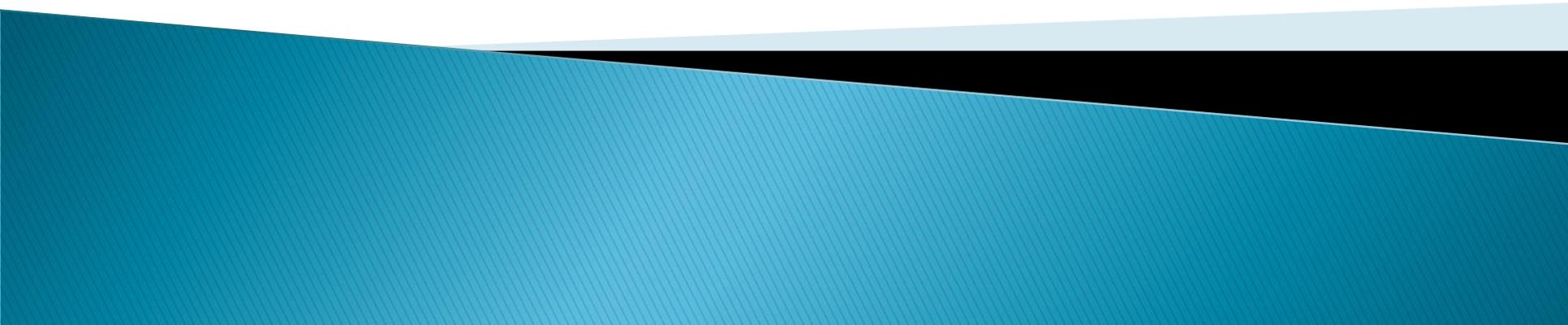


An Investigation of the Relationship Between University Rankings and Graduate Starting Wages

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Global University Rankings

- ▶ Era of global rankings began in early 2000s
 - Asiaweek (2000)
 - Shanghai Jiao Tong (ARWU) (2003—)
 - Times Higher Ed. World University Rankings (2004—)
 - Quacquarelli Symonds (QS) (2010—)
- ▶ Universities scored on comparable indicators with a focus on research performance
- ▶ Rankings are widely criticised
 - Construct validity
 - Measurement precision
 - Reproducibility

But...

- ▶ Rankings are increasingly gaining attention
- ▶ Being well ranked may be of benefit to universities and students
 - Material effect on graduate employment and earnings
 - Other tangible and intangible benefits
- ▶ Do graduates from globally-ranked universities earn higher starting wages, all else equal?

University Quality

- ▶ Typical measures
 - National rankings (e.g. Barron's)
 - Institutional characteristics
 - University groups (e.g. Go8)
 - Global rankings?
- ▶ Many, but not all, previous studies find an association between quality and earnings
- ▶ Birch, Li and Miller (2009) found that broad university groups have little impact on wages
- ▶ Differences in samples, methods and measures

Empirical Challenge

- ▶ Non-random selection into universities
- ▶ If unobserved characteristics correlated with starting wages, estimates will be biased!
- ▶ Methods to address non-random selection
 - Selection on observables
 - Selection models
 - Twins studies
 - Instrumental variables

Contribution

- ▶ Association between global university rankings and starting wages
- ▶ Selection on unobservables

Graduate Data

- ▶ Graduate Destination Survey (2012)
- ▶ Sample restricted to
 - Australian bachelor degree graduates
 - Aged less than 25
 - Employed full time in Australia
 - No missing data on key variables
- ▶ Dependent variable is log hourly wage
 - Hours top-coded at 50 hours
 - Outliers excluded
- ▶ Analysis sample of 13,704 graduates

University Rankings

- ▶ Academic Ranking of World Universities 2012
 - Well known ranking
 - Objective, stable and transparent
 - Set of universities is similar across rankings
- ▶ University ranking variables
 - Top 100 vs. others
 - Top 100 vs. non-ranked (sensitivity test)
- ▶ Top 100 includes five Go8 universities

Grads of Top-Ranked Universities

- ▶ Constitute 21% of the sample
- ▶ More likely to be
 - Male
 - Studying sciences, engineering, and society and culture
 - Completing an honours degree
 - Studying full time
 - From a capital city
 - Paying fees upfront

Methodology

- ▶ Selection on observables?
- ▶ Two-stage treatment-effects model (Maddala, 1983)
 - (1) Probit to account for university choice
 - (2) Wage regression
- ▶ Endogeneity bias control factor (λ) computed from (1) and included in (2) as an additional control
- ▶ If the estimate on λ is zero, endogeneity is not an issue and OLS may be used
 - i.e. no correlation between error terms

Controls

- ▶ Age/age squared
- ▶ Female
- ▶ Broad field of education (10)
- ▶ Honours degree

Exclusion Restrictions

- ▶ Assumption that errors are jointly normal
- ▶ Include variables in selection model that are not also in wage equation
 - Non-trivial effect on selection
 - No effect on wages
- ▶ Residence in a capital city
- ▶ Part-time study
- ▶ Defer course fees

Selection Model

- ▶ All variables significant except one FOE
- ▶ Exclusion restrictions with expected signs
- ▶ Honours degree strong predictor

Baseline OLS

- ▶ Globally-ranked university associated with 3% wage premium ($p < 0.01$)
- ▶ Broadly consistent with Birch, Li and Miller (2009) who reported a 2% Go8 wage premium
- ▶ Modest effect when compared with other factors
 - 29pp across fields of education
 - Honours degree associated with 6% wage premium
 - Females earn 2% than males on average
- ▶ Sensitivity analysis yielded similar results

Corrected Wage Model

- ▶ $\lambda = -0.0089$ (n.s.)
- ▶ Negative?
 - Omitted variable negatively associated with starting wages
 - Double selection problem?
- ▶ Wage effect similar in magnitude (5%)

Conclusions

- ▶ Modest but significant wage effect not driven by non-random selection into universities
- ▶ Effect is minor, especially given the press coverage that accompanies new university rankings
 - Labour market does not care much about rankings
 - Wage effect may not reflect rankings at all
- ▶ Young bachelor graduates may be fairly homogeneous with regard to employability skills
- ▶ Research-heavy rankings may overstate the variation between universities in terms of quality of coursework education provided

Possible Extensions

- ▶ Disentangle the specific effect of rankings on starting wages
 - More than a decade of ARWU rankings
 - Association between rankings and institutional wage premia over time
- ▶ Wage premia associated with attending specific HE institutions

Importance of Rankings

- ▶ Internationally?
- ▶ Recruiting the best staff?

Questions?

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