response comes from changes in student demand or community college supply. If students respond to labor market forces but community colleges do not expand their programs, this may still result in the positive relationship I find in the regression analysis. The California administrative data allow me to observe program-level information beyond completions in order to investigate the mechanisms for the connection between community college awards and employment. I find that the response of program level course enrollments to employment changes is similar to the completion response. However, I find no evidence of a response in terms of the number of course sections offered or faculty hired. This suggests that most of the connection between community colleges and the labor market comes from student demand as opposed to college inputs. Thus, these results support the commonly held belief in the literature that administrative and budgetary constraints keep community colleges from dancing to the rhythms of the labor market.