



Variation in the Impact of High School Environment on College Applications



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The college application process

- Steps to college
 - Prepare academically
 - Prepare financially
 - Choose a college
- Free Application for Federal Student Aid (FAFSA)
 - During senior year of high school
 - Submit household and financial info
 - List any colleges they are interested in

FAFSA is a gateway to college

- Benefits of filing

- Access to federal Pell Grants and federal loans
- Access to state grant aid
- Colleges package financial aid, makes price clear

- Potential problems

- Not filing: many students who could benefit do not apply, do not attend
(Bettinger et al., 2012; King, 2004)
- Filing too late: 46% of Pell-eligible filers apply after known state deadlines
(Cannon & Goldrick-Rab, 2016)

Role of high schools

- High schools are positioned to find and solve these problems
- Large literature on what high school counselors do, how it impacts college
 - Recent review by College Board (Avery, Howell, & Page, 2014)
 - Chicago Public Schools (CPS) study found better college-going climate predicts more and better-quality applications (Roderick, Coca, & Nagaoka, 2011)
 - Research informed CPS FAFSA tracking, which increased filing rates (Johnson, Moeller, & Holsapple, 2013)

Research questions

- Who files the FAFSA and when?
- Do high schools impact who files?
- Research design: describe sources of variation in filing
 - Academic, financial, aspirations, demographic characteristics predict filing outcomes
 - Conditional on these characteristics at senior year, estimate high school variation
 - Explain high school variation with observable attributes of high school, compare to variation at individual level
 - Use Illinois class of 2009 public high school graduates

Empirical model

- First predict outcome Y_i for individual i with characteristics X_i measured at senior year:

$$Y_i = \alpha + X_i' \beta + \bar{X}_{j(i)}' \delta + e_i$$

- X_i includes **aspirations, test scores, family income**, race/ethnicity, gender
 - $\bar{X}_{j(i)}$ are averages at school j attended by i
- Then average the residuals e_i within each high school
 - Not true value added with pre-test measures and multiple observations at the level of the value-added estimate
- Outcomes Y_i
 - **filing FAFSA**
 - **filing week**

Illinois Class of 2009 longitudinal dataset

- 109,030 graduates from 640 public high schools
- All took the ACT and answered questionnaire
(Illinois State Board of Education)
- High school information
(ISBE Report Card, Common Core of Data)
- FAFSA filing observed over next four years
(Illinois Student Assistance Commission)
- College enrollment and degree attainment observed over next four years
(National Student Clearinghouse)
- Limit to 59,860 without missing questionnaire data, at HS with 10+ students

Summary statistics

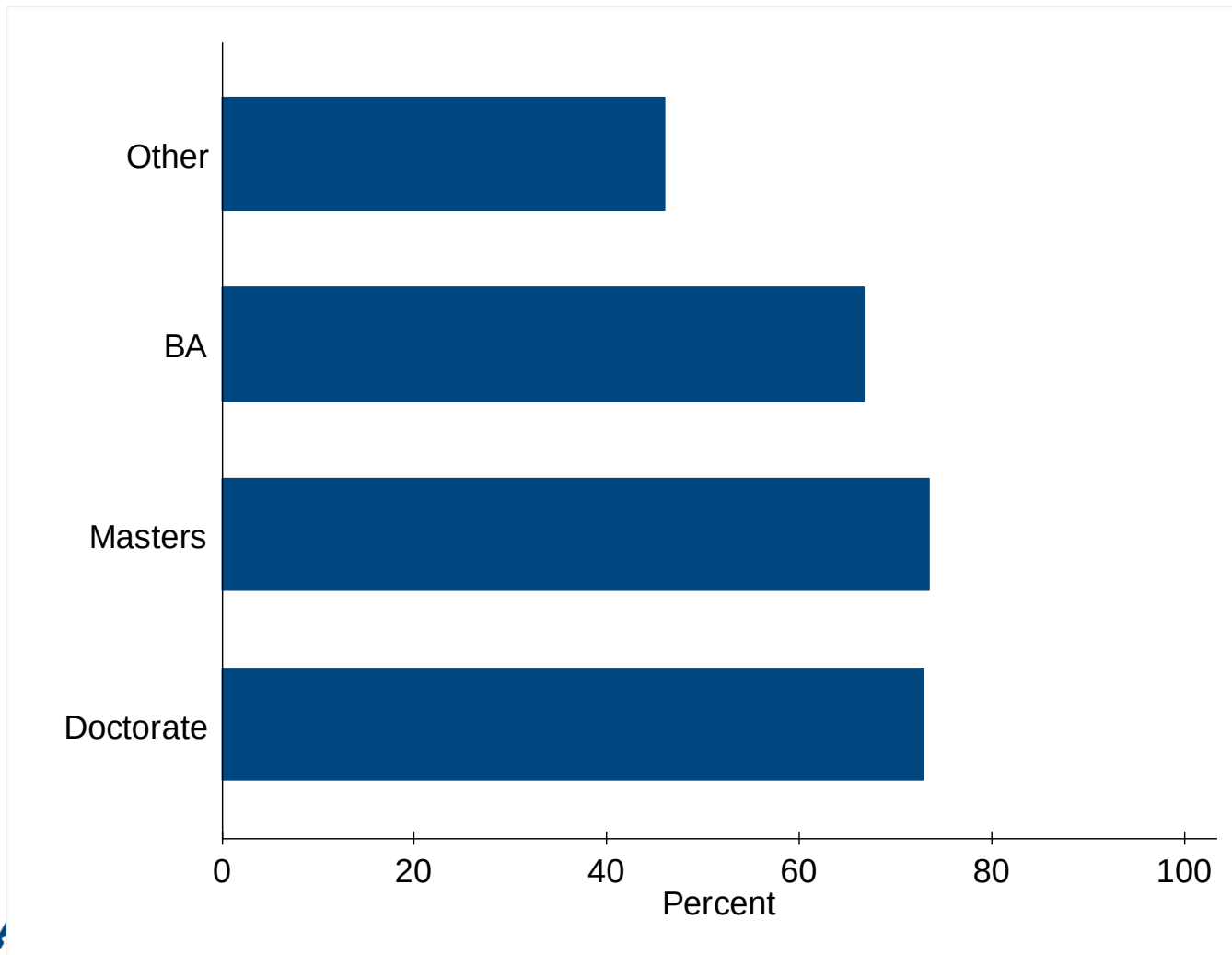
● Students

- 52% women; 71% White, 7% African American, 6% Latino
- 88% aspire to get BA or higher
- 34% college ready in science, 51% math, 58% reading, 76% English (covariation with wealth)
- 67% file the FAFSA in first year
- Of filers, 37% are first-generation college students, 16% have zero EFC

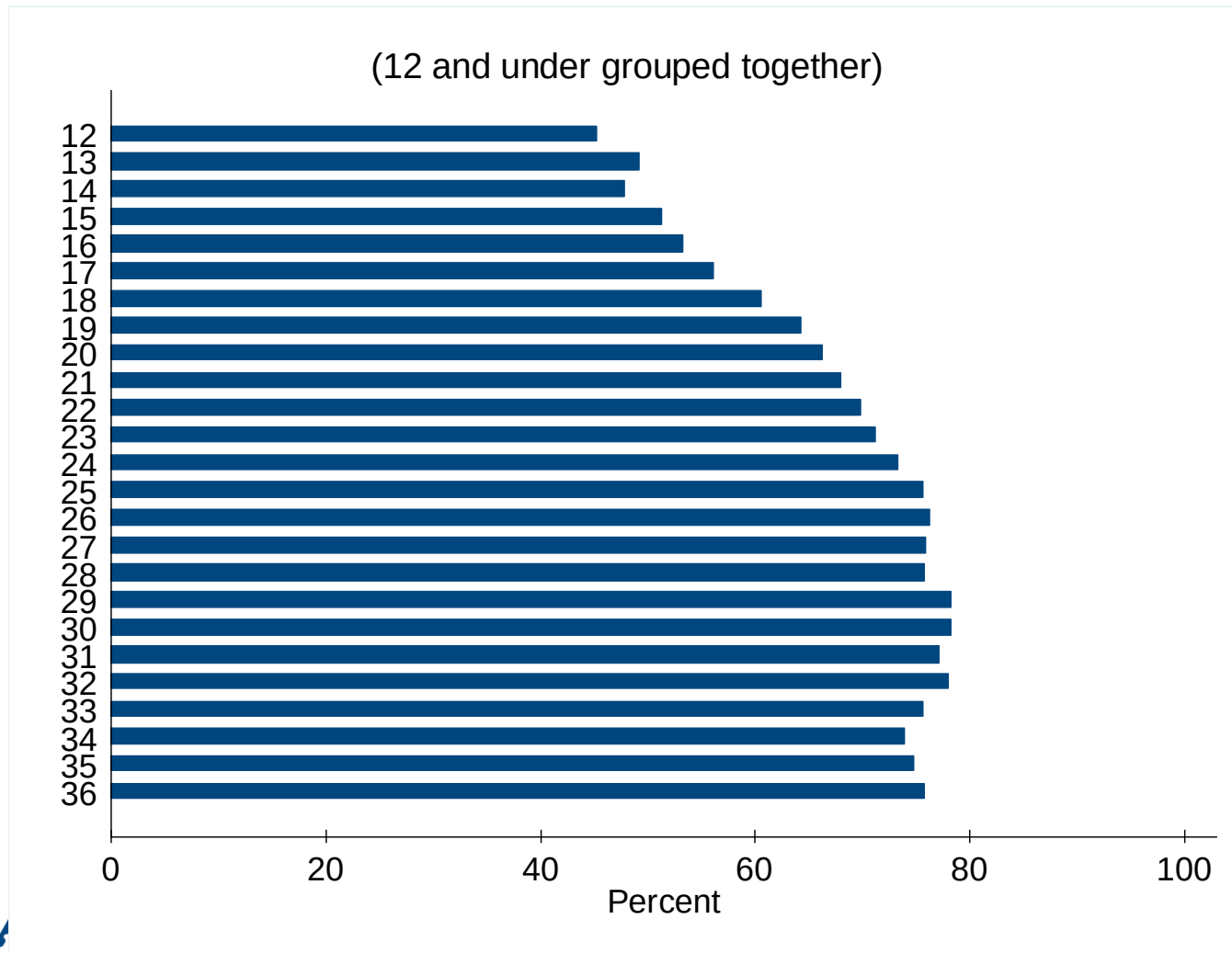
● High schools

- Median graduation rate 93% with $P_{10} = 82\%$
- Instructional expenditures/student range from \$3,300 to \$11,500 with avg. \$6,500

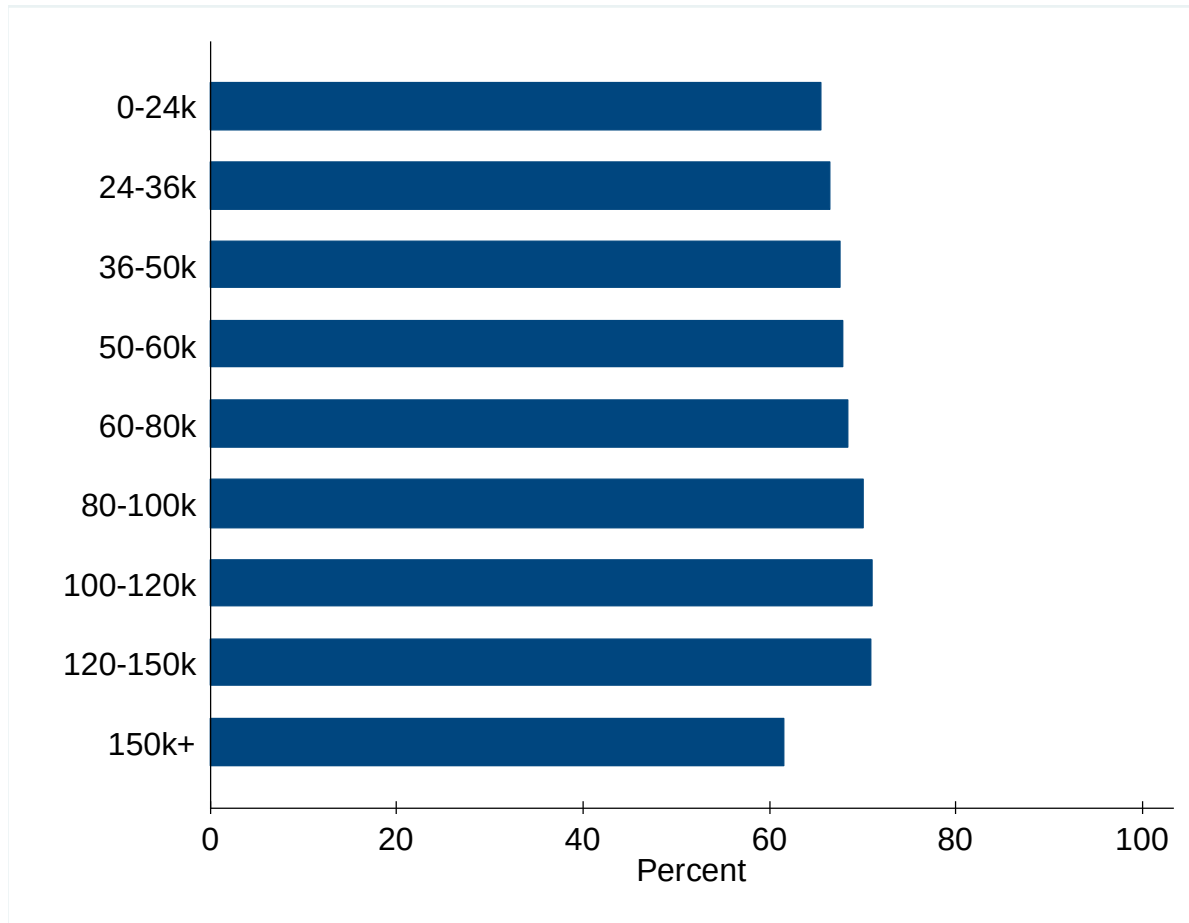
Filing rate varies by aspirations



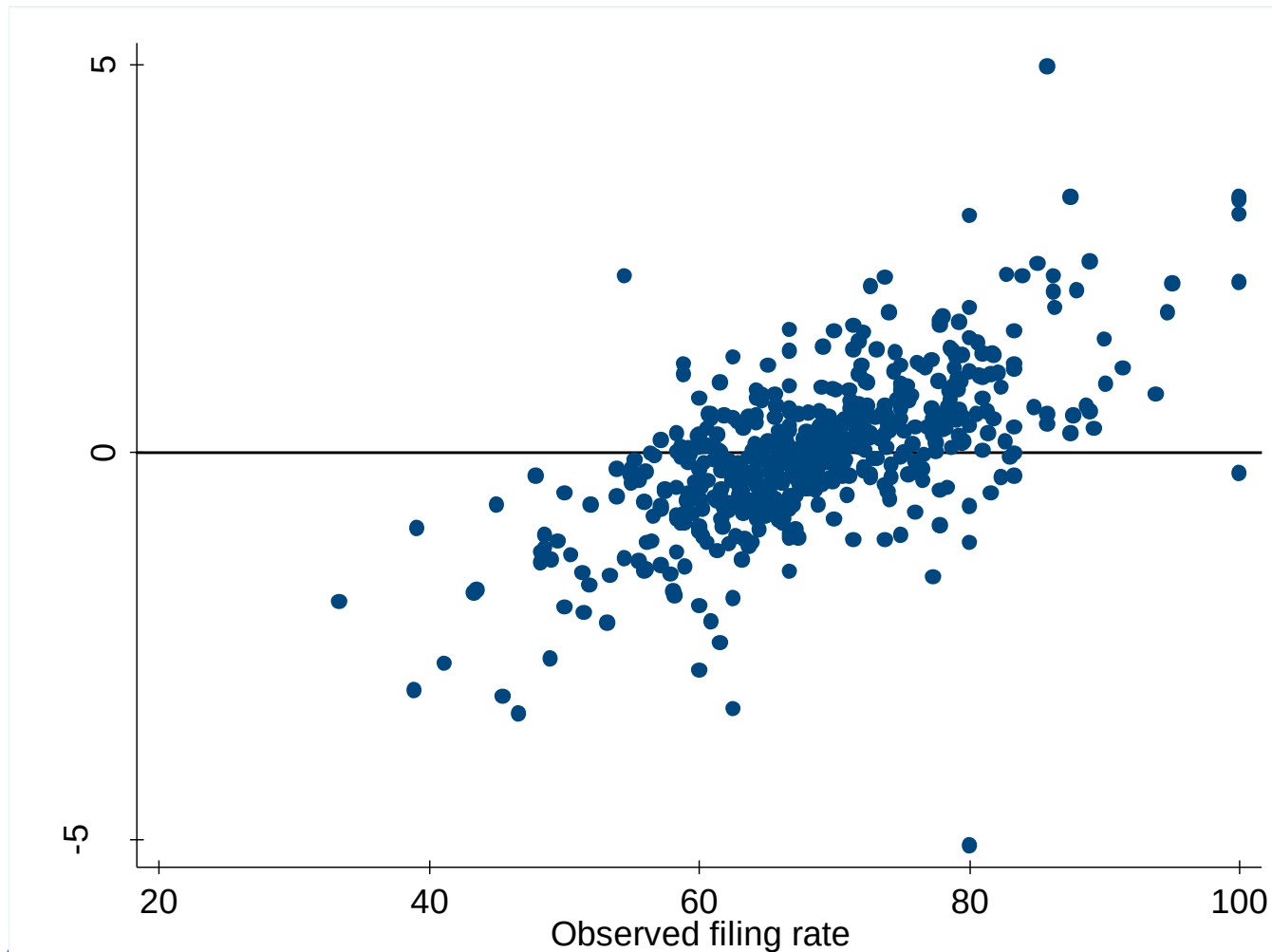
Filing rate varies by ACT score



Filing rate does not vary much by income



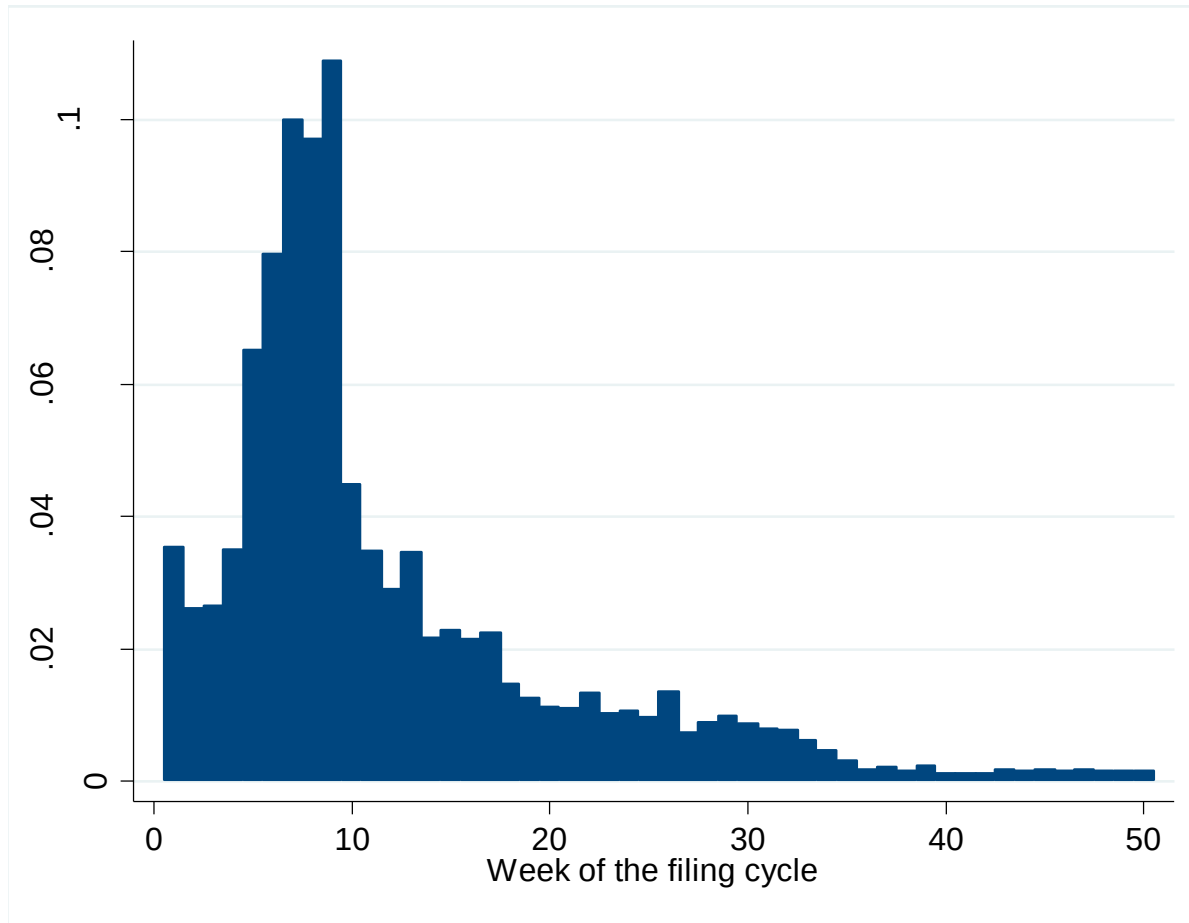
HS effects on filing, vs. observed filing



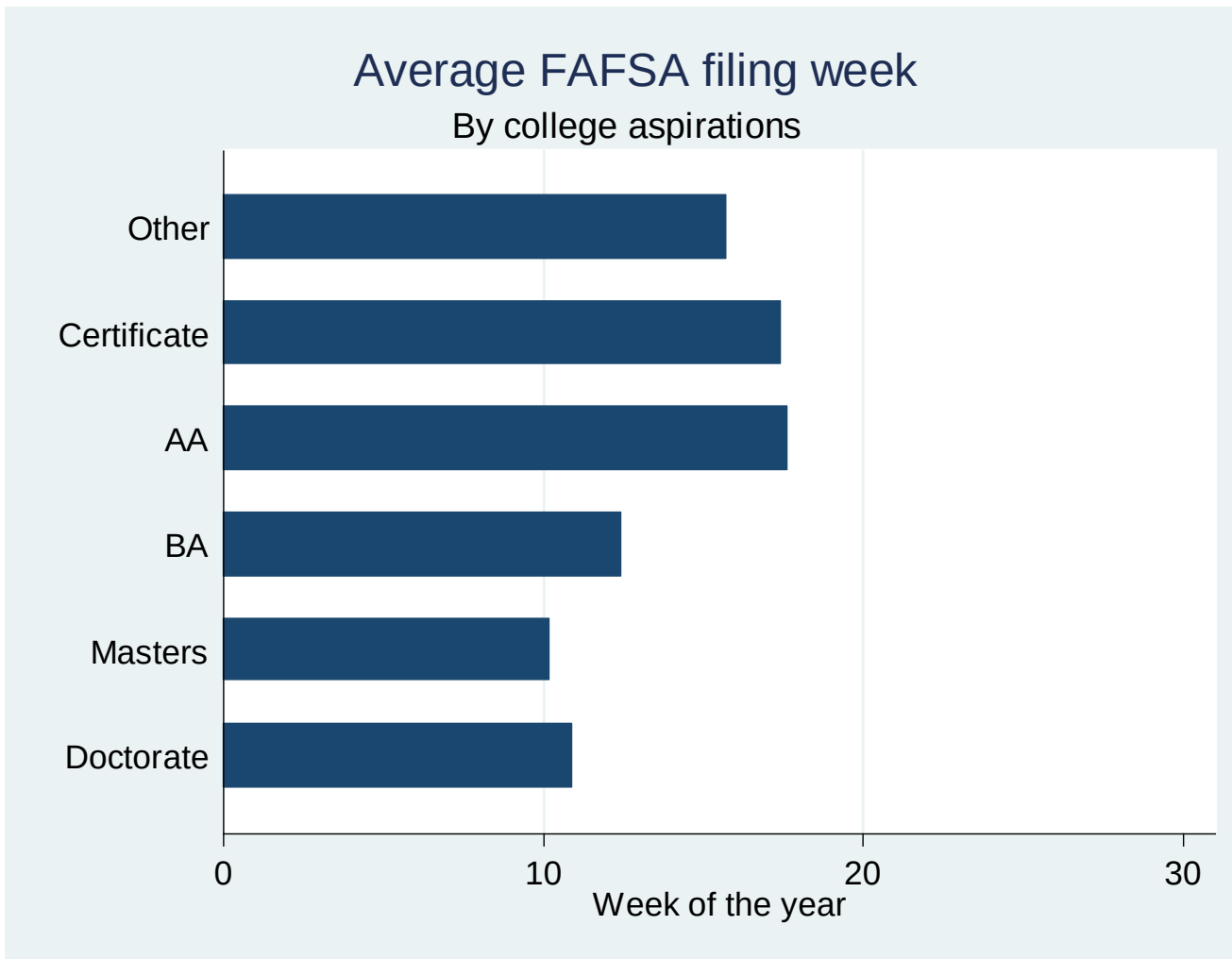
Filing rate results

- 1 SD increase in HS effect increases likelihood of filing by 8 pc pts
- 1 SD increase in ACT score increases likelihood of filing by 8 pc pts
- Regress HS effect on HS characteristics
 - Not strongly related to instructional spending
 - 1 SD decrease in students per counselor increases HS effect by 0.10 SD
($p = 0.06$)
 - 1 SD decrease in average class size increases HS effect by 0.09 SD
($p = 0.09$)

Observed filing week

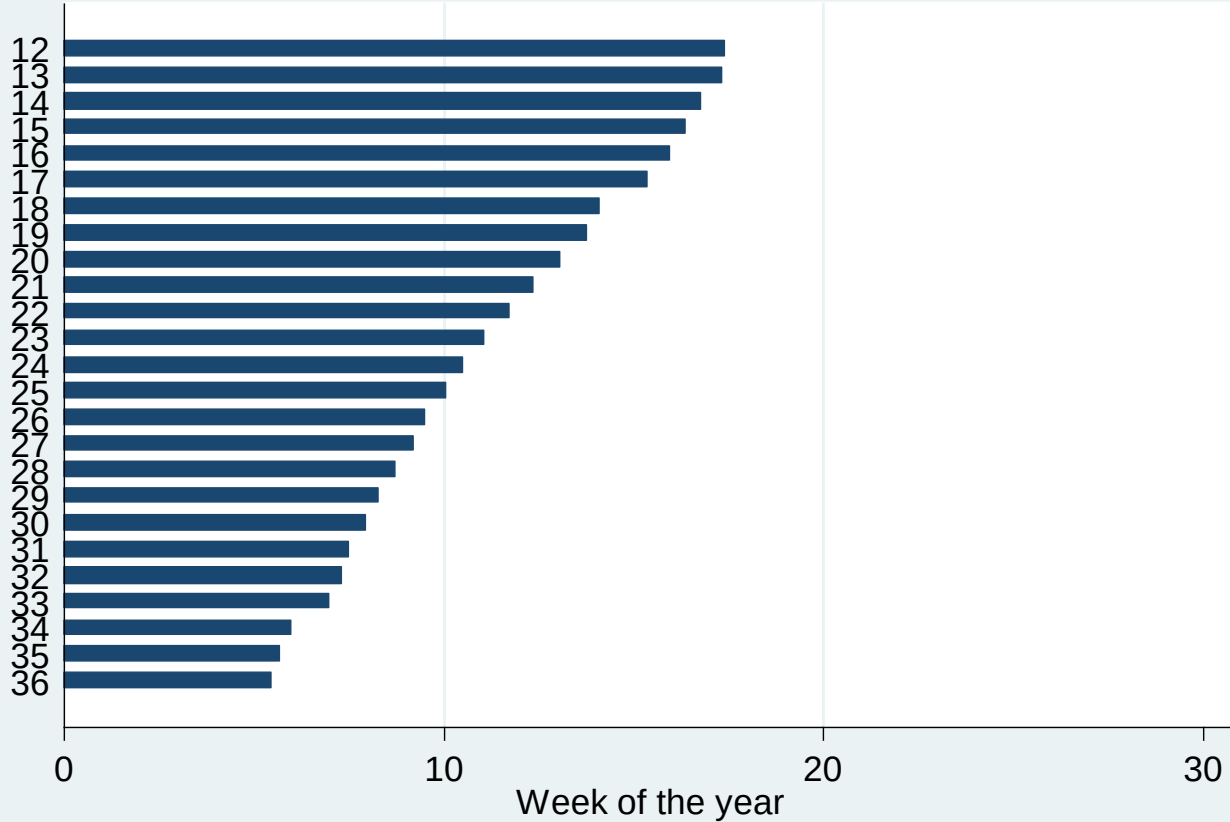


Filing week results:

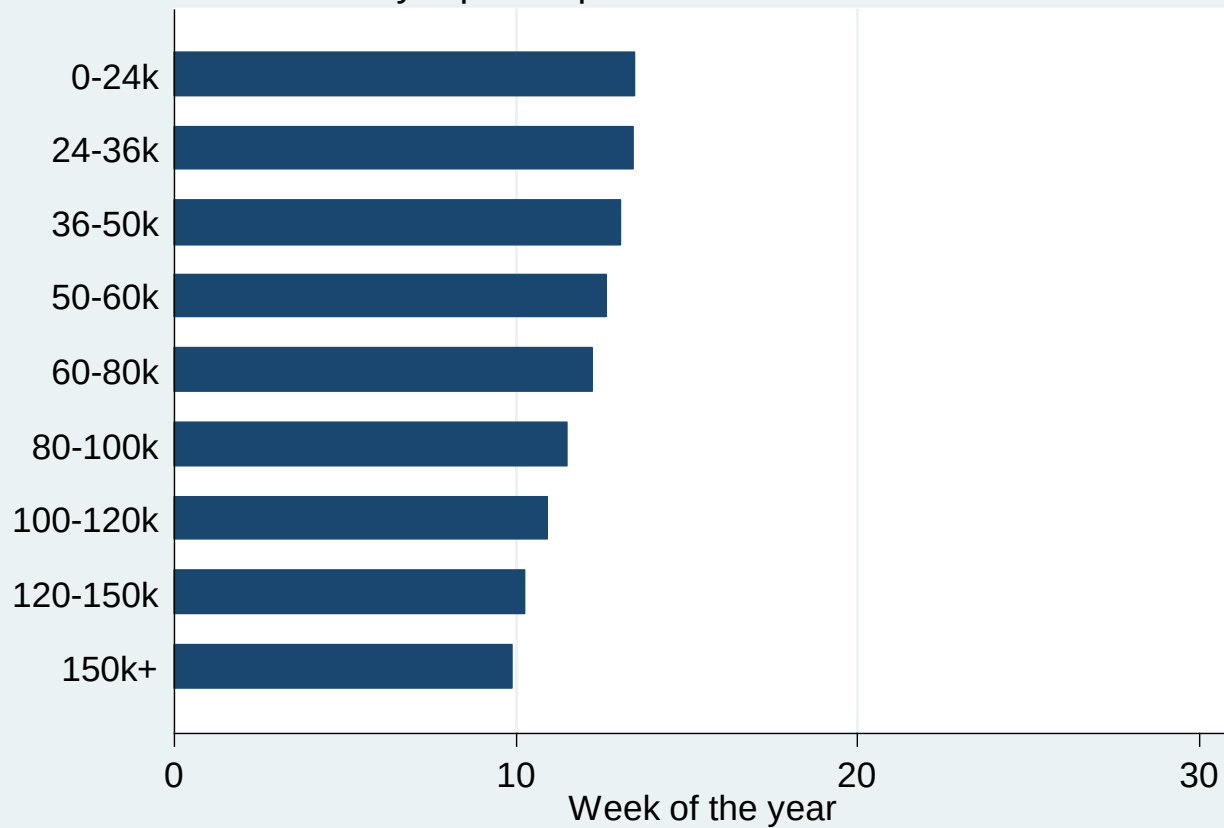


Average FAFSA filing week

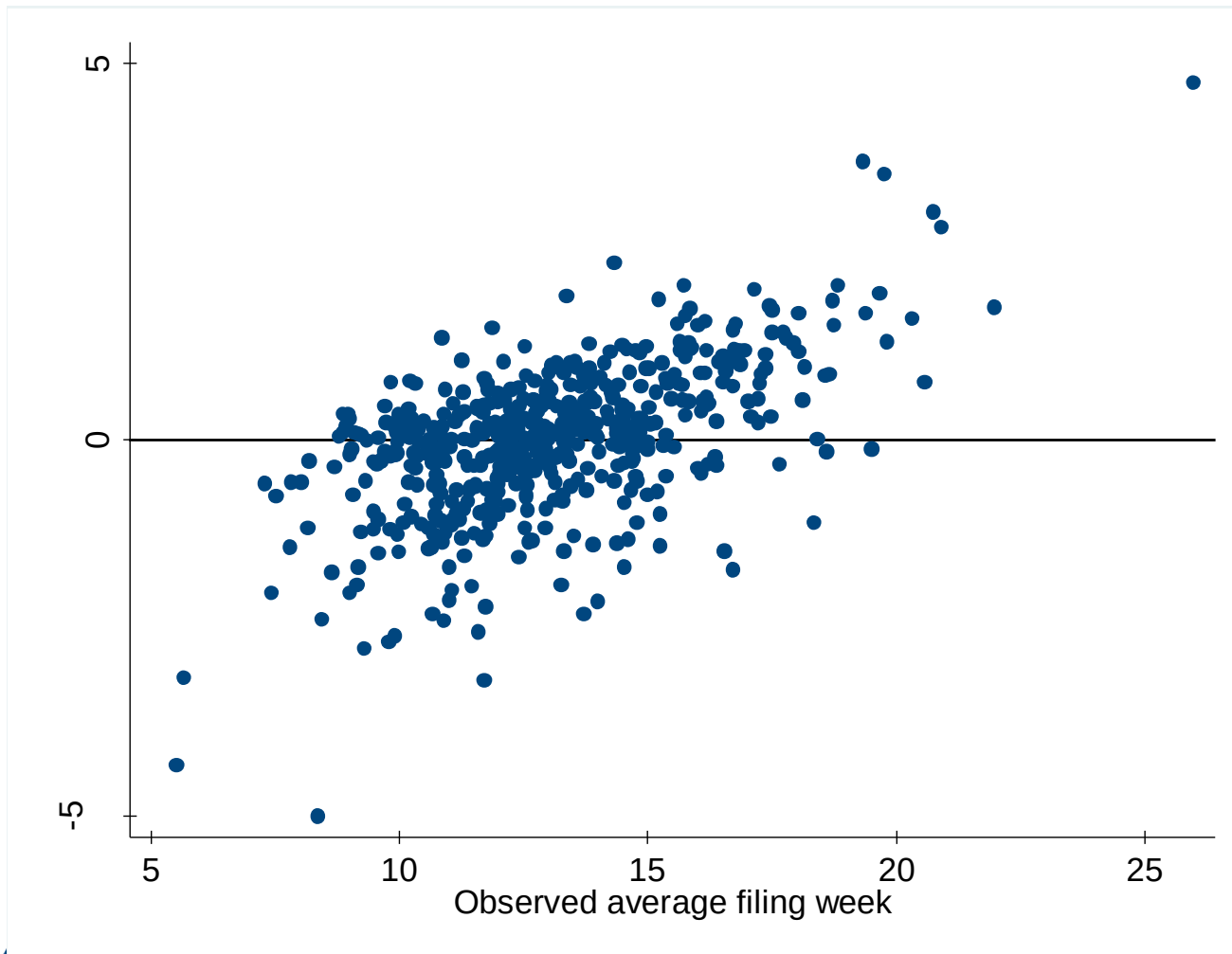
By ACT composite score (12 and under grouped together)



Average FAFSA filing week By reported parental income



HS effects on filing week, vs. observed



Filing week results

- 1 SD increase in HS effect decreases week of filing by 1.9 weeks
1 SD increase in ACT score decreases week of filing by 2.8 weeks
- Regress HS effect on HS characteristics
 - Not strongly related to instructional spending or to students per counselor
 - 1 SD decrease in average class size increases HS effect by 0.17 SD
($p = 0.001$)

Discussion and conclusion

- Surprisingly little variation in filing by family income
- Significant variation across high schools, after detailed individual controls:
 - **Comparable with variation accounted by ACT**
 - Small amount of variation explained by observable HS characteristics
- Next steps
 - Explore FAFSA filing effect on of college enrollment
 - Explore HS effect on college fit using listed colleges and average ACT
(Hurwitz et al., 2012)

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