# Problem Set #1

My research interests in Economics are in the fields of Applied Microeconomics. Mainly, I am interested in working problems related to Labor Economics, Economics of Education and Public Finance. What makes these fields interesting to me is that they involve real-world questions that require real-world data. Trying to find ways to tackle these questions is a "craft" in essence, hence requiring creativity. It is intellectually stimulating to work on these problems, as there is often no unique or standard method of coming up with a "solution".

One of the questions I previously worked on was about determining whether there is an excess supply of college graduates in the Turkish labor market. I estimated a model

$$Y_{it} = \beta X_{it} + \mathbf{Z_{it}}\mathbf{\Gamma} + \alpha_i + \lambda_t + \epsilon_{it} \tag{1}$$

where $Y_{it}$ is the outcome variable, graduate unemployment rate; $X_{it}$ is the college enrollment rate lagged five years; $\mathbf{Z_{it}}$ is a vector of control variables with corresponding coefficients contained in $\mathbf{\Gamma}$; $\alpha_i$ is entity fixed effect; $\lambda_{it}$ is time fixed effect and $\epsilon_{it}$ is the error term. The intuition was that, if there was a positive association between the number of students enrolled in a college degree program five years prior and graduate unemployment rate today, it can be inferred that market conditions have not been the same for college graduates over time. In fact, it would mean that market conditions worked against the freshman students, in the sense that, students who were recently enrolled contribute to the graduate unemployment rate five years later. If the coefficient on lagged enrollment rate turns out insignificant, it would mean that there is not necessarily evidence to assert higher enrollment rate leading to higher graduate unemployment in the future. The results however showed that the coefficient of the variable of interest is indeed positive and significant, supporting the hypothesis of this paper.

Relatedly, Arai (1998) evaluates a similar problem on the market for physicians and dentists in Japan. In his book, he describes

> "In 1970, the Japanese Ministry of Public Welfare examined policies for the supply demand balance of physicians and dentists. Its basic proposal was that the minimum number of physicians should be 150 per hundred thousand people and that of dentists should be 50 per hundred thousand people, and that the numbers of physicians and dentists should be increased in order to achieve these targets by 1985. In response to this policy proposal, new medical and dental schools were built and more students were admitted to existing medical and dental schools. In this way, the target for physicians was achieved two years earlier than anticipated and that for dentists five years earlier. The basic matter of concern in the above opinions was that if the numbers of medical and dental students were maintained at current levels, the total numbers of physicians and dentists would continue to grow steadily beyond the initial targets and reach the state of excess".

As can be evidenced in other studies (Bosio and Leonardi, 2011; Li et. al., 2014; Diem, 2015) these public policy related issues have direct consequences in the labor market, as well as on individuals' college enrollment decisions. It is therefore necessary to employ proper methods to quantify any (in)efficiencies to improve the conditions in which the market operates.

# 1  Bibliography

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