The Effects of Compulsory Military Service Exemption on Education and Labor Market Outcomes by Tumen and Torun

Discussion by Bilge Erten

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- It finds that the paid exemption reduces the educational attainment for the eligible men, implying that the exemption from CMS reduced the incentives to stay in school.
- There is also suggestive evidence of a negative effect on labor earnings of eligible men, which the authors attribute to the decline in educational attainment.

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- What proportion of men were at school at the age of 27 in 1999?
- The average age of university completion is 22-24. They could be doing a Masters or PhD.
- The timing of the law is exogenous, but there is selection into the eligible group. In particular, the characteristics of men who are 27 and still in undergraduate or graduate studies will matter.

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- Measurement error in years of schooling, and level of school completed
- An advantage of previous studies is that they have information on being still at school (Maurin and Xenogiani 2007), or having completed high school at the age of 18 and being in the transition to university (Di Pietro 2013).

Comments on Specification

- Pooling LFS data from 2004–2013, the paper uses three specifications: OLS, Double Differences, Triple Differences. The OLS specification takes the form:

$$y_{i,r,t,m,s} = \alpha + \delta B_i + \theta'.X_i + g(t) + f_r + f_s + f_m + \epsilon_{i,r,t,s,m} \qquad (1)$$

  where i, r, t, m, and s index individuals, regions, years of birth, months of birth, and survey years, y is the labor market outcome of interest, B is a dummy variable taking 1 if the individual is born on or before Dec 31, 1972, X is individual characteristics (age dummies and an urban/rural dummy), $g(t)$ is a cubic polynomial defining the time trend variable with respect to the year of birth, f_r denotes region FE, f_s denotes survey-year FE, f_m denotes month-of-birth FE.

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- There will be omitted individual characteristics that affect both the eligibility status and outcomes of interest.

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- Double Differences takes the form:

$$y_{i,r,t,m,s} = \alpha + \beta.T_i + \delta.B_i \times T_i + \theta'.X_i + f_r + f_s + f_m + \epsilon_{i,r,t,s,m} \quad (2)$$

  where the dummy variable T_i takes the value of 1 if the year-of-birth period is 1972-1973 and 0 if it is 1973-1974; B_i is a dummy variable taking 1 if the individual is born on or before Dec 31, 1972. This is estimated in 8, 12, and 10 month intervals.

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- For a DID specification, one needs two sources of variation. But here there is only one: time of birth. Even if you did not use B_i, T_i would assign the value of 1 to months before Dec 31, 1972. So this is still an OLS that assigns treatment the value of 1. Therefore, it still captures cohort-specific effects.

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- Selection bias is again important. Unobservable individual characteristics will affect both the eligibility status and outcomes of interest.

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$$y_{i,r,t,m,s} = \alpha + \phi.M_i + \beta.T_i + \xi.T_i \times M_i + \phi.B_i \times M_i + \gamma.B_i \times T_i + \delta.B_i \times T_i \times M_i + \theta'.X_i + f_r + f_s + f_m + \epsilon_{i,r,t,s,m}$$

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- In addition to DID, Di Pietro (2013) uses data from a previous year to control for pre-treatment trends in university enrollment across gender, and refers to this as Triple Differences specification.
- In this case, there is no data available prior to the reform's implementation. There is also no other source of variation, which prevents the use of a DIDID strategy.

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- An RD design has the advantage of including a control function that picks up any underlying relationship between the distance to cutoff and outcome variable. It also allows for the testing of whether the covariates are distributed evenly around the cutoff.

Covariates and the Treatment on the Treated Effect

- It may be important to include other factors that affect college enrollment (e.g. individual's academic ability, school-related variables such as types of school, family background, etc.), which previous studies have shown to significantly affect university enrollment (Di Pieto 2013).
- If you have an estimate of number of people taking advantage of the paid exemption, you can estimate the Treatment on the Treated Effect:

$$TOT = \frac{ITT}{E(D|Z=1)}$$

TOT - Treatment on the Treated
ITT - Intention to Treat
E(D| Z=1) - Treatment receipt rate