Problem Set #1

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Problem 1 The Effects of U.S. Immigration on the Career Trajectories of Native Workers, 1979-2004

Pais, Jeremy. The Effects of U.S. Immigration on the Career Trajectories of Native Workers, 19792004. American Journal of Sociology, vol. 119, no. 1, 2013, pp. 3574. www.jstor.org/stable/10.1086/671326.

$$Y_{i(j,k)} = \beta_{00} + \beta_{01}(year\_entry_{ij}) + \beta_{02}(Z_{(jk)}) + \beta_{03}(Z_{(jk)} * year\_entry_{ij})$$

$$+\beta_{04}(X_{i(j,k)} - Z_{(jk)} * year\_entry_{ij}) + \zeta_{0j} + \zeta_{1j}(year\_entry_{ij}) + \upsilon_{0k} + \epsilon_{i(jk)}$$

One of the exogenous variables is year_entry, which gives the number of years since the individual entered the labor market. Another exogenous variable is Z, the point-of-entry effect. This is measured by the level of immigration population concentration in the time and location when the individual entered in the workforce. The contemporaneous effect, X, is an exogenous variable that measured the level of immigration population concentration at points throughout the career of the individual.

Y is the endogenous variable and it represents the hourly earnings of each individual.

This model is dynamic since it takes into account the change in the level of immigratioon population over time. It is linear, since all effects are added together, and stochastic, since there is randomness inherent in the model and the outcome is not completely derived from known variables.

The paper notes that the model includes a full list of controls for individual and community characteristics, however it does not include a variable to indicate the industry that the individual is working in. Industries may be systematically different from one another in both the propensity of foreign born workers to participate and also in how many barriers to entry exist for foreign born workers.

Problem 2

$$Y = \beta_0 + \beta_1 net\_worth + \beta_2 genre + \beta_3 age\_of\_entry + \beta_4 number\_hits +$$

$$\beta_5 gender + \beta 6 mental\_illness + \beta 7 addiction + \epsilon$$

One of the key factors that influences this outcome are the net_worth of the individual, with the thinking that individuals with a higher net worth have access to a more life-threatening lifestyle including drugs, promiscuity, and partying. The age_of_entry variable may also be quite significant. It indicates the age at which the artist began their career. This may be important as significant mental and emotional development occurs in younger years and may be negatively impacted by the lifestyle of a musician and fame. The variable number_of_hits is used as an instrumental variable to attempt to measure the amount of fame and public exposure the artist dealt with during their life. A high degree of fame and inability to create a private sphere may cause significant stress. I believe that mental_illness and addiction would also be key factors. Each are dichotomous variables that indicate whether the artist was diagnosed with a mental illness or an addiction to drugs or alcohol. Gender may affect the propensity towards mental illness as well as willingness to pursue treatment. Genre is also considered a key factor as it is indicative of the lifestyle of the musician. Country musicians are steretypically family-inclined and not as inclined to drug use as, say, musicians in the rap genre.

I decided on these factors because they attempt to ascertain the degree to which the individual was effected by fame. First, by measuring the degree of fame that the artist reached and then by checking for markers of an at-risk individual. Entering into the music scene at a young age and being diagnosed with a mental illness and/or addiction can significantly impact mental health and one's ability to care for oneself. Since suicide is a common reason for the death of a musician, I believe that mental illness and addiction will be particularly telling as they are strongly correlated with suicide.

Others that may be of some consequence but I chose not to include are number of band mates, marital status, location of residence, and religious affiliation. Being a solo artist vs being a member of a band may affect your individual fame as well as the company you keep, however it seemed as if the effect would not clearly be positive or negative. Marital status is difficult since being married does not necessarily mean one has a stable home life and the musician may have been married many times or be a part of an abusive relationship. Religious affiliation does not necessarily equate to being a devout member and location of residence is a moving target, since artists typically tour and do not necessarily spend much time in their home.

In order to do a preliminary test to determine whether these factors are significant in real life, I can collect a few dozen cases of musicians who have died and find the exogenous data that is called for in the model. I can run the data through the

model and check the output of the model (Y, the predicted lifespan in years) against the true lifespan of each musician when their exogenous data is plugged into the model with the betas generated by the total data.